THE UNIVERSITY OF HULL

E-BUSINESS ASSIMILATION IN THE CONTEXT OF SAUDI ARABIA:

UTILISING HABERMAS' LIFEWORLD AND SYSTEM THEORY

Being a Thesis submitted for the Degree of PhD

in the University of Hull

By

Abdullah S. Al-Ariefy

September 2011

Abstract

E-business assimilation in Saudi Arabia becomes critical due to the overarching social issues that the stakeholders encounter. Grounded in Habermas' Critical Social Theory (CST), this study applies the *theory of lifeworld and system* to understand the relevance of the Islamic faith as well as the Arab culture in the conduct of businesses in Saudi Arabia, which in turn, would make e-business assimilation a success.

This study seeks to contribute to the IS literature's lack of research in which the aim is to emphasise social factors as the main determinants of e-business assimilation. We point out that inherent to the other important factors (e.g., technological, organisational, and cultural), people's actions (emancipated or regulated) are most critical to realising business' innovation and growth through utilising e-business technology.

The sample of the study was composed of 1071 SAP end-users from the three leading Saudi companies, namely, Saudi Aramco, Saudi Basic Industries Corporation (SABIC), and Saudi Iron and Steel Company (Hadeed), an affiliate of SABIC. Also, seven consultants contributed their knowledge and expertise regarding e-business adoption, on which they have been working for many years. The necessary data were collected through two methods: (1) distributed survey questionnaire for the SAP end-users; and (2) face – to - face (semi-structured) interview for the consultants.

The value of Habermas' theory of lifeworld and system is shown by the development of a business model that can be used to achieve e-business assimilation success in the context of Saudi Arabia because it has the ability to distinguish the actions in various social situations – whether the actions reflect emancipation or restriction of the actors' way of living; and consequently, whether the actors' way of living should remain as it is or should undergo necessary changes. The newly developed "E-Business Assimilation Model" (EAM) includes as its constructs the most important factors relevant to e-business success as well as the concepts of lifeworld and system: that is, all factors are subject to be "filtered" through both the lifeworld and the system constructs. Through EAM, it was found that it could be easy for the project team to execute an e-business project if they will give critical consideration to the people's social and cultural beliefs, aspirations, perspectives and preferences. Understanding the people's social and cultural means allows the project team to customise the e-business systems to be installed, and to make sure that the new system really fits the organisational setting. For every challenging lifeworld and system situation, the top management can provide improved solutions to be applied.

The findings show how SAP implementation in the selected companies was affected by social factors such as age and gender; cultural factors such as religion; organisational factors such as performance motivating, management support and consultancy; and technological factors. The companies' change management programmes had enabled resolution of problems by the adoption of measures suited to each company's holistic characteristics and needs. Evidence of system-lifeworld interactions was demonstrated in each of these cases. Saudi society was shown to be strongly lifeworld oriented, such that 'system' comes into conflict with a member of lifeworld and there are some lifeworld elements (such as gender roles and constraints) that system cannot change but must work within. The findings demonstrate the value of a system – lifeworld perspective in analysing factors influencing a change such as e-business assimilation and result in development of an elaborated model for holistic analysis of pertinent factors.

Dedication

In the memory of my father.....

To my mother

For her immense inner strength and endless unconditional love and support.

Acknowledgment

My deepest thanks go to Professor Steve Clarke for his support and encouragement throughout my research for this thesis. Not only was he an academic role model to look up to, but he also encouraged me to explore other aspects of life and culture of particular relevance to Saudi Arabian society. I am extremely grateful to his experienced guidance. I would like to thank Professor Steve for his patience, help and guidance during this journey.

I would also like to express my thanks and appreciation to Dr. Ashish Dwivedi for his endless support. Many thanks and appreciation goes to the staff of the Graduate school as well as the Research office staff in the Business School for their help and support.

I would like also to express my thanks and appreciation to all who encouraged and supported me during my research, including both of my uncles Mr. Sulaiman and Mohammed "Abu Hatim". They inspired me, encouraged me and always supported me by asking about me and my research. A very special thanks also goes to my loyal and caring brother, Mohammed, for his support.

I owe an exceptional debt of gratitude to my very best friend ever, who also happens to be my mother. Her continuous love, support and availability at all times, both in person and at the other end of the telephone line.

I am most grateful to my soul mate and partner, Mashael, for all the consistent love, understanding, positive thinking, and confidence she surrounded me with. She never fails to make me smile and find a funny side to any problem. I am also very thankful to the rest of my family. Athir, Ghadir, Shoge, Mohammed and Dana you all are my sunshine and the sweet of my life.

Abstra	ct	. I
Dedica	tion	
Ackno	wledgment	V
List of	Figures	XI
List of	Tables	. I
Glossa	ry of Terms	
Glossa	ry of Abbreviations	V
1 Ch	apter One: RATIONALE	1
1.1	Introduction	1
1.2	Background and Research Problem	3
1.3	Research Aims and Objectives	8
1.4	The Need for the Study	8
1.5	Structure of the Research	10
2 Ch	apter Two: TOWARDS e-BUSINESS	
ASSIN	IILATION 1	1
2.1	Introduction	11
2.2	Definition of Terms	12
2.2.1	1 E-Business 12	
2.2.2	2 Assimilation	
2.2.3	3 E-Business benefits16	
2.3	Information Technology	17
2.4	Information Technology and Business Organisations	18
2.5	The e-Business Revolution	22
2.6	E-Business as e-Technology	22
2.7	E-Business as a New Product	26 20
2.8	E-Business in Different Organisational and National Cultures	28
2.8.	Arab culture: the root of Saudi culture	วา
2.9	E-Business Assimilation	JZ
2.9. 2.0.4	Major factors to a husiness assimilation	
2.9.4 2 10		27
2.10	Summary	20 21
3 Ch	apter Three: THEORETICAL PERSPECTIVES	55
ON e-l	BUSINESS ASSIMILATION	11
3.1		41
0.0	The Social Psychological Perspectives	 41

3.2.1.2 Goal versus behaviour3.2.1.3 The choice among alternatives	48	
3.2.1.3 The choice among alternatives	48	
C	49	
3.2.1.4 Intentions versus estimates	49	
2.2.2 Significant impacts of TPA	50	
3.2.2 Significant impacts of TRA	50 51	
3.3 Theory of Planned Behaviour: the benefit of control	51	53
3.3.1 Weight of TPB	55	.00
3.3.2 TPB in IS research	60	
3.4 The Technology Acceptance Model (TAM)		.63
3.4.1 TAM in IS research	69	
3.5 The Technology Organisation Environment (TOE) Model		.72
3.6 Habermas' Lifeworld and System Theory		.73
3.6.1 Habermas: actions in social situations	101	
3.6.2 The Influences of Jurgen Habermas	103	
3.6.3 Habermas' lifeworld and system theory	104	
3.7 The Lifeworld and System Theory in the Context of	Saudi	
Arabia	1	107
3.7.1 The 'lifeworld': developing understanding th	rough	
communicative action	108	
3.7.2Colonisation of the lifeworld3.7.2.1Changes in Saudi Arabia	110 114	
3.7.3 Lifeworld and system theory in the conduct of the Inter	net in	
Saudi Arabia	115	
3.7.3.1 The key word is 'balance'	115	
3.8 The Saudi Culture: in general terms		116
3.9 Why Habermas' Lifeworld and System Theory?	1	120
3.9.1Four paradigms for the analysis of social theory3.9.1.1The functionalist paradigm	121 123	
391.2 The interpretive paradigm	123	
c.,	102	
3.9.1.3 The radical humanist paradigm	120	
3.9.1.2 The nation plattering in the interplattering in the	123	
 3.9.1.2 The interpretive paradigm	123 124 nanist	
 3.9.1.2 The interpretive paradigm	123 124 nanist	
 3.9.1.2 The interpretive paradigm 3.9.1.3 The radical humanist paradigm 3.9.1.4 Radical structuralist paradigm 3.9.2 Critical social theory: representing the radical hur paradigm 3.10 The Initial Conceptual Model 	123 124 nanist 124	125

5.12 Stay	es of e-Business Assimilation	
3.13 The	Stage 2 Conceptual Model	
3.14 Cond A Chapte		·····
		••••
4.1 IIIIO 4.2 The I	Reflect of Social and Cultural Factors on e-husiness Transa	ntions
in Saudi Ara	bia	
4.2.1	Social and cultural factors affecting business in gener	al in
Saudi Ara	ıbia	135
4.2.1.1	Attitudes to wealth	137
4.2.1.2	Charging interest	137
4.2.1.3	Business succession	138
4.2.1.4	Economic reforms	139
4.2.1.5	Low female participation in the workforce	139
4.2.1.6	Islamic law and government business relations	140
4.2.2	How social and cultural factors affect e-business in S	Saud
Arabia ²	141	Juuu
4.3 Less	ons Learned from the Saudi Companies' e-Busi	ness
Assimilatio	n	
4.3.1	Saudi Aramco	146
4.3.1.1	Analysing Saudi Aramco as an e-business tool (Website)	146
4.3.1.2	Saudi Aramco as a benchmark	149
4.3.2	Saudi Arabian Basic Industries Corporation (SABIC)	151
4.3.3	Saudi Iron and Steel Company (Hadeed)	153
4.4 Lifew	vorld and System Situational Evidences in Saudi companies.	
4.5 Conc		
5 Chapte		
5.1 Intro	duction	
5.2 Rese	arch Design and Philosophical Paradigm	
approach	es	166
5.2.2	Research philosophies and approaches	167
5.2.2.1	Qualitative research approach	172
5.2.2.2	Quantitative research approach	173
5.2.2.3	Differences between qualitative research and quantitative rese	arch
	174	
5.2.2.4	A mixed, multi-methods approach (Triangulation)	178

5.2.2	.5 Research approaches	180
5.3 Re	esearch Purpose	181
5.3.1	Exploratory	182
5.3.2	Descriptive	182
5.3.3	Explanatory	183
5.4 Re	esearch Strategy	183
5.4.1	Survey	183
5.4.2	Case study	183
5.5 Da	ata Sources and Data Collection Methods	184
5.5.1	Documentary sources	185
5.5.2	Data collection: Questionnaire	185
5.5.3	Data collection: Interviews	187
5.6 Pc	opulation of the Study	190
5.7 Th	e Choice of Respondents and Sampling	190
5.8 Se	electing a Sample	193
5.9 Sa	ample Size	194
5.10 Et	hical Issues	195
5.11 Ti	me Horizon	195
5.12 De	esigning and Formulating the Research Questionnaire.	195
5.12.1	Question types and format	197
5.12.2 5.12.	The contents of the questionnaire 2.1 Piloting the questionnaire	198 207
5.12.	2.2 The covering letter	208
5.13 Tł	e Structure and the Content of Semi-Structured Intervi	ews209
5.14 Th	ne Fieldwork	
5.14.1	Difficulties in conducting the fieldwork	212
5.14.2	Requirements for Successful Fieldwork	212
5.14.3	Response Rate	213
5.15 Va	lidity and Reliability Evaluation	215
5.15.1	Validity	215
5.15.2	Reliability	219
5.16 Da	ata Analysis	221
5.16.1	Quantitative Data Analysis	221
5.16.	1.1 Descriptive statistics: frequencies and mean, median and me	ode 223
5.16.	1.2 One-way ANOVA	224
5.16.	1.3 Kruskal-Wallis H test and Chi-Square	225
5.16.	1.4 Pearson correlation	225

5.	16.1.5 Regression analysis	. 225				
5.	16.1.6 Principal Component Analysis (PCA)	. 226				
5.16	6.2 Qualitative data analysis	. 227				
5.17	The Chosen Research Design and the Rationale behind	this				
Choic	e	227				
5.17	7.1 The research plan	. 230				
5.18	Summary	232				
6 Ch	apter Six: QUALITATIVE DATA FINDINGS A	ND				
ANAL	YSIS	233				
6.1	Introduction	233				
6.2	E-Business Start Up	234				
6.2.	1 Adequate training	. 235				
6.2.	2 Analysing the impact of e-business	. 237				
6.2.	3 Overcoming resistance to e-business	. 240				
6.2.	4 Project team and users' collaboration despite of nationality	. 242				
6.3	Change Management	244				
6.4	IT Acceptance Growth	246				
6.5	Age	246				
6.6	Gender	247				
6.7	Loyalty	248				
6.8	Trust	249				
6.9	Trust and Security	251				
6.10	Culture	252				
6.11	E-Accounting	257				
6.12	Human Resource System	258				
6.13	Causes of e-Business Implementation Delays	259				
6.14	6.14 Failure Factors to e-Business259					
6.15	E-Business Benefits	261				
6.16	Conclusion	261				
7 Ch	apter Seven: QUANTITATIVE DATA FINDIN	IGS				
AND A	ANALYSIS	265				
7.1	Introduction	265				
7.2	Age	267				
7.3	Gender	270				
7.4	Education	272				
7.5	Nationality	274				
7.6	Organisational Level	275				
7.7	Attitude to e-Business	275				

7.8	Innovation Characteristics	276
7.8	.1 Compatibility	
7.8	.2 Observability	
7.8	.3 Trialability	
7.9	Computer Anxiety	278
7.10	Training	280
7.11	Support	281
7.12	Organisational Culture	282
7.13	Summary	284
8 Ch	napter Eight: FINAL DISCUSSION	
8.1	Introduction	286
8.2	The Final Conceptual Model	286
8.3	Results	
9 Ch	hapter Nine: CONCLUSIONS, IMPLIC	ATIONS
	FUTURE RESEARCH	297
9.1	Introduction	297
9.2	Summary of the Main Findings	298
9.2	.1 Summary of the findings related to social and culture	ral factors
imp	perative into the Saudi companies' SAP implementation	
9.2 9	.2 The manifestation of lifeworld/system in Saudi compa 2.2.1 The occurrence of lifeworld in the four major factors	inies 303 303
9	2.2.2.2 The occurrence of system in the four major factors	
9.3	Major Contributions to Knowledge	
9.3	.1 Academic contributions	309
9.3	.2 Managerial contributions	309
9.4	Limitations of the Study	310
9.5	Further Research	311
9.6	Final Statement	311
10 Re	eferences	312
11 Ap	opendices	336
11.1	Aramco Quantitative Data	336
11.2	SABIC and Hadeed Quantitative Data	
11.3	Questionnaire	418

List of Figures

Figure 2-1 Operational improvements by the application of technology2	23
Figure 3-1 The TRA Model, Fishbein and Ajzen (1975)4	14
Figure 3-2 TRA in IT adoption5	51
Figure 3-3 The TPB Model, Ajzen (1985, 1991)5	54
Figure 3-4 The TPB Model, Ajzen (1985, 1991); focus to PBC5	56
Figure 3-5 Technology Acceptance Model (Davis, 1986, 1989) (simplified)	55
Figure 3-6 Technology Acceptance Model (Davis, 1986, 1989) (original)	56
Figure 3-7 System: colonisation of the lifeworld11	13
Figure 3-8 Four Major Paradigms that Affect the Organisation (Burrell and Morga	n,
1979)	22
Figure 3-9 Lifeworld/System theory when utilised in e-Business Assimilation12	26
Figure 3-10 Stages of E-business Assimilation12	29
Figure 3-11 Stage 2 Conceptual Model: E-business Assimilation Model (EAM) 13	30
Figure 5-1 Research Plan23	31
Figure 7-7-1 Frequency on 'How long have you been using the Internet and th	ne
World Wide Web?	57
Figure 7-2 Correlations between Age (below 25) and E-mail Usage	58
Figure 7-3 Correlations between Age (over 50) and E-mail Usage26	59
Figure 8-1 Stage 2 Conceptual Model: E-business Assimilation Model (EAM)28	37
Figure 8-2 Final Conceptual Model: E-business Assimilation Model (EAM)28	38

List of Tables

Table 1-1 Summary profiles of Saudi companies in study7
Table 2-1 E-business and E-commerce Definitions14
Table 2-2 Alternative definitions of IS
Table 2-3 E-business components 25
Table 2-4 E-business' Advantages and Disadvantages
Table 2-5 Critical Success Factors to ERP Implementation 36
Table 3-1 some examples of TRA's components
Table 3-2 Internal and External Factors which influence the Volition Control over
the Behavioural Goal
Table 3-3 Application of TPB61
Table 3-4 Examplee of research works which extended the TAM
Table 3-5 IS articles and the conceptual models used
Table 3-6 IS Articles and the researchers' propositions 84
Table 3-7 Hofstede's (1980) four cultural dimensions in context of Saudi Arabia.117
Table 3-8 Hall's theory of intercultural communication (Hall, 1976)
Table 4-1 Lifeworld and System Situational Evidences in Saudi Companies155
Table 5-1 Contrasting implications of positivism and social constructionism168
Table 5-2 Features of the two main paradigms 169
Table 5-3 Strengths , weaknesses of positivistic , phenomenological paradigms 171
Table 5-4 Differences between Quantitative Research and Qualitative Research176
Table 6-1 important aspects on adopting e-business
Table 8-1 Social Factors of Saudi companies' actions to lifeworld/ system290
Table 8-2 Cultural factors of Saudi companies' actions to lifeworld/ system291
Table 8-3 Organisational factors of Saudi companies' actions to
lifeworld/system
Table 8-4 Technological factors of Saudi companies' actions to lifeworld/system 294
Table 11-1 Analysis on 'How long have you been using the Internet and the World
Wide Web?
Table 11-2 Internet usage
Table 11-3 Video-conferencing usage 338
Table 11-4 E-mail usage
Table 11-5 Age of Users 339
Table 11-6 Test of Homogeneity of Variances
Table 11-7 Frequency on Internet Usage according to Gender
Table 11-8 Analysis on Gender
Table 11-9 Education of users

Table 11-11 Nationalities of the users 34	43
Table 11-12 Correlations on Organisational Level	44
Table 11-13 Correlations between the variables of Attitude to e-Business	51
Table 11-14 Regression Analysis on Innovation Characteristics and Overa	all
Satisfaction on e-business implementation	54
Table 11-15 Correlations on Computer Anxiety	55
Table 11-16 Analysis on Training	57
Table 11-17 Correlations on Training	57
Table 11-18 Analysis on Support 35	59
Table 11-19 Correlations on Support	50
Table 11-20 Correlations on Culture's Third Dimension: Background	52
Table 11-21 Reduced 4 Organisational Dimensions into 4 New Variables: Trainin	g,
Background, Technology and Organisational Communication (a)30	54
Table 11-22 Reduced 4 Organisational Dimensions into 4 New Variables: Trainin	ıg,
Background, Technology and Organisational Communication (b)	54
Table 11-23 Age of Participants 36	56
Table 11-24 Tests of Normality 36	56
Table 11-25 Analysis on Gender of Participants 36	57
Table 11-26 Education of Participants 36	59
Table 11-27 Correlations on Nationality 37	70
Table 11-28 Correlations on Organisational Level) 6
Table 11-29 Correlations on Attitude 40)0
Table 11-30 Correlations on Relative Advantage)1
Table 11-31 Correlations on Compatibility 40)4
Table 11-32 Correlations on Observability)6
Table 11-33 Correlations on Trialability 40)9
Table 11-34 Correlations on Computer Anxiety	11
Table 11-35 Correlations on Complexity	12
Table 11-36 Correlations on Training	13
Table 11-37 Correlations on Support	14
Table 11-38 Correlations on Organisational Culture	16

Glossary of Terms

ASSIMILATION

Is the degree to which the use of technology diffuses across organisational work processes and becomes associated with the business processes.

E-BUSINESS

Complex fusion of business processes, enterprise applications, and organisation structure. An organisation that implements e-business in its entire operations is called 'an e-business firm

E-COMMERCE

The use of the global Internet for purchase and sale of goods and services.

ENTERPRISE RESOURCE PLANNING

A company-wide computer software system which used to coordinate all the resources, information, *and* functions of a business from shared data stores.

INFORMATION AND COMMUNICATION TECHNOLOGY

Is an umbrella term that includes any communication device or application as well as the various services and applications associated with it.

INFORMATION SYSTEM

A group of five components that interact to produce information. (The five components of an IS are hardware, software, data, procedures, and people.)

INFORMATION TECHNOLOGY

The technology used for the study, understanding, planning, design, construction, testing, distribution, support and operations of software, computers and computer related systems that exist within an organisation.

LIFEWORLD

Broadly, the cultural environment in which we live, together with all its influences on our behaviour. The individual skills and intuitive knowledge of how one deals with a situation; and from socially acquired practices, the intuitive knowledge of what one can rely on in a situation, not less than, in a trivial sense, the underlying convictions.

SYSTEM

In this study, the environment within an organisation in which rules and procedures operate and are expected to be adhered to. For our purposes, this is seen as a subset of Lifeworld.

Glossary of Abbreviations

А	Attitude			
ANOVA	Analysis of Variance			
B2B	Business to Business			
B2C	Business to Consumer			
BI	Behavioural Intention			
CSF	Critical Success Factor			
CST	Critics Social Theory			
EAM	E-business Assimilation Model			
ECN	Electronic Contacting Network			
ERP	Enterprise Resource Planning			
GSM	Global System for Mobile Communications			
HR	Human Resource			
ICBT	Internet Based Communication Tool			
ICT	Information and Communication Technologies			
IDT	Innovation Diffusion Theory			
IS	Information System			
ISD	Information System Development			
IT	Information Technology			
KSA	Kingdom of Saudi Arabia			
LDC	Less Developed Country			
NVIVO	Qualitative data analysis software			
OECD	Organisation for Economic Co-operation and			
	Development			
PBC	Perceived Behavioural Control			
PC	Personal Computer			
PCA	Principle Component Analysis			
PEOS	Perceived Ease Of Use			
PKI	Public Key Infrastructure			
PU	Perceived Usefulness			
SABIC	Saudi Basic Industries Corporation			
SAP	Systems Applications and Products in Data processing			
SN	System Norms			
STITC	Saudi Telecommunications and Information			
	Technology			
TAM	Technology Acceptance Model			
TCA	Theory of Communicative Action			

TOE	Technology Organisation Environment
TPB	Theory of Planned Behaviours
TRA	Theory of Reasoned Action
WWW	World Wide Web

1 Chapter One: RATIONALE

1.1 Introduction

Information has become a very important asset for most modern societies: some writers have stated that the age in which we live has now turned out to be not the atomic age, nor the space age, but the information age (Carter, 1989). This revolution has made a profound impression on the way the world functions and has transformed it to an evolving information society (Shafique and Mahmood, 2008).

Information has become part of all aspects of our lives: in manufacturing, education, medicine, farming, entertainment, banking, and many other fields.

Tom (1991), who dates the information age to the end of the 19th century, comments that the years since then have seen enormous advances in telecommunications, and that innovations like the telegraph, telephone, radio and the television have unfolded new horizons for humans and society as a whole, and have subsequently provided people with information concerning distant outcomes and new thoughts. He suggests that major revolution currently underway in terms of information technology is the most fascinating development since the industrial revolution (Tom, 1991). The basic drive behind the information revolution has been attached to progress in microelectronic technology, particularly in the development of microcircuits or 'chips', offering computing and communicating capabilities that were unimaginable in the 1960s (Evans and Wurster, 1997). Advances in chip, satellite, radio, and optical fibre technology have enabled millions of people around the world to communicate electronically, without concern for national or international boundaries. This explosion in connectivity is the latest and the most important wave in the information revolution (Evans and Wurster, 1997).

Throughout time, advances in the world of business have interacted with culture, and have eventually reshaped the manner in which people live and do their business. Similarly, these technological advancements have also rapidly transformed a number of societies (Sanayei and Noroozi, 2008).

Society creates its own schemes, inventions and developments, which further increase the complexity of our daily lives. Every time people develop a new idea,

new strategy or new technology, it is within their volitional will to implement it and achieve their goals despite the many constraints, especially if they anticipate huge outcomes from this endeavour (Weisinger and Salipante, 2000). What can be drawn from these observations, and what is particularly important within this study, is that society and technological developments or advancements are interdependent. This thesis aims to gain an understanding of the cultural and social factors involved in the introduction of e-business in three companies and to derive lessons that may benefit other organisations which may be attempting e-business assimilation in a similar socio-cultural environment.

In order to determine what the literature has to say on e-business, it is necessary to look at a number of sources. E-business is referred to extensively in the literature on Enterprise Resource Planning (ERP), Information and Communications Technology (ICT), Information Systems (IS), and Information Technology (IT). Consequently it has been necessary throughout this thesis to draw on all of these sources, and as a result to refer to these different perspectives through which we might understand ebusiness. Where this occurs, the aim has been to make clear the reasons for the choice of literature (and even, perhaps, domain?), but to further clarify this a definition of each of these terms, and their relationship to e-business, is included in the Definition of Terms at the beginning of this thesis.

Advances in Information and Communication Technologies (ICT) are having a profound impact on the manner in which business is carried out, on the way societies function, and on the manner in which individuals or organisations communicate with others (Arabi and Bromideh, 2006). Moreover, firms are increasingly using the Internet, the World Wide Web (WWW) and other web technologies with a view to expanding their markets, conducting business transactions with customers and suppliers, and enhancing their competitive position by redesigning business processes (Hackbarth and Kettinger, 2000). This use of web technology in relation to conducting business transactions is referred to as e-business. E-business involves fundamentally rethinking the business model to transform a company into a digitally networked enterprise (Higgin, 1999)

E-business has been very dynamic, rapidly growing and has attained various competitive characteristics by enhancing the process of doing business, together with its capability to create new avenues for wealth. Many firms are now creating new online businesses, whilst new ventures have been exploiting the opportunities to be derived from this new application of technology (Raphael and Christoph, 2001).

However, a number of countries in the world have not yet fully actualised the perceived benefits of e-business: for instance, in the Arab region, the expansion of the Internet together with its related products and technologies faces multi-faceted constraints, including cultural, economic, technological and legal inhibitors (Yasin and Yavas, 2007b). Consequently, a number of Arab citizens and firms alike have not yet been fully converted to the use of e-business, and have therefore not yet experienced the full utility that it can provide.

Against such a background, this research investigates factors that influence the assimilation of the e-business concept in one rapidly-developing Arab country, Saudi Arabia, focusing on the experience of early adopters: Saudi Aramco, SABIC and Hadeed. The following sections provide a rationale for such an investigation, set out the research aims and objectives, and states the significance of the research.

1.2 Background and Research Problem

Business which is conducted over the Internet, which is referred to as E-business (Raphael and Christoph, 2001). E-business, a result of Information and Communications Technology (ICT), encompasses far more than simple interorganisation transactions; it includes all of the interactions between a company and its customers, partners, employees, and other value chain participants (O'Brien, 2001, Levy, 2001). As indicated by Huang et al. (2004) e-business can help any organization to increase its competitive advantages over its competitors. Furthermore, e-business allows companies to expand into new markets and restructure business processes in order to improve effectiveness and efficiency, and to easily customise products and services in such a way so as to meet the needs of a diverse customer base. E-business technologies can also be used for environmental scanning, subsequently making it easier to identify what competitors are actively pursuing. Some of the benefits commonly attributed to e-business include advertising exposure, improved communication, effectiveness and efficiency gains through improved business processes, and improved product and/or service delivery (Cragg and King, 1993). Moreover, e-business adoption is said to be an important source of comparative national advantage in the twenty-first century (Brogan, 2006).

In order to reap the aforementioned benefits, firms are investing large amounts of resources in adopting and assimilating e-business technologies into their business processes. According to ActiveMedia Research, a research firm specialising in online commerce, worldwide spending on business-to-consumer (B2C) e-commerce was \$56 billion in 2000 and is expected to be approximately \$1.1 trillion by 2010 (Saliba, 2001). The U.S. Census Bureau of the Department of Commerce estimates that total e-commerce sales in 2005 were \$86.3 billion, an increase of 24.6% from 2004. Total retail sales in 2005 increased by 7.2% from 2004. Furthermore, ecommerce sales in 2005 accounted for 2.3% of total sales, whilst e-commerce sales 2004 accounted for 2% of in total sales (http://www.census.gov/mrts/www/data/html/05Q4.html). Therefore, it appears that e-commerce and related e-business technologies are increasingly becoming key tools for supporting the business strategies of organisations. In turn, it is therefore claimed that e-business can also significantly contribute to economic growth (Sanayei and Noroozi, 2008).

However, despite these benefits, there are claims that one of the main barriers to adopting e-business is the lack of knowledge about the real advantages that it may give to an organization in terms of competitive advantage (Buonanno et al., 1998).

In the developing world, firms are not using e-business technologies to their fullest capabilities or, for a variety of other reasons, are not using them at all (Marco et al., 2001). The reasons most commonly cited include costs, lack of perceived benefits, lack of knowledge, and lack of industry fit. E-business may also be not fully utilized because of information security problems and/or the legislative uncertainty (Mitrakas, 1996).

Perhaps less widely recognised are cultural issues. For instance, the studies of Cheung and Lee (2001), and Al-Khaldi and Olusegun (1999) reveal that the most prominent problems that can be seen in the adoption of e-business and acceptance of new technology are related to culture.

According to Bowers (2000), the most notable characteristic of the use of e-business is its culturally mediating and transforming effect. However, this may sometimes be negatively perceived, as a destructive form of Western colonisation (Sanayei and Noroozi, 2008). It has been a common perception amongst developing countries that,

upon the use of computers and the Internet, they must be able to radically adapt, together with other cultural aspects, to the patterns of thought that they could encounter whilst in the course of using these technologies (Sanayei and Noroozi, 2008).

For such reasons, Sanayei and Noroozi (2008) state that the adoption of e-business in developing countries differs greatly from implementation within developed countries; not only is the lack of the vital financial, legal and physical infrastructures an important consideration, but there is also the concern that different cultures and business philosophies make it difficult. Uzoka et al. (2007) similarly argue that the cultures of developing countries serve as major hindrances to the transfer of e-business models which have been designed by Western countries.

A lack of understanding of critical e-business issues, and cultural reluctance to adopt this new way of doing business, could subsequently put Less Developed Countries' (LDC) businesses at a significant disadvantage within the global economy; there is, therefore, a need for guidance for firms that consider introducing e-business.

One country in which the adoption and assimilation of e-business is becoming a key issue is the Kingdom of Saudi Arabia (KSA), one of many developing and emerging economies in the Middle East, in which culture and religion play an important role in influencing business and social behaviours The culture milieu which is shaping the behaviour of Saudies is a blend of Islam mixed with Arab traditions (Bjerke and Al-Meer, 1993). As indicated by Al-Gahatani et al. (2007) social norms and the degree of technological advances can impact the individual and organisational acceptance and use of the Internet. Fundamentally, religion and family are critical, influential factors on Arab organisations. Furthermore, in Arab society, the family plays an important role in creating a system that implies and creates loyalty and obligations, which each family member should then respect. As indicated by Al-khatib et al. (1997), in such cultures work is performed for the benefit, respect and affluence of the family. This creates very negative and unprofessional managerial values, which managers and employees should respect and accept, such as nepotism, favouritism and the power of strong personal and social contact relationships, as more important elements than formal procedures (Anastos et al., 1980). Al-Faleh (1987) argues that Arab people rely on family power, nepotism and social relationships to a greater extent in order to get things done within the organisation, rather than relying on personal qualifications, experience, abilities and training. Furthermore, all of these socio-cultural factors have raised the question as to whether Western managerial theories and practices do work in Arab organisations. According to Bussom et al. (1984) there is a need to tailor the Western managerial style to the Arab country's managerial style in order to be confident such transfer will be a success. According to Sanchez-Runde et al. (2011), it is important to recognize that managerial tools are culturally embedded, which means they are rooted in the diverse cultures where they are exercised and not a Western construct that is easily expanded to global dimensions. Therefore, techniques and programmes are adapted in such a way as to fit the local cultural values; otherwise, transferring such Western managerial issues will be a waste of time and money (Ali, 1990).

The Government and the business community in KSA recognises the need for the adoption of modern electronic, telecommunications and computer technologies (US Commercial Service, 2006), but cultural, religious and political forces have resulted in massive filtering of Internet links into the country in order to exclude objectionable material (Open Net Initiative, 2004). As such, it is therefore likely that the society will be sensitive to the adoption of e-business. In this situation, there is a need for a model of e-business adoption which takes into account a broader range of technological, organisational and socio-cultural factors in such a manner that relates to the Saudi social context, which can subsequently guide future e-business initiatives. With this in consideration, it can therefore be stated that the purpose of this research is to develop such a model.

In order to fulfil the aim of this thesis, the research will critically examine the experiences of the three Saudi companies that have assimilated e-business technology into their business operations as well as meeting 8 consultants who has good experience in the field of implementation of ERP systems. These companies are the prime adopters of e-business technology, namely, Saudi Aramco, Saudi Arabian Basic Industries Corporation (SABIC), and the SABIC subsidiary, Saudi Iron and Steel Company (Hadeed). Table 1.1 provides the summary profile of the theses companies. As indicated by a consultant at Aramco, for many years up to the present day, these companies have been operating well and considered among to performance companies in term of managerial style and adopting new technology.

Company	Date Established	Ownership	Number of Employees	Affiliates	Major Products	Importance
Saudi Aramco	 1933 as Aramco 1988 as Saudi Arabian Oil Company (now Saudi Aramco) 	100% Saudi government	54, 000 from 66 different countries	 Motiva Enterprises, Houston, TX, USA Petromin Oils, KSA Arab Petroleum Pipelines Company, Egypt S-Oil Corporation, Korea Petron Corporation, Philippines And others 	• Petroleum	No. 1 largest crude oil producer in the world
Saudi Arabian Basic Industries Corp. (SABIC)	1976	70% Saudi government and 30% by Saudi private businessmen and other Gulf Cooperation Council (GCC) investors	33,000	 SABIC Innovative plastics (formerly GE Plastics, USA) SABIC Europe Hadeed Saudi Methanol Company And others 	 chemicals polymers petrochemicals innovative plastics fertilisers metals 	Largest and most profitable non-oil company in Saudi Arabia Fifth largest petrochemical producer in the world
Saudi Iron and Steel Company (Hadeed)	1979	Wholly-owned by SABIC	Large portion of SABIC's workforce	Gearing for expansion	• steel rebar, wire rod, steel sections, flat steel, etc.	One of the largest steel- manufacturing company in the Middle East

Table 1-1 Summary profiles of Saudi companies in study

1.3 Research Aims and Objectives

The overall aim of this research is to gain an understanding of the cultural and social factors involved in the introduction of e-business in the three companies: Saudi Aramco, SABIC, and Hadeed, in order to derive lessons that may benefit other organisations that may be attempting e-business assimilation in a similar socio-cultural environment. Upon studying these three companies, the overall aim of this research can subsequently be divided into the following objectives:

- 1. To identify the cultural and social factors involved in their e-business implementations;
- To explore possible relationships and interactions between the determined factors;
- To examine the key factors facilitating and impeding the assimilation of ebusiness;
- To develop an integrated conceptual model of e-business assimilation which incorporates socio-cultural factors in a manner related to the social and cultural environment of KSA;
- 5. To contribute to the knowledge of e-business assimilation;
- 6. By mapping against the above model, to derive from the experiences of the three companies, as early technology adopters, lessons which may guide future e-business initiatives in organisations facing a similar environment.

A detailed map of the research is to be found in Figure 5.1: Research Plan in Chapter 5.

1.4 The Need for the Study

The importance of this study comes from the increasing worldwide interest in ebusiness, and in particular this interest as it relates to Saudi Arabia. The Saudi market is the largest market in the region and one of the fastest growing markets in the world (Alsubaie and Najand, 2009). This research will contribute to knowledge on e-business assimilation as well as transferring the knowledge to one of the fast growing markets in the world, both by the novelty of its context and by its distinctive approach and perspective. Although there has been considerable research into different e-business issues, much of this has been in reference to developed countries, and the knowledge gained from these studies may therefore not be applicable in the context of organisations in less developed countries (LDCs) owing to their differing characteristics, e.g. resource constraints, centralised ownership and control, and less formalised business processes and infrastructure (Mirchandani and Motwani, 2001, Jennings and Beaver, 1997).

Some research has begun to address the adoption of IT, including e-business, in emerging economies, for example, India (Bertolotti, 1984); Singapore (Teo and Ranganathan, 2004); Malaysia (Thuong and Anthony, 2002); Mexico (García-Murillo, 2004); Brazil (Tigre and Dedrick, 2004); South Korea (Lee et al., 2003) and Taiwan (Thatcher et al., 2006). However, there has been very little research carried out with regard to the Middle East, particularly in Saudi Arabia.

Moreover, extant studies have generally been conducted from very limited perspectives: technological, organisational and, more recently, cultural and social, but have neglected potentially important social factors and, more particularly, interactions between the social dimension and the other dimensions. Thus, there are significant gaps in the literature that this research aims to fill by developing an integrated model of e-business assimilation that is relevant to the socio-cultural environment of Saudi Arabia which may be transferable to other KSA users.

This study considers a social perspective on e-business. By providing a view of ebusiness as a form of social interaction amongst end-users and their organisations, it allows for further identification and exploration of the existing models of social behaviours in relation to commercial transactions. Given the nature of Saudi cultural interactions as described earlier, this social view will enable a perspective which has the potential to bring together, or integrate, technical, organisational and sociocultural issues.

The research also has practical importance, given the relaxation of restrictions on business in Saudi Arabia and the discernible interest in e-business implementation. Perceptions of end-users in terms of their openness to e-business are explored, which could eventually pave the way for the development, not only of organisational strategies but also of institutional policies. The research will thus provide valuable guidance for new and interested adopters of e-business in the Saudi context, and will be of interest to a wide range of firms and to the Government as a whole.

1.5 Structure of the Research

The first chapter introduces the value of the present study, sets out the background of the research problem, and presents the research aims and objectives.

The second chapter provides substantial information on IT, e-business, and the concept of organisational assimilation. It starts with the definition of the most important terms used in this study and is followed by discussing the details on e-business and the major factors relative to attaining assimilation success.

Chapter three reviews the theoretical perspectives on e-business assimilation, beginning with the social-psychological perspective, followed by the technological adoption perspectives. In this chapter, Habermas' lifeworld and system theory was chosen as the most applicable theory for supporting the study's proposition that social factors are inherent in the other major factors which determine the assimilation of e-business into the organisation. The conceptual model developed by this study is also presented in this chapter.

The fourth chapter introduces the research context. Following a brief background on Saudi Arabia and its current status in terms of e-business adoption, this section examines a number of social and cultural factors affecting business in Saudi Arabia in general and the effects of such factors on e-business in particular. The remainder of the chapter then considers the oil, petrochemicals, and steel sectors, represented by Saudi Aramco, SABIC, and Hadeed as the focus of this research.

The fifth chapter explains the methods adopted in the research, including the research philosophy and approach, data collection methods, sampling and method of data analysis.

Chapter six provides an analysis of the data collected through semi-structured interviews conducted by the researcher with consultants. Chapter seven provides an analysis of the data collected through the survey questionnaire given to the participants from Saudi companies. Chapter eight provides a discussion regarding the results of this study. Chapter nine covers the conclusions, implications and further research. Chapter ten is the references. Followed by chapter eleven which contains all appendices.

2 Chapter Two: TOWARDS e-BUSINESS ASSIMILATION

2.1 Introduction

There is a large volume of scholarly research on technology adoption in general, and on specific applications such as e-business and related cultural and social factors. There is, however, a definite shortage in the literature on the aforementioned in relation to Saudi Arabia.

According to Mr. Ashraf, a senior manager in the change management department at Aramco, large corporations have had to make significant organisational changes in order to assimilate e-business into their existing structures, processes and cultures, whilst competing with dynamic dotcom companies against a backdrop of very mixed fortunes for e-business as a whole. He further indicates that e-business is not only a new technology, which has the potential to permeate the entire organisation and to reach beyond the organisational boundaries to customers and suppliers; rather, it also brings new ways of working, new cost pressures and a new channel for interacting with customers whose expectations have grown. Large organisations not only have to implement technology and its associated systems and applications; in many cases, they also have to develop new strategies and development processes, and possibly change their entire structures and cultures. Although formal organisational structures are man-made and can be (and often are) changed by senior management in the face of changing circumstances, other, more subtle, social structures or interpretive schemes, which may dominate and legitimate (Giddens, 1984) require much more than merely re-drawing the organisational chart.

Most corporations have already faced, or are currently facing, significant organisational changes as a result of e-business, and these changes are inherently more complex and difficult for large organisations (Al-Mashari and Zairi, 2000).

The aim of this chapter is to present the basis of e-business assimilation based on previous IS studies in various fields. This chapter starts with the definitions of the most important terms used in this study followed by the other sections that present the salient features of IT and e-business in general.

2.2 Definition of Terms

2.2.1 E-Business

The term 'e-business' has been defined in multiple ways by previous researchers. According to Chatterjee *et al.* (2002, pg. 69), e-business is 'the application of web technologies for understanding customer needs, marketing products, services, and product-market solutions, and taking customer orders...', Sharma (2000, pg. 27) describes e-business as:

'Utilisation of networks and near-time interactions to accomplish some combination of six core business goals: empowerment of customers, enhancement of trade, increased business agility, extension of enterprises in a virtual manner, evolution and invention of products and services, and the development of new markets and audiences.'

E-business, more than just establishing an Internet presence or conducting ecommerce transactions, concerns redefining old business models and maximising business value (Sanayei and Noroozi, 2008). E-business is complex to use, involving business process changes and significant financial investments in areas such as computing and networking infrastructure and human resource management (Esichaikul and Chavananon, (2001). E-business includes e-commerce, as well as both front and back-office systems that constitute the engine of modern business (Bloch et al., 1996), and so include technologies that provide effective and efficient ways in which corporate buyers can gather information rapidly about available products and services, evaluate and negotiate with suppliers, implement order fulfilment over communication links and access post-sales services (Archer and Yuan, 2000).

E-commerce can be defined as 'the buying and selling of information, products, and services via computer networks' (Kalakota and Whinston, 1996). Zwass (1996) defines e-commerce as the sharing of business information using telecommunication networks which is used to maintain business relationships, and conducting business transactions. Treese and Stewart (1998) define e-commerce as the use of Internet to purchase and sale of goods and services, including services and support after the sale. Kauffman and Walden (2001) emphasize the Internet as an intermediate for enabling business transactions.

The term 'e-business' therefore represents a broader concept: 'support for any kind of business transactions over a digital infrastructure' (Bloch et al., 1996, Castells, 1996). This view of e-business seems more relevant to organisations, and also implies 'the use of networks and Internet technology for communications and transactions between various groups of stakeholders', emphasising the central role of electronic networking (Straub et al., 2002). The usual categorisation of business-to-consumer (B2C) and business-to-business (B2B) will be used in the next paragraphs.

E-business applies packaged software applications that link and manage information flows within and across complex organisations, enabling managers to make decisions using information that truly reflects the current state of their business (Gulla and Mollan, 2009). Furthermore, e-business represents a new way to manage businesses and relationships with trading partners and reflects a firm's strategic intention to use the Internet to share information, facilitate transactions, improve customer service and strengthen back-office integration (Esichaikul and Chavananon, 2001).

According to Esichaikul and Chavananon (2001), e-business is the complex fusion of business processes, enterprise applications, and organisation structure. An organisation that implements e-business in its entire operations is called 'an ebusiness firm' (Clegg et al., 2005). It has been said that e-business is somewhat like an octopus: it has tentacles into all of the business operations (Clegg et al., 2005). Therefore, e-business has the ability to alter or to modify the organisation's culture. In simple terms, e-commerce is buying, selling and marketing on the Internet; ebusiness refers to the situation where e-commerce is embedded in the total activities and processes of the business, linking the financial transactions with sales / ordering, delivery, supply and so on (Targett, 2001).

	Source	Definition
E-Business	Chatterjee <i>et al.</i> (2002)	E-business is 'the application of web technologies for understanding customer needs, marketing products, services, and product-market solutions, and taking customer orders
	Sharma (2000)	Utilisation of networks and near-time interactions to accomplish some combination of six core business goals: empowerment of customers, enhancement of trade, increased business agility, extension of enterprises in a virtual manner, evolution and invention of products and services, and the development of new markets and audiences
	Bloch et al. (1996)	E-business includes e-commerce, as well as both front and back-office systems that constitute the engine of modern business
	Esichaikul and	E-business is the complex fusion of
	Chavananon (2001)	business processes, enterprise applications, and organisation structure.
	Lockley et al. (2002)	IBM offers a broad definition that e- business means changing the way work gets done – connecting businesses to customers, employees, partners and suppliers It's about new models of commerce, marketing and distribution
	Hitchcox (2001)	the use of technology infrastructure and applications to synthesize and optimize new and existing business processes
	Targett (2001)	the situation where e-commerce is embedded in the total activities and processes of the business, linking the financial transactions with sales/ordering, delivery, supply and so on
E-Commerce	Kalakota and	'the buying and selling of information,
	Whinston (1996)	products, and services via computer networks'
	Hitchcox (2001)	buying and selling of goods and services over the Internet, plus the technology, infrastructure and applications used to support those transactions
	Targett (2001)	buying, selling and marketing on the Internet

Table 2-1 E-business and E-commerce Definitions

2.2.2 Assimilation

For this research, e-business is broadly defined as the use of e-business technologies in the pursuit of organisational objectives. In contrast, e-commerce is more narrowly defined as the buying, selling, marketing and servicing of products, services and information over the Internet, intranets, and extranets. E-commerce is said to occur between an organisation and its customers, suppliers, trading partners, and other external stakeholders (O'Brien, 2001). This study focuses on e-business rather than e-commerce.

IT adoption has been of considerable interest to IS scholars. The study of IT adoption often uses the term 'adoption' to refer to both adoption and assimilation (van Akkeren and Cavaye, 1999, Premkumar and Roberts, 1999, Thong and Yap, 1995). In this study, the term 'adoption' refers to the decision to use a particular technology to solve a business problem.

By definition, assimilation studies are post-adoption studies that assume the decision to adopt a technology has been made, and acceptance and diffusion of the system is complete (Chatterjee et al., 2002). In IS literature, assimilation has been defined as the extent to which a technology or innovation diffuses across and is used by an organisation in its work processes, to the extent to which it becomes a routine part of the business process of a particular organisation (Chatterjee et al., 2002). However, an alternative definition is offered by Armstrong and Sambamurthy (1999), which includes looking at the degree of success attained in improving a firm's capabilities and performance with technology. For this study, assimilation is defined as the integration of technology and strategy into business functions and processes. Purvis et al. (2001) defined assimilation as the degree to which the use of technology diffuses across organisational work processes and becomes associated with the business processes.

According to English dictionaries (e.g., Oxford Dictionary, Cambridge Dictionary), the term 'assimilate' originated from a Latin word 'similis' which means 'like'. In this sense, one must be similar to the other. In order to attain similarity, there is a need to fully absorb another's characteristics until it becomes the same image or an even better version of its source of assimilation.

Some suggest the terms adoption and assimilation can be used interchangeably. However, adoption is defined as "the decision to make full use of an innovation as the best course of action available" (Rogers, 2003, pg. 21), whilst assimilation is defined as "... the extent to which the use of a technology diffuses across organizational work processes and becomes routinized in the activities associated with those processes" (Scupola, 2008, pg. 80).

2.2.3 E-Business benefits

As explain by Van der Vorst et al. (2002) e-business is the use of ERP to alter a business process of an organisation to improve its efficiency and accuracy. E-business benefits refer to the significant positive impact of e-business received by the company through its implementation. Shanks and Seddon (2002) delineated five major categories of benefits provided by implementing e-business: (1) operational benefits, which are increases in employees' work productivity with decreases in labour cost; (2) managerial benefits, which enable the top management to provide effective plans and decisions; (3) strategic benefits, which include the increase of the company's competitive advantage in the market world; (4) IT infrastructure benefits, which cover cost reduction relative to IT maintenance and updated innovations; and lastly, (5) organisational benefits, which strengthen the company's employer-employee relationships whilst coping with the changes and overcoming the difficulties encountered spontaneously (Shang and Seddon, 2002).

At best, the benefits of e-business are gained most when enabling the firm to conduct electronic transactions with any business partners along the value chain, creating opportunities to establish interactive relationships with business partners (such as suppliers, logistics providers, wholesalers, distributors, service providers and end customers), and improving the operating efficiency and extending their reach, all at a very low cost (Chatterjee et al., 2002).

As exemplars of success, traditional firms such as Dell, Cisco, General Electric, Wal-Mart, and Charles Schwab, along with firms "born on the Internet," like Amazon and eBay, have shown the potential of e-business to enhance customer services, streamline internal operations, and improve inter-firm coordination (Straub et al., 2002).

2.3 Information Technology

Since the introduction of the first browser in 1993, the Internet has grown rapidly and has facilitated the creation of online communities, electronic bulletin boards, electronic mail, electronic file transfer, personal broadcast networks, etc... Access to the World Wide Web has evolved beyond personal computers, and has expanded to encompass cellular phones, personal organisers, videogame consoles, as well as to home appliances, vending machines, and automobiles.

In its early days, the Internet had a certain revolutionary or anarchic culture, captured nicely by Coyne (1998, pg. 349):

'The dominant ethos is now romanticism: a focus on subjectivity, a new metaphysics of proximity, a revival of the early socialist dream of community, a disdain for the constraints imposed by the body, embracing the holistic unitary patterning of chaos theory, the representation of the object world, a hope for its ultimate transcendence through the technologies of cyberspace, and a quest for a better, fairer more democratic future'.

However, the Internet quickly became commercialised as businesses focused on the considerable potential for electronic commerce (Dos Santos and Peffers, 1998).

Table 2-2 Alternativ	e definitions of IS
----------------------	---------------------

Source	Definition		
Huber et al. (2008)	'An organized collection of people, information, business processes, and information technology designed to transform inputs into outputs, in order to achieve a goal.'		
Kroenke (2008)	A group of components that interact to produce information. [The five components of an IS are hardware, software, data, procedures, and people.]		
Paul (2007)	'The IS is what emerges from the usage that is made of the IT delivery system by users (whose strengths are that they are human beings, not machines). This usage will be made up of two parts: (1) First the formal processes, which are currently usually assumed to be pre-determinable with respect to decisions about what IT to use; (2) Second, the informal processes, which are what the human beings who use the IT and the formal processes create or invent in order to ensure that useful work is done.'		
Rainer et al. (2007)	A process that collects, processes, stores, analyzes, and disseminates information for a specific purpose; most ISs are computerized.		

2.4 Information Technology and Business Organisations

Leavitt and Whisler (1958) predicted that the advent of computers would significantly change the structures and processes of most business corporations. In their article 'Management in the 1980s', which was published in the *Harvard Business Review*, they predicted that Information Technology would spread rapidly, and it would subsequently have a great impact on business organisations. They argued that the adoption of computers would ultimately allow top managers to perform different roles, and that jobs at a middle management level would become highly structured. Furthermore, they stated that much more of the work for many middle managers would be programmed and this would in turn lead to a reduction in their numbers. Leavitt and Whisler's (1958) early predictions became the cornerstone for many studies that have been carried out in the last four decades such
as the study of (Chin-Yueh, 2007) which examines the effectiveness of IT investment that may result in enhancing the organisation business.

In the years following Leavitt and Whisler's (1958) predictions, the presence of computers and other information technologies in business organisations started to grow at a rapid pace. In the 1960s and 1970s, the presence of IT in business organisations typically took the form of specific computer application systems, such as accounts payable and financial reporting systems, which either automated specific operational procedures or supported certain managerial processes. In the 1980s, and particularly in the 1990s, the growing dependency on IT in the workplace began to shape a new environment: in the new emerging environment, however, access to IT-related facilities was not only for predetermined management activities but also for strategic and tactical purposes (Teng and Calhoun, 1996).

As they grow and change, organisations ultimately depend on IT more and more for their survival (Feeny and Willcocks, 1998). For instance, today, companies implement and use IT in order to seek out and determine solutions to business problems, to improve management decision-making, to enhance productivity and quality, and to compete for new markets in what is now a global and aggressive business environment. Moreover, Porter and Millar (1985, pg. 16) stated that:

'The importance of the information revolution is not in dispute. The question is not whether information technology will have a significant impact on a company's competitive position; rather, the question is when and how this impact will strike. Companies that anticipate the power of information technology will be in control of events. Companies that do not respond will be forced to accept changes that others initiate and will find themselves at a severe competitive disadvantage'.

Today's organisations have become increasingly dependent on information technologies (Janvrin et al., 2008). By using such technologies, managers are now able to generate and access complex databases of customer and organisational information. Furthermore, they enable employees throughout the organisation to communicate both internally and externally in ways previously not possible. With the advent of global networks, many companies now use these networks to allow managers, engineers, and designers to interact around the world. Large firms are

developing computerized decision aids to assist them in, for example, enhancing their business processes in order to make the right appropriate decisions (Dowling and Leech, 2007), which has subsequently led to an enormous reduction in both time and costs when producing goods and services, which consequently results in higher revenues and profits for these companies.

In recent times, the use of the Internet — or what is known as the 'Information Super Highway' (Gates, 1994) — has played a major role in the creation of many profitable new businesses. Bill Gates (1994) argued that the best way to take advantage of information technologies (i.e. the Internet, PC software, PC hardware) includes considering how the company works, how information should operate, what the key databases are, and how network technologies could be used in order to make business employees work with greater efficiency. What Gates said is manifested in various strategies of many businesses in terms of utilising and maximising the significance or competitive advantage of information technology tools; thus, this paved the way for the creation of their new branches, daughter companies, subsidiaries, or business affiliations, right up to an international level.

Changes in business practices caused by IT are apparent through changes in work attitude, organisational culture, human resource management, standard operating procedures, business' relationship to government, business' relationship to customers and suppliers, financing systems, marketing strategies, and so forth. In this light, Markus (2004) gave examples of *complementary changes* that the business organisation should execute during the IT adoption process so that IT impact is turned to business success:

- 1. Changes in business process and workflow
- 2. New job designs
- 3. New skills training
- 4. Restructuring departments or business units
- 5. Management changes
- 6. Changing Human Resource (HR) policies (e.g., hiring, performance evaluation, compensation, supervision, etc.)
- 7. New computerised or manual 'management systems' to monitor performance and support taking corrective action
- 8. Redesigned spatial layouts

- 9. Reallocated resources
- 10. New metrics and incentives

Without organisational change support to the IT adoption process, it could lead to any of three negative outcomes: (1) IT applications may not be adopted and used; (2) IT applications are used but old working patterns retained; and (3) IT applications are used but benefits are not met (Markus, 2004).

Certainly, Information Technology is reported to be a major source of change for many organisations. For example, in 2007 the Japanese market sales of business to consumer e-commerce were about 5.3 trillion yen, a 21.7 percent increase from 2006 (Nakayama, 2009). While the US figures increased by 17.6 percent in 2007 reaching 205.6 billion dollars in 2007 (Nakayama, 2009). This trend is up even since the 90s for example, Dell, the American personal computer manufacturer, was selling computers at the rate of over \$1 million a day using the World Wide Web (WWW) (King, 1998). According to Ferguson et al. (2010) over the past 25 years, the development of electronic commerce (e-commerce) has challenged and threatened firms to adapt their business models and processes. In the United States, retail e-commerce sales exceeded US\$32.4 billion in the second quarter of 2009, which represents 3.6% of retail sales and increase of 2.2% on the first quarter of 2009 (US Department of Commerce, 2009)

There is widespread agreement amongst many researchers that Information Technology is the most important technology leading to structural change in the industrial economies. In the USA, for example, more people are employed in the computer industry than in the automobile, automobile parts, steel, mining, and petroleum-refining industries combined (Due, 1995).

Palmer (2002) summarised the characteristics of Information Technology as follows:

- 1. Ubiquitous application
 - IT can be applied in many different ways by users regardless of their age, gender, education, social status, business-type engagement, and work designation.
 - e.g.: e-mail, Internet surfing, virtual social networks
- 2. Dramatic rate of cost decline

- Due to the enormous supply of hardware and software products, and competition among IT provider companies, its cost is decreasing over time.
- 3. Ready for ownership
 - Lower costs of hardware and software means that these products are affordable and anyone can own them whenever he or she wants.
- 4. Exponential growth
 - Cost reductions and increasing technological capacity will be consistent due to continuous and rapid innovative developments applied to a particular IT product.

IT development has increased further through the development of e-business. Ebusiness is designed as a system that encapsulates not just e-commerce but also the various information and communication networks for the purpose of integrating all the organisational activities. For some Information Systems (IS) researchers, the term 'e-business' is technically used as a replacement to the term IT, but e-business is not exclusively about IT. Rather, it covers all the areas relative to business operations. In the following sections, the importance of e-business will be discussed.

2.5 The e-Business Revolution

Although the dotcom 'revolution' has mostly matured (Howcroft, 2001), e-business nevertheless remains a very important area of activity. Organisations continue to heavily invest in both business-to-consumer (B2C) and business-to-business (B2B) applications, and the number of transactions continues to increase on a month-tomonth basis. Furthermore, organisations around the world are motivated in terms of e-business applications (Dutton and Peltu, 1999), and the Internet and web remain the ultimate backbone of current IS development and operational activity. Unlike previous technology, e-business presents a more pervasive potential within the organisation, and has accordingly attracted both a fascination and a willingness to experiment with the industry.

2.6 E-Business as e-Technology

Technology is an applied science whereby people modify the nature (of something) so as to meet their needs and wants. Technology is the realisation of people's quest

for easier living – in short, for their convenience and satisfaction. The scope of technology originates from human's knowledge acquisition up to its effective application (e.g., theoretical models, system designs and processing; computers and software, cellular phones, aircraft, pesticides, water-treatment plants, etc.). The application of every newly developed technology delivers benefits to people (Phillips, 2001). In other words, it is not the *physical* technology that is beneficial but the application of that technology which results in products and services.

Phillips (2001) argued that, the application of technology can be considered in four ways, and estimated the percentage of operational improvements in each category (see Figure 2-1).

- The application of technology to improve efficiency of current operations (72%)
- 2. The application of current technology to undertake new operations (18%)
- 3. The application of new technology to improve the efficiency of current operations (8%)
- 4. The use of new technology to undertake new operations (2%)



Figure 2-1 Operational improvements by the application of technology

Phillips' (2001) analysis postulates that most applications will be made in area 1 of the matrix, which represents upward progression on improvement of current business activities.

Using Phillips' (2001) proposition, companies can assess the impact of e-business adoption – whether or not e-business as a technology that is very new to them improves the efficiency of their business operations. Figure 2-1 shows e-business adoption for efficiency improvement for 72% of applications, followed subsequently by operational modifications or system customisations. As the understanding of the new innovation can aid the adoption of new technologies and is of obvious importance with IT based products, at the same time, it can also slow the rate of future innovation (Phillips, 2001). Once a new standard has emerged then mental, financial and organisational commitment exists providing reasons not to innovate further. Therefore, areas 3 and 4 are both less common.

Meanwhile, *technology adoption* refers to the process by which a technology is selected for use by individuals or firms (Calantone et al., 2006). E-business is a type of technological innovation adopted and implemented by many companies worldwide.

E-business utilises IT tools (e.g., computer, Internet, etc.) as its key components (see Table 2-1). Therefore, e-business is a very important technology in the business world.

Table 2-3 E-business components

Category	Examples	Description
Networks for communicating	Databases	where large amount of information is stored (e.g., information on: marketing, purchasing, finance, personnel)
and exchanging of information (Rockart and Morton, 1984, Clegg et al., 2005)	E-mail	fast and unlimited exchange of messages (often with attachments of scanned file) among users in different places
	Multiple E-mail	the execution of "many-to-many" communications (Stevens, 1981) (e-mail with multiple addressing and conferencing facilities; e.g., one sender to many recipients)
	Video conferencing	allows eye-to-eye contact
	Website	exclusive Internet site created by the individual (for his or her personal use), institution, businesses, etc., commonly for their public and business advantage (e.g. popularity, advertising, marketing, etc.); contains 'beautiful' profiles posted by the owner to acquire maximum use by the 'surfers' and eventually attain favourable outcomes.
Business Processing Software	Enterprise Resource Planning	integrating the whole business processes and strategies (i.e. CRM, SCM, HRM, etc.) for optimum business advantages. Examples: J.D. Edwards, SAP, Oracle, Peoplesoft, Baan.

Source: (Rockart and Morton, 1984, Clegg et al., 2005)

One of the major components of e-business technology is software applications such as Enterprise Resource Planning (ERP). Specifically, an ERP software package (e.g., SAP R/3) is a large off-the-shelf software solution that provides the company with integrated business systems. Unlike the traditional software development approach, which promotes building systems from scratch, ERP packages encapsulate reusable best business processes and software. Customers (i.e., adopting companies) purchase the package and configure their business process and software systems to meet their requirements. As indicated by AMR research the 2006 market for ERP software grew to over \$28 billion, and is expected to further grow to \$47.7 billion by 2011, driven by a combination of strong customer demand and leading vendors expanding their product portfolios through acquisition (Jacobson et al., 2007).

ERP enables the integration of all departments and functions (e.g., manufacturing and logistics, finance and accounting, sales and marketing, and human resources, etc.) across the business organisation into a single computer system which in turn results to easier sharing of information and communication, cost reduction, up to date management systems, and others (Shanks et al., 2000, Deloitte Consulting Research Report, 1999).

According to (Jacobson et al., 2007) Oracle and SAP continue to dominate the market among very large global companies.

2.7 E-Business as a New Product

According to McLaughlin and Rao (1991), a new product is an addition to the consumer product line of a manufacturer that is either a new brand or a new extension (p.93). On the other hand, Blake et al. (1970) define new products as those items which consumers see as novel or those that have just been launched in the market (p.483). Based on the two definitions presented above, it can be emphasised that a consumer views a product as "new" because it does not correspond with the consumer's usual expectations. It could also be the case that the characteristics of the new product are not very typical in contrast with other typical products in the market, hence making it appear as "new". This characteristic of a new product, which could be termed "novelty", sets it apart from the rest of the items in the market due to its unique feature (Blake et al., 1970).

According to Fisher and Price (1992), the adoption of new products, and, by inference, e-business, is primarily a social process that is necessary to create a sense of "power, knowledge, and status". The context of this explication is primarily centred on the adoption of e-business would cause a particular person a form of social acceptance or a relatively higher status. The adoption of innovative is both an individual and social process (Hoffmann and Broekhuizen, 2010). Factors such as "usage conditions, expectations of product related conversations, and individual differences in consumers' attention to social comparison information" highly affect consumer decisions in the early adoption of new products (p.479).

In relation to this, Fisher and Price (1992) also theorised that the use and adoption of new products by a "super ordinate group" elicits a form of product endorsement that eventually paves the way for "influenced perceived visibility, expectations of social approval and evaluations of product performance" (p.479). The use of new products by this group of people entices consumer perceptions of fame or popularity. Hence, the notion spreads that adopting these new products would eventually increase consumers' social approval. In this respect, the purchase of certain new products elicits a sort of communication connection between the consumer and the super ordinate group. Finally, the adoption of products by super ordinate groups also entices early product adoption because it creates a sense of product evaluation and meanings that are independent of social consequences of consumption (p.480). Hence, Fisher and Price (1992) theorised that new product adoption is primarily influenced by various socio-cultural factors.

E-business technology is a new product, which transforms the company from being traditional to becoming an IT-based business. The business trend now is aligned with the continuous IT developments. If a company lags behind the IT innovations other firms are implementing, it will fail to survive in the national and global competition. It will gradually lose its power among its former customers, suppliers and business partners, who will move to other partners for the benefits of better service and quality. In addition, there is an expectation that companies that implement e-business are operated by a reliable top management backed by a knowledgeable and dynamic workforce, whilst they fear traditional business approaches to be no longer effective in this new economic model.

Again, Clegg et al. (2005) are right in saying that e-business is a bit like an octopus; it has tentacles spreading to all the business operations – and after being completely transformed by e-business, the implementing company is like a newborn baby, capturing the hearts of the surrounding business societies through its winning smiles and laughs – that is to say, through its promises of sure business profits and advantages.

Currently, not all companies have adopted e-business. It is very new – a *new product* to be purchased (i.e., acquired) by business innovators; a new product derived from Information and Communication Technology (ICT). For this reason, Lee et al. (2002a) suggest that those who acquire it earlier than their company's rivals achieve greater competitive advantage: in this way, the company can learn more quickly about e-business, can better capture the diverse resources required for e-business activities, can better understand the e-business market, can win customers, and can better achieve strategic and operational superiority (Lee et al., 2002a).

As a new product fit for business innovations, *e-business* receives different responses from different businesses. It has been argued that firm innovation can be viewed as the use of e-business initiatives (Rapp et al., 2008). Some see it as a threat while some perceive it as an opportunity. For example, e-business could be a threat to employment security among rank-and-file employees, and on the other hand, an opportunity for business expansion with lesser overhead costs.

2.8 E-Business in Different Organisational and National Cultures

Organisation culture has been defined as 'the collective will or consciousness of an organisation, composed of a pattern of beliefs shared by all its members (Clarke, 2007, pg. 118). From this perspective, culture is seen as being a unifying force — and one which can be created and manipulated by management. This view does not explain the cultural dimensions manifested in industrial disputes, and also pays no attention to the fact that culture emerges from the social interaction of all the organisation's members. Managers, whilst controlling the organisational culture, are themselves influenced by it. "In information-based cultures, communication channels, business practices and business strategies have been rapidly re-engineered to capitalize on the seemingly endless business potential of the Internet and its

related products and technologies" (Yasin and Yavas, 2007a, pg. 68). In this view, culture is embedded in terms of shared codes of meaning, myths, beliefs about the social world (including ethics), and rituals, such as dress codes and patterns of expected behaviour.

In relation to Information Systems, culture needs to be understood in order to align information strategies with prevailing culture. Furthermore, in order to avoid cultural resistance that may inhibit necessary change in the organisation, it may be necessary to also focus attention on transforming the culture (McSparran and Edmunds, 1996, Clarke, 2007). From the cultural perspective, however, such change is a participative, rather than a planned process (Clarke, 2007).

A few studies surrounding e-business have examined organisation culture (Boynton et al., 1994, Blaize Horner and Izak, 2000). Studies suggest that, potentially, ERP implementation could change the infrastructure and operating practices of an organisation, and the social implications of adopting e-business could therefore be wider than the introduction of other IT systems or techniques in the organisation (Bingi et al., 1999, Davenport, 2000). In his e-commerce organisational model, Raisinghani (2000) contrasts this technology with traditional business in terms of both organisational and social factors, suggesting a shift from a hierarchical structure to a team-based structure, internal to external orientation, and vertically aligned to customer-focused, integrated teams, with a new focus on strategic alliances and flexibility to quickly act and adopt.

Another crucial factor is consistency of e-business with the company's business strategy (Riyad et al., 2002). The strongest driver of e-business is said to be a business strategy of protecting and extending existing markets, reaching new markets or seeking competitive advantage (Gibbs et al., 2003). Such attitudes may be linked to national culture. Research shows that technologies often reflect the socio-cultural systems of the country in which they are developed (Bertolotti, 1984, Boudreau et al., 2001), which could pose problems for transfer to other cultures. Perceptions and the use of IT systems have been found to differ by culture (Straub et al., 1997, Ho et al., 1989). Thatcher *et al.* (2006) recognise that culture interacts with institutional factors, which helps to explain how organisational and industry factors influence decision-making. However, they also found that competitive pressures may

ultimately override cultural matters, and that the same cultural values may therefore operate in different ways under different industrial pressures.

The literature suggests that there is a significant resistance to the adoption and use of computer resources, particularly in developing countries (Kim and Kankanhalli, 2009). Although this has been often attributed to poor infrastructure and language barriers, socio-political and cultural factors can be major impediments to the process (Al-Abdul-Gader, 1999).

2.8.1 Arab culture: the root of Saudi culture

One of the major issues that Arab countries face is society's preference for face-toface interaction over other alternatives when doing business (Yasin and Yavas, 2007b). For instance, although banks in Jordan offer Internet-based banking services, very few of their customers actually choose to make use of these, as they usually prefer social interactions with bank employees and managers (Kobrin, 2001). Other than this, technological infrastructures, in terms of electronic exchange of data and payments, have been subject to a number of issues: slow rates of data transfer, together with continuous disconnections and difficulties in access, are notable examples (Yasin and Yavas, 2007b).

The public is also not yet endowed with technological means, such as ownership of personal computers, in addition to constraints such as the lack of a good credit-based payments system, which is necessary in order to establish a business-to-customer transaction. Other constraints exist, for example, in the Saudi Arabian culture; wherein Saudis prefer cash to the use of credit cards, and require assurance of trust before establishing business relationships with business people who are strangers to them – hence, fears over security often take precedence over the opportunity of conducting e-business (Yasin and Yavas, 2007b).

The use of English language in order to use the Internet also poses another barrier, as there is a huge shortage of Arabic software which end-users are more likely to be inclined to use (Kobrin, 2001).

Moreover, the role of the Government could also be noted as being a potential barrier in promoting e-business. In fact, Yasin and Yavas (2007b) saw the Arab Government as failing to provide the necessary financial and cultural support for ebusiness. Furthermore, there are a number of instances where the Arab Government has hindered e-business development by establishing rigid laws and procedures (Yasin and Yavas, 2007b).

Hofstede (1980) argued that there are four socio-cultural dimensions: (1) *power distance* which refers to the degree of acceptance on power being distributed unevenly, (2) *uncertainty avoidance* which refers to the intensity of people's efforts to avoid ambiguity or anxiety (3) *individualism/collectivism* which denotes whether social actors value greatly the individual decision or the group consensus, and lastly, (4) *masculinity/femininity* which denotes what gender values dominate in the society. The Arab culture in relation to Hofstede's socio-cultural dimensions demonstrates huge emphasis on group and family collectivism and power distance (Hofstede, 1997).

Drawing on the study of Hall and Hall (1990), it is apparent that the Arab culture is a high-context culture where personal relationships and the context of the communication process are more important than the content of the communicated message. "In a high context culture, the information surrounding an event is already in the person, and very little in the coded, explicit, transmitted part of any communication between participants" (Thatcher et al., 2006, pg. 95). In this milieu, oral communication is preferred over written communication. Therefore, face-to-face communication, or a telephone call, is therefore more greatly valued than communication via e-mail or fax. Consequently, the instantaneous delivery of messages through electronic means is not deemed as important, unlike in the West (Yasin and Yavas, 2007b).

Higher importance is placed on tribal influence in terms of keeping the dissemination of information both controlled and centralised. The central authority figure — which could be the Government, the top management or the head of the tribe — tends to control information, and disseminate it when necessary. As such, a relatively high degree of freedom in terms of information access is not viewed as favourable in Arabian culture (Kobrin, 2001).

Owing, as well, to the close family relationships in Arab countries, most individuals view as vital the act of seeking recommendations from a social network before they make their own decisions, even for individuals who have computers and access to the Internet (Yasin and Yavas, 2007b).

Business-to-business transactions and supply chains also have their own set of problems, and consequently often fall short of the demands of the market. The lack of effective technologies and knowledge in terms of how to implement business-to-business relationships also cause most firms to adopt face-to-face interactions as opposed to using electronic means (Kobrin, 2001)

2.9 E-Business Assimilation

E-business assimilation is the extent to which e-business technology is diffused across the work processes of an organisation and is eventually used in all activities associated with those processes (Chatterjee et al., 2002, Cooper and Zmud, 1990, Fichman and Kemerer, 1997, Tornatzky and Klein, 1982). Assimilation is defined by Purvis et al. (2001) as the extent to which the use of technology diffuses in an organisation's projects or work processes and becomes part of the routine in the activities of those projects and processes. Assimilation is also vital in the causal chain of influence for organisational adoption of Information Technology (Mahmood and Soon, 1991, Jarvenpaa and Ives, 1991, DeLone and McLean, 1992, Sethi and King, 1994, Chatterjee et al., 2002).

Assimilation of e-business technology is now widely accepted by customers, suppliers and organisations around the world (Roberts, 1999, Chatterjee and Segars, 2003, Chatterjee et al., 2002). E-business, or the integration of ICT tools and applications, has provided firms with strategic benefits in terms of creating a competitive advantage and bringing more value to their businesses (Chatterjee et al., 2002).

However, it should be noted that not all firms are successful in assimilating ebusiness into their organisations (Brews, 2000, Haley et al., 1996, Chatterjee et al., 2002) as this technology is highly elaborated and offers a number of functionalities that range from static presentation of content to transactions having security variables and personalisation (Cronin, 1997, Chatterjee et al., 2002). "The assimilation of IT enables e-business to become competitive, which makes the differences between organizational capabilities and structures even more critical" (Zhu and Kraemer, 2005, pg. 205). Therefore, it is critical in e-business assimilation, first to consider the functionalities that are suitable for the organisation in order to develop profitable e-business activities (Chatterjee et al., 2002). E-business assimilation requires deeper understanding of the technology capabilities and core business value that e-business technology can provide, such as web-enabled business transactions. Furthermore, for effective e-business assimilation, it is imperative that the existing organisational work processes are integrated, which requires changes in current technologies and work processes (Chatterjee and Segars, 2003, Keen and McDonald, 2000, Chatterjee et al., 2002). E-business assimilation is about enhancing operational efficiency and competitive agility for long-term survival of the firm (Lee et al., 2002a, Clegg et al., 2005).

2.9.1 Types of assimilation actions

There are two types of assimilation actions to achieve assimilation of e-business technology into the entire organisational work processes (Orlikowski and Robey, 1991, Orlikowski et al., 1995):

- 'structuring actions' wherein individuals make use of the institutional structures of signification, legitimisation, and domination to gain the advantages of the technology, collect all the needed resources to infuse it into work processes, business activities, and strategies, and undertake the improvisational actions needed to assimilate the technology.
- 2. 'meta-structuring actions' wherein senior or top managements have the control over the existing institutional structure; they can choose either to maintain or alter the institutional structures of signification, legitimisation, and domination for the purpose of creating conditions favourable to technology assimilation.

It is here that we begin to see the specific relevance of Habermas' lifeworld and system theory, which emphasises the nature of actions exhibited by the social actors in the organisation. This will be further discussed in Chapter 3.

2.9.2 Major factors to e-business assimilation

Esichaikul and Chavananon (2001) suggested an approach for e-business adoption in three phases:

• *Phase 1: Identify the business opportunity*

- New business opportunities can be identified after re-evaluating the organisation's mission and vision as well as applying SWOT (company's strength, weaknesses, opportunities and threats) analysis.
- *Phase 2: Select the technology infrastructure*
 - The company should select a corporate software application to be used in all operations.
- Phase 3: Implement the electronic business solution
 - Implement the business solution, for example: ERP SAP. Not all ebusiness implementation (e.g., ERP: SAP) are successful (Shanks, 2000) so companies should make careful study of its success factors and barriers to implementation

According to Gulla and Mollan (2009), knowing the advantages and disadvantages of e-business (see Table 2-2) prior to investment allocation for an adoption project is very important.

E-Business						
Advantages	Disadvantages					
 Total systems integration Streamlining different processes and workflows Easier sharing of data across various departments in an organisation Improved efficiency and productivity levels Better tracking and forecasting Cost reduction Improved customer service 	 Limited customisations in many situation The need to reengineer business processes Can be cost prohibitive to install and run Technical support can be complacent Not fit to the level of organisation's readiness 					

Table 2-4 E-business' Advantages and Disadvantages

According to Lee et al. (2002a), Korean firms and other companies all over the world adopted e-business due to the following reasons:

- Large number of potential customers
- Higher stock prices

In addition, Somers and Nelson (2001) also proposed 22 critical success factors (CSF: refer to Table 2-3), and their study provided the mean position of these CSFs according to the degree of importance in ERP implementation. Top management support, project team competences, interdepartmental co-operation, project management, inter-departmental communication, management of expectations and the project champion are all influenced to some degree by human actions and background.

#	Critical Success Factor	Mean
1	Top Management Support	4.29
2	Project Team Competence	4.20
3	Interdepartmental Co-operation	4.19
4	Clear Goals and Objectives	4.15
5	Project Management	4.13
6	Inter-departmental Communication	4.09
7	Management of Expectations	4.04
8	Project Champion	4.03
9	Vendor Support	4.03
10	Careful Package Selection	3.89
11	Data Analysis and Conversion	3.83
12	Dedicated Resources	3.81
13	Steering Committee	3.97
14	User Training	3.97
15	Education on New Business Processes	3.76
16	BPR	3.68
17	Minimal Customisation	3.68
18	Architecture Choices	3.44
19	Change Management	3.43
20	Vendor Partnership	3.39
21	Vendor Tools	3.15
22	Use of Consultants	2.90

Table 2-5 Critical Success Factors to ERP Implementation

Source: (Somers and Nelson, 2001)

The specific factors mentioned above are no doubt contributing positive effects to ERP implementation goals. However, the proponents of the these factors, namely, Somers and Nelson (2001), Esichaikul and Chavananon (2001), Gullan and Mollan (2009), and Lee et al. (2002a) did not include the social and cultural factors inherent in the organisation when adopting a new technology. In fact, numerous ERP implementations have failed due to problems that are not properly addressed (Stratman and Roth, 1999). Among such problems are the attitudes, behaviours and actions of the people in the organisation to which the project team gave insufficient consideration.

Moreover, many IS researchers have examined the success factors in e-business adoption by analysing several dominant imperatives: technological (Rogers, 1983), organisational (Kraemer and King, 1981, Moreton, 1995), managerial (Lakhanpal, 1994, Harrison et al., 1997) and environmental (Orlikowski and Robey, 1991, Orlikowski, 1993). Again, these studies did not emphasise the importance of both the social and cultural aspects.

In the context of the present study, (e-business) adoption is but part of the assimilation process. In terms of e-business assimilation, the social and cultural aspects of the subject organisation should not be taken for granted. Together with technological and organisational factors, this study includes the social and cultural factors, thus, forming these four factors as the major factors to the assimilation of e-business technology into the business organisation.

2.10 Conclusion

Though the kingdom now has the single largest Internet community in the Arab world, Internet penetration stands at a mere 6.8% – out of the kingdom's 23.5 million population – which is over four percentage points above pan-Arab average (Al-Gahtani, 2011).

The United Nations Economic and Social Committee for West Asia (ESCWA) (Mandorah, 2003) report discloses recent indicators for the information society in Saudi Arabia. It emphasizes that the Saudi market is the largest information market

among Arab countries with a strong expectation for substantial growth in the future (Mandorah, 2003).

Continuous innovation on computers backed by other electronic and communication technologies realises the rapid growth of Information Technology – the fulfilment of Leavitt and Whisler's (1958) prediction. Information technology changes the way organisations conduct their business activities, with the application of IT solutions replacing traditional business practices. The Internet provides huge benefits and advantages for businesses by placing their presence in the global market. This so-called information super highway allows businesses to rapidly attain success in terms of growth and expansion.

The formation of e-business technology based on ICT tools and applications contributed further favourable changes to the way companies conduct their business transactions. Companies which implement e-business technology are enjoying its benefits.

However, adopting e-business for competitive purposes is not that easy. The company needs to provide sustainable capital investment, top management support, a knowledgeable project team, and necessary training in order to achieve competitive advantage over its current and future competitors.

E-business is a new product because it is not the usual strategic tool used by the majority of companies. Companies that adopt e-business technology are gaining continued success while those that ignore it are often the poor performers in the global market.

In 2004, the Saudi government issued a decree to the Saudi Computer Society to provide a National IT Plan (NITP) for Saudi Arabia. The Saudi NITP project, which was approved by the Saudi Government in 2007, utilizes information and other technologies to promote knowledge and to support economic development throughout the Kingdom. The plan asserts that scientific and technological innovation is an essential feature for economic development, such that support for the development of science and technology is seen as a measure of development (Al-Gahtani, 2011). This plan includes continuing work on Saudi Arabia's first Knowledge Economic City (KEC) in Madinah (Arab News, 2007). The United Nations Economic and Social Committee for West Asia (ESCWA) (Mandorah,

2003) report discloses recent indicators for the information society in Saudi Arabia. It emphasizes that the Saudi market is the largest information market among Arab countries with a strong expectation for substantial growth in the future (Mandorah, 2003). Therefore, the long-term vision of the government of Saudi Arabia is "the transformation into an information society and digital economy so as to increase productivity and provide communications and information technology (IT) services for all sectors of the society in all parts of the country and build a solid information industry that becomes a major source of income" (Simsim, 2011). The Saudi government has approved several laws that govern informational transactions. With the extension of these provisions to government agencies as well as private organisations, this will ultimately enable the introduction of e-government and e-business to all business transactions.

According to Opoku and Abdul-Muhmin (2010) the technology side may prove the least difficult to address; the organizational, legal, political and social aspects may prove to be much more of a challenge. Technological, organisational, social, and cultural factors were introduced in this chapter. These factors would be useful on determining the impact of e-business assimilation. We note that the impact of these factors on e-business assimilation may vary in different countries or even in different companies located in the same country. According to Pons (2004) social and cultural factors are among the barriers that affecting e-business in the Arab countries. As we progress in this study, the four major factors will be discussed in detail.

2.11 Summary

Assimilation of e-business requires change of not only technology, but of organizational structure, processes and culture. In addition, customers and suppliers become more integrated into the organisational processes.

E-business is, then, more than just the Internet and technology, and involves communication and transactions between various groups.

The terms "adoption" and "assimilation" have been discussed at length in this chapter. The key issue to emerge has been that, whilst much has been done to address various aspects of technological, operational, managerial, organizational and

strategic benefits from e-business, there is a gap, which may be characterised as a need to take an overview of e-business as a social phenomenon.

The nature of Saudi culture makes this particularly important. Given the requirements for trust and personal relationships in Saudi business, e-business will succeed only where it can overcome the constraints imposed by the culture. In essence, this requires e-business to become part of the social "whole" that is Saudi Arabian society.

This leads directly to the research questions to be addressed by this study, and, particularly, to the need to identify the cultural and social factors involved in ebusiness and to develop a conceptual model of e-business assimilation which takes account of these.

The next chapter moves this discussion forward to provide the theoretical perspectives on e-business adoption, and discusses the importance of Habermas' lifeworld and system theory in relation to the social and cultural factors inherent in the actions performed by the organisation's social actors when utilising a new technology.

3 Chapter Three: THEORETICAL PERSPECTIVES ON e-BUSINESS ASSIMILATION

3.1 Introduction

The last chapter introduced the four major important factors (i.e., technological, organisational, cultural, and social) in determining the success of e-business assimilation. Now, there is a need to develop an effective conceptual model so that these factors can be critically aligned in accordance to realising e-business assimilation goals.

Nowhere in the IS literature has it been found that Habermas' concepts of lifeworld and system were utilised for e-business assimilation initiatives. Analysing the lifeworld and system helps people understand what is really happening around them and consequently, this provides them with ways to respond to various situations without harming the welfare of all those involved.

However, before undertaking a more detailed review of systems/lifeworld, this chapter first looks at the existing paradigmatic perspectives on technology adoption in order to provide a thorough theoretical underpinning to the present research.

3.2 The Social Psychological Perspectives

Technological imperative models such as the Technology Acceptance Model (TAM) (Davis, 1989) focus on the characteristics of the technology or users' perceptions of it, and assume that the innovation adoption decision is based on rational decision-making (Gibbs and Kraemer, 2004).

The managerial imperative model seeks to explain innovation based on the innovativeness attributes of managers, their commitment to the innovation and background. The support of top management is recognised as a crucial success factor in IT adoption (Premkumar and Ramamurthy, 1995, Premkumar et al., 1997) and this generally requires knowledge of e-business potential (Riyad et al., 2002). "Organizational imperatives describe management related factors that influence the assimilation" (Tarafdar and Vaidya, 2006, pg. 295).

Environmental imperative models, on the other hand, tend to focus on external influences (Munene, 1991). As indicated by Tarafdar and Vaidya (2006) environmental imperative is one of the factors that influence the assimilation of new

technology. External pressure from market forces, inter-organisational relationships, institutional forces, and the e-readiness of socio-economic forces are some of the environmental factors which are considered likely to affect innovation adoption, especially those innovations that cut across firm boundaries (King et al., 1994, Mann, 2000). In this domain, Lee et al. (2002b), for example, investigated the relationship between e-business initiatives and firm value. They found that capital markets positively respond to the e-business initiatives of firms, and that this is reflected in terms of enhanced market value. Those positive effects were more strongly observed in Business-to-Customer (B2C) than in Business-to-Business (B2B) firms. It has been suggested that this may be due to the inherent complexity and risk of B2B firms and to the 'firm size effect' (Park et al., 2007). The possibility of enhanced market value may provide an environmental imperative for e-business adoption. Other environmental factors, however, may have the opposite effect; for instance, lack of trust in online transactions is one of the main reasons reported for the relatively low electronic commerce adoption today. Trust is a key issue and its existence amongst the business community and the end-users will ultimately increase the willingness of trading partners to expand their electronic transactions (Miles and Snow, 1992, Hart and Saunders, 1997, Wilson, 1997, Ratnasingham, 1998). The low level of trust with regards to electronic commerce can be partly attributed to the lack of face-to-face interaction between trading partners in conjunction with the general uncertainty of users in taking advantage of network technologies (Ratnasingham, 1998). Ke et al. (2009) show that the firm's trust and perceived institutional pressures, have a positive impact on new innovation adoption such as Electronic Supply Chain Management systems.

Although each of these perspectives may explain some factors in the technology adoption decision, that they pay insufficient attention to the social and cultural environment of organisations. Thus, many information systems researchers have argued that intention models from social psychology may produce a potential theoretical foundation for research on the determinants of the user's actual behaviour (Swanson, 1994), yet, when it comes to determining the acceptance of technology among the people who think and act based on their manners, customs and beliefs, the result is incomplete because intention models are limited to usage predictions. Intention models have greater emphasis on the behaviours of the social actors towards the new technology to be adopted; however, they lack the elements which may produce effective techniques on dealing with difficult situations caused by socio-cultural issues such as religion, language, traditional values, loyalty, trust, and others. For this reason, this thesis opted to utilise the theory of lifeworld and system in the context of Saudi companies' e-business assimilation. The theory of lifeworld and system covers not only the attitudes and behaviours of the social actors but also the ways they conduct themselves, the meaning of the actions performed, the difference between emancipatory actions and regulated actions, the interpretation of the communications shared, and the impact of the consensus and decisions made.

But first, in this section, a review will be presented of the social psychology models adopted by many IS researchers: the TRA (Ajzen and Fishbein, 1980), TPB (Fishbein and Ajzen, 1975), and TAM (Davis et al., 1989). The TOE Model will also be discussed in brief. After discussing these four established theoretical models, Habermas' theory of lifeworld and system will be presented in full as the final basis for the present study's conceptual model.

3.2.1 The theory of reasoned action: defining the actual behaviour

Theory of reasoned action has a long-established tradition of research on the relationship between attitudes and behaviour in social-psychology (Rehman et al., 2007). It is widely believed that people's behaviour is driven by their attitude, as indicated by Rehman et al. (2007) attitudes are determined by beliefs about the outcomes of the behaviour. However, the two; behaviour and attitude; are so closely related as to pose a difficulty of differentiation; they are often used interchangeably. In what follows the term 'attitude's' used to mean as the person's unique way of responding to things which he / she encounters, according to his or her own perceptions, understanding and interpretation of the meaning of the situation.

In an attempt to conceptualise the process by which attitude governs behaviour, Martin Fishbein and Icek Ajzen (1975) developed the theory of reasoned action (TRA) which is useful in understanding and predicting most human behaviours (Fishbein and Ajzen, 1975).

TRA focuses on the determinants and performance of the consciously intended behaviours (Fishbein and Ajzen, 1975, Ajzen and Fishbein, 1980). It suggests that a person's actual performance of a specified behaviour is determined by his or her behavioural intention (BI) to perform the behaviour, and BI is jointly determined by the person's attitude (A) and subjective norm (SN) concerning the behaviour in question, with relative weights typically estimated by regression:



Figure 3-1 The TRA Model, Fishbein and Ajzen (1975)

Where:

- **Behavioural intention** (**BI**) refers to the degree of one's intention to perform a specified behaviour (Fishbein and Ajzen, 1975)
- Attitude [about the Behaviour] (A) refers to the individual's positive or negative feelings (evaluative affect) about performing the intended behaviour (Fishbein and Ajzen, 1975)
- Subjective Norm (SN) refers to "the person's perception that most people who are important to him think he or she should or should not perform the behaviour in question" (Fishbein and Ajzen, 1975, pg. 302)

A person's volitional (voluntary) behaviour is predicted by his or her *attitude about that behaviour* and *on how he or she perceives other's view in regard to the behaviour he or she would perform or not*. The theory of reasoned action suggests that people evaluate the consequences of alternative behaviours before engaging in them, and that they choose to engage in behaviours they associate with desirable outcomes (Hae-Kyong Bang et al., 2000). Attitude and subjective norm correlate to one another and they form the person's behavioural intention. The relative contribution of attitudes and subjective norms varies with the behavioural context and the individual (Rehman et al., 2007). However, these two constructs are not weighted equally in predicting the behaviour. It could be that *attitude* has greater

impact towards the behavioural intention than the *subjective norm*, or the opposite respective weight (e.g. some people do not care for what others would think or say; if this is the case, *subjective norm* has little or no effect on them). If a person intends to perform a behaviour, then it is likely that he or she will do so. Here, it may be useful to elaborate each component of TRA. *Behavioural intention*, as said earlier, is the degree of one's intention to perform a specified behaviour. For example, when a person intends to eat an ice cream that is inside his or her refrigerator, he or she formulates in his or her mind to get it as soon as possible and quickly decides on the manner in which he or she would eat it. His or her decision may be to smile and to open his or her eyes wide while eating the ice cream. Here, he or she intends to look happy while eating the ice cream, thus, his or her intention. Is the intention formulated naturally by one's mind or is it driven by the overarching factors in his or her environment?

According to the standard format of the TRA model shown above, we see that behavioural intention comes from the two factors: attitude and subjective norm. It means that such factors contribute to the production of behavioural intention. Attitude is presented in the example as to whether the person would eat the ice cream with an expression of delight or with a sort of defence mechanism due to an unresolved personal problem; thus, an expression that is shown as either positive or negative defines the kind of attitude the person displays. A negative expression corresponds to a negative attitude while a positive expression corresponds to a positive attitude. However, such an interpretation does not fit with the distinct meaning of *attitude* which TRA proposes. TRA's *attitude* construct refers to either a feeling of conformance or a sense of rejection towards the behaviour whether it is to be performed or not. Regarding the above example, the person's attitude is *positive* towards eating an ice cream, that is to say, he or she *likes* to eat an ice cream at the present time. Regarding *subjective norm*, also looking at the given example, let us assume that the person who desires to eat an ice cream which he or she will get from the refrigerator is a college student and is living with his or her family or with his or her dorm mates; and therefore in this case, he or she assesses in his or her mind what they will think of him if he or she eats the ice cream in a manner which attracts their attention right away. He or she perceives in advance whether or not they would

accept his or her intention to eat the ice cream in an unusual way. Thus, the equation **BI=A+SN** is the same as (A+SN=BI) = B, where B is the behaviour performed or acted upon. Relating the modified equation to the given example, it becomes: [A (Attitude: excited to eat an ice cream and so will eat it with a big smile and widely opened eyes)+ **SN** (Subjective norm: perceiving that his or her family or dorm mates would either agree or not on the attitude he or she would express) = **BI** (Behavioural intention: the person eagerly intends to eat the ice cream from the refrigerator with facial expressions like smiling and widening of the eyes; whilst perceiving and considering the feedback he or she would get from his or her family or from his or her dorm mates)] = **B** (Behaviour : being so happy and is acting somewhat like a child in eating the ice cream). The given example is a very simple one which shows the basic functioning of TRA's constructs in the field of social psychology.

Some examples of TRA's components are shown in Table 3-1.

Table 3-1 some examples of TRA's components

#	Attitude	Subjective Norm	Behavioural	(Actual) Behaviour
	(about the behaviour)		Intention	
1	Like to eat pork	Saudi Arabia prohibits eating of pork.	To eat pork	Will eat or will not eat pork (Though restricted and despite the negative consequences he or she might possibly get, there are cases where a foreigner finds way to eat pork, by all means)
2	Decided never to drive a car	Urge by the family to drive a car to cut transportation expenses otherwise they won't provide money for transportation	Never to drive a car	Will drive or will not drive a car
3	A Filipino doctor wishes to work abroad as a nurse	Nursing job in Canada or UK receives higher salary than the doctor's salary in the Philippines, so many grab this offer.	To work as a nurse	Will work as a nurse
4	Allan, a Muslim youth wants to take up his or her college degree in USA	His family and friends said that lifestyle in USA had long been too secularist and negatively liberated	To study in USA	Most likely not to study in USA
5	A junior manager, who is 35 years of age, is fond of reading books of any kind. This time, he or she wants to read the book version of a Harry Potter movie.	His colleagues did comment that reading Harry Potter book is so 'childish' for anybody who is old enough	To read the Harry Potter book series	Will read the Harry Potter book series or not

Table 3-1 shows that the intended behaviour is not always acted upon. In other words, the actual behaviour may or may not be the performed intended behaviour, because the two factors (i.e. attitude toward the behaviour and subjective norm) greatly influence the behavioural intention. Most of the time, it is the person's attitude (about the behaviour) which causes him to perform the intended behaviour. It is likely that for people who are raised in an individualist culture (e.g. USA), their attitude dominates their volition to act on their intentions; while for people raised in a collectivist culture (e.g., Saudi Arabia), and their intentions are largely driven by the norms of their society. However, according to the overarching research, *attitude toward the behaviour* consistently has a greater influence on the behavioural intention than the subjective norms (O'Keefe, 1990).

3.2.1.1 TRA and the limiting conditions

Sheppard et al. (1988) argued that there are three common limiting conditions on (1) the use of attitudes and subjective norms to predict the intentions and (2) the use of intentions to predict the performance of behaviour (i.e. actual behaviour):

- 1. goal versus behaviour
- 2. the choice among alternatives
- 3. intention versus estimates

This means that we should *distinguish intended behaviour from intended goal*, *consider the choice among the alternatives*, and *differentiate intention from estimates*. We shall base our discussion on Sheppard et al.'s (1988) study of TRA.

3.2.1.2 Goal versus behaviour

A *goal* refers to *an aim or purpose* (Cambridge Advance Learner's Dictionary), for example, to lose weight within a specified period, in preparation for a swimming competition. In this example, it is clear that the person aims to achieve a goal. On the other hand, behaviour refers to *way of behaving or acting* (see Compact Oxford English Dictionary), for example, to take a diet pill every day.

In the context of TRA, 'behaviour' is defined as the 'action' of the person resulting from his or her personal judgments toward a matter which would produce either a beneficial or harmful outcome. Behaviour in TRA does not refer to 'how the person would perform the action'; rather it refers to 'would the intended action be performed'.

In this light, *goal* is where an individual is *physically* making ways to materialise what he or she wants while *behaviour* is where an individual is mentally evaluating matters (e.g. his or her attitude and the view of people around him) so as to come up with a decision on what to act upon (i.e. to perform).

According to Sheppard et al. (1988), the distinction between a goal intention (e.g., losing 3 pounds before the swimming competition) and a behavioural intention (taking a diet pill) should be considered to avoid misinterpretation.

3.2.1.3 The choice among alternatives

The presence of choice changes the nature of TRA's constructs and the role of intentions in the performance of behaviour (Sheppard et al., 1988). Fishbein and Ajzen (1975, 1980) have the same argument that the more 'positive' are the conditions of TRA's constructs, the more likely it is that individuals will perform the behaviour. However, what if there are choices available for the individual to assess on? For example, with his or her friends, an individual wants to watch a comedy movie and he or she is thinking where to watch it; until he or she decides to watch it through his or her laptop instead of the desktop or television. In this example, with each rejected alternative (i.e., desktop or TV), the attitude and subjective norm are both positive toward the behaviour (i.e. to watch a comedy movie) but the behaviour is not performed. In contrast, with the chosen alternative (i.e., laptop), the behaviour is performed after attitude and subjective norm are both positive toward performing it. Therefore, people who attempt to utilise TRA in any field should also consider this kind of condition which also affects intentions and decisions.

3.2.1.4 Intentions versus estimates

The *intentions* domain is where a person 'intends to perform the behaviour' while the *estimates* domain is where a person 'expects to perform the behaviour' during or after considering his or her limitations: his or her strengths and weaknesses, his or her resources, knowledge and experiences, and people's connections (Sheppard et al., 1988). The individual intends to perform the behaviour but there are times when his or her expectation of performing it is based on his or her estimates (Warshaw et al., 1991). For example, assessing whether he or she could achieve something with the means or time available.

With awareness, an individual considers all the factors that would affect the behaviour he or she will perform. He or she considers these factors according to his or her estimation – whether to successfully perform the behaviour despite the constraints or disregard it so as to avoid conflicts. Estimates would include (1) the individual's consideration of his or her current attitudes, subjective norms and intentions toward the action or outcome of interest, (2) his or her attitudes, subjective norms and intentions toward alternative actions or outcomes, and (3) other factors that would cause him to be unsuccessful upon executing his or her intended behaviour (Sheppard et al.(1988). In short, *estimates* affect one's performance of the behaviour; such that what is performed may not be the behaviour at all.

3.2.2 Significant impacts of TRA

Despite the doubt that TRA would be useful for other situations, researchers found that TRA is effective in providing significant results relative to the research goals. Sheppard et al. (1988, pg. 388) had [therefore] concluded that TRA is also useful in other research activities by arguing that "TRA has a strong predictive utility, even when utilised to investigate situations and activities that do not fall within the boundary conditions originally specified for the model. That is not to say, however, that further modifications and refinements are unnecessary, especially when the model is extended to goal and choice domains."

Hale et al. (2003) argued that TRA has been utilised in many areas of study including dieting (Ajzen and Fishbein, 1980), using condoms (Greene and Hale, 1997), consuming genetically engineered foods (Sparks et al., 1995), and limiting sun exposure (Hoffmann et al., 1999). Hale et al. (2003) pointed out exceptions to the utility of TRA by saying that the aim of the TRA is to explain volitional behaviours. Its explanatory scope excludes a wide range of behaviour such as those that are spontaneous, impulsive, habitual, the result of cravings, or simply scripted or mindless (Bentler and Speckart, 1979, Langer, 1989). Such behaviours are excluded because their performance might not be voluntary or because engaging in the

behaviours might not involve a conscious decision on the part of the actor (Hale et al., 2003).

3.2.3 TRA in IS research

In the context of IS research, Fishbein and Ajzen (1975) assert that 'external variables' affect or influence the user's behaviour by indirectly influencing A, SN, or their relative weights (see Figure 3-2). This implies positive *user acceptance* of information technology tools. External variables correlate with the internal *psychological* variables, thus, critical analysis is done in regard to *user acceptance* as a result of the influence on the behaviour. Examples of *external variables* are system design characteristics, user characteristics (including cognitive style and other personality variables), task characteristics, nature of the development or implementation process, political influences, and organisational structure.





The use of TRA was originally intended for social psychology domain. Nevertheless, 'information technology adoption' whether in general or in a specific application, is obviously a type of action, which is why the TRA model which aims to find people's reasons behind their behaviours (i.e. actions) is also applicable for this context.

Davis et al. (1989) examined TRA in a longitudinal study of student usage of a word processing package. The components were reassessed after fourteen weeks from the time of initial assessment and they found that the constructs attitude and subjective norm were both strong predictors of a user's intention to utilise the word processing package.

Harrison et al. (1997) applied TRA to finding the determinants of senior managements' behavioural intention and actual behaviour, particularly on their decision to adopt or to reject a strategic information system. They provided questionnaires which would generate answers relative to assessing both the attitudinal and the normative beliefs. They disregarded the criticisms of TRA by some researchers like Budd (1987), who states that respondents may answer the questionnaires on TRA in an artificial manner, thus resulting in inconsistencies about utilising the TRA components; as well as of Fazio et al. (1984), who state that if respondents have not previously formed their attitude toward something, completing the attitudinal questionnaires will lead them to attitude formation instead of attitude assessment. According to Harrison et al. (1997), what matters most is that the actual behaviour is the result of a careful, deliberate, or preferred decision. They found that TRA's basic structure allows integration of important IS success factors such as top management and peers, which were among the factors studied by IS researchers in for example, (Melone, 1990).

Barki and Hartwick (1994) emphasise the importance of TRA's constructs (i.e., attitude, subjective norm) as among the antecedents of the concept 'user participation.' User participation refers to the observable behaviours, assignments, and activities that users or their representatives perform during the information system development process, for example, being the leader of the project team, approving formal agreements, and defining design and customisation layouts (Barki and Hartwick, 1994). The three dimensions of user participation are (1) overall responsibility; (2) user-IS relationship; and (3) hands-on activity. Barki and Hartwick (1994) find that 'information system use' is determined by the user's intention to use the system. On the other hand, the user's intention to use the system is determined by the user's attitude toward using the system (i.e., whether he or she

feels using the information system is good or bad) and his or her subjective norm concerning using the system (i.e., whether he or she believes that other individuals want him to use the information system). However, the weight of attitude and subjective norm differ depending on the type of users: mandatory or voluntary. Mandatory users were found to weight the normative construct most heavily because their intentions and actual behaviours resulted from their superiors' expectation that they would use the system frequently. Voluntary users, on the other hand, were found to weight the attitudinal component most heavily because their intentions and actual behaviour were driven by their personal assessment that frequent use of the system would be good and of great advantage (Barki and Hartwick, 1994).

The above studies resulted in positive impacts of the TRA. However, Liker and Sindi (Liker and Sindi, 1997) in their study of *Expert Systems* found that general attitudes did not predict intentions to use this particular information technology and this finding clearly contradicts many IS studies on TRA (e.g. (Hartwick and Barki, 1994). They went on to suggest more in-depth research be done to prove whether attitude is relevant or not in predicting information technology use.

3.3 Theory of Planned Behaviour: the benefit of control

The issue of *why the behavioural intention does not always lead to actual behaviour* is argued to have been resolved by the Theory of Planned Behaviour, which was developed by Icek Ajzen (1985) from the Theory of Reasoned Action (Fishbein and Ajzen, 1975) by adding a new component: perceived behavioural control --- to account for conditions where the individual's volitional control over behaviour is incomplete. "TPB which is widely used in predicting and explaining human behaviour across a variety of settings while also considering the roles of individual and social systems in the process" (Chen et al., 2007, pg. 301). As indicated by Smarkola (2008) TPB uses direct measures of attitudes, subjective norms and perceived behavioural control.

Research studies which applied TRA (outside its original use) confirmed that *behavioural intention* does not always result in actual behaviour (Sheppard et al., 1988). There are limiting conditions that the individual should consider; conditions or circumstances (e.g., stressful events involving the family; drastic changes in the society; rapid technological advancements, etc.) which affect his or her intentions,

especially those that are beyond his or her control. This means that the individual has only limited volitional control over other factors which also affect his or her *will* to perform the intended behaviour. According to TPB, people's actions are determined by their intentions, which are influenced by their perceived behavioural control, besides attitude, and subjective norm (Ramayah et al., 2009).

Not all intentions are carried out. Some are totally disregarded, while others are subject to development so as to fit with the circumstances at hand. For this reason, TRA was extended and modified into a new model, the TPB (Ajzen, 1985). TPB differs from TRA in that the former places emphasis on the *perceived* as well as *actual* control over the behaviour under consideration, while the neglects this important element.



Figure 3-3 The TPB Model, Ajzen (1985, 1991)

The model is illustrated in Fig 3.3 above, where:

• **Behavioural intention (BI)** – refers to the degree of one's intention to perform the particular behaviour.
- Attitude toward Act or Behaviour (A) refers to the extent to which a person evaluates the behaviour favourably or unfavourably.
- Subjective Norm (SN) refers to the perceived social pressure (i.e. peer influence, superior influence). It is determined by normative beliefs, which are concerned with the likelihood of important referent individuals or groups approving or disapproving of performing the behaviour.

Perceived behavioural control (PBC) – refers to the perceived ease or difficulty of performing the behaviour and is dependent on second-hand information, experiences of acquaintances and friends, and anticipated assistance and impediments (Ajzen, 1991, Lim, 2003). The prediction of behaviours that were not under complete volitional control was the basis behind the addition of PBC (Armitage and Conner, 2001).

3.3.1 Weight of TPB

TPB is a social-psychological model where *behaviour* is a weighted function of intention and perceived behavioural control; and [behavioural] *intention* (BI) is the weighted sum of attitude toward the behaviour (A), subjective norm (SN), and perceived behavioural control (PBC) components. "TPB identifies three kinds of variables determining or explaining behavioural intention: attitude towards behaviour, subjective norm and perceived behavioural control" (Herrero Crespo and Rodríguez del Bosque, 2008, pg. 283). Each component of intention (i.e. A, SN, and PBC) is determined by its underlying belief structures such as attitudinal beliefs, normative beliefs, and control beliefs corresponding to A, SN, and PBC respectively.

PBC affects the condition of both the behavioural intention and the behaviour in question (see Figure 3-4). However, it remains a component of BI, because in parallel to TPB's application, a person's perceived control over the behaviour drives him to push through his or her intention and successfully come to its execution. Thus, this procedure is *from control to intention to behaviour* and not *from intention to control to behaviour*.



Figure 3-4 The TPB Model, Ajzen (1985, 1991); focus to PBC

Perceived behavioural control (Schifter and Ajzen, 1985, Ajzen, 1985) has a similarity with Bandura's concept of 'self-efficacy' featured in the Social Cognitive Theory (Bandura, 1977). Social Cognitive Theory postulates that people develop perceptions on their own abilities and characteristics that afterward guide their behaviour by determining what they want to achieve and how much effort they will put into their performance (Bandura, 1977). Self-efficacy is a type of self-reflective thought that affects one's behaviour (Bandura, 1977, Bandura, 1989). Self-efficacy is representing people's beliefs of what they can do with what they have, it is not an assessment of an individual's number of skills but rather (Hoyt and Blascovich, 2010). By reflection, people can analyse their experiences, think about their own thought processes, and alter their thinking accordingly – thus, each of them is able to measure his or her degree of self-efficacy. Self-efficacy refers to the conviction that a person can successfully perform the behaviour needed to produce the outcome. A substantial literature on self-efficacy indicates that it is an important motivational construct that influences choices, goals, effort, persistence, thought patterns, performance, and stress reactions (Bandura, 1982, Bandura, 1997, Taylor et al., 1984).

On the other hand, PBC reflects beliefs on *access* to the resources (e.g., time, money, etc.) and opportunities needed to enact the behaviour, or alternatively, to the internal and external factors (refer to Table 3-2 below) that may impede execution of the behaviour.

	Individual difference	Information, skills, and abilities	Power of Will	Emotions and Compulsions
Internal Factors	Every person has his or her own unique perceptions towards controlling the events in his or her life. Some change their intentions faster than others.	At times, we desire to contribute positive impact to other's lives only to find out that we lack the information (or knowledge), skills and abilities; then we tend to acquire these things so that in the near future; our intention would come to action.	To be attained, some behaviour al goals require 'will power' or strength of character. This 'power of will' is stronger than one's attitude and subjective norm in terms of fulfilling his or her intention. A person whose 'will power' is weak is deemed to having a changeable mind.	Emotional and compulsive behaviours are still performed despite one's effort to stop it (e.g. daydreaming, stuttering, etc.).

Table 3-2 Internal and External Factors which influence the Volition Control over the Behavioural Goal

External	Time and Opportunity	Dependence on Others
Factors	There are unexpected events relative to time and opportunity which changes one's attitude toward the behaviour and the perceptions of his or her significant others; however, his or her original intention remains by making a new plan of performing the intended behaviour on the time and opportunity convenient to him.	Incomplete control over behaviour goals exist when others whom you depend on do not conform or do not support you on what you intend to do. You cannot force them to immediately accommodate your desire, otherwise conflicts will arise. Because, like you, others have 'free will' too: whether to go with your
		Intention of not.

When repeated efforts to perform the behaviour fail, changes in intentions occur.

Source: Ajzen (1985)

Proving the similarity of perceived behavioural control and self-efficacy, they meet in terms of providing control over the factors that influence (or change) the intensity of behavioural intention. Consequently, in the mind of the person, *intended behaviour* is changed into *expected behaviour* after he or she has successfully planned, prepared and utilised his or her control mechanism. The greater amount of appropriate control exercised, the higher the execution of the expected behaviour. Warshaw et al. (1991) argued that if used as a predictor of behaviour, behavioural expectation is more accurate than the behavioural intention. However, expectation is but a result of the PBC construct; and this construct is still a determinant of behavioural intention. This is to argue that behavioural intention remains the final determinant of the behaviour in question, a component of TPB closest to the behaviour being performed or not.

Drawing on the study of Schifter and Ajzen (1985) and Ajzen (1985) (see Table 3-3), it can be concluded that people who strongly believe that they can perform their intended action (e.g. losing weight) are more likely to succeed. When people are highly motivated to achieve certain behavioural goals, they prepare well in facing and resolving even the difficult challenges they perceive – to the extent of carrying out effective strategies so as to succeed. Here, strategies denote 'control': control over internal and external factors which *validate the firmness* of one's behavioural intention and consequently, the outcome of the performed behaviour.

Table 3-3 Application of TPB

Components	Descriptive Application
Attitude	Favourable or unfavourable evaluation towards losing weight
Subjective Norm	Social pressure to lose or not to lose weight
Perceived Behavioural Control	Perceived ease or difficulty of losing weight and is assumed to reflect past experience, and anticipated impediments and obstacles
Behavioural Intention	Losing weight
MAJOR RESEARCH F	INDINGS:
Behaviour Outcome	Women who strongly intended to lose weight and also believed that they were capable of doing so belonged to the 58% of the respondents who managed to lose weight within 6 weeks.

Source: Schifter et al. (1985) and Ajzen (1985)

3.3.2 TPB in IS research

TPB in the study of Hansen et al. (2004) included a path from the subjective norm construct to the attitude construct which, according to them, has provided a strong prediction of the intention to use the Internet in grocery purchasing. Due to the fact that all respondents have been using the Internet, Hansen et al. (2004) found that perceived behavioural control has little or no effect on behavioural intention to purchase groceries online. Instead, aside from their experience that the Internet is useful in many ways, participants' feelings that it can also be useful in terms of purchasing made them decide to perform online grocery buying. In this case, according to Hansen et al. (2004), attitude is the strongest determinant of behavioural intention within the boundary of online grocery buying.

Also having studied Internet purchasing, Joey (2004) found that trustworthiness (under the subjective norm construct) is the dominant predictor of whether the respondents (i.e. consumers) would or would not use the Internet in purchasing various items. Joey (2004) measured trust in the Internet itself rather than measuring the trustworthiness of Internet merchants. The consumers were driven more by their perception on the trustworthiness of the Internet than by concerns they might have about unauthorised use of their personal information by the Internet merchants. Direct paths (i.e., without mediation of intention) of constructs attitude towards Internet purchasing, the subjective norm, and perceived behavioural control (which was driven by consumers' higher level of self-efficacy) to the actual behaviour resulted in performing the Internet purchasing.

Harrison et al. (1997), in the context of small businesses, argued that executives' decision to adopt an IT for competitive purposes is an integrated function of attitude toward adoption (i.e., positive or negative anticipated consequences of adoption), subjective norm about the adoption (i.e., perceived social expectation) and perceived behavioural control over the adoption (i.e., perceived obstacles or facilitators to adoption).

Limayem and Hirt (2003) in their study on students' usage of Internet-based communication tools (IBCT) argued that TPB can be refined productively by adding a 'habit' construct as a determinant of actual behaviour (p.84). According to them, when behaviour is frequently done or simply becomes habitual, this results in the

decrease of intentions' influence on the behaviour. Thus, when ICBT (e.g., WebBoard) usage becomes habitual to the majority of the students, then social factors (i.e., subjective norm), perceived consequences (i.e., attitude towards the behaviour), and facilitating conditions (i.e., perceived behavioural control) are less significant determinants of intention. Habit, as derived from Triandis (1980) behavioural framework, is rather the dominant predictor of actual ICBT usage than the original TPB constructs.

In the study of Chau and Hu (2001) on healthcare professionals' decision to adopt telemedicine technology, TPB appeared to be a weaker theoretical model than the Technology Acceptance Model (TAM) in terms of the influences of its constructs on intention to system usage. Chau and Hu (2001) integrated the TPB and TAM models because according to them, these models were both adapted from TRA and were having constructs important to predicting the behavioural intention. Under TAM, perceived usefulness mediated through attitude is the strongest predictor of intention to adopt telemedicine technology. On the other hand, perceived behavioural control though remains important, has lesser influence on the said intention.

3.4 The Technology Acceptance Model (TAM)

Davis (1986, Davis, 1989) developed the **Technology Acceptance Model (TAM)** to provide a theoretical pattern for people and business entities to use a particular technology.

TAM was derived from TRA, the theory of reasoned action (see Figure 3-5), but with the exclusion of the *subjective norm* (*SN*) and on the other hand, inclusion of two specific beliefs, *perceived usefulness* (*PU*) and *perceived ease of use* (*PEOU*) which were postulated as direct determinants of behavioural intention (BI) (i.e. usage intention) in order to determine the behaviour (i.e., actual usage of technology) consequently. PU and PEOU already encapsulate the assessed attitude; hence the attitude construct is also excluded in order to better understand the intention parsimoniously through PU and PEOU (see Figures 3-5 and 3-6). According to Davis (1989), Information Technology is generally perceived as advantageous in terms of job performance; so even if people do not like it, they will use it.

TAM was specifically tailored for modelling user acceptance of an information system with the aim of explaining the behavioural intention to use the system (Chen

et al., 2007). It is influential in explaining and predicting the Actual Usage of technology. Functions of its constructs are as follows:

- **Perceived Usefulness (PU)** refers to "the degree to which a person believes that using a particular system would enhance his or her or her job performance" (Davis, 1989, pg. 320).
- **Perceived Ease of Use (PEOU)** refers to "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989, pg. 320).

PEOU influences PU because a technology that is easy to use can be more useful (Davis, 1989, Schillewaert et al., 2005). Moreover, the easier a technology is to use, and the more useful it is perceived to be, the more positive one's attitude and intention towards using the technology, and its level of usage increases.

PEOU and PU are two specific beliefs about the technology that future users assess in their minds.

• Usage Intention is the sole direct determinant of Actual Usage.

Intention is very important because it motivates the person to achieve his or her goals. Intention gives meaning to matters of aspirations. In the IS field, intention to adopt IT applications pushes the user-to-be to use it as urgently needed despite the presence of various constraints.

• External factors (e.g., perceived fun or enjoyment) affect Usage Intention and Actual Use through mediated effects on PU and PEOU (Pijpers et al., 2001).



Figure 3-5 Technology Acceptance Model (Davis, 1986, 1989) (simplified)

From the original TAM model:



Figure 3-6 Technology Acceptance Model (Davis, 1986, 1989) (original)

However, TAM lacks the behavioural control component. While TAM provides a valuable insight into users' acceptance and use of technology, it focuses only on the determinants of use (PU and PEU) and does not tell us how such perceptions are formed or how they can be manipulated to foster users' acceptance and increased usage (Mathieson, 1991).

In many fields of research, researchers extend the original TAM, thereby including in it the constructs Attitude, Subjective Norm (e.g., in TAM2), Self-efficacy and others (refer to Table 3-4).

#	Field	Context	Major Findings	Researchers/ Authors
1	Marketing	Adoption of IT by Salespeople	PU is the fundamental driver of sales technology adoption; PEOU is in secondary importance; Salespeople are willing to overcome some difficulty in using a system, provided that the system performs critical selling functions and enhances sales performance	(Niels et al., 2005)
2	Higher Education	Intention to use e- Learning among university students	Subjective Norm and Self-efficacy are the main drivers to adopt e-Learning; neither PU nor PEOU had significant direct effect on BI to use e-Learning because Internet is normally and already perceived as very useful and easy to use among Korean students.	(Sung Youl, 2009)

Table 3-4 Examplee of research works which extended the $\ensuremath{\mathsf{TAM}}$

3.4.1 TAM in IS research

TAM's perceived usefulness (PU) and perceived ease of use (PEOU) should result in competitive advantages instead of disadvantages. *Usefulness* of a technology must be weighted according to its *long-term efficiency* while its *ease of use* must be measured according to its *impact*. Not all useful technologies are long-lasting and not all easy to use technologies contribute optimum effects.

IS researchers have supplemented PU and PEU with characteristics of the organisation as factors that may influence IT adoption. The size of the business has been held to be an important factor (Ein-Dor and Segev, 1978, Delone, 1981, Igbaria et al., 1997, Raymond, 1988, Raymond, 1990). Frequently, large organisations have been found to be early adopters, either because they have greater financial resources or because their complexity and wider information needs exert greater pressure for change (Montazemi, 1988, Yap, 1990). More studies, however, suggest that the size advantage may be eroded, due to the greater flexibility of small organisations (Grover and Teng, 1992) and the decline in comparative technology prices (Stair and Reynolds, 1998). Technology adoption has also been associated with business age (Franz and Robey, 1986); industry (Premkumar and King, 1994); availability of IT support (Ball et al., 1987); IT budget (Barua et al., 1995, Grover and Teng, 1992) IT experience (Grover and Teng, 1992, Sanders and Courtney, 1985) and sophistication of IT infrastructure (Iacovou et al., 1995).

The managerial imperative model seeks to explain innovation based on the innovativeness attributes of managers, their commitment to the innovation and background. The support of top management is recognised as a crucial success factor in IT adoption (Premkumar and Ramamurthy, 1995, Premkumar et al., 1997) and this generally requires knowledge of e-business potential (Riyad et al., 2002). Although each of these perspectives may explain some factors in the technology adoption decision, they neglect the social and cultural environment of organisations.

Taylor and Todd (1995) in their study on use of a Computer Resource Centre concluded that TAM provided a good fit to the data. TAM accounted for 34% of the variance in behaviour, 52% of the variance in intention, and 73% of the variance in attitude. The paths such as (1) from EOU to PU and Attitude, (2) from PU to Attitude and Intention, and (3) from Intention to Behaviour demonstrated positive

significance. On the other hand, the path from Attitude to Intention was not significant. PU and EOU both had significant total effects on Usage, but attitude did not.

Agarwal and Prasad (1999) argued that perceived usefulness and perceived ease of use are equally influential on the behavioural intention to adopt new information technologies by individuals of different profiles and perspectives such as in terms of technology role, tenure in the workforce, level of education, prior experiences with similar technology, and participation in training. In their study, among these five variables, only three, technology role, level of education and prior experiences on similar technology had positively affected the ease-of-use construct of TAM. On the other hand, only participation in training has a direct effect on the perceived usefulness construct. In sum, TAM is useful for determining user acceptance of information technology based on its constructs which covered the variables manifested by different individuals. However, TAM is criticized for ignoring the social influence on technology acceptance so it has limitations in being applied beyond the workplace (Fu et al., 2006). TAM also has limitations in being applied beyond the workplace because its fundamental constructs do not fully reflect the variety of user task environment and constraints (Fu et al., 2006). Legris et al. (2003) suggested that TAM is a useful model but has to be integrated into a broader one which would include variables related to both human and social factors.

In the context of Hong Kong, Chan and Lu (2004) found the differences between the users' and the potential users' level of intention to adopt and use the Internet in relation to perceived usefulness and perceived ease of use constructs. Their findings are as follows:

- Perceived usefulness significantly and positively affects the intention. This is because 'if users and potential users perceive that Internet banking is useful, most likely they will continue to adopt and use the innovation'.
- The effect of perceived usefulness on intention was stronger for users than for potential users mainly because users had already experienced Internet Banking, leading to increasing knowledge of its usefulness.
- Perceived ease-of-use has no effect on intention; rather PEOU directly affects the adoption and usage of Internet banking because when IT innovation becomes more user friendly, users can learn how to use it more easily.

• Users feel more positive about using Internet Banking when the social environment promotes its use. Thus, the effect of subjective norm on intention was stronger for existing users than for potential users of Internet Banking.

Moreover, Chan and Lu (2004) added the factors IMAGE and Subjective Norms as two of the determinants of Perceive Usefulness. They argued that in the context of Hong Kong, IMAGE is very important because it signifies one's social status. One's IMAGE within his or her peer group affects business reputation. In turn, his or her peers' feedback and criticisms define the weight of subjective norm. Therefore, IMAGE and Subjective Norm were noted as the most important factors affecting Intention for potential users.

TAM is said to be applicable to the United Kingdom in terms of assessing IT acceptance according to the field study conducted by Al-Gahtani (2001). By investigating the behaviours of 324 users of IT systems, Al-Gahtani (2001) found out that perceived usefulness dominates influence on IT acceptance, followed by user's attitude toward IT. Perceived usefulness operated directly on IT acceptance and indirectly through attitudes. Meanwhile, attitude is greatly influenced by the perceived ease of use than by the perceived usefulness.

Gefen (2003) upon studying the TAM from among the experienced users of the Internet, online shoppers in particular, argued that continued use and habit were both factors in evaluating consistent Internet usage. However, Gefen (2003) noted that continued use is different from habit. Habit is what the individual usually does but neither a behavioural preference in the present nor an intended behaviour in the future (Gefen, 2003, p. 10). In sum, whilst Gefen (2003) agreed that perceived usefulness, perceived ease of use, and attitude are important determinants of intention to (continually) use IT in the context of online shoppers, he proposed that habit should be included as a major factor behind behavioural intention. TAM can be more productive by adding habit as its construct (Gefen, 2003). As with most information systems, service adoption could only be partially explained by TAM since both human and social factors should also be incorporated and considered simultaneously.

3.5 The Technology Organisation Environment (TOE) Model

Reviewing the literature suggests that the technology-organisation-environment (TOE) framework (Tornatzky and Fleischer, 1990) is appropriate to study contextual factors that influence e-business assimilation. The TOE framework identifies three aspects of a firm's context that influence its assimilation of a technological innovation: (a) Technological context describes both the existing technologies in use and new technologies relevant to the firm. (b) Organisational context refers to descriptive measures about the organisation such as scope, size, and managerial structure. (c) Environmental context is the arena in which a firm conducts its business - its industry, competitors, and dealings with government (Tornatzky and Fleischer, 1990). This framework is consistent with the Innovation Diffusion Theory (IDT) of Rogers (1983) in which he or she emphasised technological characteristics, and both the internal and external characteristics of the organisation, as drivers for technology diffusion.

However, as mentioned earlier, IS literature provided numerous empirical studies on e-business through utilising the well-known models such as TRA, TPB, TAM, IDT (innovation diffusion theory), and others. Tornatzky and Fleischer's (1990) TOE model could also be useful for providing analytical planning for e-business assimilation projects, yet the main focus of the present study belongs to the lifeworld and system concepts of Habermas - on how these concepts work among the social factors, that is to say in the context of e-business: the company owners, the top management, the project team, the end-users, the consultants, and the other affected individuals and entities. The theory of lifeworld and system is argued to be more applicable than TOE in terms of e-business assimilation in the context of Saudi Arabia because the former has a great emphasis on the socio-cultural issues while the latter merely focuses on the administrative approach to business aspects. Saudi Arabian companies' management styles are non-bureaucratic in nature and therefore administrative techniques are less adopted. What a Saudi company needs is a concept that will unleash its best by carefully handling the issues relative to business development goals. The next section will explore whether Habermas' theory of lifeworld and system theory can provide such a concept in Saudi Arabia.

3.6 Habermas' Lifeworld and System Theory

Numerous IS studies have utilised the aforementioned established conceptual models in terms of e-business adoption projects. . Tables 3.5 and 3.6 below list the concepts which have been identified from the literature in this respect, and demonstrates the non use of Habermas' System-Lifeworld theory in this respect.

Table 3-5 IS articles and the conceptual models used

				The	me		Me	thodo	ology			(Conce	eptu	al Model Utilized
#	Title	II	E-business	E-commerce	Social	Culture	Qualitative	Quantitative	Triangulation	TRA	TPB	TAM	CST (Critical	Social Theory)	OTHERS
1	Designing and Implementing culturally- sensitive IT applications: The interaction of cultural values and privacy in the Middle East. (Zakaria et al., 2003)	¥	*			v			¥						IBT
2	Determinants of user acceptance in Internet banking: an empirical study. (Yi-Shun et al., 2003)	~			Trust ✓		~					~			
3	Socio-instrumental usability: IT is all about social action (Pär and Owen, 2006)	~			~		~								TCA (Theory of Communicative Action)
4	An empirical examination of the role of social integration in system development projects (Aladwani, 2002)	~			~			~							Social Integration (see Shaw, 1981)

5	Computer Technology Acceptance Success Factors in Saudi Arabia: An Exploratory Study (Al-Gahtani, 2004)	~		~	~		~		~	
6	An extension of the technology acceptance model in an ERP implementation environment (Amoako-Gyampah and Salam, 2004)	~	~				~		~	
7	Information Technology Assimilation in Firms: The Influence of Senior Leadership and IT Infrastructures (Armstrong and Sambamurthy, 1999)	~					¥			Resource-based and knowledge-based theories of the firm (see Penrose 1995, Conner and Prahalad 1996, Grant, 1996a, Spender 1996).
8	Determinants of Computer System Effectiveness in Saudi Arabian Public Organisations (Atiyyah, 1989)	~		~			~			Multi-domain multi- constituency model of computer system effectiveness (p. 88)
9	Understanding B2B Interaction - A Model to accentuate Inter-organisational Systems Design Issues (Axelsson et al., 2002)	~	~			~				BAT (Business Action Theory)
10	Emphasising technology: socio-technical implications (Berg et al., 2005)	~		~			~			Michael Foucault's discourse analysis

11	Toward a Better Understanding of Information Technology Organisation: A Comparative Case Study (Blanton et al., 1992)	~						V			Contingency Model (see Miller, 1988)
12	Habermas' Theory of Communicative Action and the Theory of Social Capital (Bolton, 2005)	~		~		~					TCA (Theory of Communicative Action)
13	An Empirical Examination of a Technology Adoption Model for the Context of China (Calantone et al., 2006)	¥		*	~		~			>	
14	A qualitative study of information technology adoption: how ten organisations adopted Web- based training (Chan and Ngai, 2007)	v		✓ (p. 290)		~					IT adoption model (Mehrtens et al., 2001).
15	Small-Firm Computing: Motivators and Inhibitors (Cragg and King, 1993)	*				*					Nolan's Growth Stages Model (Nolan, 1979)
16	The impact of e-business on supply chain management – an empirical study of key developments (Croom, 2005)	*	*			*					general literature review
17	Internationalisation and Organisational Growth: The Impact of Internet Usage and Technology Involvement Among Entrepreneur led Family Businesses (Davis and Harveston,	~					~				None

	2000)										
18	User Acceptance of computer technology: A Comparison of two theoretical models (Davis et al., 1989)	V			~		✓	~	~		
19	Achieving Social Integration to Implement ERP Systems (Elbanna, 2003)	~	~			~					Actor Network Theory (ANT)
20	Implementing an integrated system in a socially dis-integrated enterprise - A critical view of ERP enabled integration (Elbanna, 2007)	*	~			*					Actor Network Theory (ANT)
21	Managing user acceptance towards enterprise resource planning (ERP) systems – understanding the dissonance between user expectations and managerial policies (Lim et al., 2005)	*	¥			*					Expectancy Theory (Vroom, 1964
22	Electronic Commerce and Electronic Business Implementation Success Factors (Esichaikul and Chavananon, 2001)	√	~	~		~					literature review on e- Commerce and e-Business success factors

23	Core IS Capabilities for Exploiting Information Technology (Feeny and Willcocks, 1998)	~			*						general literature review
24	The adoption of information technology in the sales force (Schillewaert et al., 2005)	~	~				✓		√		
25	Measuring dimensions of perceived e-business risks (Scott, 2004)	~		~		*					literature review (Website Adoption Research Model)
26	Understanding User Participation and Involvement in ERP Use (Kanungo and Bagchi, 2000)	¥	~			~					general literature review
27	The Social–Economic–Psychological model of technology adoption and usage: an application to online investing (Konana and Balasubramanian, 2005)	¥	~		<.						SWOT Analysis
28	Going with the flow: predicting online purchase intentions (Korzaan, 2003)	~				~		~			
29	The implementation of enterprise resource planning packages in different organisational and national cultures (Krumbholz, 2003)	~		~	~					V	
30	Measuring dimensions of perceived e-business risks (Scott, 2004)	~	~	~	~						general literature review

31	Understanding User Participation and Involvement in ERP Use (Kanungo and Bagchi, 2000)	~					~				✓	
32	The Social–Economic–Psychological model of technology adoption and usage: an application to online investing (Konana and Balasubramanian, 2005)	~		~	~	~						TCA (Theory of Communicative Action)
33	Going with the flow: predicting online purchase intentions (Korzaan, 2003)	~			~			~				Attribution theories
34	The implementation of enterprise resource planning packages in different organisational and national cultures (Krumbholz, 2003)	~	~				~					Socio-technical of perceived e-business risks
35	Measuring dimensions of perceived e-business risks (Scott, 2004)	~	~				~		~			
36	Understanding User Participation and Involvement in ERP Use (Kanungo and Bagchi, 2000)	~						V			~	
37	The Social–Economic–Psychological model of technology adoption and usage: an application to online investing (Konana and	~		~			~		~	~		

	Balasubramanian, 2005)										
38	Going with the flow: predicting online purchase intentions (Korzaan, 2003)	~	~	V	~			*			Knowledge Meta-schema (of culture) Model (derived from Krumbholz and Maiden, 2000, pp. 279–293).
39	Determinants of the adoption of e-business technologies (Lal, 2005)	~	~				~				general literature review
40	Management in the 1980's (Leavitt and Whisler, 1958)	~				~					prediction on IT and changes on management systems
41	Impact of e-Business initiatives on firm value (Lee et al., 2002a)	~	~					✓			general literature review
42	Why do people use information technology? A critical review of the technology acceptance model (Legris et al., 2003)	~				~				~	
43	Managerial Influence in the Implementation of New Technology (Leonard-Barton and Deschamps, 1988)	4						✓			analysis on the role of end- user's individual characteristics
44	User acceptance of expert systems: a test of the theory of reasoned action (Liker and Sindi,	~					~		~		

	1997)								
45	State of the art Technochange management: using IT to drive organisational change (Markus, 2004)	~			*				general literature review
46	A Model of Internet adoption by SMEs (Mehrtens et al., 2001)	~			~		~		
47	Critical factors for successful ERP implementation: Exploratory findings from four case studies (Motwani et al., 2005)	¥	v		v				ERP literature review
48	The dynamics of contextual forces of ERP implementation (Nandhakumar et al., 2005)	~	~		~				ERP literature review
49	There's no business like e-business (Palmer, 2002)	*	~	¥	~				general literature review (e.g., diffusion theory, etc.)
50	Senior executives' use of information technology (Pijpers et al., 2001)	*				~		~	
51	Critical Success Factors in International ERP Implementations: A Case Research Approach (Plant and Willcocks, 2007)	~	~		~				literature review on ERP's Critical Success Factors (e.g. Somer and Nelson, 2001)

52	How information gives you competitive advantage (Porter and Millar, 1985)	~			~						literature analysis and discussion
53	Adoption of new information technologies in rural small businesses (Premkumar and Roberts, 1999)	~					~				literature review on theories of innovation adoptions or diffusions (e.g. Rogers, 1995)
54	Understanding IT adoption decisions in small business: integrating current theories (Riemenschneider et al., 2003)	~				>			>	~	
55	Are individual differences germane to the acceptance of new information technologies? (Agarwal and Prasad, 1999)	~				~				*	
56	The theory of planned behaviour and InternetInternet purchasing (Joey, 2004)	~				\checkmark			~		
57	Explaining the role of user participation in information system use (Hartwick and Barki, 1994)	~				\checkmark		~			
58	Force of habit and information systems usage: Theory and initial validation (Lumayem and Hirt, 2003)	~		~		~			~		

59	The Applicability of TAM Outside North America: An Empirical Test in the United Kingdom (Al-Gahtani, 2001)	V				~		~	
60	Incorporating social dimensions in Web-store design (Tractinsky and Rao, 2001)	*	¥	¥	*				connections between the computer and the social aspects (e.g. Reeves and Nass, 1996)

	IS ARTICLES : Titles and propositions						
#	Title	Proposition					
1	Designing and Implementing culturally-sensitive IT applications: The interaction of cultural values and privacy in the Middle East. (Zakaria et al., 2003)	(IBT=Information Bounded Theory). The impact of technology to the societal culture can be determined if studied well prior to its implementation.					
2	Determinants of user acceptance in Internet banking: an empirical study. (Yi-Shun et al., 2003)	TAM was extended by including the user's 'computer self-efficacy' construct which functions through perceived usefulness, perceived ease of use, and the other new construct 'perceived credibility'; that in the end, computer self-efficacy determines the actual usage of Internet banking. This new model (Extended TAM) is said to be applicable in the context of Internet banking adoption.					
3	Socio-instrumental usability: IT is all about social action (Pär and Owen, 2006)	(Dominant theory: Habermas' Theory of Communicative Action). It is important to understand how the social aspects become embedded in technical systems; Consider that the use of IT is based on communication and the use of language, not just about technical aspects.					
4	An empirical examination of the role of social integration in system development projects (Aladwani, 2002)	The higher the top management support is, the higher social integration and consequently, higher system development project performance is best attained. The nature of the relationship between social integration and project performance may be contingent upon some other significant factors.					

5	Computer Technology Acceptance Success Factors in Saudi Arabia: An Exploratory Study (Al-Gahtani, 2004)	IT adoption and implementation in Saudi Arabia is best realised when societal culture is positively regarded and well understood.
6	An extension of the technology acceptance model in an ERP implementation environment (Amoako-Gyampah and Salam, 2004)	Project communication and the training on ERP system are important determinants of the users' shared belief on the benefits of ERP. The heavier weight of project communication and training on ERP, then, perceived ease of use and perceived usefulness are positive and thus result to actual ERP implementation.
7	Information Technology Assimilation in Firms: The Influence of Senior Leadership and IT Infrastructures (Armstrong and Sambamurthy, 1999)	This research defines IT assimilation as the effective application of IT in supporting, shaping, and enabling firms' business strategies and value-chain activities.
8	Determinants of Computer System Effectiveness in Saudi Arabian Public Organisations (Atiyyah, 1989)	There are unique and common features of computerisation in developed and developing countries. Among the most important factors for computerisation success are: qualified workforce, providing computers to the office departments which are closer to the top management, and promoting user involvement. Regardless of culture, economic condition, and fast-changing technologies, computerisation success can be achieved if these three factors are met.
9	Understanding B2B Interaction - A Model to accentuate Inter- organisational Systems Design Issues (Axelsson et al., 2002)	(BAT=Business Action Theory). B2B e-commerce should not be seen as an Internet-based phenomenon, but rather as a new way of conducting the business. The organisation should approach the new system brought by the new technology with critical understanding on its functionality whether or not it is applicable to the current business operations. Current business operations may undergo modifications based on the latest IOS design.

10	Emphasising technology: socio- technical implications (Berg et al., 2005)	Mobile technology (i.e., mobile phones) are found very useful in people's everyday lives but in some cases, it negatively affects the ethical discourse.
11	Toward a Better Understanding of Information Technology Organisation: A Comparative Case Study (Blanton et al., 1992)	An organisation with good structure and strategy can greatly produce a most effective IT support
12	Habermas' Theory of Communicative Action and the Theory of Social Capital (Bolton, 2005)	The researcher proposed that Habermas can emphasise that lifeworld is also a source of the <i>social capital in action</i> even after new norms have been established and that social actors continue to create or develop new ways of living based on their evaluations towards their roles in the society.
13	An Empirical Examination of a Technology Adoption Model for the Context of China (Calantone et al., 2006)	In the context of China, the constructs <i>government support</i> , <i>compatibility</i> , <i>and technological innovativeness</i> were added to the original TAM. The modified TAM is proven effective to certain Chinese businesses.
14	A qualitative study of information technology adoption: how ten organisations adopted Web-based training (Chan and Ngai, 2007)	Three main factors significantly affect the decision to adopt WBT in Hong Kong organisations: the perceived benefits/costs of WBT, organisational readiness and external pressures. This study found out that IT adoption model (Mehrtens et al., 2001) is applicable in the context of Webbased Training (WBT) adoption decision by businesses in Hongkong.
15	Small-Firm Computing: Motivators and Inhibitors (Cragg and King, 1993)	Different small firms have different strategies, plans, and corporate philosophies. Some prefer to remain small, some want to grow bigger.

16	The impact of e-business on supply chain management – an empirical study of key developments (Croom, 2005)	E-business developments in supply chain management follow a number of different stages of evolution such as: stage one, customer acquisition through e-mail and websites; stage two, customer management through Customer Relations Management (CRM) systems; stage three, utilisation of the e-business systems such as ERP; stage four, integrating supply-side activities through e-procurement; and stage five, integrating e-supply chain management through e-business platforms such as e-fulfilment.
17	InternationalisationandOrganisational Growth: The Impact ofInternetUsageandInvolvement Among Entrepreneur ledFamilyBusinesses(DavisHarveston, 2000)	Among entrepreneur-led family businesses, internationalisation and growth are positively affected by increased use of the Internet and increased investments in information technology. The effect of aging by the entrepreneur on a family business appears to suppress sales growth. The higher educational attainment by the entrepreneur had a positive effect on both internationalisation and sales growth.
18	User Acceptance of computer technology: A Comparison of two theoretical models (Davis et al., 1989)	Perceive usefulness was found as the strongest determinant of computer technology adoption.
19	Achieving Social Integration to Implement ERP Systems (Elbanna, 2003)	Social logic dominates the organisation, therefore the it should be regarded. Social integration should not be taken for granted when the organisation intends to adopt ERP, rather it should be monitored and be acted upon.
20	Implementing an integrated system in a socially dis-integrated enterprise - A critical view of ERP enabled integration (Elbanna, 2007)	The study argues that the institutionalised marginalisation of some business units within the organisation created a highly political and largely dis-integrated social context for the ERP implementation, which contrasts with the system logic of integration, transparency, and coordination. It reveals that this organisational practice of dis-integration can be reproduced and

		inscribed in the implemented ERP system, thereby hindering the realisation of its integration capability.
21	Managing user acceptance towards enterprise resource planning (ERP) systems – understanding the dissonance between user expectations and managerial policies (Lim et al., 2005)	Expectancy Theory can be helpful in determining and resolving the constraints on ERP systems implementation.
22	Electronic Commerce and Electronic Business Implementation Success Factors (Esichaikul and Chavananon, 2001)	The overall success factors of implementing B2C e-commerce, B2B e-commerce, and e-business can be considered under four groups, as follows: Organisational Factors, Business Factors, Technology Factors, Environment Factors
23	Core IS Capabilities for Exploiting Information Technology (Feeny and Willcocks, 1998)	Organisations benefit from relating the IS core capabilities model to their own particular circumstances, priorities and plans. Companies realise that even there is an increase of number of suppliers in the market, yet through IT capabilities, they can consistently transact with them.
24	The adoption of information technology in the sales force (Schillewaert et al., 2005)	This study found out that perceive usefulness is the strongest driving force for sales technology adoption while perceive ease of use is only of secondary importance.
25	Social Pressures on Organisational	Social pressures (e.g., institutional pressures, organisational visibility, leadership in the field and faddishness), are significant in innovation adoption and are of strongest impact during the

	Website Adoption (Flanagin, 2000)	primary stages of innovation diffusion. Organisational features and perceived benefits are of lesser significance than the Social Pressures although these two also determines innovation adoption.
26	Success and failure factors of adopting SAP in ERP system implementation (Garyega and Brady, 2005)	Six factors were identified which determine the failure or success of SAP implementation: (1) worked with SAP functionality/ maintained scope; (2) project team, management support, consultants; (3) internal readiness/training; (4) deal organisational diversity; (5) planning/ development/ budgeting; (6) adequate testing. Specifically, lack of appropriate culture and organisational readiness (internal) are the most dominant factors to failure of SAP implementation while the presence of project management approaches, appropriate culture and organisational readiness are the strongest factors for the SAP implementation success.
27	Building an E-Business Strategy (Hackbarth and Kettinger, 2000)	Managers should make an effort to understand both the supplier and customer side before implementing e-business technology. C-SLC or Customer-Supplier Life Cycle is a comprehensive guide to managing these two important business partners. By utilising the SWOT, it was found that all companies utilise their strengths, improve from their weaknesses, capitalise on their business opportunities and minimise the threats which affect their business operations.
28	Executive Decisions About Adoption of Information Technology in Small Business: Theory and Empirical Tests (Harrison et al., 1997)	Attitude, Subjective Norm, and Perceived Behavioural Control were proven strong determinants to IT adoption of Small Businesses. When the business size increases, the expectation of people in and out of the organisation also increases while the focus for control and possible consequences decreases.
29	From Habermas's communicative theory to practice on the Internet	Habermas' theory of communicative action, of the components of the Critical Social Theory (CST) was applied on the Internet through the facilitation of GRASS, a software tool which

	(Heng and Moor, 2003)	accommodates the undistorted communication of business people who participated in the study.	
30	Sociotechnical Study of e-Business: Grappling with an Octopus (Clegg et al., 2005)	E-business is like an octopus, it has tentacles spreading to the entire business operations, including valuing and keeping business relationship with the customers and suppliers.	
31	Personal Computing Acceptance Factors in Small Firms: A Structural Equation Model (Igbaria et al., 1997)	Igbaria et al. (1997) found out that PEOU is more important determinant of personal computing acceptance than the PU in the context of small firms in New Zealand.	
32	Making sense of e-commerce as social action (Janson and Cecez- Kecmanovic, 2005)	The <i>sellers' and buyers' behaviour</i> in the context of e-commerce when TCA is applied on it is interpreted as <i>social action</i> . Also, the sellers' and buyers' action is manifested in their commercial transaction. The study found out that e-commerce motivates and assists the social actors in purchasing goods via the Internet because they perceive this new application as efficient, convenient, and fair in terms of business dealings.	
33	Differential social attributions toward computing technology: An empirical investigation (Johnson et al., 2006)	This study argued that computers have social characteristics. They possess similarities to humans such as having the language, the tone of voice, the memory, etc. Of course, people had created the computers. We know that computers nowadays are used in many ways for social interaction, a sign that computing technology will continue to expand.	
34	Measuring dimensions of perceived e- business risks (Scott, 2004)	Almost 200 respondents to a survey rated the severity of the sixteen e-business risks identified by this study from a literature review. The most noted e-business risks were profitability, privacy and security. It is important that companies should consider the e-business risks because consumers are also aware of these that is why many of them are hesitant to utilise Internet in their purchasing activities.	
35	Understanding User Participation and Involvement in ERP Use (Kanungo and Bagchi, 2000)	To constructs were added to the original TRA: user participation and user involvement. User participation can greatly affect user involvement but the latter has a little impact to the former. The degree of user participation increases when the user perceives that the system is getting better, while user involvement is more exclusively executed by the project managers, business analysts, and the likes. TRA was proven applicable in the context of ERP implementation in India.	
--	--	---	--
36The Social-Economic-Psychological model of technology adoption and usage: an application to online investing (Konana and Balasubramanian, 2005)The SEP model can be applied, with due adjustments, to other contexts of charge of their decision-making in virtual contexts. The following action certain activities: illusions of knowledge and/or control, embarrassment 		The SEP model can be applied, with due adjustments, to other contexts where consumers take charge of their decision-making in virtual contexts. The following actions may be relevant to certain activities: illusions of knowledge and/or control, embarrassment avoidance, pursuit of social class membership, mental accounts, and social and institutional safeguards	
37	Going with the flow: predicting online purchase intentions (Korzaan, 2003)	Flow refers to the state occurring during network navigation which is: (1) characterised by a seamless sequence of responses facilitated by machine interactivity, (2) intrinsically enjoyable, (3) accompanied by a loss of self-consciousness, (4) and self-reinforcing (Novak et al., 2000, p. 23). Flow affects the attitude both directly and indirectly through exploratory behaviour. Exploratory behaviour in the context of Internet refers to surfing the web, and clicking the links which is just out of curiosity. On the other hand, attitude strongly determines the intention to purchase via online. The relationship between Flow and Intentions to purchase online was seen as fully mediated by attitude.	
38The implementation of enterprise resource planning packages in different organisational and nationalFour conclusions that provide the basis for better understanding org culture, in order to improve ERP implementations in the presence 		Four conclusions that provide the basis for better understanding organisational and national culture, in order to improve ERP implementations in the presence of diverse cultures: (1) theories of organisational and national culture have similar definitions of culture and share important concepts which include values, beliefs and norms; (2) these theories distinguish	

	cultures (Krumbholz, 2003)	between the deep manifestations and the superficial features of organisational and of national culture; (3) critical determinants of an organisational culture reside more in observable practices, whereas critical determinants of a national culture reside more in the nation's deeper set of values; (4) organisational and national culture can be described using multiple dimensions which give us a set of overlapping facets with which to describe important characteristics of culture.	
39	Determinants of the adoption of e- business technologies (Lal, 2005)	 The study found out that certain e-business technologies were associated with the characteristic of bandwidth used. Availability of higher bandwidth is very important for the Internet and web- enabled services to fully penetrate in India. Quality telecommunications network are required to achieve optimum benefits of ICTs. 	
40	Management in the 1980's (Leavitt and Whisler, 1958)	The researchers predicted that the world of work and the business transactions of organisations will change, from the CEOs and top management down to the rank-and-file employees due to the rapid growth and development on computer technology. Such prediction came to realisation, in fact nowadays, companies run through e-business technologies.	
41	Impact of e-Business initiatives on firm value (Lee et al., 2002a)	E-Business initiatives contribute to the creation of considerable future benefits for companies, reflected in the improved market values. Due to the widespread adoption of e-Business, companies entering into e-Business may be considered more than a simple bandwagon effect or a managerial action mimicking other firms. e-Business announcements enhance the market value of firms and lead to the creation of value for the firms' stockholders.	
42 Why do people use information technology? A critical review of the technology acceptance model (Legris et al., 2003) TAM helps the researcher/ social actors to understand and explain usag model have proven to be of quality and to yield statistically reliable results. that TAM was extended with new constructs yet perceived usefulness and p		TAM helps the researcher/ social actors to understand and explain usage behaviour in IS implementation. It has been tested in many empirical researches and the tools used with the model have proven to be of quality and to yield statistically reliable results. There were cases that TAM was extended with new constructs yet perceived usefulness and perceive ease of use	

		remains the strongest determinants to the IS adoption and implementation.	
43	Managerial Influence in the Implementation of New Technology (Leonard-Barton and Deschamps, 1988)	There were employees who are apt to adopt the new technology even without the management support and on the other hand, employees who merely wait for the management or are dependent to the level of management's eagerness to adopt the innovation solution.	
44 User acceptance of expert systems: a test of the theory of reasoned action (Liker and Sindi, 1997) Expert Systems are systems that problem domain (Turban, 1988). E useful information, perform comp analysis by experts, and remind exp		Expert Systems are systems that mimic the human expert's behaviour in a narrowly defined problem domain (Turban, 1988). Expert Systems can automate routine tasks of experts providing useful information, perform complex series of calculations that can be subjected to what-if analysis by experts, and remind experts to consider options they may not have considered.	
45	<i>State of the art</i> Technochange management: using IT to drive organisational change (Markus, 2004)	Technochange involves both the IT and the organisational changes. Technochange should not be viewed as IT project alone, or organisational change program alone, or the combination of IT and the old organisational system. Rather, the technical and organisational solutions should be integrated in order to meet success for the entire firm.	
46	A Model of Internet adoption by SMEs (Mehrtens et al., 2001)	Three factors determine the Internet adoption by small firms such as (1) perceived benefits, (2) organisational readiness, and (3) external pressure. These factors are based on the participants' Internet encounter through e-mail transactions, web browsing, and having a website. Small firms must be well prepared in all business aspects before adopting Internet-based solutions to avoid failures.	
47	Critical factors for successful ERP implementation: Exploratory findings from four case studies (Motwani et al.,	The most important factor which facilitates successful ERP implementations is having a cautious, evolutionary, bureaucratic implementation process backed with careful change management, network relationships, and cultural readiness. On the other hand, a project which is autocratically handled by top management without considering the organisational readiness and	

	2005)	proper change management will lead to ERP implementation failure. In each ERP implementation phases, critical issues should be managed wisely.	
48The dynamics of contextual forces of al., 2005)The driving forces to technology drifts associated with ERP system and the or these drifts can be explained by the degree of the manager's intentions, affordance and the power or cultural context (social structure). By understandin forces or triggers or consequences of technology drifts, the nature of changes systems can be anticipated and evaluated beforehand; this way, project delays are		The driving forces to technology drifts associated with ERP system and the consequences of these drifts can be explained by the degree of the manager's intentions, the technology affordance and the power or cultural context (social structure). By understanding these driving forces or triggers or consequences of technology drifts, the nature of changes required to the systems can be anticipated and evaluated beforehand; this way, project delays are avoided.	
49	There's no business like e-business (Palmer, 2002)	The following guidelines on understanding the social context relative to adopting innovations were proposed by the Roger Palmer: (1) Develop an understanding of the social norms making them explicit, giving this equal if not greater importance in the innnovation process. (2) Regard tensions in relationships as a positive basis for interaction demonstrating the opportunity to share views, rather than by seeing communication as a one-way process of technology/skills transfer. (3) Social relationships are an important foundation for the development of shared meanings and language. (4) Person to person interaction and facilitation of the process. Avoid technical terms and language that exaggerate differences, develop a mutually acceptable dictionary of terms through dialogue. (5) Accept assumptions, complexity, prevarication, misunderstanding, discontinuity and indeterminacy as normal rather than exceptional. Seek to resolve during rather than before the discussion.	
50	Senior executives' use of information technology (Pijpers et al., 2001)	Effective and increased use of managerial IT tools will provide the senior executives improved access to quality information, which in turn results to optimum decision-making in their jobs. Subjective norm (which was originally not part of TAM) was confirmed not significant in the executive's decision-making, for senior executives are motivated by their own leadership will.	

51	Critical Success Factors in International ERP Implementations: A Case Research Approach (Plant and Willcocks, 2007)	Factors in Three of Somer and Nelson's (2001) proposed CSF were found significant prior to E implementations: A oproach (Plant and proach (Plant and educated is that the international vendors enhanced the knowledge of the project team and educated end-users on new business processes.	
52	How information gives you competitive advantage (Porter and Millar, 1985)	The information revolution is affecting competition in three vital ways: (1) It changes industry structure and, in so doing, alters the rules of competition. (2) It creates competitive advantage by giving companies new ways to outperform their rivals. (3) It spawns whole new businesses, often from within a company's existing operations.	
53	Adoption of new information technologies in rural small businesses (Premkumar and Roberts, 1999)	This study identified 11 important factors on innovation adoption which were categorise in three broader aspects: (I) innovation characteristics (relative advantage, compatibility, complexity, and cost); (II) organisational factors (top management, size, and IT expertise), and (III) environmental characteristics (competitive pressure, external support, external pressure, vertical linkage, and individual characteristics). Such factors were tested and were proven significant towards innovation adoption.	
54	Understanding IT adoption decisions in small business: integrating current theories (Riemenschneider et al., 2003)	In Collected model (i.e. joined TPB and TAM), it appears that the improved social contact (with customers, vendors, etc.) facilitated by the Internet is the driving force behind website adoption, or that no apparent improvement in such contact underlies the hesitance of small business to go on-line. Also, collected model shows that IT adoption is stronger when the constructs of TPB and TAM are joined together than by TPB's alone or by TAM's alone.	
⁵⁵ Are individual differences germane to Perceived usefulness and perceive ease of		Perceived usefulness and perceive ease of use are equally influential on the behavioural intention	

	the acceptance of new information technologies? (Agarwal and Prasad, 1999)	to adopt new information technologies by individuals of different profiles and perspectives such as in terms of technology role, tenure in the workforce, level of education, prior experiences with similar technology, and participation in training. TAM was proven useful for determining user acceptance of information technology based on its constructs which covered the variables manifested by different individuals.
56 The theory of planned behaviour and Internet purchasing (Joey, 2004)		Trustworthiness (under the subjective norm constructs) is the dominant predictor of purchasing through Internet (i.e. online purchasing). George (2004, p. 207) measured the level of trust in the Internet itself rather than measuring the trustworthiness of the Internet merchants. It was found that the consumers seek more of the trustworthiness of the Internet than thinking about the Internet merchant's conduct, whether these business people are honest or not. Direct paths (i.e., without mediating to the intention) of the constructs attitude towards Internet purchasing, the subjective norm, and perceived behavioural control (which was driven by consumers' higher level of self-efficacy) to the actual behaviour resulted to performing the Internet purchasing.
Explaining the role of user 57 participation in information system use (Hartwick and Barki, 1994)		User participation in this study refers to the behaviours, assignments, and activities that users or their representatives perform during the ISD process. Barki and Hartwick (1994) have identified and validated three statistically distinct dimensions of user participation: overall responsibility, user-IS relationship, and hands-on activity. On the other hand, user involvement refers to a psychological state. In Fishbein and Ajzen's (1975) terms, user involvement, as defined in this study, is <i>a belief</i> and it refers to the extent to which a person believes that a system possesses two characteristics: importance and personal relevance. This study argued that user involvement is the mediating factor between user participation and system use whilst the critical dimension of user participation is overall responsibility. The role of user participation and involvement differs depending upon whether the system use is mandatory or voluntary.

5	58	Force of habit and information systems usage: Theory and initial validation (Lumayem and Hirt, 2003)	A construct 'habit' was added to the original TPB model and found out that it is a significed determinant to IT-based system usage. When behaviour is frequently done or simply becamber habitual, this results to the decrease of intentions' influence on the behaviour. Habit the becomes the strongest predictor of actual ICBT usage among the students, far greater than impact of TPB's original constructs.	
59Al-Gahtani (2001) found out that perceived usefulness dominates influence on followed by user's attitude toward IT. Perceived usefulness operates directly on and indirectly through attitudes. Meanwhile, attitude is greatly influenced by the of use than by the perceived usefulness. Finally, perceive usefulness, perceived e attitude remain the most influential determinants to IT acceptance. End-us knowledgeable on the new system's features and functionalities in order to realise		Al-Gahtani (2001) found out that perceived usefulness dominates influence on IT acceptance, followed by user's attitude toward IT. Perceived usefulness operates directly on IT acceptance and indirectly through attitudes. Meanwhile, attitude is greatly influenced by the perceived ease of use than by the perceived usefulness. Finally, perceive usefulness, perceived ease of use, and attitude remain the most influential determinants to IT acceptance. End-users should be knowledgeable on the new system's features and functionalities in order to realise IT acceptance.		
60Social interaction issues is also important in online shopping or purchasing. Virtual interaction in the context of e-commerce can be achieved through having an effective WBS (i.e., Web-based store); by the mere presence of WBSs, by their design and the interaction with the consumers, WBSs present social features, thus becoming a unique in the shopping environment.		Social interaction issues is also important in online shopping or purchasing. Virtual face-to-face interaction in the context of e-commerce can be achieved through having an effective design of WBS (i.e., Web-based store); by the mere presence of WBSs, by their design and their mode of interaction with the consumers, WBSs present social features, thus becoming a unique trademark in the shopping environment.		

The author of this thesis reviewed and analysed numerous IS articles and preferred to present only 60 of them which dwell specifically on topics such as Information Technology (IT), e-business, e-commerce, social aspects, or cultural aspects. IT is the root of the other themes, considering that two of the other themes are but newlydeveloped technologies (i.e., e-business and e-commerce) and the other two are factual aspects (i.e., social and cultural aspects) which are highly influential on business organisations' socio-technical innovation project. IT-based technologies such as e-business and e-commerce require in-depth and comprehensive study on various factors which may facilitate or may impede their adoption by firms and utilisation by the delegated end-users. IT adoption is tantamount to 'IT acceptance' in the sense that a company embraces a new IT-based technology useful for achieving, for example, greater holistic excellence, incomparable competitiveness, and continuous business expansion. End-users are the main actors involved and/or the prospective targets in the IT acceptance goal. According to Swanson (1988), user acceptance is the potential users' predisposition toward personally using a specific system, or in the context of our discussion, using a specific IT-based technology. Thus, several theoretical models (e.g., TAM, IDT, etc.) were developed which allow potential adopters and end-users to better understand the rationalities associated with the realisation of IT acceptance.

Meanwhile, e-business differs from e-commerce in that the former encompasses applications of information and communication technologies (ICT) in all business processes (Lal, 2005), nowadays through ERP systems such as SAP, Oracle, JD Edwards and others which were designed to cater for integrated business systems; while the latter exclusively refers to the sale or purchase of goods or services, whether between business, households, individuals, governments, and other public or private organisations, conducted over computer mediated networks. The goods and services are ordered over those networks, but the payment and the ultimate delivery of the goods or service may be conducted on or off-line'' (OECD, 2002). Also, according to OECD (2002), e-commerce is a subset of e-business. In reference to Table 3-5, most of the preferred articles listed therein feature IT and e-business (over e-commerce) which support the aims of the current study.

Looking at the columns provided for the topics social and culture, more articles focused their discussion on the former than the latter. However, such themes are

interconnected, as the social actors in the social dimension perform the normative actions set by the cultural dimension. As years continue, new traditions in general terms are being developed, in which afterwards social actors form a consensus and regard each newly-developed tradition as part of their culture. The term 'social' simply refers to humans' instinct of interacting with one another. In any given situation where an individual is interacting with other people, whether his or her actions are voluntary or involuntary, it shows that he or she is a social being. On the other hand, culture refers to the manners, customs, and traditions exclusively shared by people in a particular organisation, community, or at large in a region or a country. In the context of IT, social and cultural factors should not be ignored as these are the strongest building blocks which support new ideas, concepts, and systems carried by the *presenters* (i.e., those who introduce things very new to others) and can be accommodated and possibly accepted by the incumbent social actors.

Regarding the methodology columns, three types were utilised by IS researchers: qualitative, quantitative, and the combination of the two, also known as triangulation. Qualitative and quantitative methodologies differ from one another in terms of their structure, objectives, questions given, the approach used to collect data, data analysis, and in terms of flexibility. In regard to flexibility, qualitative is very flexible while quantitative is fairly inflexible. The former allows spontaneity of interactions between the researcher and the participants, thus the quality of data to be collected may improve continuously while the latter is structured as 'as is', that is to say, for example in questionnaires, the analytical results for the answers gathered remains the same as long as it is relevant to the given period in which a certain topic dominates. Examples of qualitative research methodology used for data collection are participant observation, case study, in-depth interviews and focus groups. While for quantitative, examples are surveys, questionnaires provided, correlations study, meta-analysis, etc. Many researchers integrate or combine more than two of the approaches (i.e., examples or types) of qualitative and quantitative methodologies, thus calling this methodology 'triangulation.'

Another point, the theoretical models such as TRA, TPB, TAM, and CST were listed in Table 3-5 to find the number of research works that have utilised them in the IS field. In relation to this, it was found that there are many other theoretical models (e.g., innovation diffusion theory [IDT], actor network theory [ANT], SWOT analysis, etc.) used by the IS researchers in validating the importance of various IT tools and applications in many businesses.

Also, the above tables show that two of Habermas' research works were used in previous IS studies, namely Critical Social Theory (CST) and the Theory of Communicative Action (TCA). Both theories contain the significance of the concepts of lifeworld and system towards the behaviours and actions of the organisational actors. As mentioned many times in the earlier parts of this study, from its mother theories (i.e., CST, TCA, etc.), the author regards such concepts as a new independent theory, thus calling it 'the theory of lifeworld and system.'

According to Habermas (1979, 1984, 1987), the CST perspective is sensitive to the nature of the lifeworld where the actors interact with one another, perform their roles, interpret or map the meanings of their actions and avoid suppression of ideas and propositions which are helpful for the organisation's growth and development (Ngwenyama and Lee, 1997). Thus, the notion of 'system' seems of very little importance to the organisational actors because their own actions and non-stop agreements or consensus are their means to fruitful social dealings. Further impacts of CST in the organisation are presented in Section 3.9.2.

On the other hand, the TCA perspective considers the relevance of the type of language the actors are using, for this will determine whether communicative actions in the lifeworld are producing positive results or not, or whether the communications done by the actors are freely achieving their goals or not because these are being distorted.

In sum, within the combined domains of IT, e-business and social aspects, never has the lifeworld and system theory been utilised as an effective theoretical model for realising new technology acceptance. The articles' propositions written in Table 3-6 also imply that the IS researchers had overlooked the impact of lifeworld and system theory in e-business studies. This is the reason for which the current researcher takes the risk of overcoming the philosophical challenges to prove that Habermas' lifeworld and system theory is applicable for e-business assimilation in the context of Saudi Arabia.

3.6.1 Habermas: actions in social situations

Meaningful actions constitute society. However, if actions are but a result of rules which were set to control the flow of a healthy interaction, then, these actions are meaningless from the very beginning, due to deprivation of the social actors' volitional will toward the given situation. If actions are regulated, two major contrasting implications are evident: the social actors strive hard not to violate the rules so as to avoid the punishments the offenders are subject to, and on the other hand, the social actors suppress their own true selves including their natural ways of dealing and communicating with others - in essence what moves them is the saturation and influence of the rules, not their self-driven holistic freedom. At some point, any restriction is better if its promulgation was derived from the consensus of the people. In a particular community, believing that its outcome is for the betterment of their lives; and on the other hand, it becomes worse when the implementers' main concern is to let its effects manipulate the people regardless of whether they can cope with it or not, which is to say, they have no choice but follow the mandate, otherwise they shall suffer the consequences.

Jurgen Habermas was concerned to emphasise the importance of meaningful actions and the practice of individual freedom. He sought to facilitate profound analysis, whereby people of different social standing would better understand the characteristics of both simple and complex societies. His view was that such knowledge would guide their actions in their environment so that autocratic compulsions would not be necessary but the motivation to do good would be perceived as more beneficial and far greater than any law, policy, rule, regulation, order, command, mandate, decree, statute, and the like.

Habermas was born in 1929 in Germany and was also raised there. His thought was influenced by his experience of the abuses perpetrated under Nazism, and of the Second World War.

In the 1950's Habermas studied philosophy, and he was particularly influenced by the Frankfurt School.

Under these influences, Habermas developed concerns with social justice. He challenged the modern capitalist notion that for any goal to be attained, what must be done should be done. Instead, Habermas argued that there should be an agreement

between the individuals involved in a given situation before executing any action, and that such agreement should be a result of an open discussion, purposeful arguments, weighed validity claims and a balanced consensus.

According to Habermas, communication is central to social interactions because it determines meaningful actions. In his work 'The Theory of Communicative Action', Habermas (1984) emphasised that if communication is distorted, most likely the social actors are bounded by speech prohibitions and therefore will only speak when they are allowed to speak, will only say what is allowed to say, and will only act when required to act. Moreover, their actions will be set by a controlling entity. In this regard, the functionality of communicative action differs in the two types of social situations, which Habermas called the lifeworld and system (Habermas, 1987). To simplify, communicative action is practised in the lifeworld while it is not required in the system because the latter already has its own means of meeting its ends. Communicative action functions in three important ways: (1) in conveying information, (2) in establishing social relationships with others, and (3) in expressing one's own ideas and feelings.

Lifeworld refers to a social situation wherein people actively interact with one another regardless of who they are (i.e. ordinary or high profile members of society, a citizen or a foreigner, etc.) and what capabilities they have (i.e., skills, knowledge, competences, etc.), but what really matters is they act freely to achieve their collective welfare. The term 'lifeworld' was first coined by the German phenomenologist Edmund Husserl and was developed as a concept in sociology by his student Alfred Schutz. Following them, Habermas adopted the concept of lifeworld in his initial works (e.g., Habermas, 1971b) and eventually developed it into a social concept – relating it to his studies on systems theory in the early 1970s (e.g., Habermas, 1976b). System on the other hand, in Habermasian terms, is a social situation wherein spontaneous communications are restricted and actions are regulated.

In his study on Legitimisation Crisis (Habermas, 1976b) Habermas concluded that the system in the form of markets and bureaucracies produces meaningless action on the part of the social actors, because they are prevented from acting in their own way. On the other hand, lifeworld allows the social actors to further explore unlimited ways of achieving things. Based on Max Weber's loss of meaning and loss of freedom concepts, Habermas formulated the concepts of lifeworld and system. In a lifeworld, action is a product of healthy communication and interaction; whilst in a system, action is merely duplicated from the governing rules and therefore has no meaning for the duplicating actor. In a lifeworld, actors are free to express themselves; whilst in a system, actors are required to strictly follow the rules. Meaning and freedom are absent when the system works solely for itself. However, when the system is open to hearing the voices of actors and considering their ideas and suggestions, it can be said that the system did not colonise the lifeworld. Colonisation of the lifeworld begins when from the very start of systemic implementation the system does not care for the interests and the possible reactions of the social actors. However, if the system cares, actions performed by people according to its rules can have valuable meaning when the system is operating based on their recommendations. Therefore, actions undertaken in such a system are not mere duplications, as they were originally created by the acting actors.

3.6.2 The Influences of Jurgen Habermas

Habermas is one of the best known philosophers and social theorists of the critical, neo-Marxian orientation known as the Frankfurt School. He was widely influenced by Max Horkheimer, Theodor Adorno, and Herbert Marcuse. Habermas' ideas of communicative action and the public sphere are known to a number of intellectuals. In addition, he is also known as an advocate of reform and democratisation. Habermas, influenced by Immanuel Kant, created theories that leaned towards moral consensus. Kant's influence on Habermas is vital, as it paved the way for the latter's foundation for the development of democracy and institutions. In addition, the German political thinkers, Friedrich Schelling, G.W.F. Hegel, Wilhelm Dilthey, Edmund Husserl, and Hans-Georg Gadamer also influenced him. Other than the aforementioned, the philosophies of Hegel and Marx also contributed a lot in his endeavour to create a rational and universal foundation for social institutions (Flyvbjerg, 1998). From these influences, he concluded the need to establish a universal constitution of philosophy, social science and social organisation which are important to prevent contextualism, relativism and nihilism (Flyvbjerg, 1998).

Other than this, the philosophy of language also influenced Habermas through the speech philosophy of Ludwig Wittgenstein, J.L. Austin, P. F. and John Searle. In

terms of developmental psychology the theories of moral development of Jean Piaget and Lawrence Kohlberg contributed greatly to his thinking. In addition, the American pragmatist tradition of Charles Sanders Peirce and John Dewey also added together with the sociological social systems theory of Talcott Parsons and Niklas Luhmann (Flyvbjerg, 1998).

Jurgen Habermas drew on the sociological theory of the interactional constitution of mind and self of George Herbert Mead, and the discourse ethics of his Heidelberg colleague Karl-Otto Apel (Flyvbjerg, 1998). He also adopted the traditions of Immanuel Kant and socialism due to his desire to create a more favourable society which upholds the value of reason through discourse (Flyvbjerg, 1998). In this respect he created theories of communicative rationality and rationalisation on the one hand, together with strategic/instrumental rationality and rationalisation on the other. Habermas' inclination towards improving society has created a positive impact not only on ordinary individuals but also on academia as well, hence paving the way for the rise of poststructuralism (Flyvbjerg, 1998).

3.6.3 Habermas' lifeworld and system theory

Habermas introduced the concept of lifeworld analysis, which seeks to understand the meanings of peoples' social actions. In the course of these actions, Habermas said, the lifeworld takes the "integration and latency functions", wherein it coordinates at a ground level (integration) which reproduces cultural patterns, dispositions and resources, such as language, which make social life possible and which other 'parts' of society require (latency) (Barton et al., 2004). Habermas pointed out that due to the rise of the modern society, people now have a relatively broader freedom in terms of adopting norms that they find most suitable for them. Also, the improvement of the economic set-up, together with money as a form of power, has dramatically transformed the economic and political relations in society (Crossley, 2002).

In this respect, the lifeworld, according to Habermas, is a form of societal integration, or "system integration" (Crossley, 2002). Through the lifeworld, a form of agreement between people emerges through the act of finding the balance between inputs and outputs, supply and demand, at the macro-cosmic level (Barton et al., 2004). The emphasis on the workings of the dynamics of the real world is more

important to Habermas as opposed to "idealistic" perceptions commonly proposed by earlier ethical theorists (Leeper, 1996, Bolton, 2005). However, it should be noted that Habermas said that crisis tendencies can happen in the lifeworld when viewed from the perspective of a given social-cultural system (Crossley, 2002). Instances occur of "legitimisation crisis", wherein specific conventions are questioned and eventually norms lose power to the extent that the political system is no longer able to deal with them. Habermas also said that a motivation crisis may also arise, which would pave the way for people's ceasing to reproduce the basic actions that they were formerly accustomed to performing (Crossley, 2002).

Lifeworld for Habermas happens through communication, which he viewed as a linguistic interaction which serves as a way for people to understand each other and come to an agreement. These forms of actions are further divided into "norm-conformative actions" and "discourse" (Crossley, 2002). The former refers to the behaviour of maintaining a habitual attitude of following the status quo, and unconsciously adhering to social norms. The latter, on the other hand, refers to the practice of turning against habits and assumptions and subjecting them to rational interrogation and evaluation (Barton et al., 2004).

It is through discourse that a public sphere is created wherein people come together to have norms questioned, which eventually paves the way for change. It is through the public sphere that the existing state of affairs can be scrutinised and studied, to see if it is still relevant and provides utility, in terms of the consequences that people experience based from its outcomes (Crossley, 2002). Also, specific authorities in the society which were formerly treated as unquestionable, such as government policies or religion, can be opened to analysis by virtue of human reason. It is only in discourse that traditional avenues for identifying a favourable act can be established. It is only through discourse that a valid claim can be established. In addition, Habermas pointed out that it is only through discourse that action for the common good can be arrived at, as opposed to a decision that is only designed to achieve personal goals (Bolton, 2005).

Discourse involves "validity claims", which are claims that are comprehensible, rely on truth and on rightness - a foundation on which citizens can attain a sense of freedom (Leeper, 1996, Bolton, 2005). Habermas also introduced the "ideal speech situation" concept, wherein he deemed as vital the importance of providing an equal opportunity to participate, in which ideas could be put in the open to be challenged and discussed, and wherein all individuals are equal and have the opportunity to influence each other (Leeper, 1996, Bolton, 2005). Although Habermas said that "universal and discourse principles" are grounded in tradition, they can still be analysed and critiqued outside their foundation, which in this case is tradition, in order to pave the way for a more rational thought (Leeper, 1996, Bolton, 2005). In this respect, Habermas said that in terms of public relations, formal codes are only vital to establish a more legitimate form of communication among concerned parties (Leeper, 1996, Bolton, 2005). Policies are vital only to allow for a more effective avenue for reflection and decrease the need for outside interference and create a starting point for inquiry (Leeper, 1996, Bolton, 2005). The lifeworld should reflect practices that mirror the reality that is needed by the current outcome of the discourse created by the individuals concerned (Leeper, 1996, Bolton, 2005). As such, a continuous dialogue is important to create a rationally founded agreement among all people.

However, Habermas provided a number of social processes as challenging this situation. One is "colonisation of the lifeworld", which he described as an act in which the government moves beyond its usual roles and eventually adopts a "surveillance and regulatory" role (Clarke et al., 1998, Crossley, 2002). Consequently, more and more people experience legal regulation, which eventually reduces citizens' freedom, together with their perceived meaning of their lives (Crossley, 2002). The concept of "cultural impoverishment" is also another issue that Habermas describes as a basic social process that has already impinged on citizens' lives, which have eventually become more complex and specialised, so that citizens are no longer capable of fully understanding them, leading to an incomplete and fragmented perception of the world (Barton et al., 2004). In consequence, a decline of the public sphere is perceived by Habermas, whereby citizens have already ceased to deal with certain issues that are of public concern, and instead only concern themselves with their own private demands and interests (Clarke et al., 1998, Crossley, 2002).

Such acts happen through the use of language, which serves functions that no longer reflect the perceptions of the individuals concerned but is used to manipulate the situation and lure listeners to adopt one's perception, which within the context of this

research would be that of the concerned institutions (Bolton, 2005). As Habermas pointed out, the act of concealing information from people leaves them in the dark and incapable of creating an informed decision in a particular situation (Bolton, 2005).

The role of "rationalisation" is important to Habermas as it creates a process in which claims are subjected to criticism and discussion (Bolton, 2005). However, since it is difficult to expose tradition to questioning, the issue arises of the capability to create a more rationalised decision (Bolton, 2005). Again, communicative action is important in the rationalisation process, as norms and traditions such as culture or religion, are replaced by a consensus achieved among the individuals concerned (Bolton, 2005). Removing norms from the pedestal and the replacement of a more rational approach to dealing with vital issues, in this case e-business, is vital, not only in the sense of people's autonomy, but also in terms of improving the economic disposition of a particular country, in this case, Saudi Arabia (Bolton, 2005). In this respect, in Habermas' theory of the lifeworld, the role of communicative action is vital as it "permits interactions … guided by … communicatively achieved understanding" (Bolton, 2005).

3.7 The Lifeworld and System Theory in the Context of Saudi Arabia

To a conservative and religious society like that of Saudi Arabia, it is not easy for the ubiquitous global modernisation to penetrate or affect their ways of living. In particular, information technology, which dominates the many driving forces to modernisation, is confronted by Saudi Arabia's long-standing traditions before it could possibly infuse into it. Countries from different parts of the world have been infiltrated even by the latest trends on cyber technologies, while Saudi Arabia remains very careful and critical in terms of IT adoptions and exploitations due to its strong social and cultural foundation. Anything that is thought likely to harm or negatively affect Islamic faith and values (Al-Gahtani, 2004) is restricted or banned by the Saudi government and religious authorities.

However, Habermas' concepts of *lifeworld* and *system* can nevertheless be applied to Saudi society, as will be seen. Habermas, in developing those concepts, paved the way for researchers in various fields to conduct social analysis in which society is

constructively criticised and assessed, so as to realise the most valuable recommendations for dealing with it. What follows is a detailed discussion of the concepts of lifeworld and system, highlighting their significant features as seen in Saudi Arabia, which would provide more understanding on e-business adoption decisions.

3.7.1 The 'lifeworld': developing understanding through communicative action

The 'lifeworld' is a concept wherein the social actors in society interact with one another through 'communicative action' in a given speech situation (Stahl, 2002). It accommodates the execution of 'communicative action' among the social actors in which ethical debates are allowed in order to create consensus (Bolton, 2005). There are three types of validity claims which the social actors exhibit: the claims of truth, rightness, and veracity. Whenever one of the actors says something, the assumption is whether it is true, right, and truthful or *not and can never be any of the three*. If doubts arise regarding such a claim, the discourse is again set for the actors to settle for clarification and understanding. Lifeworld develops from a network of communicative actions made of social spaces and historical times (Habermas, 1998).

Humans in Habermas' view are social beings, and therefore need to communicate with one another in order to survive and prosper. From his perspective, an ideal communication is a communication which is not manipulated and regulated by power relations (Heng and Moor, 2003). In other words, he advocates that people having the freedom to express their thoughts, opinions and concerns on matters that would affect their welfare is advantageous, rather than making them 'robots' who only speak and act when the button is pressed by somebody who is superior or in authority. Each person has the instinct to initiate 'to speak up' or 'to act right away' because of his or her innate will to survive while living in this world. However, for the purpose of order and maintaining respect towards one another, social actors, during the conversation, must speak one at a time - having the balanced communicative freedom to speak, listen and evaluate the words spoken (Habermas, 1996). Habermas proposes this kind of communication through his work known as the 'theory of communicative action' where social actors are seen as practising undistorted communication which is a result of a good and well-rounded argument provided in an open discussion.

Three *structural components* of the lifeworld are culture, society, and personality (Baxter, 1987, Habermas, 1984). Culture or the 'cultural tradition' moulds the individual's inter-conforming ways and value-standards; society or the 'societal order' institutionalises individual interactions as per level and category; and lastly, the 'personality' holds and manifests the social actor's motivations and capabilities. These three components are inherent in every social actor in the lifeworld and are usually vulnerable to changes. These are analysed below within the context of Saudi Arabia.

1. Saudi Arabian culture mainly revolves around the Islamic religion. Most notable to the culture is their intimate devotion to and worship of Allah by following the teachings of the Prophet Mohammed and the Holy Quran. The majority of the Saudi population adheres to a theological interpretation within Islam most commonly known as *Salafism* or *Wahhabism*. As Muslims they pray five times a day. During the whole month of Ramadan, they 'fast' from sunrise to sunset every day. Public practice of any religion other than Islam is strictly prohibited. The Saudi government enforces a strict and conservative version of *Sunni* Islam. The judicial system is based on Sharia Law, rooted in the Holy Quran.

Islam governs all aspects of life, for example food intake; eating of pork and drinking alcoholic beverages are forbidden by the Islamic dietary laws.

Arabic remains the official language. The media are mainly in Arabic, which is prioritized over foreign languages. In government, as well as private businesses, almost all the names of establishments are in Arabic, written above the equivalent foreign language names. Men normally wear a long robe and head covering. Women are required to cover their bodies. Foreign women are also required to adopt this manner of dressing.

2. Saudi Arabian society practices the custom of 'tribalism' where every Saudi citizen is loyal to his or her tribe. He or she prioritises his or her own tribe, the extension of his or her family unit, at all times for any reason. In decision-making and problem solving, it is usual to consult the immediate family as well as the other members of the tribe, especially the elders, and the learned or educated ones. Women are not allowed to associate with men who are not their

relatives. In doing business, tribal Saudis often commit 'nepotism', out of a preference for the people involved in their business to be those whom they know well; relatives are assumed to be trustworthy because it is believed that every tribe member has the desire to promote the success of his or her relatives' businesses. Relating the Saudi Arabian society to the study of Hofstede (1980) in his or her four cultural dimensions, it can be said that Saudis are *high* in 'power distance' (acceptance that power is distributed unevenly), *high* in 'uncertainty avoidance' (people work to avoid ambiguity or anxiety), a 'collectivist society' (valuing the group; e.g., tribe) rather than individualist, and a 'masculinistic' society (gender values that dominate; e.g., patriarchal) rather than feministic.

As regards education, Saudi people, today, have many colleges and universities. Education of every citizen is largely sponsored by the Saudi government, including sending students abroad for the purpose of higher education.

3. Saudis' personality is also aligned with the Islamic faith and values. They are totally dependent on the 'will of God' so it is 'automatic' for them to utter 'Inshallah' during conversations. 'Inshallah' signifies that God is in control of everything and that all, regardless of social status, should submit to the will of God. Saudis are the most conservative people among all the Arabs, not just in terms of applying the teachings of Islam but also in maintaining their traditional customs and values. In fact, their personality is rooted from the Bedouin cultural heritage such as freedom; independence; tribal loyalty; pride; self-respect; strong respect for the elders; focusing on the time frame of months and seasons; emphasising reputation; emphasising personal relationships (Anastos et al., 1980).

3.7.2 Colonisation of the lifeworld

In the following section, 'system' is used in the sense contained within Habermas' analysis of system-lifeworld.

The force whereby action is regulated and communication restricted, colonises the lifeworld simply by means of established laws, policies, standardisations, and the like. When the social actors who participated in the open discourse came up to a

unified agreement, this becomes a strongforce for colonisation. Final agreement or consensus may then be presented in the form of laws, policies or standards. When the statement is declared as a law, a policy, or a standard, its effectiveness is official, having power over the actions of the social actor belonging to the 'area of responsibility' of the 'lifeworld': that anyone who violates it is subject to disciplinary action or appropriate punishment; for example in the field of Human Resource Management, work suspension or termination for insubordinate employees; in the judicial fieled: capital punishment for a murderer. Other examples of colonisation are the monetisation of transactions, markets, and bureaucracy (Bolton, 2005).

System/Lifeworld theory presents a two-level concept of society, and demonstrates the problems that arise when the steering media of the system replace and disturb communicative action in the lifeworld (Habermas, 1987).

Habermas uses Husserl's definition of lifeworld as consisting of "individual skills, the intuitive knowledge of how one deals with a situation; and from socially acquired practices, the intuitive knowledge of what one can rely on in a situation, not less than, in a trivial sense, the underlying convictions" (Habermas, 1987, pg. 35).

Therefore, when people fail to reach agreement in communication they move to discourse to re-establish agreement. As the knowledge of an individual is shared, the need for discourse is experienced less. However, as societies have dramatically grown, such discourse has become more complex and diverse. Therefore, the ability to reach an agreement becomes more difficult and the need to move communication to the level of discourse becomes more frequent. As a result, approaches have emerged which relieve the need of having to reach an agreement on any issue. Colonisation can in some ways be seen to serve a useful purpose in society, by diminishing the burden of reaching agreement on every issue that becomes problematic in a differentiated and complex society. In the Theory of Communicative Action, Habermas (1987) recognises two main sub-systems: the economic system and the political system. Such systems are sites of strategic and instrumental action rather than the communicative action that characterises the lifeworld.

"The economic system refers to the value (goods and services) created by the society's modes of production. The administrative system brings technology, both administrative and scientific, to bear on the economic system as part of the resource, both human and material, transformation process. The lifeworld represents the social system dimension within which cultural norms and values are discursively formulated by the participants and ideally, provides the legitimating grounds for the actions taken by the administrators of the modes of production as well as the distribution of the wealth generated by the economic system" (Dillard and Yuthas, 2006, pg. 209).

At first, communicative action has the purpose of "cultural reproduction, social integration, and socialisation" (David and Lars Bo, 2002) (which corresponds to the three structural components of lifeworld such as culture, society and personality) but eventually systemic forces squeeze it out (Figure 3-7).

Communicative action, in terms of reaching understanding, reproduction of cultural knowledge is promulgated; in terms of coordinating actions, social integration and the strong foundation of unified mission, vision and core values are made possible; in terms of socialisation, personal and community identities (Habermas, 1987) are given greater emphasis. The designated authorities in charge of the system's rules and regulations restrict the practice of communicative action to prevent the social actors from presenting their oppositions and recommending logical amendments. Thus, the social actors tend merely to act in accordance with the system so as not to put themselves or their welfare at stake. The social actors in the lifeworld, or the lifeworld itself is 'colonised' by the system because communicative freedom (Heng and Moor, 2003, Habermas, 1996) is bounded or even abolished so that their actions are now based on mandate and compulsion (Figure 3-7).

Reviewing the notion of communicative freedom, Habermas (1996) argued that it is the possibility of responding to the utterances of one's counterpart and to the concomitantly raised validity claims – the communication here is simply reciprocal between both the speaker and the listener. Yet, within the 'system' formed, social actors can only speak up if they are allowed or requested to do so. However, usually, the system chooses only some of the social actors, not all of them, to voice their concerns; only those who, according to the system, are worthy and capable of producing innovations and development. At this point, the system sets aside those who do not meet its required qualification (of course with bias according to its own evaluative measures) for people joining the convention, even though they too may have the desire to share their ideas.



Figure 3-7 System: colonisation of the lifeworld

Now, we shall look at a particular 'system' actively enforced in Saudi Arabia. The country formulated and implemented its labour regulations known as 'Saudisation', for the purpose of ending unemployment of Saudi citizens and decreasing dependence on foreign workers. Thus, the term "Saudisation" refers to a development strategy that seeks to replace foreign workers with Saudis. To date this has been largely accomplished through various employment quota targets – i.e. regulating by law the percentages of foreign employees allowed to work in different companies (Saudi Economic Digest, April 2005).

Relating to the business organisational context, it can be said that 'Saudisation' is a contemporary vehicle of Saudi Arabia's tribal cultural heritage: valuing and prioritising their countrymen or tribesmen over the foreign workers who are but strangers to them. Nowadays, in different areas of business, deployment of Saudi women to replace foreign women is also happening, such as in the hospitals, and in private offices. Many contentions relative to Saudisation arise, for example, employment of Saudi workers who do not fit the position and its job description, in order to comply strictly with the rule of filling up the required number of Saudi workers. In this case, colonisation of the lifeworld by the system is again evident, where the company is the lifeworld; where the system is 'Saudisation', and where the social actors in the persons of Saudi citizens are well-benefited while social actors in the persons of foreign workers seem to be demoted, uncomfortable and unsatisfied. Moreover, the communicative freedom of foreign workers is constrained. It may be that due to the Saudi government's continued support of its education sector with the aim of equipping students to work in all companies operating in Saudi Arabia, the time will come when the Saudi workforce is more than enough to fill all the jobs in the whole country. Thus, the goal of the Saudi Ministry of Labour of decreasing dependence on foreign workers will be achieved. Ultimately, however, foreign workers may still prefer to stay working in Saudi Arabia, only each of them will need to have a 'mind set' to follow the Saudi labour regulations instead of ever complaining against them and ending up as losers in the 'game of survival.'

3.7.2.1 Changes in Saudi Arabia

Many factors contribute to the changes happening in Saudi Arabian society. All sorts of media, telecommunications, recruitment and deployment of foreign workers,

rise of foreign establishments, international expansion of local businesses, education taken from other countries, and personal attitudes and behaviours are among the major factors of transformation behind the 'coming-ins' and 'going-outs' of Saudis. The new social media influence human minds. As for the Saudi people, the Internet subtly teaches them to act in an 'overly-liberated way' in terms of clothing, and in interacting with others, be it in words or actions. Some people are questioning why the government allows things (i.e. goods such as western-style clothing; and services such as movie videos, etc.) to enter into the country, which they fear in the long run would harm the country's identity. However, if foreign products and services are not accommodated, the country will be left behind in aspects of global modernisation, and eventually will lose the respect of other nations.

3.7.3 Lifeworld and system theory in the conduct of the Internet in Saudi Arabia

Saudi Arabia enforces restrictions on the use of the Internet. This is in pursuit of preserving the moral and spiritual standing of Saudis as Muslims, believers and servants of Allah, in the confines of Islam. Websites which are thought likely to harm their social identity as conservative people are blocked right away. However, the use of the Internet for education, business innovations, and sharing the dogmas of Islamic faith are given important emphasis. Here we can see how the Saudi government, as the 'system' advocate, regulates the use of information technology, the Internet in particular. Things that it believes would put its citizens (the social actors) at risk are disregarded, while things that it views as beneficial are supported. In this way, the Saudi government implements the 'system'.

3.7.3.1 The key word is 'balance'

When the 'system' is formed, though it controls the 'lifeworld' on the one hand, it provides order (i.e. well-organised pattern for actions) for the social actors, which is highly commendable. What matters is that the authority which runs the 'system' should look at the more favourable welfare of the whole society so that the social actors would not revolt against the regulations thinking that they also have the realisation whether these are imposed for their greater benefits and advantages or not. Saudi nationals perceive that prohibition of the negative influences of web technology is important for maintaining their standards on morality. Therefore, all private and public sectors which use the Internet support this rule. On the other hand, offenders are punished.

We can see that the Internet is a clear realisation of what Habermas aspires to: the emancipatory appeals of the lifeworld, where communicative action is free of boundaries among the social actors. Internet end-users, regardless of age, gender, level of education, profession, and social status can exchange communication via email and 'on-line chatting' free of restrictions in terms of the type of words they speak and write. Saudis are among these Internet end-users. In this case, there seems to be a battle between the preservation of national identity and globalisation brought by the information and communication technology. For example, in the physical realm, Saudi women are not allowed to associate and to talk with men (Saudis or foreigners) who are not related to them; but in virtual communication, conversation between the genders is happening. This is just one of the many conflicts between the Internet (as a manifestation of Habermas' lifeworld concept) and the Saudi Arabian society. We can say, then, that Habermas' concept of lifeworld is not always applicable to the context of Saudi Arabia because numerous 'systems' had been established by that country before Habermas had ever made his propositions on social issues and philosophies.

3.8 The Saudi Culture: in general terms

It is useful to review the culture of Saudi people which defines their conduct and behaviour. Saudis' culture using the socio-cultural dimensions of Hofstede (1980) and Hall (1976) can be presented as:

Dimension	Description	Dominant Culture Evident to Saudis' Behaviours	
Power Distance	Acceptance that power is distributed unevenly	High in Power Distance: Saudis give high honour (or respect) to their elders, as well as to their community and religious leaders (e.g. Imam, the Saudi Royal Family, Government Officials); that without a tight relationship ('connections'), it could be hard for anyone to have access to these authorities	
Uncertainty avoidance	People work to avoid ambiguity or anxiety	High in Uncertainty Avoidance: It takes time and testing on loyalty before Saudis could trust anyone (especially the foreigners); they are too conscious of seeking maximum assurance	
Individualism/ Collectivism	Culture which values group or individual	Collectivist: Inherent to Saudis is their culture of 'tribalism', that in all kinds of affairs, they seek consultation from their tribes and families before coming up to a decision	
Masculinity/ Femininity	Gender values which dominate	Masculinist: Saudi society is patriarchal; masculine roles are above the feminine roles; men are protectors and providers to their families while women are nurturers to their children and managers of household chores; however, in terms of gender values, Saudis are usually affectionate and are humble to Allah.	

Table 3-7 Hofstede's (1980) four cultural dimensions in context of Saudi Arabia

Table 3-8 Hall's theory of intercultural communication (Hall, 1976)

High Context	<i>Communication situations</i> in which most of the information is in the physical context or internalised in the person, while very little is a coded, explicit, transmitted part of the message.	High Context: In terms of communicating with others, Saudis prefer a face-to- face interaction. Trust is important to them. If they trust you, whatever you say is highly regarded. Whether you say much or few words is not an issue to them. Indeed, you must be trustworthy; otherwise they will not entertain you.
Low Context	Communication situations in which the mass of the information is vested in the explicit code. Senders assume little or no shared knowledge with receivers. Higher information load can include so called meta-messages such as <i>emotional</i> <i>tone</i> .	Not a Saudi-type of communicative behaviour.

Now, the question is 'How would analysis through the lenses of TRA, TPB, TAM, TOE, and Habermas' Lifeworld and System Theory represent the social actors of Saudi Arabia with regard to e-business assimilation?'

As has been said earlier, TRA proposes that one's behaviour is determined by his or her intention (BI). On the other hand, his or her intention (BI) is concomitantly weighted by attitude (A) and subjective norms (SN). However, Saudi Arabia is a country of distinctive culture and values as compared to Western countries. In terms of Saudi companies' intention to adopt e-business, TRA would be ineffective because it lacks an 'action control' domain, into which the Saudi government's rules and regulations for Internet activities would fall into.

A modified TRA, TPB contains the perceived behavioural control (PBC) construct, which would accommodate the national policies of Saudi Arabia on Internet usage, yet this domain manifests a weak functionality when individuals attitude toward the desired behaviour is too high (Hansen et al., 2004) or when 'trustworthiness' of the individual to the people around him is too strong (Joey, 2004). Or in some cases, other constructs such as 'habit', need to be added into the original TPB to enhance its effectiveness in determining the actual behaviour.

According to Al-Gahtani (2004), TAM (which is also derived from TRA) is useful for determining IT acceptance or e-business assimilation goals in particular. However, TAM lacks the behavioural control component. In the context of Saudi Arabia, control towards the intended action is important. In application, control towards e-business assimilation is necessary because Saudi government does not allow any globalisation medium which it beleives would negatively affect its citizens' conservative Islamic faith, values, and holiness. E-business is rewarding but it should function congruently with Saudis' business customs. Yet, the 'action control' domain is not enough.

The constructs of the TOE model (Tornatzky and Fleischer, 1990), it might be argued, are also insufficient to be able to cover the issues on e-business assimilation in a place or in a situation where people expect that their lives will not be at stake. TOE only covers technological, organisational, and environmental factors; thus, social and cultural factors are neglected. However, Saudi people are not easily influenced by technologies unfamiliar to them; therefore, their social norms and culture must be studied first in order to come up with a new technology that fits them.

Indeed, what Saudi Arabia needs is a profound understanding and consideration of its social and cultural factors. That is why Habermas' lifeworld and system theory is chosen to add further understanding regarding the issues on technological innovations to be undertaken by the Saudi companies.

3.9 Why Habermas' Lifeworld and System Theory?

Habermas' lifeworld and system theory is fundamentally derived from the same author's research work on the Theory of Communicative Action (Habermas, 1987, Habermas, 1984). According to the theory of communicative action, knowledge is shared by the social actors based on their meaningful dialogues, understandings and agreements. Another grounding work of Habermas is the 'Theory of Knowledge Constitutive Interests' (Habermas and Shapiro, 1971) wherein he stated that all human endeavours (or actions) are performed for the purpose of fulfilling the three constitutive or cognitive interests: technical, practical, and emancipatory (Shah and Clarke, 2009). Thus, communication, knowledge, and human actions are not separated because these are the components of healthy social interactions. Communication is people's major means for understanding in order to accomplish things. Technical know-how is imperative to developing and using a technology for easier living. Lastly, human actions are behind all the achieved goals.

Habermas' lifeworld and system theory is proposed as the most applicable approach to e-business assimilation in Saudi Arabia for two key reasons: i) because the companies therein are operated by mostly people-centred management, that is to say, the manpower's social aspects should neither be neglected nor be disregarded; and ii) because, as has already been discussed, the general cultural environment in Saudi Arabia is such that system is much more intricately linked with lifeworld than in western industrialised economies.

This section will discuss the underpinning rationale for adopting Habermas' lifeworld and system theory in this study. It begins with a review of the four paradigms for analysing the social theory, presenting the critical social theory as a type of radical humanist paradigm, and in the last part, an initial conceptual model relative to e-business assimilation in the context of Saudi Arabia is offered.

3.9.1 Four paradigms for the analysis of social theory

Burrell and Morgan (1979) developed the four paradigms of organisational analysis based on the premises of the major debates in sociology, such as whether reality has an objective disposition, that is, it exists irrespective whether there are agents perceiving it; or whether it is dependent on the human mind, so that it would cease to be relevant if there are no free agents that make use of it (Haas, 1992). In addition, there is a debate on the epistemological foundation of things, such as whether understanding, or knowledge for that matter is *a priori*, that is, before experience, or *a posteriori*, after experience (Battersby, 1991). The aforementioned debate in sociology states that knowledge has two sources, and philosophers and sociologists argue as to which of them, if any, is significantly more sound than the other. The proponents of the *a priori* tradition or the Rationalists claimed that knowledge is independent of experience and can be attained by means of human reason, and more particularly of logic. On the other hand, proponents of the *a posteriori* tradition or the Empiricists argued that knowledge *could only be attained* from experience (Haas, 1992).

The problem of the existence of human freewill is also pointed out to be an illusion by some, who take a highly deterministic view, seeing human action as a result of the interplay of various forces in the environment, or as argued by some schools of thought, by the psychological and biological make-up of an individual (Battersby, 1991). Thus, the problem of whether knowledge acquisition is a product of the scientific method or occurs through direct experience has been much debated (Haas, 1992).

These vital issues raised by sociologists were later on summarised into two major issues that formed a two by two matrix: First, the emergence of claims of the importance of social theories which emphasise regulation and stability, versus those theories that impose a radical change; and second, a conflict between subjectivist or individualist theories versus objectivist or structural theories (Battersby, 1991).

In relating this to the theory of Habermas, it could be said that individualistic theories assert that knowledge comes from respective individuals by virtue of what is needed at the moment, without necessarily taking into consideration the norms and dogmas initially practised in the society (Battersby, 1991, Matejko, 1986). In this

respect, it could be said that individualist theories are framed in accordance with the postmodernist tradition of philosophy, wherein knowledge is gained based on the experiences of individuals who are directly affected in a specific situation. On the other hand, structuralist theories could be seen as the frameworks that have already existed in society for such a long time, that they have become deeply ingrained in people's way of life (Haas, 1992, Matejko, 1986).

Based on the arguments stated above, Burrell and Morgan (1979) claimed that there are four major paradigms that are adopted within organisations; these are the: Functionalist Paradigm, Interpretive Paradigm, Radical Humanist Paradigm, and finally, the Radical Structuralist Paradigm (see Figure 3-8).



Radical Change, Conflict, Domination

Regulation, Voluntary Concensus, Integration
Nature of Knowledge

Figure 3-8 Four Major Paradigms that Affect the Organisation (Burrell and Morgan, 1979)

The figure above shows the four major paradigms as claimed by Burrell and Morgan (1979) and their respective orientations, being subjective or objective, and initiating a radical change, conflict or domination, or alternatively, regulation, voluntary consensus and integration. Each of the paradigms is discussed below.

3.9.1.1 The functionalist paradigm

According to Burrell and Morgan (1979) the Functionalist paradigm has been the major paradigm that is normally accepted for organisational study. It assumes that human action is rational and could be understood through the process of creating and testing hypotheses. The functionalist paradigm is an objective approach to understanding the social world; individuals who are within this paradigm look toward the relevance of applying the status quo, social order, and various kinds of agreements. In this respect it could be said that they are realists, positivists, determinists, and nomothetic (Haas, 1992).

Truth is seen as already existing in the world; it just needs to be identified through specific processes, and value-free investigations. Functionalists normally do this through surveys, experiments, and content analyses (Haas, 1992, Matejko, 1986).

3.9.1.2 The interpretive paradigm

The Interpretive Paradigm, on the other hand, explains the behaviour of individuals in respect of their views. People who adopt this paradigm try to observe a continuous process of observation, to understand effectively the behaviour of people and eventually of the world (Battersby, 1991). Interpretive individuals consider that science and logic disregard the social dynamics that significantly contribute to the human perception of reality (McPhail and Rexroat, 1979, Matejko, 1986), they view reality at a micro level, focusing on small social dynamics and the role of people in creating realities. The interpretive paradigm brings contextuality into the reality known to human beings, and seeks to apply it in order to resolve problems (Haas, 1992, Matejko, 1986).

3.9.1.3 The radical humanist paradigm

The Radical Humanist Paradigm focuses on identifying constraints that limit people's potential. Often, Radical Humanists see the existing dominant ideologies as different from the true selves of people. This paradigm is normally used to justify the need for a revolutionary change (Battersby, 1991). In this respect, this paradigm is normally anti-organisation in approach. People who adopt this framework want to release people from the constraints that they face, with the aid of their reason. In this way, Radical Humanists believe, people can be transformed and emancipated. This

paradigm puts immense importance on the capacity of people to create their own reality and adopt a course of action that is most appropriate to them.

3.9.1.4 Radical structuralist paradigm

Finally, the Radical Structuralist Paradigm is a framework that asserts the existence of inherent structural conflicts within society, which paves the way for change through the process of the emergence of political and economic crises. Radical structuralists view reality as objective and concrete and use scientific methods in order to explain the state of affairs. This framework emphasises the existence of dialectical relationships of people within society and are concerned with structures that create contradictory and antagonistic relationships and breed problems (Battersby, 1991, Matejko, 1986). The solution, in their view, is a radical transformation, attained through the social division of labour. Through this process of transformation knowledge can be attained (Haas, 1992, Matejko, 1986).

3.9.2 Critical social theory: representing the radical humanist paradigm

The *critical social theory* (CST) (Habermas and McCarthy, 1979, Habermas, 1984) is one of the theories belonging to the Radical Humanist Paradigm (Shah and Clarke, 2009). CST holds importance to the following considerations (Ngwenyama and Lee, 1997):

- 1. Understanding the lifeworld of the organisational actors towards interpreting and mapping the meanings of their actions.
- 2. Organisational actors are not passive receptacles but they are intelligent actors who assess the truthfulness, completeness, sincerity, and contextuality of the messages they receive.
- 3. Adoption of pluralistic methods of inquiry for the research such as participation, observation, and the analysis of contextual data.
- 4. The subjects of inquiry and the organisational context should not be separated.
- 5. Organisational context is important for both the formulation of meaning and the social activity.
- 6. The researcher not only attends on matters of mutual understanding, but also on matters of emancipation of organisational actors from false or unwarranted beliefs, assumptions, and constraints.

7. The researcher is not a mere observer but is both influencing and being influenced by the social and technological systems he or she is studying.

In the end, all social actors can go beyond conforming to the present interpretation or meaning of social actions in the lifeworld; thus, they have the utmost freedom to argue, pursue and claim what they think are beneficial to them. CST, like the principles of the Radical Humanist Paradigm, simply promotes positive transformation through social actors' awareness of their environment.

3.10 The Initial Conceptual Model

Analysis and critique of the aforementioned theoretical models (i.e., TRA, TPB, TAM, and TOE), have led to the adoption in this study of Habermas' *lifeworld* and *system* theory, not least because of its emphasis on the social actors as active members of the society who do not just create but also regulate their ways of living.

This study will find out how *lifeworld* and *system* influence e-business assimilation in the context of Saudi Arabia. Relative to this purpose, the initial conceptual model is presented below:



Figure 3-9 Lifeworld/System theory when utilised in e-Business Assimilation
Figure 3-9 shows that emancipated actions characterise the lifeworld in which people are free of restrictions. However, in pursuit of e-business assimilation, the lifeworld is colonised by the system through the regulated actions brought about by the government and the changes required in order to adopt new technology. It is noted that since the beginning, a government was basically established by the social actors for the purpose of embracing things that are beneficial to them while avoiding harmful things. On the other hand, current technological development is a result of globalisation which brings difficult challenges to the people living in this information era – the quest for their survival.

In the context of Saudi Arabia, lifeworld and system theory has the ability to accommodate and resolve the issues that the various sectors (e.g., government, religious groups, traditional businesses, etc.) may present. This theory explains why people are able to come up with new set-ups despite the complexities of the situations they encounter, and thus live harmoniously after all. The very key is considering the welfare of all the parties involve and analysing the outcomes of the decisions made for the whole society.

3.11 E-Business and the Lifeworld and System Theory

E-business usage has social implications and therefore Habermas' Lifeworld and System Theory is an appropriate instrument for analysing this new technology so as to come up with clear understanding that is useful for future IT-based technology adoption and assimilation (Hirschheim et al., 1996, Ojelanki and Allen, 1997, Janson and Cecez-Kecmanovic, 2005). Lyytinen and Klein (1988) were the first to propose Habermas' theory as a basis for information systems.

In IS literature, researchers conclude that for Habermas, information systems development (ISD) is "conceptualised as a form of social action" (Hirschheim and Klein, 1994).

To reiterate, lifeworld is a social situation wherein people are free to express themselves in words and in actions while system is a parallel social situation in which people are bounded by restrictions or are controlled by the established norms they themselves had created (Crossley, 2002). What counts in approaching these two types of social situations is their meaningful action – that is why Habermas felt it important to analyse and emphasise the essence of social actions, and their impact on different life aspects (Habermas, 1987).

Combining e-business and Habermas' lifeworld and system theory (Habermas, 1984), the dominant issue is the social aspect. This is because people or the social actors are the primary originators or seekers of developmental changes (Baxter, 1987, Habermas, 1984). However, the other aspects and the factors therein that are significant in attaining positive changes, specifically on business change efforts, should not be, and are not, disregarded. Next to the social aspect, other aspects given importance are the technological (Rogers, 1983), organisational (Kraemer and King, 1981, Moreton, 1995), and cultural aspects (Hofstede, 1980, Hall, 1976). It is assumed that initial problems come from the social aspect (Habermas, 1984) and therefore it is necessary to master how to avoid the occurrence of difficulties (Baxter, 1987, Habermas, 1984). These aspects have characteristics worth considering in relation to e-business. Thus, e-business is affected by these aspects and so they can also be named as factors determining its success.

Finally, though e-business challenges the resilience of the social aspect, nevertheless its entrance to the organisation can be fully welcomed or accepted if people's concerns are properly valued (Yasin and Yavas, 2007b). Handling the social actors in such ways that their basic rights such as the right to active communication, social interaction, and social responsibility (Habermas, 1996), are neither distorted nor disrupted will make e-business an effective means for business' developmental change (Janson and Cecez-Kecmanovic, 2005).

3.12 Stages of e-Business Assimilation

Based on the innovation diffusion literature (Rogers, 1983, DeLone and McLean, 1992, Sethi and King, 1994, Chatterjee et al., 2002), there are three stages of ebusiness assimilation (see Figure 3-10). The first stage is e-business initiation wherein the company is evaluating the potential benefits of e-business, whether it could be effective for resolving the problems they have at present. The second stage is e-business adoption, wherein the company has decided to accept the entrance of ebusiness and is then making plans as to how the project should be executed. And the last stage is e-business routinisation, wherein e-business is implemented and continuously utilised by the company into its entire operations.



Figure 3-10 Stages of E-business Assimilation

Integrating e-business, the factors determining its assimilation success, and the lifeworld and system theory, a more mature conceptual model is developed for e-business assimilation, which will be discussed next.

3.13 The Stage 2 Conceptual Model

At this point, the factors that determine the success of e-business assimilation are discussed; and inherent in those factors, consideration is given to how the concepts of lifeworld and system work in each of them.



Figure 3-11 Stage 2 Conceptual Model: E-business Assimilation Model (EAM)

Grounded in the four major factors determining the success of e-business assimilation, the assimilation stages, and the assimilation contexts discussed above, the stage 2 conceptual model is developed as shown in Figure 3-11.

Compared to the previous theoretical models such as TRA, TPB, TAM, and TOE, the e-Business Assimilation Model (EAM), whilst more complex, is easier to use for conducting e-business assimilation projects in a company where people are the most valued among all the organisational assets. Section 3.8 has discussed the weaknesses of the aforementioned conceptual models in terms of e-business assimilation goals.

Organisational and technological factors should conform to the requirements and restrictions of cultural and social factors. Meanwhile, cultural factors and social factors function in a 'vice-versa' connection, wherein cultural factors are acted upon by the social factors while social factors are subject for evaluation whether or not each human action therein would become a normative culture; however, the final outcome of the consensus is dependent on social factors. Social factors inherent in and/or accumulated from other factors determine the type of system agreed upon, and consequently such a system assesses the characteristics of e-business in pursuit of the social factors' acceptance and continuous usage. The arrows from e-business acceptance and usage constructs pointing to the system signify that e-business initiatives should not disregard the current system established by the social factors; rather, cautious modification is best required. It is suggested that all these constructs determine the success of e-business assimilation goals.

Moreover, the model includes the constructs lifeworld and system. The construct lifeworld determines the characteristics of the four major factors, that is to say, people in the organisation have their own established ways or standards for dealing with matters but these are open to positive changes according to their conversations and agreements. In contrast, the construct system is actually their agreements, which have been declared official and should be followed or carried out by all of them; yet these agreements, as the environment changes and the time passes by, can also be amended if they are no longer applicable in their present situations. Thus, the theory of lifeworld and system when utilised in pursuit of understanding the factors relative to e-business assimilation in the context of Saudi Arabia can bring out effective strategies or techniques to deal with people who are compelled by their strong Islamic faith and cultural values.

The application of lifeworld and system theory to e-business assimilation is very important in Saudi Arabia compared to Western countries because the former runs its businesses based on culture and religion, while the latter operate their businesses in systems which are intellectual, individualistic and secularistic in nature.

The next chapter will present the perceived strength of this model wherein lifeworld and system theory is working behind every business activity.

3.14 Conclusion

The literature reviewed in the preceding sections establishes several important points regarding technology adoption. First, when looking at technology adoption or ebusiness as e-technology in particular, it is not enough to focus on the technology itself. Decisions about technology and the way it is used are likely to depend on or be influenced by various contextual factors, including the characteristics of the organisation and the nature of its business.

Second, organisational entities are ultimately social entities, in which sense the success of a particular technology is ultimately predicated on organisational / employee attitudes. While some e-business research (Yasin and Yavas, 2007b) has explored such factors in a limited way, most studies of the e-business literature have neglected them. Hence, reviewing and critiquing the impacts of the three theoretical models such the TRA, TPB and TAM provided direction on how to assess the intentions on e-business adoption. However, these three established theoretical models failed to cover the general significance of the social and cultural factors. Similarly, the TOE, it is argued, lacks substance pertaining to the roots of social actors' attitudes and behaviours imperative to embracing the culture of the new technology and so avoiding rejection.

Third, business and commercial transactions are, in the final analysis, social transactions, in which sense the transformation of the medium through which transactions are conducted is bound to have a social impact. Accordingly, it is expected that the adoption of e-business in KSA firms is not only predicated on social and cultural, as well as technological and organisational factors but will, in turn, have definitive intra and extra organisational social impacts.

Habermas' theories of society tell that there are two distinct levels in the aforementioned: the system and the lifeworld which operates in interaction. The lifeworld, according to Habermas, consists of direct symbolic interactions which are coordinated by individuals in relation to their shared norms and values. The lifeworld consists of traditions together with other aspects of culture, knowledge and identity (Crossley, 2002).

Habermas' theory and its role in information systems and e-business have gained acceptance due to its capability to understand the social implications of e-business. Researchers have discussed its implications for the ontology and epistemology of information systems research together with its methodologies and corresponding ethical implications (Busli and Suliman, 2002).

In this light, a new conceptual model called the 'E-Business Assimilation Model' (EAM) was developed in order to provide clarity and direction to the present research exploration. This model emphasises that social factors drive the other factors and the consequently outcomes define the output of the e-business assimilation project.

The next chapter will discuss the research context, prior to identifying the appropriate research methodologies adopted in this study in Chapter 5.

4 Chapter Four: RESEARCH CONTEXT

4.1 Introduction

The discussion in the previous two chapters implies the importance, when investigating technology adoption, of considering the technological, organisational, social, and cultural contexts in which it takes place. The purpose of this chapter, therefore, is to provide background information on the research context at national, sectoral and organisational levels.

The first part of the chapter introduces Saudi Arabia. Following a brief background on the Kingdom's geographical setting and economy, its current status with regard to Internet and e-business adoption is reviewed. Specific factors of Arab culture and Islamic thought which might be expected to influence e-business adoption are discussed.

In the second part, attention turns to the oil sector, in which the present study is conducted. The role of this sector in the Saudi economy, the distinctive features of the sector, and the implications for e-business are discussed.

Thirdly, the organisations which are the focus of this study, Aramco, SABIC and Hadeed, are introduced. The chapter ends with an account of evidence of lifeworld and system in the companies' SAP.

4.2 The Effect of Social and Cultural Factors on e-business Transactions in Saudi Arabia

Saudi Arabia stands out among the Middle East Islamic countries due to its large government and a wide range of private business practices, all of which adhere to traditions and values unique to the country. The country is a hereditary monarchy, whose significant executive, legislative and judicial powers lie in the ruling family. In 2001, the Kingdom was ranked as the largest economy among the Arabic countries, a rank it acquired due to the high volumes of oil exports. As indicated in the *Foreign Policy* magazine, the country was also ranked as the least globalised among the same category of countries (Foreign Policy, 2006). Unlike democratic countries where rules, laws, merits, performance and liberal authorities govern business practices, the Saudi business transactions are governed by their cultures and

ideals, most of which are based on the Hanbali branch of Islamic Sharia Law (Wells, 2003, p 206).

The business governance structures in Saudi Arabia are akin to the traditional authority structures as described by Wells (2003). Wells pointed out that the Arabic business environment is influenced by Islam, Colonial legacies, tribal traditions, government intervention, and Western influences.

4.2.1 Social and cultural factors affecting business in general in Saudi Arabia

The business workforce in Saudi Arabia is organised, just like other workforces throughout the world. This means that offices and departments exist both in public and private enterprises. However, management practices reveal the traditional authority and values that are characteristic of the Saudi Arabian culture. As such, Saudi nationals expect their government and business managers in private enterprises to operate in adherence to set cultural and social principles (Al-Aiban and Pearce, 1993, p 10).

Among the notable positive attributes of this kind of approach in business management is that there is less bureaucracy in government and private offices. This, however, varies between private and public offices, with private offices more likely to be affected by Western trends, and more bureaucracy in the government offices. This mainly stems from the fact that managers in private businesses are more concerned with efficiency and profits. Additionally, some of the private businessmen in the country have embraced business partnerships with players from other countries. The management practices of the latter therefore infiltrate the traditional, cultural and social aspects of the Saudis.

Despite this, observation of business activities of Saudi companies reveals that the values of the country are still prevalent in most businesses. In a study comparing the business environments in Saudi Arabia and America, Al-Aiban and Pearce (1993) noted that Saudi managers applied less rules in the workplace. They were also less bureaucratic and used non-merit criteria more when making personnel decisions. Additionally, nepotism was higher in Saudi Arabia than it was in America. Even when Saudi private businessmen partnered with businessmen from other countries, the cultural and social principles remained the same, albeit being less terse. The

study attributed this to a deliberate effort by Saudi businessmen to uphold the country's cultural and societal values. Another study carried out by At-Twaijri (1989) comparing Saudi Arabian and American negotiators, managers and purchasing agents revealed that Saudi managers were less paternalistic as a result of more involvement in foreign trade. The study also observed that Saudi negotiators either took competitive or collaborative approaches, aspects that are deeply rooted in the culture (Harris et al., 2004).

The government presence is also heavy in the Saudi Arabian business environment especially because this affects business ownership. The public sector plays a central role in economic development and societal issues (Roy and Sideras, 2006). This means that no amount of business liberalisation can happen without the direct consent of the government, which is structured around the Royal Family.

In the Saudi Arabian concept, the Arabian cultural values of loyalty, justice and friendship form the moral basis on which business is founded (Yasin and Yavas, 2007a). One of the notable characteristics of Saudi nationals is the fact that they have great emotions and sentiments which are at times viewed as extreme by people from other cultures (Harris et al., 2004). Business behaviours that go against these principles may leave the Saudis indignant and outraged.

Trade and Business are two aspects of commerce that are highly respected by the Saudis (Harris et al., 2004). As such business relationships are first established on rapport, trust and mutual respect developed between two people. To excel in business therefore, most businessmen rely on establishing networks and connections between people they can trust and respect (Yasin and Yavas, 2007a). Socialisation, invitations, social gestures and courtesies are among the prominent methods that Saudis use to expand their business networks. Business deals are, however, not sealed in socialising meetings. Traditionally, women are exempted from such gatherings except when they are accompanied by their husband, brother or father. Decision making was also a male affair. Nowadays, however, women are gaining some rights to manage businesses, although communication between them and males must be carried out through male guardians. As part of the Saudi culture, bargaining is an acceptable and commonplace thing. Haggling is so widespread that it is seen as an art in the country. The culture also demands that decision making be by a person. This means that even in a corporate setting, the organisation would have to have a

suitably ranked person to make the decision, handle correspondence and finally seal the deal. Unlike the Western culture where time is specific and delay in business deals are perceived as lack of commitment, time is handled flexibly in Saudi Arabia (Harris et al., 2004). This stems from the Islamic concept that plans for the future can only be realised if Allah wills.

As Wells (2003) notes, business and politics in Saudi Arabia are intertwined. This means that knowing high-ranking government officials can easily land a business person a lucrative government contract.

Business communication is Saudi Arabia is complex and is based on a combination of verbal and non-verbal communication. Arabic is the common language for use in this country and the citizens understand it better than any other language. Outsiders are expected to follow the lead provided by their host and should be in harmony and agreement with what the host tries. The Arabic language is laced with raised voices, hyperbole, facial expressions and physical gestures. A notable characteristic of this culture is that the Saudi's can sometimes use 'yes' to mean 'maybe', because saying 'no' is considered impolite (Wells, 2003).

The business environment in Saudi Arabia is linked to the principles of Islam. Because of this, the Saudi economy remains among the most open in the world, while the country's family enterprises have the most hands-off management style in the world. The country has a School of Islamic law which propagates governance theories on economic and commercial matters in the country (Kaslow, 2006).

4.2.1.1 Attitudes to wealth

The Saudis believe that God (Allah) is the source of both spiritual and material wealth. As such, they believe that no person should feel guilty for accruing as much wealth as the individual can, since God has blessed their country. Saudi women, though denied other basic rights like travelling alone or driving, in the other hand, they are allowed to own any business as well as inherit business and property (Kaslow, 2006, p 251).

4.2.1.2 Charging interest

Islam forbids its adherents to engage in *Riba* - charging interest. *Riba* is banned by Sharia Law as it is considered usury. Instead of charging interest, Saudi banks charge fees or engage with their clients in profit participation schemes.

4.2.1.3 Business succession

Business succession in Saudi Arabia is based more on entitlement principles than competency. Family businesses and their responsibilities are passed to family members regardless of age or experience, because the culture demands so. In such situations, the person vested with the responsibilities learns on the job. The impact of business success of handing the management of businesses to inexperienced family members is deemed to carry little significance as compared to cultural entitlement. There are guiding principles that are applied by family businesses in Saudi Arabia. They include the recognition of the differences between family dynamics and business requirements. To ensure that this works out right, most family businesses create processes and structures that reflect the roles. Family members develop a shared vision and trust for accountability issues. Some family businesses in the country even apply international business practices (Kaslow, 2006).

Practices that may be viewed as outright corruption by business people from the western countries are acceptable under the Saudi culture. Influence peddling, bribery and other corrupt practices are among the unique prominent ways that the Saudis do business. To the nationals of the Kingdom, providing personal connections is a valid and legitimate service for which payment is expected. In the past, these kinds of payments were unregulated and the agents could obtain huge sums of money for facilitating valuable contacts. This trend has however changed considerably in the past as the Saudi government reacted to western corruption allegations and has since set regulations on the amount of fees that agents can receive (Kaslow, 2006). Knowing the right person is especially cited as the basis of doing business in the country. So strong is the personal connection culture that the success of a foreign investor relies mainly on the strengths of the connections that he or she has. To visit Saudi Arabia, whether as a tourist or on business, one needs a Saudi national to take responsibility for the person's actions when in the country. This makes the requirement for personal connections even more important since no visas are offered to people from other countries.

Foreign business people are required to take up Saudi business partners who can act as the official cover for the business. They can also take on the sponsoring role and act as an important contact to influential Saudis. Marketing rules are redundant in Saudi Arabia if one does not have the right contacts. This means that despite having a superior product, one may not gain substantial market share if they do not have the right connections. Having the right connection may help one make the sales regardless of the product quality (Wells, 2003).

In view of globalisation and the increase of foreign investors in the country, the Saudi government has taken several positive steps towards becoming a more competitive country.

4.2.1.4 Economic reforms

The Saudi government, like other countries in the Arab world, has been slow in responding to global business trends. This is because of the central role that culture plays in the Saudi society. The need to execute reforms, however, quickly followed the increase in oil revenues. This made the ruling monarchy anxious about its position in power. According to a 2007 World Bank report cited by Ali (2009), Saudi Arabia may have resolved to be involved in the global economy whilst adopting market responsive techniques in order to serve its political interest. The ruling family in Saudi Arabia also reacted to calls for privatisation although most of the privatised government enterprises are still controlled by members of the ruling family.

Economic reforms also took the form of stock market development. Since 1995, a significant number of new companies have been registered on the stock market (Ali, 2009). This has served to increase investor confidence and the economic stability of the country. Another positive development in the country is the involvement of the Saudi government in bilateral trade agreements. Saudi Arabia joined the World Trade Organisation in 2005, thus opening its borders for more open trade practices, competition and liberalisation. Besides the WTO, the country also belongs to the common market of Arab countries, which was initiated in 1960.

4.2.1.5 Low female participation in the workforce

According to a United Nations Development Programme's 2002 report (Rojewski, 2004), only 10 percent of the Saudi female population is employed. They are employed in the education sector, health-related jobs, finance, banking and government ministries. Since the job opportunities restrict the education choices that women in the country can take up, most Saudi women, cognisant of the fact that

their career prospects are minimal, take up careers in the same fields, while some choose not to acquire the basic skills.

4.2.1.6 Islamic law and government business relations

Islamic law is based on the Prophet Mohammed's recorded teachings – Sunnah and the Quran. The Saudi government seeks to safeguard, confirm and disseminate the Islamic values throughout its governance structures. This conception rejects any body or collective initiatives that contradict the Islamic law and the business sector is no different. To the Saudi Government, the Quran and the different Islamic interpretations are the decisive legal authority in the country. Islam is therefore given the role of recommending and opposing activities in both the government business sectors and the private business sector. The intensity of this matter is reinforced by the fact that the Saudi King is perceived as the 'protector of the Islamic faith' (Soufi and Mayer, 1991). This means that whatever business activities he engages in or approves on behalf of the business community have to be in line with Islamic teachings.

As the main business enterprise, the government of Saudi Arabia has the biggest stake in the production of crude oil. It is from the revenues collected from such ventures that the Saudi Government took up measures that would accelerate development and initiate modernisation. This was, however, done in such a way that the fundamental beliefs of the Saudi Society were still intact (Soufi and Mayer, 1991).

Traditionally, government is further perceived as a servant to the people in addition to being a guardian of the Islamic Principles and Values. Through the heavy presence in the business sector, the Saudi Government is able to continuously reinforce its role as an overseer of the society. The role of the king as interpreted by the Saudi Islamic Scholars is to guard against anti-Islamic activities by either the government or the business sectors being carried out in the country (Soufi and Mayer, 1991).

Saudi citizens believe in free enterprise (Soufi and Mayer, 1991). However, the government sometimes encourages private monopolies instead of competing entities in order to guard against wasteful use of scarce national resources. It is assumed that even monopolies price their products and services fairly in line with the Islamic

teachings that warn adherents against making excessive profits at the expense of fellow citizens.

Historically, the Saudi citizens communicate with the King and his ministers through the 'rulers of public audience'. Through the same channel, government plans and guidance on business activities are passed to the general populace in a unique form of Saudi bureaucracy (Harris et al., 2004).

Despite the different ways of doing business which stem from Saudi's unique social and cultural factors, the country has become one of the best trading partners of western countries in the Middle East (Soufi and Mayer, 1991). This is especially because of its wealth in oil, a commodity that most countries in the West do not have. Whatever trade agreements that Saudi Arabia enters into, however, have to comply with Sharia law.

4.2.2 How social and cultural factors affect e-business in Saudi Arabia

To reiterate, e-business is defined as the a complex combination of business applications, enterprise applications and organisational structure which is used in order to create a high performing business model (Sarmento, 2005). Adopting ebusiness requires companies to go through various transforming changes. This may mean that the company will re-evaluate its value chain, re-examine its core competencies and even collaborate with industrial players. E-business includes the marketing, selling, buying, delivering, servicing, and payments information, products and services through the Internet (Sarmento, 2005). Transiting to ebusiness, companies undergo structural transformations which are integral in disaggregating and re-aggregating the value chain. This makes the difference between successful or failed transition. While disaggregating the value chain, a company needs to identify its main competency, partners and resources, which are vital for continued profitability. Re-aggregation, on the other hand, determines how well the company is able to collaborate with the important industry partners and players in the supply chain in order to optimise joint competitiveness (Sarmento, 2005).

Saudi Arabia lags behind in adopting the Internet as a means of marketing and purchasing goods or services. E-business must proceed in this country in line with cultural and social factors, which consequently affect how the government and the general populations adopt technology. For example, despite wide adoption in other parts of the world, the Internet was introduced in the Kingdom only in 1999. Upon introduction of the Internet in the Kingdom, a filtering system was set up to establish Internet connections in the Kingdom. The filter was stationed in Riyadh and was meant to guard against the infiltration of undesirable content into the Kingdom, including pornography and anti-Islamic sentiments. Despite these challenges, Saudi Arabia has made significant changes to make e-business part of the country's commercial structure. Although e-business is still young in the country, the rate at which people are adopting technology suggests that Saudi Arabia will soon catch up with other modernised economies in e-business. However, Saudi Arabia is not to be compared to other countries due to its unique social and cultural characteristics.

The banking system is also a major hindrance in the propagation of e-business in Saudi Arabia. Because the country has yet to develop good banking systems that would allow the e-trade to check a client's credit before proceeding with a transaction, then most people are yet to adopt e-business (Wilson, 2004).

The number of Internet users in the Kingdom is also an inhibiting factor. Coupled with the fact that not many businessmen are open to the e-business idea, this becomes an added challenge. Only a limited number of people have access to the Internet in the Kingdom, and even a significant number of those who can access it have no interest in e-business. Even those who can conduct transactions through the Internet still have reservations about the security level of Internet connections in the Kingdom. According to Franda (2002), Saudi worries about the Internet include theft and destruction of data by Internet hackers and installation of malicious coded keys by hackers. Many Internet users in the Kingdom therefore are reluctant to post sensitive details on the Internet for fear of falling prey to hackers and identity thieves. Internet security has also been a key concern for the government since the Internet was introduced in the country. For this reason, it introduced policies, which restrained the usage of encryption software in the country (Franda, 2002).

On the cultural front, Saudi Arabia is among the Middle East countries who believe that the wide use of the Internet will spread the cultural, political and economic dominance of American and Europeans countries (Yasin and Yavas, 2007a). Saudi authorities are searching for a middle ground, which should balance the preservation of their culture and the need to embrace advanced technological ways of doing business.

Drivers of e-business worldwide are improved communication networks, ubiquitous networking, high capacity computers (storage and speed), competition, products with short life-cycles, speed to the market and the need to cost cut. E-business is also successful in organisations that have products with low market visibilities (Wilson, 2004). Statistics (ITU, 2009) show that there were 200,000 Internet users in Saudi Arabia in 2000 representing 0.9 percent of the entire population. In 2003, this figure improved over seven fold to stand at 1,500,000 users representing 6.9 percent of the population. Two years later in 2005, the number of Internet users had gone up to the 2.5 million mark. In 2007, the number had hit 4.7 million. According to these statistics, it is evident that the Saudi populace is taking an interest in Internet usage. The 2007 statistics are still low, considering that they represent only 19.5 percent of the population. As of 2007, the Saudi population was 24,069,943 people. As Bidgoli (2004) notes, cultural and social sensitivities play critical roles in the success or failure of electronic international business. Understanding the Saudi Arabian culture is thus an important consideration for any foreign business person wishing to conduct business electronically with Saudi nationals. For example, the Saudis' main language is Arabic. Online business messages targeting them would therefore need to be written in Arabic. The lack of regulations and appropriate security measures in the Kingdom also limit the use of e-business.

Since trust is such a vital thing for Saudis, many of them wonder how two people can communicate through the Internet, without seeing each other. As discussed earlier in this section, Saudis believe that a deal can only hold if the two agreeing parties are present. For the same reason, contracts signed on paper are deemed as less genuine than word of mouth. The first meeting between two business associates is also perceived as of much importance. For this reason, Saudis have a hard time adopting e-business, where all business related activities happen online. Further on trust, the Saudis have a hard time deciphering if the Internet can be relied on to deliver messages without intercepting them. How are contracts signed online? This, too, is a legitimate question for a population that adopted Internet use only in 1999 (Verisign, 2007). Because the government had initially shown reservations about adopting Internet use, even private players are still not yet convinced that doing business online is the best option. For the same reasons, the government employed the services of Public Key Infrastructure (PKI), which is a system that builds a trust environment for the Saudi masses. PKI has been used elsewhere in the world and develops a framework that allows transactions to be carried out over public networks (Verisign, 2007). This is done by the issuance of certificates which settle the confidentiality, integrity, authentication, non-repudiation, access control, digital signatures and the creation of Internet documents among others. The disadvantages of PKI worldwide are that its infrastructure is not only expensive to implement, but also difficult (Verisign, 2007). This means that only well performing companies can afford to procure, install and maintain it. Even for those who can afford to install it, the challenge still remains, since one company may have the PKI while its business associate partner does not.

For e-business to succeed in Saudi Arabia, the government as well as the private players need to show unwavering commitment to ensuring Internet security.

- 1. **Authenticity**: This is especially applicable to documents and electronic signatures that may be required during the e-business processes.
- 2. Integrity: This is important for detection of malicious or unintentional alterations of signed documents. As discussed earlier, Saudis lay more emphasis on verbal deals especially when both parties are present than they do on signed documents. The fact that many signature disputes arise over the integrity of e-documents therefore poses an extra challenge not so much to the Saudis, but to the people who transact business with them. According to Verisign (2007), most disputes happen because people refute that the documents in contention are not the original documents on which they appended the e-signatures.
- 3. **Non-repudiation**: this is a regulation necessary for upholding honesty between two parties. As such, the receivers or senders of a business document cannot refute the fact that they did indeed sign the document. Non-repudiation is applicable to time-sensitive documents, including stock-analysts reports and online bargains among others.
- 4. Security persistence: This consideration would ensure that document security is maintained throughout business processes. In other parts of the world, security persistence allows the parties involved in e-business to

retrieve a past signature in order to verify present transactions (Verisign, 2007).

- 5. **Easy to use:** This is a consideration in every technology that handles business transactions. In e-business, this makes it easy to send and receive secure documents. It also means that the digital signature can be verified easily.
- 6. **Confidentiality:** This refers to the protection of the contents of a document against unauthorised access. As such only the intended recipients get the documents.

Documents that may need to be exchanged in increasing volume by Saudis as more of them embrace e-banking include: banking and financial documents that involve high value transactions (Idris, 2007); legal documents, mostly concerning arbitration agreements made in the course of e-business transactions; and real-estate documents such as leases, rental agreements and deeds .

The Saudi Government, on its part, has a huge role to play in creating the perfect example of embracing e-business. The Saudi masses look upon their government to provide leadership not only politically, but also through upholding the country's culture and societal values (Idris, 2007). Adopting strategies that would make the country more accessible through e-business would be an added advantage.

4.3 Lessons Learned from the Saudi Companies' e-Business Assimilation

In a country where Internet adoption was taken much later compared to other countries, three companies, namely, Saudi Aramco, Saudi Arabian Basic Industries Corporation (SABIC), and Saudi Iron and Steel Company (Hadeed) are business leaders in Saudi Arabia. Their taking up e-business and executing a well mapped strategy to execute their business processes is therefore bound to affect other companies in the country to take up the same approach. These companies are among a few Saudi companies that are planning to require suppliers to interact with them through virtual offices, and keep on encouraging their clients to take advantage of the convenience provided by online shopping. While targeting more clients rather

than the traditional ones, the companies have also taken up to online marketing strategies. Moreover, these companies rank as the biggest examples of e-business success in Saudi Arabia.

Much literature argues that it is not easy to conduct e-business in Saudi Arabia due to the issues on religious beliefs and socio-cultural values (Al-Khaldi and Olusegun, 1999, Al-Gahtani, 2004), but as has been shown above, the three companies have done so.

In Saudi Arabia, Business-to-Business (B2B) and Business-to-Consumer (B2C) commerce are common strategies used by the commerce people to cater for both the supply and demand of Saudi goods. Also, e-business gained ground in the Kingdom in 2004 (Wilson, 2004). The maturing of the Internet market in the Kingdom is responsible for increasing e-commerce and government's adoption of Internet-based processes as well.

Detailed below are the lessons learned from these three companies.

4.3.1 Saudi Aramco

Saudi Aramco was founded in 1933 as a venture among several prominent oil companies. Originally, the company was named Arabian American Oil Company or Aramco. Starting in 1973 the Saudi government commenced a share-acquisition process in the company and by 1980 the company was fully owned by the Saudi government. In 1988, the company changed its name to Saudi Aramco and today ranks as the biggest oil company in the world (Idris, 2007). Saudi Aramco controls all of the Kingdom's oil fields, their production and oversees the exports which neared 3.4 billion barrels in 2006 averaging 8 million barrels daily. The company also produces and exports natural gas liquids, and other oil refined products.

4.3.1.1 Analysing Saudi Aramco as an e-business tool (Website)

With a growing number of contractors, customers, vendors, purchasers, salesman and marketers in Saudi Arabia and in other countries, the company found a ready solution of handling its business effectively through e-business. In its well detailed website (saudiaramco.com), Saudi Aramco has a customer portal, which is meant to handle communication between the company and its customers. It also has the vendor's portal, which handles communication, business deals and payment communication between the company and its vendors. Additionally, different portals are provided for the contractors and the purchasing department in the same website. In the e-business strategy set out by the company, Saudi Aramco can conduct online sales and auctions, while supply and marketing is done through the same. Jobs and careers in the company are also advertised and sourced through the same website. A perfect example of how the company executes its e-business is provided by the Electronic Contracting Network (ECN), through which Saudi Aramco interacts with its contractors. Through ECN, the company is able to procure and interact with its contractors online through a comprehensive and easy to use web system. To uphold the trust culture, which is dominant in Saudi Arabia, the company provides contractors who have registered with the company a section, where they post their profiles. Registering as a contractor with Saudi Aramco is done after the person applying for the position has posted their legal information, contacts and other relevant information. Their request is reviewed against the information they provide by an Aramco employee who then decides whether they qualify or not. The contactor profile section requires the potential contractor to fill in his or her qualifications and other work-related information. It also enables the contractors to update their profiles without having to re-send the information to Saudi Aramco.

The contract room is another feature of the website under the contractor's category that allows for real-time interaction between employees of Saudi Aramco and the company's contractors. It is a virtual workplace complete with a comprehensive automation of functions and activities that happen when the company is engaged in the procurement process. The contract room acts as the main business avenue for both the host company and the contractors.

ECN benefits both Saudi Aramco and contractors because this system is not only intuitive, but also user-friendly. It also translates to faster and easier contract procurement, processes that are achieved at greater convenience. E-business enables the company to identify the best qualified and well-suited contractors to handle the company's processes. Since all contractors are given an equal chance to state their qualifications, capabilities and capacities, the best contractors always stand the best chance to be awarded contracts by Saudi Aramco. Through this system, the contractor owners are also able to monitor how their companies interact with Saudi Aramco. Saudi Aramco has a section named 'New Business', where it posts details of new business development. Through this e-business section, the company also posted its own strong points in a bid to capture more business people to do business with the company. It has also stated its major achievements in the same section. For businesses that might be interested in manufacturing equipment or servicing the same for the company, the opportunities are also posted in the website. Opportunities for the conversion industries are also posted as are the contactors 'Saudisation'. There is also a webpage set aside for updating the media on what Saudi Aramco is undertaking, news about the company and updating them on upcoming events. Separately, the news media is given special attention whereby news, speeches, publications, press kits, company profile, annual review, the company's facts and figures, photos and other details are provided.

The company also provides its corporate story, values and calendars in their corporate business. The website also provides information about the company's workforce and their joint values as enforced by their employer as well as revealing what is behind the management of the company.

Since the website is the backbone of its e-business strategy, the company states what it does to ensure reliable supply of oil to its customers. The website also has details about the company's exhibits and what it has done in the past in order to make history. Analysing this section of the website gives one the impression that the company has put extra effort into ensuring that people gain as much trust in the company as possible. This is in line with the trust social and cultural characteristic of the Saudi people.

In the 'our business' webpage, there are details regarding the company's operations which are divided into various categories, including the company's operation's map, its exploration activities, oil and gas operations as well as refining and distribution activities. Another category addresses the company's international operations as well as projects that the company is utilising technology and innovation. The 'our business' also addresses the company's activities in relation to environment conservation and the safety measures that the company is putting in place in order to ensure that there is minimal effect to the environment by the oil exploration activities. Additionally, the webpage provides details about research and development projects that the company is undertaking. Here, the company is quick to

state that the central role given to coordination of research is a reflection of the company's continuing commitment to petroleum research and future development of petroleum production in the Saudi Arabia Kingdom.

4.3.1.2 Saudi Aramco as a benchmark

Since Saudi Aramco is government owned, the company is in a good position to inspire confidence in e-business, especially considering that most Saudis look upon their Government for guidance and inspiration either in business or social affairs (Soufi and Mayer, 1991).

Saudi Aramco has an excess of one million products in its catalogue and continually encourages its suppliers to join Business-to-Business (B2B) exchanges in order to make them part of the e-business concept (Shoult, 2002). In 2006, Saudi Aramco had 900 agreements with its partners, coming short of its 1,200 target. Although this was on an e-commerce platform, it is through the same that the company advanced to adopt the e-business concept. Through embracing e-commerce first, the company was able to realise the benefits of handling all aspects of its businesses online.

In 2007, a statement by SAP ERP - a German company that handles the software and e-business portals for Saudi Aramco - said that the Company's main challenge is handling a wide range of activities in all its operation areas, while ensuring that all the concerned parties are attended to convincingly (SAP, 2007).

Some of the lessons that businesses can learn from Saudi Aramco about its ebusiness adoption include:

- Logistic management and ensuring that profit targets are met
- Acquiring the appropriate technological components
- The transfer of knowledge and competencies
- Processes and methods of operating e-business
- Value engineering
- Planning for start-up (ARAMCO, 2008)
- Benchmarking
- Scope definition, and
- Scope control

Despite having established itself as a formidable company even before embracing ebusiness, Saudi Aramco just like other companies taking a similar course had to face the reality of strengthening and even redesigning its logistics and infrastructure. This is because strong-based logistics and a well-grounded infrastructure system moves the business processes hence supporting online commerce and keeping the company afloat (Reynolds, 2001).

Based on Reynolds' (2001) summary of the goals on logistics, one can conclusively state that Saudi Aramco had a clear understanding of the business processes, applications, systems, and the value-chain partners. This is because e-business success is determined by a company's understanding of the different logistics involved in the company and how the logistics will be integrated.

As evidenced through the various issues addressed in Saudi Aramco's website (<u>www.saudiaramco.com</u>), one gets the impression that the company has an effective e-strategy team that attends not only to the interaction requirements required for Aramco's business processes to continue unabated, but also one that attends to the technological solutions necessary for the successful implementation of e-business.

In addition, it is clear through the Saudi Aramco website that the company had taken time to review the customer requirements and therefore provided webpage channels through which such issues are addressed.

Considering that Saudi Aramco has business interests beyond the Kingdom borders, the company has also done a good job integrating processed orders, transport, shipping, delivery, quality control, customer satisfaction and after-sales services (Al Hoymany, 2006). As such, it would serve as a good example for local companies willing to venture in e-business especially if they have international markets.

Other factors which are not apparent in Saudi Aramco (partly because of the nature of its product) are multi-level distribution channels like retailers, wholesalers, third-party distributors and franchises. This may be applicable to other forms of consumer products therefore they need to take note. Some consumer goods may also need to be tracked as they move from the producing company to the customer (Reynolds, 2001).

Throughout its e-business operations, Saudi Aramco has prided itself on having smooth operations, which span across different businesses that the company engages

in. Top on the list of these activities include exploration of hydrocarbons, production of the same, refining, marketing and shipping the products to both local and international markets (SAP, 2007).

The unique position of Saudi Aramco as one of the biggest and most profitable government companies makes it conspicuous not only to other business practices, but also to the ordinary Saudis. The employees of the company alone stood at 52,000 according to 2007 statistics (SAP, 2007). With such a huge workforce, the company has to address non-core activities such as staff healthcare, telecommunications and others. Most of these are covered through the different e-business portals available on its official website. Across the board, Saudi Aramco had 52,000 virtual users of its website daily in 2007.

Through e-business interactions, the company is not only able to cut communication costs that were previously accrued from other forms of communication, it is also able to support future growth through improved interactions and new functions of all its stakeholders. Through e-business, the company is able to bring business processes, people and information together thus supporting critical portal-based developments and collaborations.

Being a global business, the company transacts business in most parts of the world. This involves moving products to the respective markets and executing the arising transactions.

Thus, through e-business, Saudi Aramco is continuously soaring in its success.

4.3.2 Saudi Arabian Basic Industries Corporation (SABIC)

SABIC, which is 70 percent owned by the Saudi Arabian government, shows that ebusiness implementation and development has been receiving substantial support from the government. Upon viewing the contents of SABIC's website, the top management's (who belong to the royal family) support for e-business is many times emphasised.

In regard to 'trust', SABIC's website initiates transparency and openness which builds strong business relationships among its business partners and prospective customers. Trust is also gained through the availability of a supplier portal, customer portal and VPN which provide privacy security for the website users (i.e., clients, suppliers and other stakeholders).

SABIC employs foreign workers yet these personnel are outnumbered by Saudi employees. The company supports the Saudisation system in which most of the Saudis are designated in management and significant technical positions. It also grants scholarship for Saudi staff in support of the Saudi government's goal of reducing dependence to foreign workers in all fields of knowledge and expertise.

Below is a summary of the lessons that can be learned from SABIC's e-business implementation through the 6M's of business management:

- 1. Money
 - o transparent report and openness to shareholders maintain trust
 - updated financial report avoids discrepancies in distribution of shares
 - availability of substantial investment gives confidence to stakeholders
 - o cost reduction produces larger profits
- 2. Materials:
 - Product specifications provide knowledge to the stakeholders
 - Waste reduction produces profits
- 3. Methods:
 - Continuous research and technology innovation prepares the company for greater expansion
 - Right approach to the required changes
- 4. Machine:
 - New and hazard-free industrial equipment is important for maintaining safety and for avoiding environmental pollution.
- 5. Manpower:

- E-business boosts the morale of SABIC people, thus making them proud that they are part of a well-known, highly established and successful company.
- Religious and cultural values are strictly observed
- 6. Marketing:
 - Presence of SABIC's website on the Internet wins new customers, suppliers and investors.

SABIC is worth emulating in terms of e-business implementation. As long as there is strong government support, enormous capital, supportive top management, and openness for change in employees, there are few barriers to hinder the company's e-business success.

4.3.3 Saudi Iron and Steel Company (Hadeed)

Hadeed, Saudi Arabia's largest iron and steel manufacturer, an affiliate of SABIC, and with more than 2,800 employees, also runs SAP. Hadeed's e-business is fully aligned with SABIC. Therefore, SABIC's e-business success is the same as Hadeed's.

Overall, Saudi Aramco, SABIC, and Hadeed demonstrate that a company can still sustain some of the most upheld cultural and social factors in the Kingdom, while employing new technology and innovations. Therefore, they act as good models for other businesses to follow. However, e-business in other sectors may fair differently.

4.4 Lifeworld and System Situational Evidences in Saudi companies

Following on from the details provided regarding Saudi culture and the e-business success of the three Saudi companies mentioned above, the discussion will now consider how the concepts of lifeworld and system work within the four major factors as shown in the conceptual model developed in the last section of Chapter 3.

In the context of e-business, technological factors include the type of training provided; the users' familiarity to computer and other IT tools, and their attitudes towards using these technologies; for organisational factors: the aspects on human

resource system, the user or employees' loyalty to the company, the top managements' support to the project, the organisational protocol, etc.; for cultural factors, the issues on nationality, religion, tradition, language, etc.; and for social factors, the considerations on age, education, gender, trust, interest or hobbies, etc. Table 4-1 below provides examples of situations wherein lifeworld and system are evident.

Factors	Particulars	Lifeworld	System
Social Factors	Age	Young or old can use the computer	No-one below 18 years old can use the Internet
	Education	High school graduates or PhD degree holders can check their personal documents in the database	Complex computer systems can only be handled by IT people
	Gender	Male or female can use the Internet	Only males can access items intended for males and only females can access items intended for females
	Trust	Trust is given right away to important others (i.e., family, relatives, friends); there is higher level of trust (to the system) when the user is familiar with the technology used	Known to you or not, you ought to give the benefit of the doubt to other people as well as to the new knowledge or new systems they bring, thinking that in the end you will gain great advantages.
	Loyalty	Employee's loyalty can be measured in the length of stay in the company. The longer the years of stay in the company, the greater loyalty the employee has for the company. However, more important than the length of stay is the established good employer-employee relationship which results to volitional unwavering attachment.	Some managers think that incentives provision is the greatest motivator for employees' loyalty. Its repercussion: employees expect that the company is consistent in giving financial favours. This dilemma may result to even worst problem when the employees file a job resignation due to the unmet expectations or unfulfilled promises.
	Interest/Hobbies	Enjoyment is experience out of personal delight	Conform to the new system whether your interests or hobbies are ignored or encouraged.

Table 4-1 Lifeworld and System Situational Evidences in Saudi Companies

Cultural Factors	Nationality	SAP is open to all users regardless of nationality	Americans and Europeans are the most preferred ERP project managers and consultants in Saudi Arabia
	Religion	SAP is open to all users regardless of religion	Saudi government prefers Consultants who are Muslims.
	Tradition	Non-Muslims work without stopping the whole working hours except lunch break time.	Non-Muslims should conform to the broken working hours of Muslims in Saudi Arabia wherein the latter pray five times in a day.
	Language	Different nationals working in one company strive to understand each other despite the language barrier. At times they communicate through gestures or through a third party who can interpret or translate the words spoken.	To serve the many companies of different languages, SAP uses English more often than other languages. Users ought to be knowledgeable in English.

Organisational Factors	Human resource system	Though hierarchical in the order of designations, Saudi managers manage their subordinates in a non- bureaucratic way, that is to say, they prefer that employees can also perform the jobs of other departments (i.e., multi-tasking)	SAP is systematic in nature. Champion user should focus on his or her assigned roles.
	Training provided	Some employees may encounter difficulty in earlier stages of e-business project due to their limited knowledge and thus would resist actual usage of e- business.	Training the employees prior to starting e- business implementation will encourage them to embrace the new system.
	Top management support	In traditional systems, employees prefer minimum supervision of the managers.	Top management should consistently monitor the performance of the users.
	Consultants' intervention	The company decides its own direction.	Consultants' proven expertise must be applied due to the actual experiences and lessons they acquired.
	Project Team capabilities	Users can express their ideas and opinions anytime they would like to speak up.	Users can contribute knowledge but this knowledge is subject to the project team's analysis.

Technological Factors	Perceived Benefits	As long as the employees are paid properly, they will work with or without machines or office equipment, only the company should consider that their work output is based on the available materials.	Follow the system; otherwise the company will replace you.
	Familiarity to information and communication technologies (ICTs) (e.g., computer, Internet)	Employees work in the company with or without formal education on computer; they simply get learning from their colleagues and peers who are computer literate.	Employees without sound knowledge in ICTs will be left behind. They need to acquire knowledge and skills in ICTs in order to survive or even advance in this information era.
	Availability of IT infrastructures	Businesses are satisfied with their profit even without the use of IT tools.	Businesses which will not adopt IT applications would lose even their small profit due to the intensifying competition in the global market. Global companies would penetrate and win the clients the non-IT company has.
	Attitude towards the technology	People usually use the Internet for fun and curiosity satisfaction.	Use the Internet for income-generating activities.
	Readiness to use the technology	Employees prefer to process office work by using papers.	In e-business (e.g., e-mail), business letters are official even without the handwritten signature.

Applying the lifeworld and system theory to e-business assimilation requires more extensive lifeworld and system situational evidence. The above data is not complete and is merely provided as proof that the said concepts of lifeworld and system are indeed occurring in new technology adoption activities as in the case of Saudi companies.

As we go further, Chapters 6 and 7 provide the backbone of this study: the qualitative and quantitative analyses on the survey questionnaire and semi-structured interview which were conducted. In the meantime, the next chapter explain why both quantitative and qualitative methods were adopted for this study.

4.5 Conclusion

Although Saudi Arabia was among the countries that adopted the Internet in the late 1990's, the e-business concept has gained much acceptance in the country in the past decade. However, the combination of social and cultural aspects of the Saudi people has had some noticeable drawbacks against the adoption of the Internet as a tool for conducting business. First was the suspicion that the Internet would infiltrate the Saudi culture with anti-Islamic content. Second, there was suspicion that the Internet was not a secure place to conduct business.

With the advent of e-commerce and, later, e-business, the slow rate at which banks in the Kingdom upgraded their technology to allow for e-transactions became a major hindrance to the adoption of the two in the country. The popularity of e-business, although seen as a time saver elsewhere in the world, was a major pastime snatcher, which was not welcome by most Saudis who view shopping as a good way of spending much of the time that they have on their hands. This is especially so for women who suffer multiple inequalities in the society.

The fact that Saudi Aramco, SABIC, and Hadeed have taken up e-business and so far seem to be making good returns is good enough reason why businesses in Saudi Arabia should test the waters too. The three companies have proven that no amount of culture or social inhibitors should prevent businesses from adopting new technology and thus can be referred to as a model of societal and economic reforms in the Kingdom. In addition, as provided by this chapter, specific evidence of lifeworlds and systems found in business activities of Saudi companies could be of great help for future business innovators and technology adopters when emphasising or prioritising the social and cultural aspects of the recipient companies. However, the current researcher must present a strong and comprehensive validity for this particular proposition.

5 Chapter Five: RESEARCH METHODOLOGY

5.1 Introduction

The process of any research is the overall activities undertaken to find a solution to a given problem. Research methodology is concerned with the way(s) by which the researcher collects data to answer his/her research question(s). Therefore, researchers should be careful when choosing research methodologies. They need to spend a considerable time studying the appropriateness of the chosen methodology to their research questions and objectives. There are many research designs, strategies or approaches that could be used when conducting research, but the nature or the context of the research question(s) and objectives imply a specific type of research design and strategy to be followed. The methodology used in this study could be described as a cross-sectional study adopting a multi methods approach (quantitative and qualitative) conducted through a survey questionnaire and a semi-structured interview to investigate the specific social factors behind the other major factors that affect the assimilation of e-business in the context of Saudi Aramco, SABIC and Hadeed.

This chapter is structured as follows: it starts with an overview of research design and philosophy including type of or approaches to research, followed by justifications for the chosen research methodology and design including the population and the sample. In addition, this chapter discusses the two main data collection methods used in this research for primary data collection; namely, personally-administered questionnaires and semi-structured interviews, and their design, structure, content and all other issues related to each method. Finally, the chapter ends with discussion and justifications of the statistical methods and techniques appropriate to answer the research questions and objectives. Accordingly, this chapter could be described as the most important chapter, as it aims to present a comprehensive exploration of the methodological issues concerning this study.

A research is a multistage process that researchers should follow in order to undertake and complete their project (Saunders et al., 2006). Deciding on the research methodology is a crucial decision; the success of empirical research depends mainly on the nature of the research project, as well as on the available data (Collis et al., 2003). The methodology used in this research includes the research philosophy, approach, strategy, time horizon and data collection and analysis methods. Each of these will be discussed in turn.

As the previous chapters have shown, this research explores issues surrounding ebusiness assimilation in Saudi Aramco, SABIC and Hadeed. Each of these organisations is seen as a social entity interacting with a complex environment, and e-business as a social phenomenon likely to affect and be affected by a range of factors, including organisational characteristics, process, attitudes and culture, as well as the technology itself. To explore this phenomenon, therefore, data and information of various kinds are needed, including 'hard' data such as unit size, age, IT budget etc. and 'soft' issues such as ideas, attitudes and motivations toward ebusiness. Moreover, given the size and structure of the said Saudi companies, and the range of their operations, such data need to be collected from a large number of geographically dispersed units, and to reflect the perspectives of diverse interest groups.

5.2 Research Design and Philosophical Paradigm

Research design is a framework or structure for data collection and analysis. It is a plan for conducting research, which usually contains specifications of elements to be investigated and the procedures to be followed. Research design is about organising research activities, including data collection, and analysing it in ways that help to achieve the research aims. A *research design* refers to a basic plan or strategy of the research and the logic behind it, which will make it possible and valid to draw more general conclusions from it.

Saunders et al. (2006) assert that it is important to have a clear research strategy (design), a general plan of how you go about answering the research questions. Research strategy should contain clear objectives derived from the research questions; also, it should identify the sources from which the researcher intends to collect data, the allocated time, the location and ethical issues. Sekaran (2003) points out that research design involves a series of rational decisions. These are: identifying the purpose of the study, whether it is exploratory, descriptive or hypothesis testing; identifying the type of investigation; deciding the extent of the researcher's intervention; identifying the study setting; deciding measurement and measures;
deciding data analysis; deciding data collection methods; deciding time horizon; deciding sampling design; identifying the unit of analysis.

There are many potential choices to make when developing a research design. However, the choice between research designs depends on many things; most especially on the nature of the research questions or objectives and the research philosophy or paradigm (the way we think about the development of the knowledge). Research philosophy is important to determine the other research methodology elements. Therefore, in the following subsections, research philosophy, approaches, and the chosen research design and the rationale behind this choice will be covered.

The design of a study begins with the selection of a topic and a paradigm. Paradigms, in the human and social sciences, enable us to understand phenomena. They serve to advance our assumptions about the social world, about how research should be executed, and about what constitutes legitimate problems, solutions, and criteria of 'proof' (Creswell, 2003 p.1). Consequently, each paradigm implies certain ontology, epistemologies, theories, and methods.

Writers on research methodology differ as to the number of paradigms they identify, and the labels given to them, but the most common classification, used by, for example, Collis and Hussey (2003) identified two main research paradigms or philosophies. These paradigms can be characterised as positivist and phenomenological. Some authors prefer to use the term interpretivist rather than phenomenological, since it implies a broader philosophical prospective and prevents confusion with the methodology known as phenomenology. Guba and Lincoln (1989) call the positivist paradigm "conventional" and the phenomenological paradigm "constructivist".

The positivist philosophy, as outlined by Cooper and Schindler (2003), is popularly associated with the natural sciences. It is characterised by the detached and systemic analysis and exploration of the research phenomenon.

The positivist paradigm implies the belief that, ontologically, reality exists objectively and independently from human experience. Epistemologically, "positivists are concerned with the hypothetic-deductive testability of theories" (Chen and Hirschheim, 2004, pg. 201) and maintain that "scientific knowledge should allow verification or falsification and seek generalisable results" (Chen and

Hirschheim, 2004, pg. 201). Consequently, a causal relationship is usually displayed and tight coupling between explanation, prediction and control is exhibited (Orlikowski and Baroudi, 1991). Methodologically, positivists assert that in order to test hypothetic-deductive theory, researchers need to adopt a value-free position and employ objective measurement to collect evidence. Typical positivist methods include quantitative surveys and experiment. This paradigm is also called objectivist and traditionalist (Collis et al., 2003).

On the other hand, the phenomenological philosophy is predicated on the belief that the comprehension of social phenomena imposes upon the researcher the imperative of engaging with, rather than detachedly observing the phenomenon in question (Cooper and Schindler, 2003).

Other writers propose a different classification of paradigms, identifying a third paradigm, the critical paradigm (Orlikowski and Baroudi, 1991, Myers, 1997). Within the critical paradigm, researchers believe at an ontological level that society is grounded on certain deep-seated structural faults that need to be explored (Orlikowski and Baroudi, 1991, Ngwenyama and Lee, 1997, Cornford and Smithson, 2006). Epistemologically, critical researchers strive "to critically evaluate and transform the social reality under investigation" (Orlikowski and Baroudi, 1991, pg. 19), while positivist researchers are content to predict the status quo. In other words, critical research aspires to be emancipatory, in that it strives to eliminate the causes of unwarranted alienation and domination and to thereby enhance the opportunities for realising human potential (Alvesson and Willmott, 1992, Hirschheim and Klein, 1994). Ideologies that can fit within the critical paradigm, including feminism (Wajcman, 1991) and Marxism, are based on the philosophical positions of writers such as Foucault (1979) and Bourdieu (1990).

According to Klein et al. (2007), a critical research must involve the following criteria: (1) concern for human existence which consequently identifies human needs and potentials, (2) support for critical self-reflection and the associated self-transformation processes, (3) awareness to the institutional issues important to handling social justice, due process, and human freedom, (4) incorporate principles of the evidence necessary for claims evaluation, (5) establish principles of fallibility and self-correction originated from the criticisms received, and (6) suggest ways on how to face the negative feedbacks to social conditions or practices.

Relating to the six criteria proposed by Klein et al. (2007), e-business assimilation in Saudi Arabia could become even more widespread throughout the country if companies therein would apply such valuable points.

The critical paradigm has its roots in Critical Social Theory (CST), emanating from the thinking of Kant (1724-1804). In terms of this study, the development of CST by Habermas has been seen to be of particular relevance. Consequently, Habermas' works may be seen as extending a German tradition (althought at the time Kant resided in Prussia), and are considered 'critical,' critically investigating social phenomena, and determining how best to approache them.

It was mentioned in Chapter Three that a key perspective given to us by CST is that of the lifeworld, within which we can look to the freedom of the social actors, and to issues of alienisation and colonisation. CST breaks with the idea that society is solely run by those in authority. Rather, more than just a democratic way of living, CST holds that people are accountable for the welfare of their society, and that they always aim to transform their social environment for the better. Each participant therefore has the right to evaluate the actions of others, and to gain an understanding concerning any issues arising from these actions.

From a review of the IS literature, it can be argued that positivist research still dominates (providing as much as 81 percent of published empirical research) (Orlikowski and Baroudi, 1991, Chen and Hirschheim, 2004). Flynn and Gregory (2004) found that a very small (1 percent) proportion of papers adopted the critical paradigm. However, the interpretive paradigm (i.e., phenomenological paradigm) and the use of qualitative methods have grown increasingly over the past twenty years.

Even though the positivist and phenomenological philosophies seem to completely contradict one another, Bryman and Bell (2003) maintain that the two philosophies can coexist within a single study and can be used to explore different aspects of the research problem.

Deciding on what research philosophies should be used by the present study, three main reasons were considered: (1) it is imperative to approach the study of the organisations and the social impact of e-business from a detached and systematic perspective, therefore a positivist paradigm is chosen; (2) it is important to study

other aspects of the phenomenon, such as the cultural environment within which the target organisation exists, from a more interactive perspective, therefore, the phenomenological paradigm is included; and lastly (3) it is important to conduct thorough analysis and investigation of the people involved in order to come up with best approaches in addressing the social and cultural issues, therefore, the critical paradigm is also chosen. This study focuses most strongly on the critical paradigm, because the present author aims to establish effective strategies for dealing with Saudi people who faithfully exercise their religious and cultural identities even in business matters.

5.2.1 Important criteria when deciding research design and approaches

The choice of research methodology in social research has become a debated and problematic issue. However, there is neither an appropriate nor inappropriate research methodology until it is applied to a specific problem. In deciding the right methodology or design, there are many important factors which should be taken into account. Some of the important factors are:

- 1. The nature of the research questions and objectives
 - choosing the best design or best method is a matter of appropriateness (Oppenheim, 1992).
 - no single research approach is always or necessarily superior; it all depends on what is needed to be found and on the type of question which the research aims to answer
 - adopt certain methods which are useful for answering the research questions and objectives (Bouchard, 1976).
- 2. The availability of the relevant literature
 - for topics with substantial literature from which hypotheses could be drawn easily, deductive (or quantitative approach) is best used, whereas, when the research topic is new and controversial and where there is little source of literature, it may be more appropriate to generate data and analyse them to formulate a theory by applying an inductive (or qualitative) approach (Creswell, 2003).
- 3. The nature of the social phenomena to be explored

- the research approach should be appropriate to the phenomenon to be investigated (Easterby-Smith et al., 2001); for example:
 - for finance, accounting and operational research, the research is expected to adopt positivist-deductive-quantitative approaches.
 - For the human side of IS studies, marketing and organisational behaviour research, which is mostly about human beliefs, behaviours, perceptions and values, the researcher should adopt phenomenologist-inductive-qualitative approaches.
- however, business and academic researchers show preferences for survey research methods by mixing the two dominant research philosophies.

5.2.2 Research philosophies and approaches

The research philosophy is most important when deciding a research design. The study's research philosophy reflects the way the researcher thinks about the development of knowledge which consequently affects the way he or she goes about doing the research (Saunders et al., 2006). Identifying the other elements of the research, such as the research approach, strategies, data collection methods and even the data analysis techniques, will become easier for the researcher if the research philosophy is already set.

Easterby-Smith et al. (2001, pg. 27) state that "there are at least three reasons why an understanding of philosophical issues is very useful. First, because it can help to clarify research designs. Second, knowledge of philosophy can help the researcher to recognise which designs will work and which will not. It should enable a researcher to avoid going up too many blind alleys and should indicate the limitations of particular approaches. Third, knowledge of philosophy can help the researcher identify, and even create, designs that may be outside his or her or her past experience. And it may also suggest how to adapt research designs according to the constraints of different subject of knowledge structures". Creswell (2003, Creswell, 1994) also emphasises the critical link between the design of the study, which refers to the overall approach followed to solve the particular research questions and the overall paradigm of scientific inquiry, which sets the philosophical basis for the research.

There are two main philosophies dominant in the literature according to Easterby-Smith et al. (2001) and Saunders et al. (2006): positivism and the phenomenology (or social constructionism). These philosophies have important parts to play in business and management research. Easterby-Smith et al. (2001) provided the differences of these two philosophies as shown in Table 5-1.

	Positivism	Social constructionism
The observer	Must be independent	Is part of what is being observed
Human interests	Should be irrelevant	Are the main drivers of science
Explanations	Must demonstrate causality	Aim to increase general understanding of the situation
Research progress through	Hypotheses and deductions	Gathering rich data from which ideas are induced
Concepts	Need to be operationalised so that they can be measured	Should incorporate stakeholder perspectives
Unit of analysis	Should be reduced to simplest terms	May include the complexity of whole situations
Generalisation through	Statistical probability	Theoretical abstraction
Sampling requires	Large number selected randomly	Small number of cases chosen for specific reasons

Table 5-1 Contrasting implications of positivism and social constructionism

Source: Easterby-Smith et al. (2001)

Other terminology used for categorising the positivistic approach is traditional, or quantitative, or empiricist approach, whilst the phenomenological approach is called the post-positivistic, or subjective, or qualitative approach (Hussey and Hussey, 1997).

Hussey and Hussey (1997) summarise the features of the two main paradigms, as shown in Table 5-2. The major difference between the positivistic (quantitative) and the phenomenological (qualitative) paradigms can be illustrated through the overall approach followed by each of these paradigms, with regard to the generation of knowledge: deductive theory testing and inductive theory building. Saunders et al. (2006) assert that the deductive approach represents the positivistic paradigm, whereas the inductive approach represents the phenomenological paradigm.

Positivistic (quantitative) paradigm	Phenomenological (qualitative)	
	paradigm	
Tends to produce quantitative data	Tends to produce qualitative data	
Uses large samples	Uses small sample	
Concerned with hypothesis testing	Concerned with generating theories	
Data is highly specific and precise	Data is rich and subjective	
The location is artificial	The location is natural	
Reliability is high	Reliability is low	
Validity is low	Validity is high	
Generalises from sample to	Generalises from one setting to another	
population		

Table 5-2 Features of the two main paradigms

Source: Hussey and Hussey (1997)

Within the positivistic paradigm, a researcher develops a theory and hypothesis (or hypotheses) about the relationship between two or more variables from available literature, which is then tested empirically by gathering data on the relevant variables and then applying statistical tests to the data in order to identify significant

relationships. Thus, the fundamental idea of the positivistic paradigm, as confirmed by Remenyi (1998, pg. 34) is "working with an observable social reality and that the end product of such research be law-like generalisations similar to those produced by the physical and natural scientists". Hussey and Hussey (1997) indicate that social scientists began to argue against positivism since positivist researchers tend to make cause and effect links between variables without consideration of the way in which humans interpreted their social world.

The main principle of the phenomenological paradigm is that social practices are not natural phenomena. Instead, they are socially constructed and emerge as a result of the social practices of organisational participants. The phenomenological paradigm appreciates the different interpretations and meanings which people give to various phenomena. People's feelings, thinking and interpretations of the phenomenon being investigated are fundamental issues in the phenomenological paradigm. This involves thoroughly explaining why and how people see different experiences, rather than searching for external causes and fundamental laws to explain their behaviour (Easterby-Smith et al., 2001).

In general, each of the two main philosophical paradigms has strengths and weaknesses shown in Table 5-3.

Table 5-3 Strengths, weaknesses of	positivistic, phenomen	ological paradigms
------------------------------------	------------------------	--------------------

Theme	Strengths	Weaknesses	
Positivist (quantitative) paradigm	 can provide wide coverage of the range of situations more fast and economical where statistics are aggregated from large samples, they may be of considerable relevance to policy decisions 	 the methods used tend to be rather inflexible and artificial not very effective in understanding processes or the significance that people attach to actions not very helpful in generating theories because they focus on what is, or what has been recently, they make it hard for policy makers to infer what changes and actions should take place in the future 	
phenomenologic al (qualitative) paradigm	 more in-depth and detailed generates new theory and recognise phenomenon ignored by previous literature helps people see the world view of those studied categories, rather than imposing categories attempts to avoid pre-judgements- goal is to try to capture what is happening; present people from their perspectives and views 	 fewer people studied usually and less easily generalised as a result difficult to aggregate data and make systematic comparisons dependent upon researcher's personal attributes and skills participation in setting can always change the social situation/ not participating can always change the social situation as well. 	

Source: (Frankfort-Nachmias and Nachmias, 1992)

It is worthwhile mentioning that Saunders et al. (2006), Easterby-Smith et al. (2001) and Creswell (2003) argue that, in reality, business research rarely falls under one specific research philosophy: positivism (quantitative) or phenomenology (qualitative). There are very few pure quantitative or qualitative research projects which adopt one single paradigm and use its implications. Therefore, much management and business research uses a combination of both paradigms. Saunders et al. (2006) emphasise that it is not only perfectly possible to combine approaches within the same piece of research, but it is often advantageous to do so. This fact leads the discussion to the most common research approaches in the following paragraphs.

Regarding the research approaches which are related to the research philosophy, Creswell (2003) states that there are three approaches that the research methodology can be derived from: quantitative, qualitative and mixed method approaches. The first two approaches can be classified into two main categories: the positivistic and phenomenological approaches, respectively (Hussey and Hussey, 1997), as mentioned earlier. Description of each of these research approaches will be provided in the following sections to better understand them.

5.2.2.1 Qualitative research approach

In describing a qualitative approach, Creswell (1994, pg. 7) indicates, "In a qualitative methodology inductive logic prevails. Categories emerge from informants, rather than are identified a priori by the researcher. This emergence provides rich context-bound information leading to patterns or theories that help explain a phenomenon. The question about the accuracy of the information may not surface in a study, or if it does, the researcher talks about steps for verifying the information with informants or triangulating among different sources of information, to mention a few techniques available".

According to Rudestam and Newton (2001), within qualitative research the researchers will be more flexible in exploring phenomena in their natural environment, rather than being restricted in a relatively narrow band of behaviour. A qualitative approach implies that the data are in the form of words as opposed to numbers; these data are normally reduced to themes and categories and are evaluated subjectively. There is more emphasis on description and discovery and less emphasis

on hypothesis testing and verification. They also argue that qualitative researchers seek a psychologically rich, in-depth understanding of the individual and would argue that experimental and quasi-experimental methods could not do justice to describing phenomena. Qualitative research emphasises processes and meaning over measures of quantity. It also emphasises the socially constructed nature of reality (phenomenology philosophy), a close relationship between the researcher and the object of the study and the context that influences the inquiry.

There are many types of methods which could be applied in this approach, such as case study, interviews, group discussion, participant observation and documents and records analysis. The main advantages for using qualitative research methods are identifying and clarifying specific responses, especially those related to the attitudes and behaviour of the respondents and understanding deeply their organisational climate. In addition, qualitative methods help to gain more insight into people and situations and help the respondents to think about their own world and consider the way they construct their reality (Easterby-Smith et al., 2001). Moreover, Stone (1978) cites the main features of the case study approach as: the researcher is interested in studying small number of units of analysis which could be a person, group, unit or organisation; phenomena are investigated in a natural setting; the methods used are generally more personal, such as interview or observation; the researcher has no intention of exercising any experimental or statistical control over addressed variables; it is appropriate to generate a hypothesis rather than testing it. However, the main disadvantage of the case study, according to Bryman (1988), is the lack of generalisation of their results. Sometimes researchers may be suspicious of conducting a case study because of the 'unscientific' feel it has (Saunders et al., 2006).

5.2.2.2 Quantitative research approach

In contrast to the qualitative research approach, the quantitative research approach is concerned with explaining the relationships between variables and testing specific hypotheses.

In describing the way researchers apply a quantitative approach, Creswell (1994, pg. 7) says, "By using a deductive form of logic wherein theories and hypotheses are tested in a cause-and-effect order. Concepts, variables, and hypotheses are chosen

before the study begins and remain fixed throughout the study. One does not venture beyond these predetermined hypotheses. The intent of the study is to develop generalisations that contribute to the theory and that enable one to better predict, explain, and understand some phenomenon. These generalisations are enhanced if the information and instruments used are valid and reliable."

Moreover, Rudestam and Newton (2001) describe quantitative research design as a design which attempts to control the playing field of the study as much as possible and restrict the focus into a narrow band of behaviour and to get out of harm's way as a separate and objective observer of the action. Quantitative data are evaluated by using descriptive and inferential statistics. In addition, the quantitative research is suitable to record a small set of previously identified variables.

A survey strategy is the most typical quantitative strategy conducted by questionnaire, structured interviews and telephone interviews. There are many advantages and disadvantages for quantitative approach methods. Easterby-Smith (2001) states that the advantages are that quantitative methods can provide a wide coverage of the range of situations, they can be fast and economical, where statistics are aggregated from large samples and they may be of considerable relevance to policy decisions.

The disadvantages are that the methods used tend to be rather inflexible and artificial, they are not very effective in understanding processes or the significance that people attach to actions, they are not very helpful in generating theories, because they focus on what is or what has been recently and they make it hard for policy makers to infer what changes and actions should take place in the future.

5.2.2.3 Differences between qualitative research and quantitative research

The terms quantitative and qualitative are used widely in business and management (Saunders et al., 2006). Neuman (2005) pointed out that quantitative researchers adopt a deductive approach, which involves a well-planned approach to the research design, measurement and sampling before collecting and analysing the data. In contrast, qualitative researchers adopt an inductive approach, characterised by concern for the richness, texture and feeling of the data in order to construct generalisations or theories from these data (Neuman, 2005). Therefore, there are fundamental philosophical differences between quantitative and qualitative research.

One of the differences between the two approaches is related to the nature of the data (Neuman, 2005). Quantitative data are hard, formed in numbers, and differ from the soft data, which is in the form of words, impressions, symbols and photos, in qualitative data.

Another difference is related to the sample size. In quantitative research, samples are larger than in qualitative research and generalisation through sampling to the sampling frame and population is essential in quantitative research (Punch, 2000). In qualitative research, theoretical generalisation is used.

Another important difference is related to the type of the problem presented in the research (Creswell, 2003). In quantitative research, the research problem is addressed in terms of factors that affect the results and enable the researcher to identify the variables, which explain the problem. "Researchers sometimes advance theory to test, and they will incorporate substantial reviews of the literature to identify research questions that need to be answered" (Creswell, 2003, pg. 54). Meanwhile, the research problem in qualitative research is described by exploring a concept or phenomenon, about which relevant variables and theories are often unknown (Creswell, 2003).

"Quantitative researchers emphasise precisely measuring variables and testing hypotheses that are linked to general causal explanations" (Neuman, 2005, pg. 151). On the other hand, qualitative researchers depend on interpretive or critical social sciences, where the research follows a largely non-linear path using practical logic and emphasises cases and contexts (Neuman, 2005).

Finally, the design and analysis of both types of research are different. Quantitative research has well developed methods of analysis (Punch, 2000). These methods are more formalised more uni-dimensional and fewer variables than qualitative methods. Thus, this type of research is more replicable than qualitative methods (Punch, 2000). On the other hand, a qualitative research structure is less rigid than quantitative research and the methods are less formalised. In addition, qualitative research has more dimensions than quantitative research. They are also more-multi dimensional, more diverse and less replicable. It therefore has greater flexibility (Punch, 2000).

Quantitative and qualitative research types are used widely in business and management studies (Saunders et al., 2006). Table 5-4 shows their apparent differences.

	Quantitative	Qualitative	Reference
LogicalApproach		Inductive	(Neuman, 2005)
Data Type	Hard (e.g., numbers)	Soft (e.g., words, impressions, symbols and photos) (Cassell et al., 2006; Holloway and Todres, 2003)	(Neuman, 2005)
Sample Size	Large (sampling frame and population generalisation) Small (theoretical generalisation)		(Punch, 2000)
ProblemDescribed in termsTypeimportant factors		Described by exploring a concept or phenomenon	(Creswell, 2003)
Emphasis	Measuring variables; testing hypothesis	Cases and contexts	(Neuman, 2005)
Design and Analysis	More formalised More replicable Fewer variables	Less formalised Less replicable More multi-dimensional Less rigid Greater flexibility	(Punch, 2000)

 Table 5-4 Differences between Quantitative Research and Qualitative Research

This study adopted predominantly the qualitative tradition of research using primary and secondary data as sources of information. The qualitative research process is expected to "confront the constraints of daily life" as it seeks to address issues and problems that are emerging, and have not yet been studied by any existing positivistic research paradigm (Näslund, 2002). In this respect, this research tradition is able to gather rich descriptions of valuable data, unlike the quantitative research tradition which have data which are more limited (Näslund, 2002, pg. 329). Owing to the emphasis on broad and rich descriptions of ideas and meanings of the group of people who participated in a study, the possibility of creating a whole new paradigm or theory may emerge (Denzin and Lincoln, 1994, Näslund, 2002).

The qualitative tradition of research science is primarily dependent on its epistemological roots, and has interpretations that vary, as they are highly dependent on the researcher (Cassell et al., 2006). Holloway and Todres (2003, pg. 162) argued that there are certain instances where one could see an overlap of the "epistemological, aesthetic, ethical and procedural concerns" which in sum paves the way for one to have a general overview of what qualitative research is. Some of these generic characteristics are for instance, textual data, visual images or techniques that are normally used in the qualitative process.

In this respect, it could be said that the qualitative research tradition is more interpretive and subjective towards its approach on the subject matter (Näslund, 2002, pg. 324) The emphasis on the world view of "looking inside rather than outside" implies a more humanistic perception in terms of the interpretation of an area under discussion, because it primarily involves the views of people who are directly participating in a particular process (Denzin and Lincoln, 1994, Näslund, 2002, p 324).

Despite the value of such an approach to this research, however, quantitative data are not precluded. Therefore, it could be concluded that one method is not sufficient for the whole research process.

We cannot find out everything we might want to know using only one approach, and we can often increase the scope, depth and power of research by combining the two approaches (Punch, 2000, pg. 243). For this reason, a mixed approach (i.e., triangulation) was adopted, as explained next.

5.2.2.4 A mixed, multi-methods approach (Triangulation)

Based on the argument provided by Saunders et al. (2006), Easterby-Smith et al. (2001) and Creswell (2003) that, in reality, business research rarely falls under one specific research philosophy, positivism (quantitative) or phenomenology (qualitative), most management and business research often uses a combination of both paradigms. Saunders et al. (2006) emphasise that it is better to combine approaches within the same piece of research. In this regard, Easterby-Smith et al. (2001) also stress that the distinction between a quantitative and qualitative approach is not always clear. Some techniques could be used in either approach, for example, the interview. Similarly, a single piece of data, such as interview transcript, can be analysed in either way. In addition, there is no a particular method which should be used in one particular circumstance and another for another circumstance.

According to Creswell (2003), the combination of the two paradigms has been described as "triangulation" between paradigms, methodologies and methods of data collection in the study of the same phenomenon. The triangulation concept is built on the assumption that it would reduce biases inherent in particular data collection sources and methods, through using more than one data collection method. The term *triangulation* was borrowed from the field of navigation and surveying, where it refers to the notion of fixing an object from at least three independent locations in order to increase the accuracy of the sighting (Smith, 1975). Abrahamson (1983) points out that the triangulation approach prevents the research from becoming method-bound. Almost every measure is flawed in some way or another, and therefore counterbalancing the strengths from one measure to another can improve research designs and strategies. Abrahamson (1983) also argues that methodological pluralism - obtaining as many perspectives as possible on things- inevitably helps the exploratory theory - testing process along.

Triangulation has many advantages. It provides a kind of convergence of results complementing findings reached from analysing various observations and enhances the scope and breadth of a study (Creswell, 2003). It increases validity because it ensures that the variance is attributed to the trait of the subject examined rather than

to the method used for investigation. In short, triangulation consists of crosschecking data for internal consistency and external validity, which are matters of concern for any study (Sekaran, 2003, Saunders et al., 2006). Gilbert, (1993, pg. 199) in identifying the importance of triangulation, states, "*The notion of triangulation has become a salient feature of research methodology. In this framework, validity is seen as having both external and internal aspects and the achievement of validity, and indeed of the research task as a whole, requires a triangulation of research strategies.*

There are different types of triangulation, according to Denzin (1970). These are data triangulation, which has three subtypes: time, space and person; data should be collected at a variety of times, in different locations and from a range of persons and collectives. The second is investigator triangulation, which is using multiple rather than single observers of the same object. The third, theory triangulation, consists of using more than one kind of approach to generate the categories of analysis. This is the most difficult triangulation to achieve. The fourth, methodological triangulation has two subtypes: within method, for example using, in a questionnaire, a combination of attitude scales, forced choice items and open-ended questions; between–method triangulation, which is probably the more important one.

Theoretical triangulation involves drawing conceptual models and frameworks from other disciplines and using them to explain situations in another discipline or context while methodological triangulation is achieved through the use of mixed methods that are quantitative as well as qualitative in nature (Easterby-Smith et al., 2001). Janesick (1998, pg. 154) adds the following statement in relation to methodological triangulation:

Because different "lenses" or perspectives result from the use of different methods, often more than one method may be used within a project to the researcher can gain a more holistic view of the setting. Two or more qualitative methods may be used sequentially or simultaneously, provided the analysis is kept separate and the methods are not muddled.

Saunders et al. (2006, pg. 218) defined methodological triangulation as "the use of two or more data collection methods within one study in order to help ensure that the data are telling you what you think they are telling you". The first use of

methodological triangulation is connected with the validity of measurement in structured quantitative data (Ritchie and Lewis, 2003). Triangulation can be used to overcome the possible bias and deficiencies of a single-method approach (Collis et al., 2003). The value of triangulation arises from the ability to provide a comprehensive and fuller picture of the research problem (Bryman and Bell, 2003).

According to Creswell (2003), it is beneficial for the researcher to be "pragmatic" in mixing research approaches and methods in a single study of social phenomena. "Pragmatists" attempt to integrate methods of quantitative and qualitative paradigms in investigating a single study. That is because each research approach and method has its own strengths and weaknesses; thus, the data collected will be affected by these strengths and weaknesses. Therefore, combining or employing different approaches and methods in this study will cancel out a 'method effect' and combine the advantages for each method employed.

5.2.2.5 Research approaches

As mentioned earlier, there are two main research approaches: deductive and inductive. The deductive approach is related to positivism and natural science models of social research. Miller and Brewer (2003) argue that deductive study is an approach to data analysis, explanation and theory that sees empirical social research conducted on the basis of a hypothesis derived from social theory, which is then tested against empirical observation, and then subsequently used to confirm or refute the original theoretical proportion. The inductive approach, on the other hand, follows from the collected empirical data and proceeds to formulate concepts and theories in accordance with that data (Marcoulides, 1998).

Selection of the research approach is, according to Creswell (2003), a critically important decision. The research approach does not simply inform the research design but it gives the researcher the opportunity to critically consider how each of the various approaches may contribute to, or limit, his or her study, allow him/her to satisfy the articulated objectives and design an approach which best satisfies the research's requirements (Creswell, 2003).

Following from that, the research proceeds to test the proposed hypotheses. The deductive approach is appropriate in this research to validate the data related to social factors' impact on e-business and the salience of the lifeworld and system

theory evident in the Saudi companies. At the same time, the information which may be generated will be used inductively to develop a theory in reference to the unique Saudi culture.

In the present study, the primary research approach will be qualitative, using rich data to determine a deep understanding of the problem domain. This will be supported by a quantitatively analysed study, wherein a broader-based study via questionnaire will be used to challenge or verify the findings of the qualitative research. The quantitative data, which will be obtained through conducting a survey within Saudi Aramco, SABIC and Hadeed, can therefore be seen as validating (or otherwise) the qualitative data, which will be obtained via interview. So the result of the questionnaire will be used to further investigate social factors, which are discussed in detail in the focus group. Triangulation is needed to increase the credibility of interpretations and illustrations and as such will increase the overall quality of the research (Stake, 1995, Yin, 1994). Following from Punch's (2000) advice that a research's value is inevitably maximised should it exploit both approaches, if the research hypotheses, questions and objectives withstand doing so, the research will utilise both approaches. A qualitative approach is appropriate where there are strong theoretical underpinnings (Bryman, 1999). It will be useful for collecting 'hard' data on business unit characteristics and for obtaining a large volume of attitude data in a manner that can be captured in numerical form to facilitate analysis. The qualitative approach will allow deeper exploration, through rich, subjective, verbal data (Hussey and Hussey, 1997) of the expectations, beliefs and feelings which underlie people's decisions and responses in relation to ebusiness.

5.3 Research Purpose

Research scholars have identified three main purposes to research activity. These are the exploratory, the descriptive and the explanatory purposes (Saunders et al., 2006). Proceeding from Jackson's (1994) contention that the researcher should identify the purpose(s) by correlating the research questions to the research objectives, this is precisely the strategy that the current research will adopt.

5.3.1 Exploratory

The purpose of exploratory research is the exploration of a complex research problem or phenomenon, with the objective of clarification of the identified complexities and the exposition of the underlying nature of the selected phenomenon. In other words, exploratory research investigates a specified problem/phenomenon for the purpose of shedding new light upon it and, consequently, uncovering new knowledge (Robson, 2002).

As indicated in Chapter One, the research question, "What are the social factors which affect the assimilation of e-business?" necessitates the posing of a few secondary questions, including:

- What changes should each of the three Saudi companies as a social entity make in order to facilitate the adoption of e-business?
- How will the adoption of e-business affect communication between the three Saudi companies and their environment?

They are fundamentally exploratory in nature. In order to answer these questions, it is necessary to explore e-business implementation paradigms, e-business communication paradigms and the intra- and extra-organisational social impact of ebusiness.

5.3.2 Descriptive

Punch (2000) explains the purpose of descriptive research as the collection, organisation and summarisation of information about the research problem and issues identified therein. Jackson (1994) contends that all research is partly descriptive in nature, insofar as the descriptive aspect defines and describes the research's who, what, when, where, why, and how.

This research adopts a descriptive purpose in parts. To answer the research question, it is necessary to ask (1) "what is e-business?" (2) "what are the three companies doing about e-business, when, where and how?" (3) "what are the reasons for the companies' e-business decision?" and (4) "how are end-users responding?". These questions immediately correlate to the research objectives and are essential for answering the primary research question. More importantly, these questions are

descriptive in nature, will be answered through the literature review and, as such, impose a descriptive purpose upon the research.

5.3.3 Explanatory

Miles and Huberman (1994) define the function of explanatory research as the clarification of relationships between variables and the componential elements of the research problem.

The selected research question and research objectives suggest a need for an explanatory research purpose. The research questions concern the relationships between organisational and social factors and the successful implementation of e-business. Accordingly, the research will further adopt an explanatory purpose.

5.4 Research Strategy

According to Saunders et al. (2006) research strategy refers to a general plan which enables the researcher to answer their research questions. There are different research strategies, such as survey, case study, grounded theory experiment, action research, ethnography and archival research.

5.4.1 Survey

This strategy is ideally suited for the collection of quantifiable data from large populations, but should only be employed when the researcher's knowledge of the subject enables him/her to identify correctly the possible/most likely response options to the questions posed (Gable, 1994). A survey is a time and cost effective way of obtaining the required volume of data.

5.4.2 Case study

In this study, Saudi Aramco's six business lines, international scope and large number of personnel, SABIC's numerous affiliates, and Hadeed's expansion goals, means that a large sample is needed for representations of data. The researcher's work experience in Saudi Aramco as well as his business connections to SABIC and Hadeed; the theoretical understandings of Habermas' lifeworld and system theory; and a careful pilot testing, will enable the appropriate response options to be identified. The value of such integration of case study and survey methods within information system related research has been argued by, for example, Gable (1994) and Fitzgerald and Howcroft (1998).

5.5 Data Sources and Data Collection Methods

There are many methods which could be used to collect research data. Oppenheim (1992) defines research methods as those used for data collection and generation. Data could be gathered by interviews, questionnaire, observations or archival records, depending on the nature of the study, research approach (qualitative or quantitative or both), research questions and objective, research design and philosophy and research strategy (experiment, survey, case study, grounded theory, ethnography, action research, exploratory, descriptive and explanatory studies). However, researchers could still use any research method whatever the research approach (qualitative or quantitative) is. In supporting this, Rudestam and Newton (2001) state that the distinction between qualitative and quantitative approaches could be misleading and not clear. Neither one of these approaches possesses a distinct set of methods that are all its own. Some methods, such as interviews, can be used to gather data in either approaches, also, a single piece of data, such as an interview transcript, can be analysed in either way.

In this study, as mentioned earlier, in order to answer the research questions and meet the objectives, the researcher made the decision to adopt a multi-methods approach through applying both personally administered questionnaires and face-to-face interviews as the data collection methods in a complementary or supplementary way rather than in competition with each other. Therefore, in this research the exploration of social factors that may affect the assimilation of e-business technology is based on the key users', the top managers', and the senior implementation consultants' viewpoints in Saudi Aramco, SABIC and Hadeed as organisations, and is carried out by using face-to-face semi-structured interview and personally administrated questionnaires (delivered and collected by the researcher).

Using a questionnaire as the only data collection method in investigating the social factors that affects the adoption of e-business has been criticised by many authors, such as Sekaran (2003), Saunders et al. (2006) and Creswell (2003). There are many important and complex social factors that need to be explored and explained in detail

through other data collection methods such as interviews. Therefore, combining interviews and questionnaires in this study helps in generating deeper insights and better understanding to reveal further facts about the research dimensions; also, it helps in understanding the facts underpinning the questionnaires' answers and identifies many other important social factors. In addition, applying qualitative and quantitative methods was very important because of the difficulty in quantifying social factors' outcomes, which are mostly subjective in nature and require a long time to emerge.

Based on its sources, data is divided into primary and secondary data. Primary data is the kind of data which is new, original research information directly obtained by the researcher. According to Saunders et al. (2006, pg. 221), "Primary data is the data collected specifically for the research project being undertaken." However, secondary data are data which the researcher did not produce personally, but obtained as a second hand report or record, and then re-uses in his/her own research. According to Saunders et al. (2006) secondary data are data that have already been collected for some other purpose. Multiple data sources are needed in case studies to reduce the risk of bias (Yin, 1994, Stake, 1995).

The researcher will have access to all the information related to the purchase of SAP and its implementation.

5.5.1 Documentary sources

The development of the case study for this research will make extensive use of secondary data. Both Yin (1994) and Stake (1995) discuss the usefulness of secondary data sources as the basis for research and as a main source of evidence. However, secondary data sources do have limitations. Primarily, bias [and accuracy problems] may exist in the secondary data and so should be treated with caution (Yin, 1994, Stake, 1995). Secondly, secondary sources and documents should not be taken as a literal recording of events (Yin, 1994), and thirdly, there is no way to tell whether or not the data or results have been affected or driven by outside influences or events.

5.5.2 Data collection: Questionnaire

As a research data collection tool, the questionnaire is generally recognised as very efficient (Creswell, 2003). The questionnaire is the core method of conducting

survey research and the question makes up the core of the questionnaire. Questionnaires have the advantage of obtaining data from a large group of people and are more efficient in terms of time, effort and cost. Sherman and Fetters (2007) argues that questionnaires are the most popular method for collecting data and can be administered electronically, personally, or can be mailed to respondents. Unless questions are open-ended, its responses are fixed and easily summarised and quantified.

Questionnaires can be formatted to focus on a specific aspect of the organisation, or take a more comprehensive approach with questions covering organisation characteristics as a whole. The flexibility of questionnaires extends to structure and format, whereby they can either be standardised or customised (e.g. to Aramco's different business lines). In instances where they are both, the questionnaire is a valid and rich source of reliable data. In regard to format, questions can be either open- or closed-ended. The use of the former carries the advantage of motivating more flexible and detailed responses. However, in all cases, questionnaires are administered to respondents in exactly the same way, confirming their position as a valid source of reliable data (Creswell, 2003).

Despite the advantages of questionnaires as a method of data collection, problems with questionnaires include (Banas and Rohan, 1971): (1) they do not allow probing, prompting and clarification of questions; (2) they do not offer opportunities for motivating the respondent to participate in the survey or to answer the questions, (3) the identity of the respondent and the conditions under which the questionnaire is going to be answered are not known. Researchers cannot be sure whether the right person has answered the questions, (4) questionnaires do not provide an opportunity to collect additional information while they are being completed. There is no researcher presents, for instance, to make observations while the questions are being answered, (5) due to lack of supervision, partial response is possible.

These problems, however, can be reduced by utmost care in questionnaire construction and piloting, by the researcher's knowledge of the organisation, and targeting of respondents, and by triangulation with other data sources.

Questionnaires were used to obtain a profile of SAP end-users in Saudi Aramco, SABIC and Hadeed and to explore the four major important factors across business activities.

Questionnaires can be delivered on paper or online, and both of these methods have advantages and disadvantages. Paper surveys can be expensive to print, mail, and collect, and the data must be entered by hand for analysis. Online surveys can require back-end programming for data collection and user authentication, but the data does arrive in a convenient digital format. Nevertheless, it has been shown that online surveys usually result in a much lower response rate than paper surveys provide. Compared to traditional mail-in questionnaires, an electronic survey offers some advantages such as the creation of a more interactive and attractive instrument, the reduction in handling costs and response cycle time, as well as the elimination of errors due to data re-entry (Couper, 2000, Dillman and Dillman, 2000, Steven et al., 2001).

In the case of the three Saudi companies, the questionnaires were distributed to their headquarters. Prior to the delivery of the questionnaires, the participants were aware of the schedule for answering and returning this document.

5.5.3 Data collection: Interviews

The other data collection method used in this study was face-to-face semi-structured interviews, since the study is dealing with different subjective factors and variables which need to be explored comprehensively. In addition, the lack of similar studies about the social and cultural factors that may affect the adoption of e-business technology which makes the questionnaire, alone, an inappropriate data collection method for this kind of investigation. The problems of the research need to be explored in-depth; therefore, it was found that semi-structured interviews are an appropriate data collection method for this study.

An interview is:

- a purposeful discussion between two or more people which helps to collect valid and reliable data that are relevant to research questions and objectives (Saunders et al., 2006).
- a method of collecting data in which participants are prompted with questions in order to find out what they do, think, or feel (Easterby-Smith et al., 2001).

For this study, an interview is a face-to-face or voice-to-voice conversation, directed and conducted by the researcher to obtain or elicit relevant data, information, expression, opinions, and beliefs that are relevant to the research objectives.

Personal face-to-face interviews can be divided into three types:

- 1. In-depth unstructured or informal interviews
 - has no pre-determined list of questions or theme
 - the researcher or interviewer must have general ideas about the areas or aspects to be explored
 - the respondent or interviewee is given the chance to talk freely about the situation, event, behaviour or beliefs in relation to the topic area
 - a non-directive type of conversation
- 2. Structured or standardised interviews
 - has a set of pre-determined questions
 - the responses are recorded on a standardised schedule
- 3. Semi-structured interviews
 - Non-standardised
 - The researcher has a list of themes or questions to cover during the interview
 - Themes and questions may vary depending on specific organisational context and on the interview conditions
 - Data collected by the interviewer are recorded by note taking or tape recording

Advantages and Disadvantages of the Interview Method

The interview has many advantages and disadvantages, as dose any other inquiry method.

Main advantages of the interview:

1. **It is a flexible method.** The interview allows the researcher or interviewer to modify and adjust interview questions to suit the situation, especially with

semi-structured and unstructured types. Thus, they help the researcher to collect supplementary data and to clarify the objectives of the study. Any question could be changed, omitted or added to when required, while it is difficult to remedy this situation in the case of the mailed questionnaire.

- Increase in certainty. Due to the direct contact between the interviewer and the interviewee, it allows the researcher to explain the purpose of the study more freely and to clarify any doubt or to avoid any misunderstanding of the questions or the concepts.
- 3. **Many detailed responses.** The researcher can obtain many detailed responses of the subject to the questions that will lead to robust results. Because the interviewer has more control over the number and the order of the questions to be asked, he/she may add many further supplementary questions and information resulting from the conversation with the interviewee and that he/she has no idea of before, whereas, it is difficult to maintain that control over the mailed questionnaire.
- 4. **More complex questions can be given.** With the permission of the interviewee, the researcher can ask more complex questions. Also, follow-up questions can be asked (Sekaran, 2003).
- 5. **Higher degree of the interviewee's confidence in giving his/her answers.** The interview takes into account the non-verbal communication, such as the feeling, behaviour, attitudes and facial expression of the interviewee.
- 6. **Higher response rate.** Due to the higher co-operation of the respondents, the proportion of refusals will be less and the number of answered questions will be high. In supporting this view, Shaikh (2003) also argues that in organisational settings, the typical response rate for a personal interview is about 95 percent, whereas for a mailed questionnaire, it is between 20-40 percent.

Main disadvantages of the interview:

1. The whole process of the interview could be described as expensive and time consuming, especially if there is a large number of respondents to be interviewed, there is a large number of interviewees needing to be interviewed and the problem of access to an appropriate very knowledgeable interviewees (Hussey and Hussey, 1997).

2. The interviewer may affect the validity and reliability of the questions as he or she might be sensitive to the interviewee's responses.

5.6 Population of the Study

It would be useful to start this section by identifying the many reasons behind choosing Saudi Arabia and the three Saudi companies to conduct this research. Importantly, it is the home country of the researcher, which means that the researcher was able to collect the required information for his or her research without any difficulties regarding the language, cultural difference, time issues, and so on and he understands all the ethical issues concerned in conducting a research in Saudi Arabia. The other important reason is that there is a shortage of empirical studies concerning e-business in developing countries, including Saudi Arabia, also, concerning the social factors which affects the adoption of e-business. This point emphasises that Saudi Arabia, as a developing country, needs empirical studies in the field of e-business which might improve the adoption rate of e-business and the way in which organisations look at or consider e-business and, also, support decision makers to have useful information which is required to adopt and improve e-business in the organisations.

Hussey and Hussey (1997) define a research population as the entire group of people, events, or things of interest that the researcher wishes to investigate. The population of the present study is defined as the SAP end-users from the three leading companies in Saudi Arabia. Therefore, the chosen organisations reflect the whole population rather than a sample of the population, because of their small number and to reflect the whole picture of e-business adopters in the private sector.

5.7 The Choice of Respondents and Sampling

The study targeted a total of 1,150 SAP end-users from Saudi Aramco, SABIC and Hadeed from all level of each company. In choosing the research participants, it could be said that, in this study, purposive or judgmental sampling techniques were applied in determining the participants that would best enable the researcher to answer the research questions and to meet the research objectives. Purposive sampling is the most appropriate sampling technique for this study, since the research questions and objectives require selecting particular respondents who are considered to be informed and who have the required information and experience needed to answer the research questions.

This research was conducted mainly in Dhahran, the headquarters of Saudi Aramco, although central, western and southern regions were also considered; as well as in Jeddah and Riyadh, the headquarters of SABIC and Hadeed. Those people were chosen to be the respondents of this study because they are the only people who have the required information and experience about SAP implementation issues, management, problems and its importance for organisational success, also for their critical roles in their respective business lines.

The rationale for using semi-structured interviews in this study was that other Arab researchers have chosen the face-to-face semi-structured interview technique as a means of enlightened opinions, views and knowledge constitute a rich data collection, in addition to a survey questionnaire, to conduct their research (Al-Ali, 1999, Al-bahussain, 2000, Al-Faleh, 1987, Al-Rasheed, 1996). They found that this technique is very successful in Arab organisations, where managers prefer to talk rather than to complete a questionnaire. In this regard, Muna (1980) states that Personal contact is a strong preference within Arab culture for business transaction.

Thus, it was decided that e-business consultants would be interviewed, rather than asked to complete a questionnaire on which they may be reluctant to spend time providing written explanatory answers for someone they have never met. In addition, from the outset the researcher was convinced of the value of using face-to-face interviews as means of data collection to conduct this study because of their advantages in exploring a wide range of issues related to the research questions. In addition, they complement the questionnaires and can explore or explain, in depth, any further details, information, themes and facts under investigation behind the questionnaire's responses; in other words, to supplement and validate the questionnaires' findings. Also, interviews provide the researcher with some important information when interpreting questionnaire findings. Finally, it is important to say that, since the researcher has predetermined themes and issues which need to be explored, rather than leave the respondents to talk in general ways around the research problem(s) and then focus on particular themes, it was decided that the type of interviews should be semi-structured. Hence, key users, decision makers and implementation consultants are in the best position to provide the required information data. They are the most knowledgeable people in the surveyed organisations about SAP implementation, success rate and phased obstacles.

More specifically, the following reasons were behind choosing these groups as respondents of the study:

1. All Saudi Aramco business lines are headquartered in Dhahran. However, some key users and decision makers are based in central, western and southern regions. In addition, in all the regions there is no implementation department/section or unit. Instead, there is a relatively small computer support centre employing a limited number of employees. Therefore, the central, western and southern regions do not have sufficient information about SAP implementation. All SAP related decisions and issues are formulated in, or centralised to, Saudi Aramco's headquarters in Dhahran. Thus, the said headquarters is the main source of the desired data and information about SAP implementation at Saudi Aramco.

Likewise, for SABIC and Hadeed, these companies' headquarters are the sources of data and information on SAP implementation needed for this study. The survey questionnaires and the semi-structured interviews with the SAP end-users and consultants were administrated in Jeddah and Riyadh as the main headquarters of SABIC and Hadeed.

- 2. Managers, who are found in the headquarters of the three Saudi companies, are the most knowledgeable people in terms of corporate management, SAP practices, policies, process, planning, implementation, evaluation, training methods, training outcomes and all the social factors and problems that could affect the adoption of e-business concept effectively.
- 3. Implementation consultants are knowledgeable people in terms of implementation issues, as well as on aspects of designing and implementing a computer solution in any organisation. Thus, obtaining their views, opinions and attitudes is very important to understand the whole picture of possible social factors that may affect the adoption of e-business systems.

- 4. The study utilises a comprehensive questionnaire that includes many questions relating to SAP implementation. The required information or answers need to be obtained from the people who have them, the people who are in charge of implementing SAP; they know better than any other people, they are the only people who can answer all the questions. The questions included were not just about 'are you satisfied or not', or 'what do you think about SAP', or just about what are SAP problems, they were about how SAP is constructed there, how it is evaluated, how the business process is designed, what the indicators are, what the impact is on organisational performance. Such information contains specific issues and is not available from all the people in the organisations. That is why this research did not include end user employees as interviewees.
- 5. Top corporate managers are considered by many researchers in the field of ERP solution as being the most important group in the organisation to secure the success for its implementation. Their support, commitment, opinions and attitudes towards the importance of ERP in the organisation, determine ERP success. In addition, they are the key influential decision makers in the organisation. They are the key strategy makers, as well; their appreciation of the benefits of ERP, which are important indications that SAP really is working, will guarantee their commitment and support to this important function. Their support and commitment are the key criteria for discovering and understanding the possible social factors which may prevent the utilisation of SAP, as discussed in this study. The term 'top managers' used in this study reflects those who are mainly the decision makers or who report to the Vice President for Information Technology.

5.8 Selecting a Sample

Sampling techniques are divided into two types: probability or representative sampling and non-probability or judgmental sampling. According to Saunders et al. (2006) probability sampling is a technique in which the chance of each case being selected from the population is known and is not zero. Ghauri and Grønhaug (2005) express that there are several types of probability samples, such as random sampling, systematic sampling, stratified sampling and cluster sampling. With regard to non-probability sampling, Bryman and Bell (2003) point out that this implies that some

units in the population are more likely to be selected than others. Saunders et al. (2006) added that there are several types of non-probability sampling, such as quota sampling, purposive sampling, snowball sampling, self-selection sampling and convenience sampling. Bryman and Bell (2003) argued that probability sampling is an important procedure in social survey research. Therefore, it is possible to make inferences from information about the random sample to the population from which it was selected.

According to Sanders et al. (2006) probability sampling is most commonly associated with survey-based strategies. Hence, in this research, the researcher has adopted stratified random sampling for the questionnaire. Each selection of SAP users from the three Saudi companies was divided into three groups. The first group was mainly users who process the daily routine transaction. The second one was junior managers. The third one was senior managers.

The quota sampling technique was adopted for the focus-group interview. The aim of quota sampling is to produce a sample that reflects a population in terms of the relative proportions of people (Bryman and Bell, 2003). Therefore, the researcher conducted a focus-group interview with SAP consultants who rendered their expertise in different companies in Saudi Arabia, particularly to the three companies featured in this study.

5.9 Sample Size

Saunders at al. (2006) indicate that, the larger the sample size, the lower the likely error in generalising to the population. Since the characteristics and the accuracy of the data collected via the questionnaire are crucial to the research, therefore, if they are not biased, samples of larger absolute size are more likely to be representative of the population of the Saudi companies from which they are drawn. This is known as the law of large numbers. In addition, Saunders et al. (2006) pointed out that the mean (average) calculated for the sample is more likely to equal the mean for the population. Consequently, the questionnaire will be distributed to a large and scattered sample across the three companies' business lines. In regard to the interviews, as mentioned previously, a relatively small sample was chosen across the three companies' business lines along with small size cross-functional implementation consultants.

5.10 Ethical Issues

According to Ghauri and Grønhaug (2005) ethics are moral principles and values that influence the way a researcher conducts his/her research process. Attention should be paid to the ethical issues at an early stage of the research process. For this research, the researcher had to handle confidential data, related to the adoption of SAP. Such information was used to set and design the questionnaire as well as during the interviewing. Moreover, the researcher obtained a written agreement to participate from the participant in the second stage of the research. Additionally, the researcher clarified the rights of the participants prior to obtaining any information from them.

5.11 Time Horizon

This study adopted a cross-sectional design, the study of a particular phenomenon at a particular time (Saunders et al., 2006). The cross-sectional design mostly employs the survey strategy and is a positivistic methodology designed to gather information from population sampling (Easterby-Smith et al., 2001). In this case, usually, a different business line and/or group of people are selected and the study is conducted to ascertain how relevant factors differ (Collis et al., 2003). A cross-sectional design entails the collection of quantitative and qualitative data (Bryman and Bell, 2003).

Owing to the nature of the research participants and the time limit and financial resources, this research was carried out in Saudi Arabia by using questionnaire and a semi-structured interview at particular times; therefore, a cross-sectional research design was suitable for this research.

5.12 Designing and Formulating the Research Questionnaire

It was decided that the questionnaire should mainly deal with exploring the social factors that are inherent in the other major factors through utilising the lifeworld and system theory relative to e-business assimilation in the surveyed Saudi companies. However, there were also a few similar questions asked in the semi-structured interview, which was designed to achieve the research objectives and to validate the answers of the questionnaire.

Designing and formulating the study questionnaire must aim to answer the research questions and objectives. Wording, language, depth, clarity, order and, above all, the

type of questions asked are all important in order to get a good analysis of the study. Thus, to ensure that the criteria of questionnaire construction and pre-testing were met, huge time and effort was devoted towards the design, layout and wording of the questionnaire used in this research. The language of questionnaires is an extremely important aspect of their effectiveness and should reflect the respondent's own language usage. The wording of questionnaires can also help to avoid difficulty, such as leading and double-barrelled questions. Thus, because most of the respondents of this study were Saudis, it was decided that the questionnaire should be distributed in the Arabic language in order to that they should understand it well, while the order of the questionnaire was based on the funnel approach which, according to Sekaran (2003), facilitates the easy and smooth progress of the respondent through the items in the questionnaire. The progression goes from general questions to those which are more specific, from questions that are relatively easy to answer to those that are more difficult.

Unlike in-depth and semi-structured interviews where the researcher can promote and explore more issues related to the required data, s/he can add and omit further questions depending on the situation of the interviews, the questions in the questionnaire need to be defined precisely prior to data collection and offer one chance to collect the data. So, it is important for researchers to spend enough time deciding what data need to be collected and how to analyse them, in order to design a questionnaire that meets these requirements. It is also important to review the literature carefully and to discuss ideas with other researchers or with the project tutor and other interested parties. In addition, there are many factors affecting the methods of measurement by questionnaire: the length of questionnaire and the time needed for completion; the contents, language, sensitivity and difficulty of items of the questionnaire; whether the questions are open-ended or closed; whether the questionnaire includes a clear introduction and instructions or guidance for answering the questions; the questionnaire layout, ease of completion, type of printing, wording, etc; the interpretation of the response; whether the questionnaire is administered by post, Internet, email and telephone or personally administered by the researcher him/her self.

Several drafts accompanied with thorough evaluation and pre-testing were carried out prior to generating the final version of questionnaire. The questionnaire employed in this study is <u>displayed in Appendix 10-3.</u>

5.12.1 Question types and format

A good questionnaire offers useful data about what the researcher is attempting to explore. In this study, the questions included in the questionnaire were based on searching the previous studies in e-business adoption and implementation. It was decided that using previous questionnaires (with, of course, some necessary modifications to the original content to be applicable to the Saudi context) would ensure the study's validity and reliability and compare the result of this study with other related studies. Therefore, the study questionnaire was derived from different studies (Cooper and Schindler, 2003).

There are two types of questions for constructing the questionnaire that the researcher can use: open-ended and close-ended types. In open-ended questions, a respondent is allowed to give a personal response or opinion in his or her or her own words, while in closed-ended questions a respondent is allowed to select answers from a number of predetermined alternatives (Hussey and Hussey, 1997).

The questionnaire consists of mainly closed-ended questions. On the other hand, a few open questions were used to give participants the opportunity to express their views on specific questions or to add additional insights or comments. According to Cooper and Schindler (2003), several situational factors affect the decision of whether to use open-ended or close-ended questions:

- Objective of the study. Use closed-ended question if the objective of the study is only to classify the participants on some stated point of view.
- Thoroughness of prior thought. Use closed-ended question if the participant has developed a clear opinion on a topic.
- Respondent motivation. Closed-ended questions typically require less motivation and answering them is less threatening to respondents.

According to Cooper and Schindler (2003), closed questions are generally preferable in large surveys. They reduce the variability of response, are less costly to administer and are much easier to code and analyse. The present questionnaire used two types of closed questions: category questions and scale questions. The former are designed so that each respondent's answer can fit only one category while the latter are designed as the main type of closed questions used in this questionnaire. Rating questions allow participants to give more discriminating responses and to state if they have no opinion by providing them with some form of rating scale. This allows a numerical value to be given to an opinion (Hussey and Hussey, 1997).

Finally, a five point Likert ordinal scale was used throughout the questionnaire where the respondents were asked to indicate the degree of agreement or disagreement with each statement included in the questionnaire, or to indicate the degree of frequency of using some related issues. Two types of Likert scale were used. The first one was (1) Never, (2) Rarely, (3) Sometimes, (4) Mostly, (5) Always. The second Likert scale was (1) Strongly disagree, (2) Disagree, (3) Not sure, (4) Agree, (5) Strongly agree.

In this study, the questionnaire involves different types of questions: attitudinal dichotomous, directive, Likert and open-ended. As mentioned before, the order of the questions was based on the funnel approach; from the general questions to the more specific questions.

5.12.2 The contents of the questionnaire

It could be said that the questionnaire includes many questions since the research aims to achieve several objectives and answer many questions (see Appendix 10-3).

Internal validity refers to the ability of the questionnaire to measure what it is intended to measure (Saunders et al., 2006). The questionnaire in this research has been used by Chun (2004) as well as by Aramco's Change Management Department, who have designed and tested a set of questionnaires pre and post implementation of their system. These questions were formed based on actual encounters and further internal research of the consultants, top managers, and SAP end-users from the Aramco. This testing and validation has ensured that the concepts explored by the questionnaire are significant in achieving the goal of this study: to find out how to deal with the social issues in Saudi companies, most especially when it comes to assimilating the e-business to the current business operations.

The questionnaire includes the following sections:

Section 1: Internet-based technologies and services
This section involves questions on the user's length of IT-tools (i.e., Internet and WWW) usage and how often they use each of the five major IT tools in their business activities. For the IT tools length of usage, 7 options on number of years were provided while for the frequency of IT tools usage, a 4point Likert-scale was adopted, that is, 1 for Never, 2 for Rarely, 3 for Occasionally, and 4 for Always.

In summary, this section depends on two factors:

1- Number of years of using the Internet and the World Wide Web.

2- The efficiency of using Internet components for business dealings such as Internet, mails, Video-conferencing, White-boards and Personal Digital Assistants (PDAs).

Such factors were reduced into one variable (by compute property in SPSS) and named "Internet-based technologies and services."

Section 2: Demographical information

This section asks about the user's: (1) leadership profile which is answerable by any of the two options, a decision-maker or an influencer; (2) level of familiarity in e-business (i.e., SAP) which is measured by 4 different levels; (3) type, in terms of status as an adopter which is measured by 3 options (i.e., previous, new, or current user); (4) type of usage in terms of e-business usage frequency (i.e., power, frequent, or occasional); (5) age, which is answerable by any of the 5 different age brackets; (6) length of stay in the present organisation, which is answerable by 4 options of the accumulated number of years; (7) nationality, answerable by any of the 6 different continental belongingness; (8) education, answerable by any of the 6 different levels of educational attainment; (9) and religion, which is answerable by any of the 2 options: Muslim and Other Religion. The research participants may hesitate to answer the questions regarding their personal information; however, in the case of this research, by assuring them that it would not be disclosed to anybody else, these answers were obtained.

This section's variables were reduced into one variable (by compute property in SPSS), named **"Demographical information."**

Section 3: Human and organisational issues

This section asks about E-Business and its impact in the organisation such as in terms of Work roles, Business processes, Working practices, Interpersonal interaction across organisation, Interpersonal interaction within organisations, Communication, Attitudes to new ways of working, Attitudes to the technology, Technological competence; lack/shortage of skilled people, Training and Senior management support.

These variables were reduced into one variable (by compute property in SPSS), named **"Human and organisational issues."**

Section 4: Background

This section asks about the user's: (1) professional background which is answerable by any of the 7 options on highest educational achievements; (2) employment designation at present which is answerable by any of the 14 designations or any other job not mentioned in the option; (3) actual experience on SAP as a leading e-business system, his or her assessment as to what could be the specific major reasons that delays e-business implementation, could it be due to issues on cost, trust, top management decision or organisational culture; (4) and a question regarding the particular IT functionalities that the user has access to, which is answerable by any of the six functionalities options given.

These variables were reduced into one variable (by compute property in SPSS), named **"Background."**

Section 5: Impact of e-business tools on relationships

This section investigates how e-Business had changed the relationship with member colleagues in terms of the following Items: "Levels of face-to-face contact," "Levels of colleague collaboration," "Degree of information sharing," "Type of information shared," "Degree of closeness of the relationship" and "Smooth communication."

These variables were reduced into one variable (by compute property in SPSS), named "Impact of e-business tools on relationships."

This section asks about the difficulty of employing trust in e-Business (SAP) through the following items: "SAP is proven for its effectiveness," "SAP is proven for its ease of use," "It had changed the autonomy or control levels in proper ways," "Trust is important in dealing with people through virtual business transactions," "Lack of trust on the actual e-Business system (SAP) would facilitate implementation failure," and "External parties (e.g., Consultants) are committed to successfully completing the project."

These variables were reduced into one variable (by compute property in SPSS), named "Need for trust."

Section 7: Criteria, methods, and tools for e-business system design and implementation

This section involves questions which explore the user's level of satisfaction regarding the execution of e-business project particularly on providing system modifications or customisations and installing of software applications suitable to the organisation. It has 19 items such as: "Problems were encountered during the SAP development stage", "The solutions provided were readily adopted," "Significant financial investments were provided for e-Business (SAP) implementation," "Information given about the SAP implementation was satisfactorily comprehensive," "Information on SAP was given later than expected," "Sufficient time was provided to adapt with the change," "Complete training was provided," "Resources were readily available," "Relevant ideas and/or inputs were all accounted for during the system development stage," " Key enablers and inhibitors to SAP were identified prior to its development stage," "The project team customised the processes without hampering the current business operation," "SAP project development reports were given at the right time," "There was enough database backup," "Data security were protected," "Data entry was easily done," "Hackers were prevented to trace, steal or destroy the new system," "Systems' stability, reliability, and effectiveness were constantly met," "Consistent monitoring of the project resulted in earlier completion"

and "SAP benefits were shown and readily available throughout the implementation."

These variables were reduced into one variable (by compute property in SPSS), named "Criteria, methods, and tools for e-business system design and implementation."

Section 8: e-business being introduced

This section explores the user's level of satisfaction to e-business systems during his or her initial encounters with it; how the business operations continued through the project teams' effort while drastic changes were happening in the entire organisation. This section has 19 items, of which ask whether e-business: "Affected the execution of work in many ways," "Made the workflow simple and error-free," "Enabled the staff to share information in a fast and open manner," "Resolved the major issues in the company – e.g., problems with salaries, systems upgrade, financial accountabilities, manpower shortage, etc.," "Provided awareness of the company's position in the market," "Benefited my organisation," "Training materials are very useful," "Training courses were done appropriately, "Courses were well organised," "Most of the courses done face-to-face," "The language used for introducing SAP is familiar," "Training materials are very useful," "Course tutors are well aware of the organisational culture," "Course tutors are well aware of local culture," "Communication with course tutors was done smoothly face-to-face," "Some courses were conducted during my free time," "Some of the course tutors are from my opposite gender," "Some course were conducted in the month of Ramadan" and "My performance during Ramadan is not the same as the rest of the year".

These variables were reduced into one variable (by compute property in SPSS), named "e-Business (SAP) being introduced."

Section 9: Attitude to e-business

This section explores the user's attitude to e-business that is dependent on how the project is being executed by the project team. It has 7 variables such as: "e-Business gives new opportunities for growth and prosperity," "e-Business represents a moderate risk taken by the company," "The top management initiated the adoption of e-Business" "The staff have enough knowledge of e-Business," "e-Business is central to the business strategy," "e-Business enables the company to excel," and "Government would help the company to engage in using e-Business."

These variables were reduced into one variable (by compute property in SPSS), named "Attitude to e-Business."

Section 10: Technology for e-business

This section explores the user's level of satisfaction with using specific IT tools (which are integrated into e-business technology [e.g., SAP]); how each tool/application contributed improvement to his or her work performance and to the other aspects of his or her job.

This section has 9 variables such as: "E-mail is widely used for communication," "The Intranet is widely used for internal knowledge sharing and business communications," "SAP encourages my innovation," "SAP changed my perception of business," "SAP changed my personal life," "The SAP business process is logically designed," "SAP increased my work performance," "SAP allowed me to work remotely," and "SAP reduced the number of work-related meetings."

These variables were reduced into one variable (by compute property in SPSS), named "Technology for e-Business."

Section 11: Activity via e-business

This section explores the user's level of satisfaction regarding the benefits of e-business technology seen in different business activities. It contains 10 variables such as: "For providing information on procurement policy," "For receiving data regarding the products or issues," "For negotiating prices, quantities, and terms of products," "For placing orders by purchasing staff," "When confirming delivery of the products," "For receiving payments for the products," "When the products are produced as required," "To support the research and development team when new products are developed," "To inform all the staff about the new product" and "To collaborate with the sales team when market research is conducted." These variables were reduced into one variable (by compute property in SPSS), named "Activity via e-Business."

Section 12: Intensity of e-business

This section explores the user's level of satisfaction on the major improvements caused by e-business such as increased employees' productivity and other meaningful business outputs. It contains 7 variables such as: "Can accomplish more tasks in a shorter period of time," "Increased their level of information-accuracy," "Became more aware of maintaining job quality," "Became more organised in their workplace," "Consistently coordinate work duties with each other," "Execute faster communication" and "Regularly follow the required standards."

These variables were reduced into one variable (by compute property in SPSS), named "Intensity of e-Business."

Section 13: Environmental uncertainty

This section discusses that e-Business (SAP) overcomes the market challenges, especially when: "Prices are difficult to predict in the market," "Design trends are difficult to predict in the market," "It is difficult to forecast the expected volumes of sales," "Products have a very high innovation rate" and "Products have a short life cycle due to rapidly changing trends."

The above variables were reduced into one variable (by compute property in SPSS),named "**Environmental Uncertainty.**"

Section 14: Assets specificity

This section explores the user's perspective on the amount or weight of financial investments and other important resources to be allotted for the completion of the e-business project. Prior to the start of e-business project, senior managers assess the company's capability to meet the investment requirements of e-business.

This section has 5 variables: "A lot of time and money for the training of personnel," "An effort to recruit new personnel," "Deploy time and

resources," "Significant investments in tools and equipment," and "Significant investments in the information system."

These variables were reduced into one variable (by compute property in SPSS), named "Assets Specificity."

Section 15: Trust

This section explores the user's satisfaction on the capability of e-business to promote the importance of trust in all business dealings. Trust is exercised in e-business in different ways compared to the ways of the traditional business system.

This section contains 7 variables: "Both parties in the conversation are accountable for the outcomes of their decisions," "Business negotiations are official even without a hand-written signature,", "Feedback or criticism are acknowledged", "Dishonesty or false claims are absent," "Personnel are cautious in using their information access," "Communications via e-mail can be done in a friendly approach," and "Fulfilled promises given by the top management increased staff loyalty."

These variables were reduced into one variable (by compute property in SPSS), named "**Trust.**"

Section 16: Dependability

This section explores the user's level of satisfaction on the capability of ebusiness in securing the company's strength despite the presence of internal and external challenges. One of the internal challenges is workforce reduction and yet the remaining few employees were trained to perform many tasks which in effect maintains the company's competitive advantage. On the other hand, global economic recession is one form of external challenge but e-business does not allow it to affect the company.

This section contains 7 variables: "The staff are working with less supervision," "Many staff are knowledgeable on a single system process that enables continuous operation," "The staff are qualified for promotions due to their increased capabilities," "Management is assured that all business activities are reported to them," "The company can operate well even with less manpower," "The company has a competitive advantage because it can easily go beyond the current business trend" and "The company is protected from the threats of global economic recession."

These variables were reduced into one variable (by compute property in SPSS), named "**Dependability**."

Section 17: Inter-departmental relationships

This section explores the user's level of satisfaction on the capability of ebusiness to promote excellent coordination among office departments (i.e., workers in different office departments). It contains 10 variables such as "They work as a team," "They are adaptable to every changing circumstances," "Problems are joint responsibilities and are resolved right away," "Failures are overcome while success is shared by all," "They respect business protocol," "They practise harmonious employee-relationships," "They promote work ethics in the workplace," "They maintain excellent communication," "Confidential matters are kept undisclosed," "They come up with a unified consensus on achieving goals."

These variables were reduced into one variable (by compute property in SPSS), named "Inter-Departmental Relationships."

Meanwhile, a column for the participant's (i.e., survey-questionnaire respondent) final suggestions and/or recommendations is also provided. For the purpose of proper sequencing, this column is posted as Section 18.

To validate each of the concepts mentioned above, each of their specific variables are mostly answerable by a 5-point Likert-scale, that is to say, 1 for Strongly Agree, 2 for Agree, 3 for Neutral, 4 for Disagree, and 5 for Strongly Disagree.

It was found that four of these generalised variables (i.e., 4 of the 17 sections) did not have any relation with each other. These were "Demographical Information," "Internet-Based technologies and services," "Attitude to e-Business," and "Technology for e-Business." Removing these left 13 dependent variables.

Also, it was noted that each of the aforementioned questionnaire sections falls into one of the four major factors (i.e., technological, organisational, cultural, and social factors). This emphasis is relative to this quantitative data collection's underpinning implications necessary to confirm profound qualitative data which will be discussed in Chapter 6. Sections 1, 2, 3, 4, 5, 7, 8, 10, 11, 12, and 14 belong to the interconnecting technological and organisational factors, whilst sections 6, 9, 13, 15, 16, and 17 pertain to the combined social and cultural factors.

5.12.2.1 Piloting the questionnaire

Saunders et al. (2006, pg. 308) claims that "the purpose of the pilot test is to refine the questionnaire so that respondents will have no problems in answering the questions and there will be no problems in recording the data. In addition, it will enable you to obtain some assessment of the questions' validity and the likely reliability of the data that will be collected".

The questionnaire was obtained from two sources. The first is the PhD research conducted by Chun (2004) entitled "The Impact of E-Commerce on Buyer - Supplier relationships in the Korean Electronic industry", which included a pilot study. The second source is the Change Management Department (CMD) at Aramco, where they have conducted several studies both pre- implementation as well as post-implementation. According to Mr. Ashraf, a senior manager at CMD, all their surveys are done professionally using the latest technique including piloting all questionnaire.

For this study, piloting the questionnaire was conducted in three stages. In the first stage, the questionnaire was submitted to the researcher's supervisor who was more concerned with its contents: to make sure that the questionnaire covers all of the research questions in order to meet the research aims and objectives; to check if the length of the questionnaire was reasonable; and to ensure the clarity of instructions and the proper arrangement of the layout. The supervisor's comments were very important in constructing the questionnaire.

The second stage of pilot testing was conducted by the researcher along with some of Saudi Aramco's consultants who gave their views regarding both the contents and the layout of the questionnaire. Those consultants are experts in:

- ERP Change Management, Technical Support & Computer Training Department
- System Consultant, Support Services Applications Department

- E-Doc Division, Corporate Application Department
- Enterprise Technical Support & Planning Division

Furthermore, the questionnaire was shown to the Saudi Aramco's Public Relations consultant to make sure that any sensitive or highly confidential information would be kept exclusively to the company's knowledge. In addition, during this stage, the researcher received substantial comments on the questionnaire from other student researchers in Hull Business School. These student researchers are of Arab descent and are therefore familiar with the Arab and Saudi culture.

In the last stage, the researcher asked some of his friends in Saudi Arabia to distribute some of the questionnaires to IT managers working in middle sized organisations – about ten IT managers with whom they are connected, such as their colleagues, friends, or family relatives, to check if there were any ambiguous or confusing questions written. The overall comments were that the questionnaire was a well-organised and comprehensive one. However, a few questions were revised since they contained difficult academic terminologies, which some participants might not understand; the decision was to give more definitions for these terms.

After the stages for piloting the questionnaire were completed, the researcher was convinced that the questionnaire was judged strong enough to capture the required data and information from the participants and therefore to achieve the aims and objectives of the present study.

5.12.2.2 The covering letter

According to Saunders et al. (2006), most self-administered questionnaires are accompanied by a covering letter to explain the purpose of the survey. Self-administered questionnaires are defined by Saunders et al. (2006) as a technique in collecting data where each participant read and answers the question in a predetermine order without the presence of the interviewer or the researcher. The covering letter helps to increase the response rate. The covering letter in this research was written on a single page and used a Hull University letterhead. The structure of the covering letter contains the following information: information about the research title, its objectives and its importance for the participating organisations; promises of confidentiality; placing an emphasis that their co-operation is the most valuable factor contributing to the success of this research; information about whom

to contact if they have any queries; (telephone and mobile numbers, and the postal address for the researcher); thanking the recipients for their help.

It was recommended that a covering letter should cover the above information to gain a high rate of response. Thus, all recommendations regarding the covering letter were taken into consideration. A copy of the covering letter is shown in Appendix 1.

5.13 The Structure and the Content of Semi-Structured Interviews

It was decided that semi-structured interviews would be used with the Consultants because of their importance for the success of e-business project in any organisations. This type of interview is very rich in providing in-depth analysis of the points under investigation. Semi-structured interviews are used to supplement and validate the questionnaire's findings. Hence, some similar questions from the questionnaire were asked in the semi-structured interviews as well. As it appears in <u>Appendix 2</u>, the semi-structured interview includes the following parts.

- Part 1: Overview on Habermas' concepts of lifeworld and system
 - This part covers information on Habermas' lifeworld and system theory – how each single theoretical perspective is exhibited through the actions of the social actors (e.g., employees, supervisors, managers, etc.) who generate the different kinds of business outputs.
- Part 2: E-business today
 - This part is concerned with the importance and the impact of ebusiness to numerous companies worldwide; and particularly in Saudi Arabia, why the Saudi companies opted to adopt the e-business technology and how they were able to overcome or resolve the challenges it brought to them.
- Part 3: Social and Cultural Characteristics of Saudi Arabia
 - This part is concerned with exploring both perceivable and observable attitudes, behaviours, and actions of the people in Saudi Arabia (i.e., specifically the Saudi citizens and the foreigners [working] in Saudi companies). For Saudis, the major basis of their actions or ways in the workplace is their culture (e.g., religion, language, etc.), while for the foreign workers, it is their willingness to adapt to the culture of the host country in order to achieve their purpose in working abroad

although at the base, their actions are required to conform with the Saudi government's labour regulations.

- Part 4: Factors to e-business assimilation success in the context of Saudi Arabia
 - o This part is concerned with investigating the impact of the four major factors towards realising the success of the Saudi companies' ebusiness assimilation goals. The four major factors are technological, organisational, cultural, and social factors. Such factors were based on the previous e-business projects found in IS literature which are used for solidifying the propositions of this study.

It is important to mention that during the actual interviews, there were many questions added which were formulated according to the context of the topics being discussed.

5.14 The Fieldwork

The main fieldwork of this study was conducted in Saudi Arabia from August 2009 to September 2009 for the survey questionnaire and within the month of February 2010 for the semi-structured interview.

The fieldwork included personal visits to the headquarters of Saudi Aramco, SABIC, and Hadeed. The researcher's visits provided a good opportunity to introduce himself and the purpose of his study to the participants. A good rapport was immediately established between the researcher and the participants. An informal conversation about e-business occurred during this initial visits.

Regarding the fieldwork for the survey questionnaire, the researcher set a date convenient to the participants to answer the questionnaire. Prior to the scheduled date of answering the questionnaire, follow-up calls were made to assure the participants' presence.

It is important to mention that the questionnaire was distributed and collected by the researcher himself, despite the distance constraints of Saudi's main cities. The researcher intended to collect as many as possible of the distributed questionnaires.

When collecting the questionnaire, the researcher made sure that he saw the participants who had completed the questionnaire and, usually, he had the

opportunity to have another conversation about the questionnaire contents or any other comments about the questionnaire. Some participants, after completing the questionnaire, offered more information which showed that they understood the questionnaire and were interested in the research topic.

In addition, they asked the researcher if he wanted any other help in the future. All of the participants were happy to give the researcher their business cards to be in touch with him in the future.

The accompanying personal letter from the researcher was useful in obtaining the participants' assistance in completing the questionnaire. In this letter, the researcher stressed that the information provided by the participants would be treated with the utmost confidentiality and no personal or organisations' names would be mentioned in the report of the study. The researcher also stated in his letter that a brief report of the final analysis would be given to the participant if requested.

The researcher left a section at the end of the questionnaire for the participants to give any further comments on the topic under investigation (i.e. e-business assimilation). Some participants appreciated the researcher's efforts to conduct this study, on a topic which is known to only few Saudi businessmen. They expressed the view that, most definitely, this study would contribute a positive impact to Saudi companies' innovation plans.

1,150 questionnaires were distributed by the middle of August 2009. As all the participants (i.e., SAP end-users) are fluent in English, the questionnaire was written in this language. By the end of September 2009, all questionnaires had been collected and were usable.

About the fieldwork for the semi-structured interview, appointments with the consultants to conduct semi-structured interviews were set up by personally calling them through their mobile numbers. Two semi-structured interviews were conducted; one with the 4 consultants and the other with the 3 consultants on the 6th and 14th February 2010. All the interviews were conducted in the consultants' offices, the first one in the afternoon, while the second one took place in the morning.

The questions asked were all about e-business, or specifically how people (e.g., top management, staff, etc.) in Saudi companies managed to adopt this new technology

despite the many constraints. Most of the time, the interviewees answered the questions in general terms. Fortunately, the researcher was able to note down all the important ideas and facts they imparted. Based on the preference of the participants, the interview did not use a voice recorder so that there would be no feeling of annoyance or hesitation to express what was in their minds. The interviewees felt that every word they said was important because the researcher gestured a nod every time they spoke up. This made them more interested to impart their knowledge based on their actual experiences on e-business.

Finally, the fieldwork was a good opportunity for the researcher to get to know many people whose expertise in e-business is very important towards the completion of this research. The fieldwork added or enriched the researcher's knowledge with many interesting and important stories and issues.

5.14.1 Difficulties in conducting the fieldwork

During the fieldwork period, the consultants were extremely busy, and were therefore informed in advance about the objectives and nature of the study. Appointment schedules which were already agreed usually were cancelled and resumed on another day at the consultants' convenience. Another difficulty was that the researcher needed to travel via airplane from one city to another, due to the distance barrier.

5.14.2 Requirements for Successful Fieldwork

In addition to good questionnaire design and planning, there are many other factors for successful fieldwork in Saudi Arabia.

- Human relationships (friendship, relative, family name!) are very important in conducting an empirical study in Saudi Arabia and other Arab countries.
- Strong personality of the researcher. The researcher has to be able to convince and encourage participants to participate and to be active.
- Due respect. The researcher should recognise the specific job designations of the participants and give them a sincere respect. Arab people love to respect each other and be respected in turn.

The researcher used all his social relationships, friendships and his relatives in conducting his fieldwork. He found out that the consultants are indeed experts in e-business implementation matters.

5.14.3 Response Rate

The sample targeted the population of the three Saudi companies in which employees are in thousands.

According to Oppenheim (1992), the following factors have been found to increase the response rate:

- advance warning: informing the respondents of the study in advance;
- explanation of selection: explaining the method of sampling used;
- sponsorship: motivate the respondents;
- confidentiality: assuring respondents that all information will be totally treated confidentiality; and
- incentives to the respondents

There could be a lower response rate if the above factors were ignored.

Fortunately, for the present study, a total of 1,150 questionnaires were distributed, of which 1,071 completed questionnaires were returned and usable.

Neumann (2000) argued that in calculating the response rate, all the eligible respondents should be included (Neumann, 2000). And as indicated by De Vaus (1990), calculating the response rate can be executed by using the following formula: Response rate = Total number of responses / (Total number in sample – (Unreachable respondents or Ineligible respondents)).

Applying this formula, the response rate for this study's questionnaires = 1071/(1150 - [0-0]) = 93%.

Mangione (1996) argued that response rate for postal questionnaires can be classified as follows:

- Over 85% Excellent
- 70-85% Very Good
- 60-70% Acceptable

- 50-60% Barely Acceptable
- Below 50% Not Acceptable

It can be seen that in Mangione's (1995) categorisation on response rates, a rate below 50% rate is not acceptable, which could mean that the data gathered is too weak or is not sufficient to produce valuable answers to the research questions and objectives. On the contrary, a response rate over 85% was categorised as 'excellent', and this is because of the ability of the gathered data to come up with a reliable research output.

However, some studies argue that even a low response rate for a questionnaire, for example, a 12.3% response rate in Sander's (2007) research on e-business, is still acceptable, especially if the respondents are company top managers who can provide valuable information needed for the research (Byrd and Turner, 2001, Wisner, 2003, Sanders, 2007). Also considered in this argument is that the non-response bias should not be an issue.

Bryman and Bell, (2003) argued that postal questionnaires tends to receive a lower response rate due to distance and time constraints, the participants' lack of interest in the subject matter, or due to the absence of the researcher in cases wherein the participants prefer him to administer the survey questionnaire.

However, for the current study, the questionnaires were hand-delivered by the author himself; therefore, he was able to personally request the participants to completely answer the questionnaire and submit it on the day of retrieval. This is one of the many ways to reduce the non-response rate. Other ways were given by Oppenheim (1992) as mentioned above; that is, the ways of reducing the non-response rate is similar to the ways in increasing the response rate.

Regarding the semi-structured interviews we conducted, the response rate was 87.5 percent (i.e., [7/8-[0-0]]=N). That is, among 8 consultants who were requested for the interview, only 7 were able to attend. Two sets of interviews were done at the consultants' headquarters.

Receiving a response rate of 87.5% for this study's semi-structured interviews also signifies an excellent turnout in reference to Neuman's (2000) assessment that face-to-face interview usually receives a 90% response rate.

Finally, it appears that the response rate for this study was high due to the following reasons:

- A well organised questionnaire
- The covering letter explaining the objective of the questionnaire, the importance of the participants, and the promise of strict confidentiality
- Personal visits and follow-up calls
- Full cooperation of the participants and their interest in the study because their companies have implemented e-business and they are part of the author's social network.
- The participants were given an option to receive a copy of the research findings and results.

5.15 Validity and Reliability Evaluation

For judging the credibility of research findings, validity and reliability are important criteria. They are the basic criteria for evaluating the accuracy of the research. Measurements must be valid, that is to say, they should be accurate and the findings should be about the assertion under investigation. Measurement must also be reliable, that is, precise: the same answer should be obtained on re-measurement; the same results or observations could be obtained or made by different researchers on different occasions (Saunders et al., 2006).

Since the researcher of the present study applied a multi-methods approach using two data collection methods (personally-administered questionnaire and semistructured interviews), before, during and after collecting the data many procedures were undertaken to ensure validity and reliability of the study findings. These procedures will be explained in the following subsections.

5.15.1 Validity

Ultimately, the data collected is used to inform the research findings. If the data is not verifiable, the implication is that the findings are potentially suspected. Accordingly, it is incumbent upon the researcher to validate his or her findings (Sekaran, 2003). Saunders et al. (2006) contend that a research is valid only if it actually studies what it sets out to study and only if the findings are verifiable.

Validity confirms the accuracy of the research findings – representing what is really occurring in the situation (Hussey and Hussey, 1997). That is why we make sure of the effectiveness of the instruments we used for producing the findings which we intend to have (Sekaran, 2003). Validity refers to the absolute degree to which a test measures what we actually intend to measure.

Research errors, such as faulty research procedures, poor samples, inaccurate or misleading measurement and ambiguity about causal direction ruin the validity of the research findings. Hussey and Hussey (1997) and Saunders et al. (2006). Therefore, to meet the validity criteria, the researcher should develop an accurate measurement tool that reflects a better understanding of the questions included in a measurement tool, which guarantees that all participants are enlightened to respond to all questions. In other words, the instrument of measurement should be understandable for all respondents to be sure that the findings are in conformity or in connection to the study's assertions.

Sekaran (2003) distinguishes between different forms of validity:

- content validity whether the measure adequately measure the concept;
- face validity whether the measurement measures as its name suggests;
- criterion-related validity whether the measure's way of differentiation helps to predict a criterion variable;
- concurrent validity whether the measure differentiate in a manner that helps to predict a criterion variable currently;
- predictive validity whether the measure differentiate individuals in a manner as to help predict a future criterion;
- construct validity whether the instrument taps the concept as theorised;
- convergent validity whether the two instruments measuring the concept correlate highly;
- discriminate validity whether the measure has a low correlation with a variable that is supposed to be unrelated to the given variable.

Moreover, there is another important type of validity called external validity; the extent to which research results are generalisable, that is to say, the findings may be

equally applicable to other research citing such as other organisations. Thus, external validity depends on the selection of a representative sample. Generalising the findings is difficult unless the drawn sample is representative of the population.

In this study, to ensure high validity of the two data collection methods adopted, many procedures were undertaken.

- To ensure external validity, the entire population was targeted as the sample for this research, with a high response rate for the questionnaire, which was 93 percent and for the semi-structured interviews which was 87.5 percent.
- Using different data collection methods in this study ensures that data really represent what they appear to represent, telling you what you think they are telling you (Saunders et al., 2006). Using a multi-method approach enables triangulation to take place, which involves crosschecking for different types of validity. Many questions were asked in both questionnaires and semi-structured interviews to ensure that findings that from one method are validated by the findings from the other method. As mentioned before, semi-structured interviews were applied to get more details, to get deep insight into the questionnaire findings and to validate the questionnaire findings.
- To meet some of the validity requirements, an extensive literature review was undertaken to define and clarify the scales and measures used in this research. Many items and scales used in this research were adopted from several studies, which place an emphasis on meeting the requirements of validity and reliability. In this regard, Sekaran (2003) asserts the need to use well-validated and reliable measures to ensure that the research is scientific. Also, Sekaran (2003) asserts the importance of making use of already developed measures and scales since their reliability and validity have been established by their developers and they are already reputed to be good.
- In addition, the questionnaire items were scrutinised and pre-tested by several pilot test stages, by many doctoral students, a panel of academic experts and a set of e-business experts to judge the content and face validity of the questionnaire. This process ensured that the content validity of the questionnaire was established.

• validity of semi-structured interview refers to the extent to which 'the researcher has gained full access to the knowledge and meanings of informants' (Easterby-Smith et al., 2001). Saunders et al. (2006) state that, usually, the validity of in-depth and semi-structured interviews is very high; this refers to the flexible and responsive interactions which are possible between interviewer and interviewees allowing the meaning to be probed, the topic to be covered from a variety of angles and questions made clear to the participants.

In this study, seven consultants were interviewed; they were requested to give the researcher the required data through good preparation for the interviews. Also, there were many things which helped in encouraging the interviewees to provide data: the researcher's ability to construct a good rapport or trust with the interviewees through personal visits to their offices; good introduction of the study; providing the interviewees with a list of the probable questions to prepare answers for them; emphasising the confidentiality of the obtained data; good strategies applied through conducting the interviews in terms of avoiding any kind of biases, tapping the entire interviews where possible and taking notes.

Summarising this study's aspects of validity (i.e. validity rooted in the appropriate questions, or items, or variables provided), the three dominant types of validity are highlighted, namely, content validity, criterion validity, and construct validity.

Content validity is used because, above all of the reasons, this study aims to provide comprehensive information to business people and academic researchers on the importance of addressing the social issues in an e-business-adopting organisation. Some of the questions were originally used by previous IS studies such as Al-Gahtani (2004). Thus, the present study adopted them to ensure consistency of results (Straub et al., 1997), especially in terms of the established or known impacts of organisational and technological factors, and consequently, how these factors relate to the condition of the affected social and cultural factors.

Criterion validity is also used in this study through finding the correlations of the variables, especially those variables that are predictive in nature. In a way, this study, tries to determine the future actions of business stakeholders after having been

informed of the significance of analysing both the lifeworld's and system's situational evidences. According to Carmines and Zeller (1979), the degree of criterion validity tends to depend on the level of the connection between a test and a criterion.

Construct validity for this study covers the author's actions on confirming the strength of constructs implicitly implied by specific variables. Major constructs are the four major factors themselves, namely, the organisational, technological, cultural, and social factors, and the lifeworld and system constructs which are subtly working within the said factors. As has been said earlier, numerous sources of evidence were used in validating this study's construct variables – intensive literature review, and gathering information from expert people, through pilot testing of survey questionnaire and having conversations with friends and business partners who are knowledgeable in e-business, and these strategies were undertaken prior to the final and official execution of survey questionnaire and semi-structured interview (Lee, 1989, Yin, 1994, Sarker and Lee, 2003). It is emphasised that the present study's constructs should be critically tested because this study is the very first research work that explores the perceived impact or significance of Habermas' theory of lifeworld and system to Saudi companies' e-business assimilation developmental project.

5.15.2 Reliability

Researchers are often confronted with a range of variables, which may impinge upon the reliability of the findings. Respondents may be biased, or not interested, or may simply tick response options without reading or considering them (Sekaran, 2003). To minimise these problems, the researcher selected respondents carefully, and ensure that they were willing participants in the study (Hair, 2003). In addition, the researcher scheduled interviews at respondents' convenience and, when distributing questionnaires, gave participants several days to answer, to minimise the chances of interviews being rushed and questionnaires blindly answered (Hair, 2003). When analysing data, the researcher carefully read through them to ensure that there were no logical flaws and that the responses given by any one respondent were not contradictory (Hair, 2003). Reliability can be assessed by posing the following two questions: Will the measure yield the same results on different occasions? Will similar observations be made by different researchers on different occasions (Easterby-Smith et al., 2001). Reliability of a measure indicates the extent to which it is without bias (i.e., error free) and, hence, ensures consistent measurement across time and across the various items in the instrument (Sekaran, 2003). Reliability of a measure is an indication of the stability and consistency of the instrument. It is primarily a matter of stability: if an instrument is administered to the same individual on two different occasions the question is, will it yield the same result (Easterby-Smith et al., 2001).

In this study, many procedures were carried out to make sure that the data collection methods were error free and to minimise the instruments' biases. Some important questions were asked in both instruments, while in the questionnaire some important questions were repeated in different places in a different order.

The way in which the questionnaire was distributed helped to avoid errors resulting from misunderstanding or ambiguity and, importantly, some already developed questions or scales were adopted to enable comparison of the findings with other researchers' results. In collecting the answered questionnaires, the researcher made sure to use the opportunity to talk to the participants, verifying with them whether the name of a participant written in every questionnaire sheet was really the participant who answered the questionnaire.

Regarding the reliability of semi-structured interview, Easterby-Smith et al. (2001) affirm that it is concerned with whether alternative interviewers would reveal similar information when asked the same questions. However, Marshall and Rossman (1999) assert that the findings from using non-standardised research methods are not necessarily intended to be repeatable, since they reflect reality at the time they were collected, in a situation that may be subject to change. Thus, reliability is dependent on the actual context of the study and on the time it is conducted. The value of using this non-standardised approach is based on the flexibility that may be used to explore the complexity of the topic. Nevertheless, Saunders et al. (2006) contend that the concern about reliability in these types of interviews is also related to the issue of bias.

In this study, the researcher sought to avoid interviewer bias resulting from his comments, tone or non-verbal behaviour. In addition, he tried to avoid interviewee bias by building a good rapport or trust with them, giving a good introduction to the study, and emphasising the confidentiality of the participants' personal information, leaving the participants to talk in the manner they wanted and taking down notes of everything they said.

5.16 Data Analysis

Data analysis typically occurs at a later stage of the research (Bryman and Bell, 2003). Therefore, the researcher should be fully aware how he/she would analyse the collected data. According to Saunders et al. (2006), data in a raw form express little meaning to most people. Therefore, all data, quantitative as well as qualitative, need to be processed to make them useful. Researchers should think how they are going to analysis data in advance. The nature and the size of the sample are likely to impose limitations on the kind of technique that will be adopted to analyse the data (Bryman and Bell, 2003).

In this study, the researcher collected both qualitative and quantitative data. In regard to the qualitative data, appropriate analysing software was used. Meanwhile, statistical methods used for analysing the quantitative data are discussed next.

5.16.1 Quantitative Data Analysis

In order to achieve the objectives of the study, a number of statistical techniques were used in quantitative data analysis.

Prior to deciding on what statistical tests should be used, the researcher should know whether the case requires parametric test or non-parametric test by considering the following conditions (Hair, 2003, Bryman and Cramer, 2000):

- 1. If the level or scale of measurement is of equal interval or ratio scaling, that is, more than ordinal, use a non-parametric statistical test
- 2. If the distribution of the population scores is normal, use a parametric statistical test. About the distribution of the data in which the comparisons between these participants between the two or more groups are to be based, the Kolmogorov-Smirnov Test (K-S Test) of Normality should be conducted in order to establish whether such data are normally distributed.

Non-parametric statistical tests are used for data which are not normally distributed, or often, for categorical data. In contrasts, parametric statistical tests are used for data which are normally distributed or for data which are quantifiable (Blumberg et al., 2005). In short, parametric tests are based on normal distribution of data whilst non-parametric tests are not.

Although parametric tests are considered more powerful because they used quantifiable data, still the following conditions should be met so that unauthentic results can be prevented:

- the data cases for the sample should be independent, which means every single case selected for the sample should not affect the probability of any other case being included in the same sample.
- the data cases should be based on normal distribution
- the populations from which the data cases are drawn should have equal variances
- the data used should be quantifiable

If the above assumptions are not satisfied, the researcher can decide on using nonparametric tests. However, relative to the issue on whether to use parametric tests or non-parametric tests, the following considerations must also be weighed:

- is the association statistically significant?
- are the differences statistically significant?
- what is the strength of the relationship, and is it statistically significant?
- are the predicted values statistically significant?

For a parametric test, the Chi-Square test is used to assess differences between groups using nominal or ordinal results (Hair, 2003, Bryman and Cramer, 2000).

For a non-parametric test, the Kruskal-Wallis Test is used to assess the differences between groups using interval or ratio scales (Bryman and Cramer, 2000, Hair, 2003).

However, Hair et al. (2003, pg. 259) suggested in regard to the sample size, "In general, when the data are measured by using an interval or ratio scale, and the sample size is large, parametric statistics are appropriate."

This proposition implies that the researcher has his or her own discretion on the type of the data he or she is analysing.

For the present study, the following statistical tests were used:

- Descriptive statistics: frequency and mean
- One-way ANOVA
- Kruskal-Wallis Test and Chi-Square Test
- Pearson Correlation
- Principal Component Analysis (PCA)

There are other important issues that were considered prior to analysing the data collected, such as the size and nature of this study's selected samples. That is why appropriate tests were used for every distinct set of variables; thus, limitations were overcome.

The statistical techniques were chosen to be used for analysing the quantifiable data being collected. As has been said, each statistical test is exclusively used for every set of variables wherein it is appropriate. The researcher therefore is confident that by using each of them, meaningful results were gained which in turn clearly answer the research questions.

The justifications and rationalisations for using the statistical techniques in analysing the data are now given.

5.16.1.1 Descriptive statistics: frequencies and mean, median and mode

Descriptive statistics, also called exploratory statistics, involve the transformation of raw data into a form that would provide information to describe a set of factors in a situation. This is done through ordering and manipulating the raw data collected (Sekaran, 2003). Descriptive statistics include frequencies, measure of central tendency (mean, median and mode) and measure of dispersion (range, Standard deviation). It was found that descriptive, or exploratory statistics, is the most appropriate statistic, since the nature of the study objectives and questions is to explore, discover and describe the current situations and practices of e-business in Saudi Arabia; in addition, to explore the manifestation of both the lifeworld and the system on the business activities of Saudi companies, rather than testing particular

hypotheses. In this regard, Hail et al. (2003, pg. 252) declares that, "data is collected in business research for two broad purposes-discovery and hypothesis testing. When the purpose is discovery the researcher uses descriptive statistics. When the purpose is hypothesis testing the researcher uses inferential statistics."

Descriptive analysis was used in this study to analyse the data taken from the respondents' answers to almost all the questionnaire's sections. Such data determines whether the research variables are indeed significant towards achieving this study's objectives.

5.16.1.2 One-way ANOVA

The One-Way ANOVA statistical method is used to test the variables and understand the differences in the means of several groups (Berenson and Levine, 1992). As its name implies, the One-Way ANOVA analyses the variance, that is, the spread of data values, within and between groups of data for means of comparison. These differences are represented by the F ratio or F statistic (Saunders et al., 2006). The ANOVA F-test evaluates whether the group means on the dependent variable differ significantly from each other (Green et al., 1997). If the likelihood of any difference between groups occurring by chance alone is low, this will be represented by a large F ratio with a probability of less than 0.05. This is termed *statistically significant* (F).

According to Hays (1994), the following assumptions must be met before using One-Way ANOVA:

- Each data value is independent and does not relate to any of the other data values. This means that you should not use One-Way ANOVA where data values are related in some way, such as the same person being tested repeatedly.
- The data for each group are normally distributed. This assumption is not particularly important provided that the number of cases in each group is large (30 or more).
- The data for each group have the same variance (standard deviation squared). However, provided that the number of cases in the largest group is not more than 1.5 times that of the smallest group, this appears to have very little effect on the test results.

In this study, the One-Way ANOVA was used to analyse the differences between the participant groups from the three Saudi companies. The aim with using one-way analysis of variance was to look for comparison of how the means of the three groups (measuring a particular independent variable) from my three data firms impact on a specific dependent variable of interest. There is no need for factorial ANOVA, as there was no interest in assessing how two or more categorical independent variables from the data of the three companies impact on a specific dependent variable of the three companies impact on a specific dependent variable of the three companies impact on a specific dependent variable of the three companies impact on a specific dependent variable of interest. Moreover, there was no conceptual model ready to test hypotheses that called for assessing how two or more categorical independent variables impact on a specific dependent variable of interest. The results of the ANOVA test are shown in Chapter 7.

5.16.1.3 Kruskal-Wallis H test and Chi-Square

Since the participants came from the three companies, this study also investigated whether each difference in their answers to specific category of questions is significant by utilising both the Kruskal-Wallis test and the Chi-Square. Comparing the answers of the participants is important in order to confirm consistencies of the actions taken to resolve every corporate issue.

5.16.1.4 Pearson correlation

Usually symbolised as r, the Pearson correlation coefficient is frequently used to show the degree of linear relationship between two variables. The r value can range between -1 and +1. The two extremes represent a perfect linear relationship between the two variables. A value of +1 represents a perfect positive correlation while a value of -1 represents a perfect negative correlation. That is, if the y values tend to increase as x increases, r will be positive; on the other hand, if the y values decrease as x increases, r will be negative. When r is equal to zero, that means there is no linear relationship between y and x (Mayer and Sykes, 1996; Saunders et al., 2007).

In this study, each two variables were tested to find out their level of differences.

5.16.1.5 Regression analysis

The regression analysis is the estimation of the linear relationship between a dependent variable and one or more independent variables. Several regression models are available that can be used to determine relationships between dependent and independent variables. The *linear regression model*, a very popular model used

when a linear relationship exists between the dependent and independent variables, can be defined as a method of describing the relationship between two or more variables by calculating a "best fitting" straight line on a graph. The line averages or summarises the relationship. The result is a regression line, which can also be expressed in a regression equation. The equation Y=a+bX+e. Y is the dependent variable; X is the independent variable; b is the slope or regression coefficient; *a* is the intercept; and e is the error term (Vogt, 1993). The linear regression equation means that the function describing the relation between X and Y is that of a straight line (Green et al., 2000). Researchers commonly display the observations of X and Y and the regression line connecting them in the form of graph. Two intersecting axes represent the variables X and Y. Each observation is entered as a dot at the point where the X and Y scores intersect.

Multiple linear regression attempts to present the relationship between two or more explanatory variables and a response variable by fitting a linear equation to observed data. Every value of the independent variable x is associated with a value of the dependent variable y.

The *multiple linear regression model* was used in this study to analyse the variables on innovation characteristics.

5.16.1.6 Principal Component Analysis (PCA)

The principal component analysis (PCA) is used in exploratory studies. PCA is a means of reducing the dimensionality of a large number of variables, while retaining as much of the information (variation) as possible. It calculates an uncorrelated, ordered set of variables so that the first few retain most of the variation (Jiang et al., 1998).

Stevens (1996) suggested a case-to-variable ratio of 5:1 to guarantee a reliable principal component analysis (PCA) procedure; however, some researchers have worked with ratios as low as 2:1. In an effort to achieve an acceptable case-to-variable result, the present study preferred to write the questions after knowing the perspectives of the participants on issues relative to e-business in their companies in particular, and in Saudi Arabia in general. This study follows Stevens' (1996) ratio of 5:1 case-to-variable to ensure an accurate PCA procedure.

5.16.2 Qualitative data analysis

The qualitative data analysis started when the researcher was consolidating all the data taken from his casual conversation with the participants during his initial visits to their offices, and most especially from the semi-structured interviews conducted. Through personal dealings with the participants, the researcher was able to gather data of different perspectives but all were pointing to e-business technology.

In regard to analysing the qualitative data, there is no standardised approach a researcher can use, since the nature of qualitative data implies that it cannot be collected in a standardised way. Therefore, different qualitative research approaches have used different strategies for analysing the data collected (Saunders et al., 2006).

The researcher needs to disaggregate the mass of qualitative data into meaningful parts or categories. Such an approach allows rearranging and analysing these data systematically and rigorously. The data were transformed into a simple format in order to understand and manage them, uniting or merging related data drawn from different notes, identifying key themes or patterns from them for further exploration, developing propositions based on these apparent patterns or relationships, and drawing and validating conclusions. The data, therefore, were arranged into meaningful categories, bringing together all the similar data and attaching the specific points to support the each of the data categories. Summarising and outlining the interview results was also of great help to the researcher.

Saunders et al. (2000, 2003) argued that quantifying qualitative data by using frequency of certain events provides the researcher with the capacity to display a large amount of data that will be discussed through the use of text. This approach to describing and presenting the qualitative data provides the researcher with a very useful supplement to the most important means of analysing qualitative data. Therefore, the decision was made to quantify the qualitative data as much as possible in order to present them better.

5.17 The Chosen Research Design and the Rationale behind this Choice

It is worth mentioning that this research, like many other management studies, does not fall under one particular research philosophy: positivism or phenomenology. Rather, it is a mixture of the two philosophies, a mixture of deductive and inductive approach methods, which facilitates a flexible research design and generates more flexibility when dealing with social issues.

After the researcher had reviewed the literature of research methods in social science generally, and decided the research questions and objectives, in addition to considering all methodological limitations, criticisms and issues relating to social factors which affect the assimilation of e-business, he found that the multi-methods approach (methodological triangulation) conducted through survey questionnaire and semi-structured interviews in a complementary, supplementary way, rather than in competition with each other, was an appropriate and flexible way to conduct this research. The rationale behind this choice is justified in the following way:

- The research was conducted in three Saudi companies namely Saudi Aramco, SABIC, and Hadeed. It was designed to explore the social factors (as dominant to other factors) which affect the assimilation of e-business. In addition, the role of management in achieving the organisational strategic objectives of adopting the e-business concept and improving the organisation performance was explored. Achieving all of these aims required applying a multi-methods approach (i.e., qualitative and quantitative) including a questionnaire and face-toface interviews as the main primary data collection methods, in addition to the survey of the available secondary data. Moreover, most of the research questions and objectives were exploratory in nature; the investigation was based on the end-users', decision makers' and implementation consultants' viewpoints and experiences on e-business (i.e., ERP-SAP) in their companies. That required applying many data collection methods and exploring many themes underpinning the research objectives, rather than relying only on one particular method. The adopted approach provided useful quantitative and qualitative data, which generate a rich wealth of data and interpretation.
- As mentioned in previous chapters, there is a lack of previous empirical studies conducted in the field of e-business and the related social factors in Arab organisations in general, and in Saudi Arabia in particular, and a lack of the studies examining the ERP performance relationship, by which the research could formulate questions requiring empirical answers.

- The chosen research design and approach is also used by other Arab researchers who have conducted studies related to management and practices in different contexts, such as (Al-bahussain, 2000, Al-Athari, 2000, Agnaia, 1996, Abdalla and Al-Homoud, 1995). These Arab researchers found a multi-method approach combining questionnaires and interviews to be the most applicable and acceptable in Arab countries. Applying the same research design used by other Arab researcher strengthens the current study's consistency, validity and reliability, since the research was conducted in Saudi Arabia.
- Based on the nature of the research questions and objectives, it is obvious that this study includes many subjective variables or factors. These needed to be investigated and measured through the quantitative and qualitative approaches. The research includes many social behavioural factors, beliefs and attitudes that needed to be explored and explained in details. Therefore, applying the chosen research design helped the researcher to address all the required quantitative and qualitative data that provided more flexibility to meet multiple research interests and needs, which will strongly support the findings from this study.
- This approach enables methodological triangulation, which refers to using different data collections methods within one study, in order to ensure that data are telling you what you think they are telling you; in other words, generate more validity and reliability (Saunders et al., 2006). Triangulation involves crosschecking for internal consistency and external validity, which is a concern of this study. In this regard, Saunders et al. (2006) indicate that semi-structured interviews, applied with other data collection methods such as the questionnaires, are valuable ways of triangulating.
- Statistical analysis of the quantitative data collected makes summaries, comparisons and generalisation relatively easy and accurate, while qualitative data will provide a forum for elaboration, explanation and description of events, actions, attitudes, behaviour and lead to more meaningful and new ideas from the perspectives of the participants who are being investigated (Bryman, 1988 p.61). This will provide a more rigorous understanding of the participants under investigation.

5.17.1 The research plan

The diagram next presents a summary of this study's research plan.



5.18 Summary

This research employed a mixed methods approach, in which an in-depth qualitative investigation was employed as a first stage, followed by a quantitative survey as a second stage was used to test and confirm the first stage.

The first phase employed semi-structured interviews with representatives of various stakeholder consultants in the field of implementation of ERP. The second phase used the questionnaire technique in order to have a broader knowledge of the end users. The outcomes from this survey were used to test and confirm the outcome of the interviews. Sampling procedures were clearly explained, and issues of research reliability and validity were discussed in relation to both phases of the research.

In the following chapter, the results of the first phase of the study will be presented.

6 Chapter Six: QUALITATIVE DATA FINDINGS AND ANALYSIS

6.1 Introduction

For this study, seven consultants provided their knowledge on e-business. Almost all of them have been working on e-business projects for many years – some for ten years, others for fifteen years. Indeed, these consultants are experts in business management and technology innovations for the companies in which they have worked and are continuously benefiting through the e-business technology they had installed. Thus, the researcher believes that their opinions are meaningful and useful for this study.

Whilst the outcome from interviewing seven consultants may seem a small sample, the whole purpose of this part of the study is to gain a depth of understanding concerning the issues investigated. For broader validation and applicability the quantitative outcomes will be mapped to these qualitative findings.

This chapter provides an analysis of the key propositions (i.e., ideas and recommendations) provided by the seven e-business consultants.

The semi-structured interviews were intended to be given by at least eight consultants but, unfortunately, one of them was not able to attend, owing to a busy work schedule. The seven consultants will be referred to as Consultant A, Consultant B, Consultant C, Consultant D, Consultant E, Consultant F, and Consultant G. The researcher assured them that their identity would be kept confidential, and it is contended that this assurance motivated them to speak freely because the negative thoughts such as 'my credibility and reputation would be at stake if the researcher would disclose everything I have said', were avoided. Most importantly, good rapport was established before the main interview started, thereby minimising communicative restrictions.

In terms of the research objectives and earlier parts of this research, this chapter, together with the chapter on quantitative research, seeks to review and critique each objective in an organisational setting, and to further test, validate and critique the model initially derived from the literature review and theoretical analysis.

The starting point for the discussion during the semi-structured interview was the review of Habermas' concepts of lifeworld and system (Habermas, 1984, Habermas, 1987, Fairtlough, 1991, Bolton, 2005). Again, lifeworld has something to do with the actual actions of social actors which are not bounded by the rules and regulations yet are basically beneficial to all concerned. On the other hand, 'system' refers to the rules governing the social actors, which they have agreed will be the standards or the normative ways they should live by.

Participants were asked questions relative to lifeworld and system which were evident in the companies they had worked for as well as with the organisations in which they are currently rendering consultation services. Interestingly, these consultants were familiar with the research works of Habermas, and this was helpful in the interview process. Also, they appeared to be glad that for the first time, a researcher was exploring the applicability of the concepts of lifeworld and system to e-business in the context of Saudi Arabian companies. In the course of the interview, they were simply allowed to say everything they wanted to divulge.

Most importantly, the Consultants shared their remarks on the implication of Habermas' lifeworld and system theory as well as on how it relates to e-business, or to ERP, or to SAP adoption and implementation in particular. According to them, it is true that the concepts lifeworld and system occur in the society or even inside the business organisation – where people tend to categorise the situation in which they are engaging so that they can respond to it as necessary; and as to whether such a situation requires actions that are emancipatory in nature or grounded by restrictions.

The following sections contain an analysis of the propositions of the Consultants on each topic pertaining to e-business implementation through utilising Habermas' lifeworld and system theory in the context of Saudi Arabia.

6.2 E-Business Start Up

On starting-up e-business, significant factors which will facilitate its success will need to be addressed - failure to do so having the potential to delay implementation, or at worst, cause its total failure. Bearing this in mind, the first question asked to the Consultants was 'What do you think are the most important issues to be considered in implementing e-business?' This directly addresses objective 1, and
contributes to our understanding of the organisational, cultural and technological factors in the conceptual model.

From this question, the success factors on starting-up (i.e., starting to implement) ebusiness were identified as listed below.

6.2.1 Adequate training

According to Consultant A, "*The implementer should immediately assess the type of training through thinking, 'Is the training adequate or not?*' He elaborated that there was a case when one company preferred to stop the SAP implementation which had lasted for four years because the management had to resolve the issues they encountered (Parr et al., 1999), and one of those was the type of training provided.

This is in parallel to the study of Gupta (2000), Robey et al. (2000), and Kumar et al. (2002), in which they found that adequate training is very important for key users. Consultants A and B also agreed that training will empower the users and will make them comfortable with the system (Amoako-Gyampah and Salam, 2004).

Consultant B said, "Users should be trained on technical know-how, handling difficult situations, and dealing with human errors so that whenever unexpected troubles occur, they know how to resolve (or troubleshoot) them immediately. Everything in the organisation should be handled systematically: when correcting user's errors the superiors respond to a call 'override please!'; when considering the service to be given to clients right away even during prayer times where leniency could be applied; and to other situations wherein users flexibility, most especially in providing quality customer service, is exercised.

Consultant A argued that users should be trained in maintaining quality customer service. That is to say, even during Islamic prayer time, Consultant A said, "Service delivery is not a system; rather, it is a guideline on how to serve the client when it is urgently needed...therefore the users can be trained to be flexible in this matter. And in this case, the management can break the existing system wherein the users are allowed to serve the client despite the normative culture on 'prayer' (e.g., service given to a patient in the hospital).

Moreover, according to Consultant B: "Users should have awareness of the training given to them, thus the project team is responsible to clearly explain how being systematic benefits them."

Consultants C and D noted that it is usual that some want to learn while others do not.

Consultant D said, "In remote areas where distance is a big constraint, training (i.e. transfer of knowledge) can be transferred to people there through a media conference but face-to-face interaction is still better than this technique".

Drawing on the statements of the Consultants regarding training, we found that the users should be trained in the following specific areas:

- 1. *Technical know-how*. E-business is an ICT-based technology; therefore, users are required to continually upgrade their skills on such technologies (i.e., computing work, computer hardware and software systems [desktop or laptop], telecommunication systems, Internet, etc.).
- 2. *Handling difficult situations*. Not just in terms of providing quality service to customers, but also in cases where in the users would encounter unexpected difficult circumstances. Here, the top management should train, or in this sense, empower (Injazz, 2001) the users on how to resolve various conflicts which may arise. Also, the users should be given appropriate authority to decide on certain issues especially when the superiors are not around but the actual situation needs urgent resolution to be done (Mumford, 1995).
- 3. *Awareness of the training material.* It is important that the users are aware of the type of training given to them so that they remain on the right track towards project completion. In addition, their awareness will urge them to raise their computing knowledge and skills in order to become adapted to, or even surpass, the know-how required by the new system (Bingi et al., 1999, Sumner, 2000).
- 4. *Overcoming distance barriers to training.* As Consultants C and D had said, users have different attitudes toward learning new skills. In fact, many are hesitant to attend training sessions carried out in a venue very far from their workplace. However, it should be inculcated in the minds of the users that training is for their own benefit and in this information era, distance is no longer a constraint. As mentioned by Consultant D, training can now be done through

a media conference (Stewart et al., 1994), yet in the context of Saudi Arabia, face-to-face interaction (Zakaria et al., 2003) is still preferred by many Saudis.

Discussion of training issues has raised matters related specifically to Saudi culture which need to be addressed when designing and implementing e-business solutions. Flexibility, an issue for any such implementation, has special significance within Saudi Arabia with, for example, the need to attend to customers during prayer time. This is a direct example of the way in which Lifeworld has to be considered when implementing what many may see as an organisational system. Similarly, the Saudi preference for face-to-face communications and unwillingness to travel long distances away from family are more pertinent in Saudi culture, and need to be addressed. Even at this early stage of the qualitative research, modelling Lifeworld against System can be seen to be a valuable exercise in understanding the potential and constraints for e-business design and implementation in Saudi Arabia, with many issues surfacing which are less relevant in Western industrialised countries.

6.2.2 Analysing the impact of e-business

Analysing the impact (i.e., positive and negative effects) of e-business is without doubt an important issue (Lal, 2005, Somers and Nelson, 2001, Plant and Willcocks, 2007). This effort will guide the stakeholders (i.e., company owners, top management, project team, end-users, etc.) to wisely execute the project, and lies at the heart of objective 3, examining the key factors facilitating or impeding assimilation of e-business.

Hence, the Consultants posed the following analytical questions:

According to Consultant A:

- Is e-business miserable or not to the end-users or to the executives?
- Why do I need ERP?
- Will ERP affect other business processes?
- What could be the causes of its delay, if ever delay happens?
- Will ERP contribute success to the company?
- What motivates implementation of ERP?

According to Consultant C:

• What is in it for me?

- Will this benefit me?
- *Can I add this to my CV eventually?*
- Can this enhance my performance?
- In terms of preparing reports, can this reduce my workloads?
- Two important aspects which should be considered in e-business adoption: the business aspects and the personal aspects.

According to Consultant D:

- Will this system replace me?
- Will there be some elimination to occur?

According to Consultant C, there are two important aspects which should be considered in e-business adoption: the business aspects and the personal aspects. However, in further analysing the Consultants' questions, we find three important aspects on adopting e-business (Table 6-1), that is to say, which 'interest' is of concern? Is e-business more beneficial for the individual user (personal), for all the people in the organisation regardless of designation (organisational), or for the business processes of the company (operational)?

Source of Impact	Interest	Analytical Question
E-BUSINESS		Why do I need ERP?
		What is it for me?
	Personal	Will this benefit me?
		Can this enhance my performance?
		In terms of preparing reports, can this reduce my workload?
		Will this system replace me?
		Can I add this to my CV eventually?
	Organisational	Is e-business miserable or not to the end-users or to the executives?
		Will there be some elimination to occur?
		What motivates implementation of ERP?
	Operational	Will ERP contribute success to the company?
		Will ERP affect other business processes?
		What could be the causes of its delay, if ever delay happens?

Table 6-1 important aspects on adopting e-business

The three important aspects or focused interests in analysing the impact of e-business are inter-connected because at the base they all relate to the company.

All consultants agreed that ERP will affect the entire business organisation: from management to operations, from employees to process, from purchasing to sales transactions...and so on (Lal, 2005). In short, there will be radical changes in the company's business strategies in order to become more competitive in this information age. Therefore, a critical analysis of the impact of e-business provides

the company with a basis for effective plans concerning e-business adoption (Crabtree and Miller, 1999, Sherry and Martin, 2007).

This analysis of the impact of e-business demonstrates the strong dependence on personal aspects in order to achieve organisational and operational success. Personal issues sit in the social and cultural space of Lifeworld and, here again, a System/Lifeworld model will help build understanding of these interactions and dependencies.

6.2.3 Overcoming resistance to e-business

At first, when the new e-business system is introduced, people may resist it owing to issues that would affect their interests (Graham, 1993, Hodson, 1995, Harrisson and Laberge, 2002). Again, the term interests in this context refers to the user's expected gain from, or the personal relevance of the new system (Amoako-Gyampah, 2004). Questions which reflect the interests of the users as well as the issues which need to be addressed were mentioned in Chapter One, section 3.

To overcome resistance to e-business:

According to Consultant A, the end-users should be approached with the idea of 'non-repudiation'. This idea, according to him, refers to 'providing something new instead of merely correcting or disregarding the current processes...the current processes must therefore come in terms of modification, instead of labelling them as 'old and obsolete'.

Both Consultant A and Consultant B agreed that the Project Team should clearly set its overall objectives so that users will have a positive perception of ERP (e.g., SAP) implementation (Parr et al., 1999, Bancroft, 1996).

Meanwhile, Consultant E said he had previously worked in a private semigovernment company. According to him, "the majority of the users see the project in pursuit of innovations as technology initiated rather than e-business initiated. A technology initiated project, according to these users, is merely technology-related work. They do not know that considering the project as e-business initiated provides stronger motivation for the users to perform well on their assigned tasks because of the many benefits e-business offers (Lee et al., 2002a, Shang and Seddon, 2002). Many treat the innovation project as technology initiated owing to their limited understanding of it. Therefore, it is important that the Project Team tells the users the general objectives of the project – its features, applications, and impacts. Ebusiness, has, of course, a technology at its base, but is not exclusively technological. Users who regard the project as e-business initiated will have the sense of business ownership by voluntarily committing themselves to the company's efforts toward success (Lee et al., 2002a); thus, this becomes their positive mental culture.

In another case, Consultant F, said ERP, when introduced in a particular region, met resistance from people who were not familiar to it (Aladwani, 2001). Sometimes change is difficult for people to accept, that is to say, change from the old ways to the new system. It is necessary to evaluate 'how the users are prepared' in terms of adopting an ERP strategy in order to assess how best to approach the implementation. Before ERP, people were used to 'paper' but when ERP is introduced, business operations are conducted through electronic-communication devices. The Project Team should start breaking down the barriers between the old and new systems by understanding the attitudinal responses of the users whilst thoroughly training them until they can perfectly execute their job's new format as they conform to the new system (Aladwani, 2001).

Analysing the above statements, we find that it is better to retain the process which the users are used to rather than removing it. Only the project team ought to modify (Nandhakumar et al., 2005) the current process so it would be easy for them to use the technology (Amoako-Gyampah, 2004).

The users should be given a proper orientation regarding e-business concepts – informed what it is all about, until they become familiar with it. Primarily, either the top management or the project team should inform the users that e-business is not exclusively confined to technological aspects; e-business encompasses many other aspects such as organisational, social, cultural, the market world, etc. This way, users will realise that being a part of the huge project is actually just a beginning of the privileges and benefits given to them.

What Consultant D had said can be prevented:

"Some people may not be interested in ERP because of the less benefit they perceive." – Consultant D

One important thing here is that if the users are properly oriented, they can have a positive view about the impact of e-business, thus, their resistance to e-business adoption dies out. Orienting the users means transferring right knowledge (Robey et al., 2002) done in an effective communication strategy (Grant, 2003, Kumar et al., 2002).

Responses on resistance to e-business have shown that emphasising the positive aspects involves, for example, playing down the purely technical issues and stressing human/organisational ones. Technical developments may often be seen to have a more functional basis, with human actors becoming passive in the development. This is a classic example of System dominating the Lifeworld, but the latter never disappears – it simply becomes suppressed, with all the concomitant problems. This is encapsulated in the consultant response: "this is not exclusively a technical project". Similar problems are to be found in Western economies, but the strong socially cohesive nature of Saudi culture accentuates the issues and makes them arguably more urgent to address.

6.2.4 Project team and users' collaboration despite of nationality

Collaboration amongst the project team and the users also determines the success of e-business projects (Gallivan and Keil, 2003).

Consultant F said,

"The presence of people in an e-business project is important. There should be collaboration between the users and the Project Team. By personally interacting with the key users who are of different thinking and different culture, the Project Team will find out that communication barriers to dealing with them are cut down."

Consultant B said,

"If you involve the users into the project (Kanungo and Bagchi, 2000), you will be able to determine their level of acceptance and it will most probably be at the highest level when SAP Go-Live begins."

Consultant E pointed out that nationality of the project team is also an important factor:

"Nationality of the Project Team is very important. Arab people are very receptive to Westerners. They trust them a lot." (Consultant F).

In a negative sense, the users from a particular region can become too complacent when there are Project Teams from other countries who are capable of managing the project. Consultant E said in this regard:

"Some users from that region whose nationality originated therein are in a higher level of comfort zone when there are other nationalities who can execute the project well." (Consultant E).

Consultant F did not agree with this attitude, which is why he said that Project Teams should have people from the region where the project takes place.

"For ERP to succeed in a particular region there must be Project Teams from that region." (Consultant F).

Also, Consultant F cited an event wherein two different regions, Saudi Arabia and Kuwait, joined in a business venture. The company's organisational structure was aligned to two separate nationalities; therefore, people appointed or delegated at the management level were replaced after two or three years in order to have the balance in place. The important point, here, is equal provision of authority to people from two different regions, while they are still united in purpose.

In sum, the above statements would mean that the chance for the project to succeed is relatively higher where consideration to different nationalities is given.

It appears the users' trust (i.e., dependence on providing training) is based on the expertise of the Project Team rather than according to nationality. However, there are some cases were trust is given right away to somebody after recognising his or her nationality. Say for example, people in the Arab region can more easily trust people (e.g., Consultants) who were educated in the United States, United Kingdom and other Western countries in terms of issues related to technology, than people from other countries (Al-Gahtani, 2004). Education, which is the backbone of one's expertise, is credited in terms of valuing trust in the context of Arab Regions.

To conclude, nationality of the project team is an important issue for the users. However, in the context of Saudi Arabia, Saudis prefer project teams from Western countries not because these people are Europeans or Americans but because they have e-business expertise. E-business requires that work collaboration by the project team and the users are more important than nationality. Nationality adds motivation to users' involvement but it also has a sense of racial discrimination. Being Arabs or Asians does not mean they are inferior to Europeans or Americans. Likewise, being Europeans or Americans does not mean they are always superior to others. According to Consultant F:

"Knowledge that the user brings is very important. It does not matter whatever nationality he or she is as long as he or she has the knowledge relevant to the project."

Apparently, Consultant F believes that users' knowledge is more important than nationality. Elaborating on his belief, it can be argued that both the project team and the users possess knowledge (Due, 1995) that if combined and enhanced through their work collaboration regardless of nationality, success follows.

Whilst collaboration, not surprisingly perhaps, is seen as essential to the success of any e-business project, the cultural barriers to this in Saudi Arabia are, it seems, greater than might be expected by someone from the West. Project teams in which Saudi and foreign workers are mixed often seem to need careful handling, as was evidenced by the joint Saudi / Kuwaiti venture discussed earlier, but different cultures within Saudi can also be inhibiting. The key seems to be to recognise culture as a potential barrier, and to endeavour to pursue a project based on the knowledge and skills of participants regardless of nationality or culture. In terms of this study, what we seem to be seeing is a System which is coming into conflict with a number of different Lifeworlds, each containing elements which make relationships with others difficult if not sometimes incompatible.

6.3 Change Management

Regarding the changes that the company may face due to e-business adoption, Consultant G said the following:

"Whenever a new technology is introduced, new business transmission is taking place."

"Effective change management should be applied. Consider the fact that most of the change management program are from Western principles. Different organisations have different requirements of change management programme. Therefore, think about how the Western principles on change management could be modified in order to suit the change requirements of a certain company in the Arab region. What are the issues to think about? Think of their religion. Think of other important aspects."

Furthermore, Consultant G cited the example of an employee who felt very secure in his or her job then suddenly changes came:

"A certain employee in the Customer Care Division of a particular company in Jeddah (where Consultant G rendered a consultative service) believed that nothing could 'touch' his or her job security to the point he or she was doing nothing in the workplace but sitting comfortably and drinking tea the whole day. This example has something to do with the change management approach to be applied by the company. For an effective change management, two factors are important: (1) consider how life is going to be different for the employees by using the new system, and (2) understand the employees' reasons why they are working in the company. These two things if analysed and executed accordingly will produce positive changes or, in particular, will make the company's newly implemented e-business come to success."

Meanwhile, Consultant E said,

"There must be an awareness campaign about ERP, which is one of the many ways to execute change management; it has been proven that successful ERP implementation can be achieved which likens to what Aramco did so as to attain their goal: during the first days of its e-business project, they focused looking for better business process re-engineering (BPR), the technology's ease of use and its usability, the programme to be expedited, managing the different categories of people (e.g., according to their capabilities, etc.) and provide them significant training, the new system's impact to the market, and so on and so forth."

The Consultants' statements agree with the previous IS studies which postulated that e-business requires the company to have an effective change management in order to achieve implementation success (Aladwani, 2001, Robey et al., 2002). The Consultants pointed out that the type of change programme, analysis of work attitudes, and change awareness campaign are some of the factors to effective change management. Specifically, reviewing the study of Aladwani (2001), indeed such factors are but a part of the strategies in handling changes. Aladwani's (2001) model for managing change caused by ERP has three phases which cover important factors to be addressed such as users' attitude assessments before adopting the new system; establishing strategies based on the collected knowledge about the users' attitudes, hobbies or interest, as well as their capabilities; training which allows the users to embrace the new system; and monitoring and evaluating the effects of the ongoing changes, and others (Aladwani, 2001).

Change management must be executed systematically to maintain participation of all the people concerned. Effective change management avoids resistance, rejection, or job resignation by unsatisfied and disappointed users (Cao et al., 2004, Hirschheim et al., 1996, Nah et al., 2001).

Whilst change has to be addressed in any e-business development, the need for a programme of change management within the cultural environment of this study is, it could be argued, much greater and more difficult to achieve. In essence, the System/Lifeworld issues raised within the research must be incorporated into any change management initiative.

6.4 IT Acceptance Growth

Consultant G argued that some countries embrace technology much faster than others. The fact that twenty-five year old people can use laptops easily in India because they are familiar with them from an early age, is argued to be a reason why IT acceptance (e.g., Internet usage) there is rapidly increasing.

Such an observation agrees with the findings of Press et al. (2003) that India has been widely using IT tools such as the Internet in its government transactions, maintaining competitive advantage in telecommunication, and in its private business sectors since the 1990s.

6.5 Age

The consultants pointed out that age is a big factor in e-business implementation (Korupp and Szydlik, 2005). They said that *young and old end-users are both contributing inputs for ERP projects*. Yet, there were instances of young end-users leaving the company after a minimum of two years for reasons such as realising that there are career opportunities elsewhere which will provide higher compensation and

benefits. This dilemma starts when after comparing his or her job status that of his or her colleagues, especially those who are also working in SAP projects, the employee finds that salaries are higher elsewhere, and that he or she is not paid well. On the other hand, older end-users, regardless of the amount of salary, stay in the company for reasons such as job security. Therefore, older end-users are often more capable when operating the e-business system than the younger end-users, whose stay in the company is often very short.

However, for young end-users to stay in the company, Consultant A said, "If young end-users are paid well, they will not leave the company."

Here we find that, regardless of age, all types of users are important contributors to ERP projects. The company only needs to meet the desired benefits of its people so that young and old alike will remain in service. According to Mumford (2006), in general, employees want their company to provide them with acceptable remuneration, good working conditions, and stable job security. The end effect of this is workers' loyalty (see section 6).

Interestingly, the acceptance and use of IT by young and older workers does not seem to be a major issue. Rather, the key problem is retention of young workers because of employment mobility. This all has strong links to loyalty and trust, which are the subject of questions below.

6.6 Gender

Consultants were asked how gender affects e-business technology.

Consultant E answered:

"In the context of Saudi Arabia, an e-business project is done predominantly by males unless there is a specific task which can best be performed by women". As observed, women can be good trainers. Yet, respectfulness or modesty in dealing with the women should be regarded all the time. There must be no 'closed door' meeting with female women, especially if she is not related to you. Also, sitting beside a woman who is not related to you can be seen as disgusting in the sight of Arab people, as this does not conform to Islamic cultural values.

Al-Ghatani (2004) noted the same when he studied the degree of computing acceptance of Saudi people; he found that "women had lower degree of computer

usage and satisfaction than men" (Al-Gahtani, 2004, pg. 17). Clearly, at least a partial reason for this is Saudi culture, wherein women are not allowed to work with men who are not related to them. Or, more reasonably, many Saudi families do not allow their females to work for their livelihood. Each female member, or a married woman, for example, is required to stay home so as to give full attention to her own family and to manage household chores.

Gender is an issue in so far as the ability of male workers to work with and even mix with female workers is severely curtailed by Saudi culture. Again, this is an element of the lifeworld which no amount of system rule making and planning can change – it simply has to work within the constraints set.

6.7 Loyalty

Loyalty is one of the social factors in maintaining a good employer-employee relationship (Mumford, 2006), and consequently impacts on the success of e-business projects.

The following remarks on loyalty were given by the interviewed consultants:

"Leaders can earn loyalty by living with the people in their environment. In ebusiness, it is important that the top management is living with the users by means of giving them examples, taking their inputs seriously and favourably (e.g., system designs), setting up quality of the system, maximising time flexibility, addressing issues on project delays, allowing them to fully understand the project, and so on and so forth." (Consultant A).

"Everyone has his or her own motives, always thinking what benefits he or she can get." (Consultant B).

"Companies have their own peculiarities. They have their own ways of executing their business strategies. They have their own ways of winning and promoting employees' loyalty to their organisation." (Consultant G).

According to the statement of Consultant G, loyalty depends on how the company persuades its workforce to remain loyal – loyalty that lasts. Although Consultant B argued that most employees are benefits-centred, that is to say, they will only become loyal through financial gains, nevertheless we find that such an attitude will not prevail if the company fully understands the welfare of its employees and is keen

to address their needs and wants from the very start of their work in the company (Stogdill, 1950, Lim and Liu, 2006). On the other hand, if the employees realise that their company does not care for their welfare, this will invite manpower problems.

Moreover, drawing on the above remarks, we conclude that, indeed, loyalty is important because it drives employee commitment to the company and its management, provided that this management behaves fairly (Zakaria et al., 2003) to them, especially concerning their working conditions (Mumford, 2006). If loyalty is established among the staff, they have fewer reasons to leave the company.

In the context of e-business, top management may convince the end-users that an ERP project is for their benefit. However, if loyalty is not established, these same end users may opt to leave rather than staying for more years in the company, whether or not the project would benefit them. If the company had won the loyalty of its employees, they would not ask *'Why is e-business needed?'* Instead, stored in their minds are dispositions for the progress of their company, and thus they would personally say *'I will stay in the company with or without e-business!'*

Finally, it is argued that loyalty is the product of trustworthiness. If the company fulfils its promises to the employee, they will trust their words and mandates. In the long run, such trust paves way to employee loyalty.

6.8 Trust

According to Consultant A,

"Trust and loyalty are in the same category. Users will give you their honest feedback which will contribute to the success. Continuously, the leadership should encourage the people to become loyal. Without trust and loyalty, there will be more risks. Too much risk may fail the project"

The other Consultants agreed with Consultant A that trust can be easily given to the employees when it comes to delegation or giving of tasks and responsibilities. However, in the context of Islamic faith, only Muslims can be trusted by a Muslim; and also based on the context of Arab people, trust is given right away to those belonging to their family, tribe or nationality. According to Zakaria et al. (2003), Saudi Arabia is a high context society. Based on the study by Hall (1976), such a society primarily secures trust so that undistorted and profitable communication can

be conducted (Zakaria et al., 2003). For trust to be given to non-Muslims or to those outside a certain Arab family line primarily requires many proofs of trustworthiness through actual circumstances – that is to say, trust is not earned overnight, but it must be earned, for it is necessary in business dealings (Harris et al., 2004).

Consultant As view that there will be more risks if trust and loyalty are absent in the employer-employee relationship supports the study of Sumner (2000), who postulated that too much risk may cause failure of an ERP project. Therefore, critical analysis of e-business risks must be done (Scott, 2004).

Furthermore, for the company to gain the trust of its employees, openness is important. The company should inform the staff what is to be implemented or what is currently being implemented. If it is e-business, then top management should inform the staff widely about it: especially its scope of benefits. In this case, trust and fairness work together (Zakaria et al., 2003), and consequently employees' loyalty is strengthened.

Consultant D supported the above statement when he said,

"If the manager works for his or her own interest, I will not trust him... if the company will benefit, I will help..."

Meanwhile, Consultant A cited an example about trust which is becoming questionable:

A Saudi staff sees that their Project Team Leader is merely focusing on training his or her Jordanian colleague while he or she is set aside, ignored, or neglected. The Project Team Leader is obviously abusing his or her authority by showing partiality among his or her team members, or in this case favouring the foreigner over the Saudi. The Saudi staff then loses his or her trust in their Project Team Leader and in the project as well because of perceiving that the whole process in executing it is wrong. The negative impact: trust which is wavering within the Project Team will possibly lead to a failure of the project.

Analysing such statements, it is also important that top management and the project team make sure end-users know their defined goals and intentions, which are not self-seeking but are rather for the common good of all the affected individuals and entities (Chae and Poole, 2005).

Lastly, it was suggested that trust is measurable, as Consultant A said,

"Trust can be measured on the employees' length of stay in the company: some stay five months, others stay seven months, and some stay even many years. The longer time of stay is the highest level of trust had been established between the management and the employee."

6.9 Trust and Security

Consultant G conducted a study on B2B and B2C five years ago. He conducted surveys among SMEs, business companies and others. He said "What can be done to ensure a company's e-business success? There must be trust and security".

To validate for trust, he provided questionnaires to 1,000 people and did a face-toface interview afterwards. He further noted that "in establishing trust, one's identity would be disclosed to others and the latter assess the known bases for giving of trust. Trust issues include transparency in the sense that the company allows its data to be open to other companies (i.e., application of B2B). Yet, there was an incident wherein a certain Arab bank's information was hacked by Internet hackers. In this case, security comes along with promoting trust. You must enhance your website's security so that nobody could be able to grab your identity, which in turn wins the trust of others – in personal terms, or business dimensions, because the information they have put in your website account is also kept safe." (Consultant G).

Consultant G also managed to do his job well in a public infrastructure project in Riyadh. There, he placed strong emphasis on information security. He answered that the question 'Will there be a risk?" was addressed favourably.

Security concerns are a major barrier to customers conducting online purchasing, according to the study of Suh and Han (2003). Providing awareness and creating a comfortable feeling about utilising the technology are the keys to establishing trust and security, especially in the context of Internet banking (Yi-Shun et al., 2003, Doney and Cannon, 1997).

Loyalty and trust are bound up with the Muslim, and strongly family-based, culture of Saudi Arabia. This is addressed more fully below, but the need for trust can even be seen to manifest itself in a justification of nepotism within Saudi industry.

6.10 Culture

The consultants emphasised that culture is an important aspect in e-business implementation.

According to Consultant C,

"It is important to identify the relationship between ERP and culture in pursuit to e-business success."

This statement is in parallel with the study of Krumbholz and Maiden (2001) who found that e-business implementation must fit the stakeholders' (i.e., employers, employees, customers, suppliers, etc.) culture in both the national and organisational levels.

Consultant B said:

"The very essence of ERP is having systematic decision. There will be a switch to a systematic way. Yet, you cannot have an ERP package that will suit every culture. Some things must be automated...they will undergo transition stage...automating the current physical 'paper' process is an example of switching to a systematic way by simply mimicking it through electronic means. At first, users will resist but if they realise that the new system is better than the previous one, they will be happy to utilise it.

Here we are reminded of the Zakaria et al. (2003) study which found that the success of IT-based technology applied to the recipient organisation depends on the project team's careful appreciation to the norms and values which are important to the workforce. The workers' (or the end-users') behaviour established by their societal culture may facilitate or may impede IT-based technology adoption and/or implementation.

Meanwhile, Consultant A said that users are required to adopt the changes infused to their workplace, which would mean disregarding their current culture:

Every culture has its own ways (e.g., some cultures greatly value job titles, others do not). If you will go for a change management, you are to move the person to the new system. The person's system (i.e., culture he or she practices) should move towards a systematic way provided by the new system.

According to Consultant C:

"It is not the culture that is different but the mentality, for example, some people say, 'this is a government therefore...', or 'this is a private company therefore...' People are of different education, so they are of different mentality."

However, at this point, the Consultants concluded that one's mentality has nothing to do with his or her education. Rather, it is his or her culture that reflects the education; normative learning defines culture (Hofstede, 1984), not mentality nor perception. Mentality or perception refers to how one thinks towards an actual situation while education refers to the knowledge gained and applied.

But according to Consultant D,

"Inherited manners are common to employees."

Consultant D said that previously he had conducted a people-based management research study, and there he tackled the issues of gender, nationalities, some attitudes inherited; as well as ideas adopted or inherited. In his statement, perhaps Consultant D was saying that employees' inherited culture should not be disregarded or taken for granted.

By saying that culture is inherited, Consultant D's statement does not agree with the study of Hofstede (1984) which proposed that culture is learned by people rather than inherited.

On the other hand, Consultant A is right to say that 'every culture has its own ways'; in fact this statement is consistent with the cultural dimensions developed by Hofstede (1984), but disregarding an existing organisational culture poses a danger of distortion of the peoples' work and business dealings. To address this scenario, the following statements were given by Consultants E and F:

Consultant E said,

"If you can sense the mentality of the person you are dealing with, that would be easy for you to interact with him." Three important aspects are innate in the person: his or her culture, ideology, and religion (Al-Gahtani, 2004). For example, the Ministry of Islamic Affairs is very particular with the kind of ERP consultants. They prefer consultants who will not go against Islamic beliefs otherwise they would opt to terminate them despite the contracts being signed by both parties.

Consultant F said,

"In most cases, it will be helpful for both parties which are of different religion, ideology and culture to plan ahead regarding their future actions without neglecting or setting aside their known interests."

In the context of Saudi Arabia, Consultants E and F assured that culture must be given great consideration; otherwise no e-business project will succeed.

Summarising the analysis, all the Consultants pointed out that culture is distinguished among the people in the organisation through (a) religion, (b) language, (c) provision of trust, (d) handling business time and (5) interests (Hofstede, 1994, Trompenaars, 1994).

a) Within the confines of religion, some conflicts on work ethics are expected between Muslims and non-Muslims, yet they are interacting with one another for the purpose of attaining company goals – they are coordinated and unified by the system in effect. For example, non-Muslims cannot be forced to work in Makkah.

When the consultants were asked 'What would be your reaction if you saw somebody in the project team having a tattoo, for example, a cross tattoo on his or her skin?'

The other Consultant agreed with Consultant G when he replied: "In that case, there should be two important things to consider: First is 'What is the message you want to convey?' And second, 'How do you communicate such a message?'"

"The right message communicated is the right message." If the wrong message had been communicated, you are not going to succeed at all. The person should be sensitive to what kind of media he or she is going to use. In the case of having a cross tattoo, if the person conveys this message as a sign of his or her religion, he or she will not succeed in the environment where another religion dominates.

In terms of business payment methods, VISA is contrary to the Islamic faith because it allows banks to charge financial interest to their clients. Charging

interest or 'riba' is prohibited by Islam (Islamic Sharia Law). According to religious scholars, credit cards are 'haram', which means 'bad' or a sort of 'evil'. Likewise, online purchasing will not work in Muslim communities. There has to be some way of debiting an account so that purchasing through the Internet will take effect without placing their Islamic faith at stake. Consultant B said that this issue should be addressed properly in relation to SAP implementation because SAP is connected to online banking services. Also, it is apparent that some cultures promote receiving bribes and giving of big discounts while some cultures do not.

Another issue: Consultant A experienced a distinct way of accommodating clients during the time of his project in the Islamic Development Bank (IDB) wherein he had been used to address the clients with the word 'Brother' followed by their first name (e.g., Brother Mohammad), while in other institutions, only the use of Mr. is common in the workplace.

- b) Language. Businesses in Saudi Arabia, public or private companies, ought to use Arabic as their medium for transactions especially when dealing with government agencies. English is only secondary. Non-Arab people also ought to at least know the basic Arabic business communicative expressions in order to create rapport and understanding with the clients and future business partners (Al-Mashari et al., 2003).
- c) Trust. Again, as discussed in the preceding sections, in the context of Islamic Arab people, trust (Zakaria et al., 2003) is easily given to those of their same religion, nationality, and tribe, while others outside these categories would take an indefinite time through situations where trustworthiness is evident before trust could be given to them.
- d) Business Time. Relative to handling business time, the Arabic calendar is, by default, used by organisations on their transactional times, schedules, and vacation concerns. By default, organisations should use the Arabic Calendar. Non-Muslims are to comply with Islamic dates of vacations while setting aside their accustomed time for their countries' traditional and cultural festivities. That is to say, when a particular season is not a 'holiday' according to Islam but a 'holiday' for another religion, the non-Muslim user should prefer to report for work rather than celebrating his or her country's highlighted festivity by filing a vacation. Consultant E said, '*Aramco does*

not deal much with non-Muslim holidays but they put it in reality concerning their non-Muslim employees.' In this case, Aramco provide vacations for non-Muslims during the Christmas season and on other holidays according to their national traditions. The vacation system for Islamic countries is different from non-Islamic countries. Another example in handling business time according to Consultant D is that weekend(s) or day(s) off in Islamic countries are every Thursday and Friday while in non-Islamic countries they are every Saturday and Sunday. Working hours are also remarkable (Harris et al., 2004). Consultant E said, 'Working hours in government offices are very restricted while private offices require extra time from their employees especially when there is a call for urgent meetings.

e) Interests. Sharing of interests is also an important determinant of culture, or an organisational culture to be specific.

Consultant C said: "If you have the same hobbies or interests, this adds value in the working environment... although this is in general terms. In ebusiness, it is important to know the interests of the users so that the Project Team can motivate them effectively. "Culture can even change the moods of humans. Note that some cultures are based on their environment such as in Europe where dominant colours are red and green; in Denmark where there are bright six months surrounded by six dull months. Body language also has an effect in which some cultures just shake hands, some just give a kiss and somewhere else poses other distinct gestures – this has impact on business dealings."

Of all the cultural issues, Consultant A said: *SAP will not intercept any culture and it is important that all organisations' activities should be linked to the government's regulations, may it be in the field of online banking systems (e.g., ATM), purchasing cars, and others.*

Such a statement would mean that SAP systems can be customised in conformity to or following Saudi Arabia's existing government regulations. On the other hand, we find that social factors may shake culture, that is to say, people have the will to modify their culture based on the situations they encounter. In the case of SAP implementation in Saudi Aramco, whether Saudi people working there would admit it or not, SAP has brought changes to their traditional culture.

Any e-business implementation within Saudi Arabia, consequently, must be managed with cultural sensitivity. In terms of this study, this means constantly mapping System to Lifeworld in order to ensure that the outcomes required (from System?) will not be prejudiced by unchangeable cultural constraints. Where all staff on a project are Muslim or Saudi, arguably this is easier to manage, but, in the words of one consultant: "every culture has its own ways ... [its own] culture, ideology and religion". Given the reliance of Saudi Arabia on (particularly) American and European expertise, managing the complexity of the Lifeworld is key to the success of any project.

Some of the issues may be simply included within the rules of the System. So, for example, the forbidding of interest under Sharia Law means that credit cards may simply not be used. We can see this as Lifeworld determining System, but in any event it should not be difficult to deal with. Other issues are more complex, as with the need within Saudi culture for a level of privacy which would not be seen necessary or even understood by those from many Western cultures (see, for example, e-Accounting and human resources below, in which privacy can severely inhibit e-business development).

6.11 E-Accounting

According to Consultant A, "E-accounting is beneficial yet he is uncomfortable with it at some point. E-accounting works best for him when he had in the system a complete tracking of his or her travels, purchases, business activities, and the likes – this way he can control the flow of his or her accounts. Yet, in terms of privacy issues he is not comfortable in knowing that other individuals can access his or her personal records. And even when he is no longer connected with the company, his or her records remain there in the system.

Analysing the above statement, it implies that privacy remains one of the most dominant issues in terms of undertaking accounting through electronic means (Miyazaki and Fernandez, 2000). Indeed, customers fear that their personal information might be used by others in a heinous scam or in other unscrupulous *modus operandi*. When e-business is operating, users in the company are required to adopt the e-accounting systems, thus becoming customers of certain banks through the mediation effort of both the Accounting and Human Resource departments. To

eradicate customers' fear or sense of inconvenience of using e-accounting, privacy issues along with business trust and system security should be addressed beforehand (Dubelaar et al., 2005).

6.12 Human Resource System

From the interview, three factors emerged that would enhance the Human Resource System under e-business:

1. Monitoring the users' job performance.

"The Human Resource Department has to have the key performance indicator such as regarding the 'system usage'. Performance indicator allows focus in one area so that the users' performances are closely monitored as to whether or not their job is well executed in conformance to the system." (Consultant B).

2. Meeting the users' expectations (users tend to create expectations)

"If the expectation is not met, it will lead to the project's ultimate failure." Users expect from the Project Team that the latter will provide them excellent training, will guide them, and whatever they have said about the project shall be materialised. If these are not met, users will lose eagerness to do their part. In the end, the project fails. (Consultant E)

"Expectation is unstable when replacing the Project Team with the new team happens. Users' expectation varies according to the overall profile of the Project Team, and yet it should not be disregarded that the bottom line issue is for the project to be completed." (Consultant F).

3. Improving users' working conditions

When asked 'What would you do in a situation wherein 'a Saudi employee does not follow the system because his or her salary is very low?' Consultant F replied,

"Three things should take effect: provide employee incentives, promote their participation rather than enforcing them, and provide them the feeling of business ownership." Consultant F

The above three factors mentioned by the consultants agree with previous IS studies. Monitoring the users' job performance, aside from purposes of job appraisals and future promotions, is also necessary for evaluating the new system and determining whether customisation or modification should be applied (Al-Mashari et al., 2003). On meeting the users' expectations (Lim et al., 2005, Vroom, 1995, Scholl, 1981) and improving their working conditions (Willcocks and Sykes, 2000, Bingi et al., 1999, Kanungo and Bagchi, 2000), these will increase their trust in the project team and in top management, and most significantly, their loyalty to the company.

The suggestion here is that the human resource system can be used to build trust and loyalty within an organisation. However, given the peculiarities of Saudi culture outlined above, realising such benefits will need careful handling in terms of the System/Lifeworld conflicts.

6.13 Causes of e-Business Implementation Delays

The Consultants agreed with one another that lack of transfer of knowledge (Nambisan and Wang, 1999, Chieochan et al., 2000), a highly complex system, lack of records monitoring, and lack of concern from the project team are the main causes of the delay of e-business implementation (Attewell, 1992). In this regard, Consultant B stated:

"If the system is simple, ERP can be implemented the soonest. We should motivate the people that ERP can make their job simple as well." (Consultant B)

Meanwhile, Consultant A cited an example:

"Say for example, the purchasing manager is replaced by a new one. If the previous purchasing manager does not care for the project, he will leave without transferring the necessary information to the new purchasing manager. Succession planning in this case is irrelevant. The new purchasing manager cannot right away do the project because no tracking of records is at hand. It would take at least six months before he became familiar with the project. But if records are intact despite change of employee, ERP project will be easy."

6.14 Failure Factors to e-Business

Numerous IS studies also focused on analysing the failure factors to ERP implementation (Shanks, 2000, Shang and Seddon, 2002). Failure factors simply

refer to the inability to meet or to fully apply the success factors to ERP implementation (Lyytinen, 1988, Umble et al., 2003, Garyega and Brady, 2005).

Consultant G said that "failure of e-business simply means e-business is not used!"

There are two reasons for not using e-business:

- Fear of failure. If the user is not familiar with the new system, he is afraid to inform others about it. A lot of times, the user will not ask questions because he feels that it would degrade his or her reputation; he feels he would look so stupid if he would ask the project team leader or anyone in the team; and he perceives that people would thing negatively against him. Users do not want to show their ignorance by thinking 'My name should be secured.'
- 2. Motivating factors. Giving right incentives is one way of motivating the users (Willcocks and Sykes, 2000, Bingi et al., 1999). You must understand the motivating factor in the environment because incentives to be given depend on it (Al-Meer, 1989, Stein and Zwass, 1995). If the user is not motivated with the type of motivation through incentive provisions, most likely he will end up leaving the project because he is not happy with what he receives or will receive as the project furthers.

As mentioned, for users to be motivated depends on the type of environment they are working (Al-Meer, 1989, Due, 1995). For example, Saudi Aramco is different from small companies. It is obvious for users in Saudi Aramco that their company is the world largest oil company so they expect to receive greater incentives. If Saudi Aramco failed to meet their expectation regarding incentives and even on other benefits, they would not perform their job well. On the other hand, in small companies, if the incentives given to the users are greater than they had expected, they will give even more 'push' to contribute optimum success to the company's e-business project.

Different groups have different motivation factors (Due, 1995). Motivation is always focused on the 'growth', especially in private companies, but not in government ministries. People see to it that they acquire 'growth' in aspects relative to their working conditions as their company grows bigger and bigger.

For the new system to be implemented, motivation answers the users' question such as 'Why should I learn this system?' If the user realised that

the system would provide him better working conditions, then he or she will cling on it, or otherwise, he or she will ignore it and leave the company very soon. E-business will fail if the users will not cooperate (Davenport, 1998, Kanungo and Bagchi, 2000).

Consultant F. said: "The project team should tell the users everything about the project and should persuade them to start contributing their ideas and inputs. System change should happen in a constant basis."

From this analysis, whilst dealing with the potential for failure is important to ebusiness development, the issues, even within Saudi Arabia, seem to reside largely within System.

6.15 E-Business Benefits

Consultant G said:

"E-business benefits are tremendous...look at Amazon, look at eBay...these companies are continuously growing and expanding.

Indeed, the benefits of e-business can greatly surpass the investments provided for it (Shang and Seddon, 2002). King et al. (1994) found that Amazon is really enjoying its e-business success, whilstPorter (2001) reported the continuous growth of eBay.

Whilst the business benefits seem to be accepted, these will not be strong enough to change many of the cultural issues within Saudi Arabia. This must be acknowledged and incorporated within any e-business development.

6.16 Conclusion

As was hoped, the in-depth interviews have given an insight into the problems of implementing e-business. Mapping these findings to the objectives of the study and to the initial conceptual model (Figure 3-11), has helped to further develop an understanding of the cultural and social factors affecting e-business assimilation (objective 1), to determine which of these is key (objective 3), and test the initial model (objectives 4/5).

Specifically:

1. Discussion of training has raised issues such as flexibility, preference for face-to-face communications, and family issues, which have special

meanings within Saudi culture, and which need to be addressed when designing and implementing e-business solutions. These issues provide direct examples of the way in which Lifeworld has to be considered when implementing what many may see as an organisational system, demonstrating, even at this early stage of the qualitative research, how modelling Lifeworld against System can be seen as a valuable exercise in understanding the potential and constraints for e-business design and implementation in Saudi Arabia. The findings map most specifically to objective 1, and help validate the importance of the left hand side of the initial conceptual model, thereby contributing to the understanding needed to address objectives 4 and 5.

- 2. This analysis of the impact of e-business demonstrates the strong dependence on personal aspects in order to achieve organisational and operational success, and gives insights into the issues set out in objective 3. Personal issues sit in the social and cultural space of Lifeworld and, here again, the System/Lifeworld model will help build and understanding of these interactions and dependencies (objectives 4 and 5).
- 3. Responses on resistance to e-business have shown the need to play down purely technical issues whilst stressing human/organisational ones. There is a need to guard against human actors becoming passive in the development (System dominating the Lifeworld), and the resulting suppression of the Lifeworld. The strong socially cohesive nature of Saudi culture accentuates these issues and makes them arguably more urgent to address (addressing objectives 1, 3, 4 and 5).
- 4. Cultural barriers to collaboration in Saudi Arabia are, it seems, greater than might be expected by someone from the West. Project teams in which Saudi and foreign workers are mixed often seem to need careful handling. The key seems to be to recognise culture as a barrier, and to endeavour to pursue a project based on the knowledge and skills of participants regardless of nationality or culture. In terms of this study, what appears to be emerging is a System which is coming into conflict with a number of different Lifeworlds, each containing elements which make relationships with others difficult if not sometimes incompatible. This is directly relevant to

identifying cultural factors, determining which are key and assessing the cultural elements on the left side of the conceptual model.

- 5. The need for a programme of change management appears to be greater within the cultural environment of this study. The model needs to address System/Lifeworld issues raised within the research and enable them to be incorporated into any change management initiative.
- 6. Retention of young workers because of employment mobility, the relative inability of male workers to work with and even mix with female workers, and the loyalty and trust which are bound up with the Muslim and strongly family-based culture of Saudi Arabia, all point to elements of the lifeworld which no amount of system rule making and planning can change it simply has to work within the constraints set.

Any e-business implementation within Saudi Arabia, consequently, must be managed with cultural sensitivity, which for this study means constantly mapping System to Lifeworld in order to ensure that the outcomes required (from System?) will not be prejudiced by unchangeable cultural constraints. Some of the issues may be simply included within the rules of the System, or Lifeworld determining System (e.g. forbidding of interest). Other issues, such as the need for privacy, are more complex.

So, whilst the business benefits are accepted, cultural issues within Saudi Arabia cannot simply be changed to enable these benefits to be realised.

The Consultants' propositions give light to the purpose of the present study: to understand how the theory of lifeworld and system works in Saudi companies, especially in terms of e-business projects. The most important strategy is, whilst in the process of assimilating the e-business system to the company, the project team should know well how to deal with the people in every business aspect and how to handle even the most difficult situations without hampering the on-going e-business project. Each subfactor within the major factors is an important determinant of the significance of the lifeworld and system situations that the company should address with appropriate actions, thus, the theory of lifeworld and system is really occurring in this case. The new system to be developed by the project team should be derived from the organisation's existing condition of both their lifeworld and their system. Based on the Consultants' propositions, it can be said that Saudi companies are adapted to the non-repudiation or modification of their existing system established by the people in a free lifeworld; the modified system itself, becomes the new system. We note that the three Saudi companies' existing systems prior to ebusiness adoption are fully based on Islamic faith and Arab culture. Saudi people basically do not allow anyone to disregard their religious practices, cultural values, and traditions. There can be a new system in their organisation but their customs and beliefs should remain embedded to their business transactions.

Further details on the four major factors, the (business) situations in Saudi companies where the concepts of lifeworld and system are evident in these factors, in which a tabular analysis is provided in parallel to the researcher's final conceptual model, will be provided in Chapter Eight.

7 Chapter Seven: QUANTITATIVE DATA FINDINGS AND ANALYSIS

7.1 Introduction

In undertaking this research, extensive literature on IS, especially that which deals with IT, e-business impacts, Habermas' social theories, and Saudi companies' profiles (that is, the way they conduct their businesses which basically reflects their religious and cultural identities) has been read and reviewed. The questionnaires on which the findings of this chapter are based were personally administered.

The primary source of information for this research was always intended to be indepth qualitative research. The main aim of this section of the study has been to collect broader qualitative data from a wider range of participants, and, given the amount of data collected, to analyse this quantitatively and match the outcomes to those of the qualitative research. Therefore, the findings of this research will be solely based on the qualitative data and analysis. So, this quantitative analysis will be limited to the degree of supporting the findings of the qualitative analysis.

SAP end-users from the three Saudi companies (i.e., Saudi Aramco, SABIC, and Hadeed) were chosen as the participants for the survey conducted. They have been working as SAP users since the start of e-business projects in their companies. The range of participants has been carefully chosen to provide the necessary information, which is analysed in this chapter. To get the necessary information, the author ensured that each set of questions given has the ability to maintain the participants' interest in answering them all based on their actual e-business (i.e., ERP-SAP) experiences.

As has been said in the methodology chapter, the survey questionnaire is divided into major categories which correspond to the major factors determining success of e-business assimilation. There were questions written under the other major factors such as technological and organisational factors, but as the author had argued from the very beginning of this thesis, social and cultural factors are emphasised as the prime determinants to the qualitative execution of business activities. The concepts of lifeworld and system have something to do with the social and cultural characteristics of the people in the organisation. Thus, the researcher contends that, in essence, all questions have their origin from the social and cultural factors. In many cases, some of the questions were not explicitly presented by the technological and organisational factors, but have their roots from the social and cultural factors.

Out of 1,150 people who were expected to participate, 1,071 did so, that is to say, 614 SAP end-users who came from Saudi Aramco answered the questionnaire while 457 SAP end-users from SABIC and Hadeed did the same. This represents an excellent response rate of 93% for the survey questionnaires. The participants' ages were between 20 to 50 years old. They were all very familiar with the systems, designs, and processes of SAP. All of them answered the questionnaire based on their actual experiences or encounters before and after the e-business adoption stage.

Appropriate statistical techniques were used in this study to come up with accurate findings and analysis, such as descriptive tests, ANOVA test, Kruskal-Wallis test, Chi-square test, and Pearson correlations co efficiency test.

The final quantitative data of Saudi Aramco, SABIC and Hadeed are presented in the following.

Table 11-1 shows that 18.4 percent of the total number of participants have been using the Internet and the World Wide Web for 2-4 years; 10.2 percent for 6-8 years; 6.1 percent for 8-10 years; 6.0 percent for 1-2 years; 4.7 percent for 4-6 years; 4.0 percent for more than 10 years; and 1.2 percent of the total number of participants have been using the Internet and the World Wide Web for less than 1 year.

Figure 7-1 shows the frequency of the item 'How long have you been using the Internet and the World Wide Web?' according to the grouped and divided length of years.



Figure 7-7-1 Frequency on 'How long have you been using the Internet and the World Wide Web?

The tables (Table 11-2, Table 11-3 and Table 11-4) indicate the users' frequency of usage for each ICT tool: Internet, video-conferencing, e-mail etc.

7.2 Age

According to the study of Morris and Venkatesh (2000), a user's age is an important factor in determining the likelihood of use of new technology and on how long he or she will have used it. For younger users, it is their attitude which strongly determines their acceptance to new technology. For older users, it is their important social connections and their perceived constraints in using the new technology which were reported as the strong determinants of their adoption behaviour (Morris and Venkatesh, 2000).

Table 11-5 shows that 2 percent of Aramco employees participants are below 25 years of age, 11.7 percent are between 25 to 30, 24.4 percent are between 31 to 40, 34.2 percent are between 41 to 50 years of age, and 0.2 percent did not participate. Table 11-6 indicates the **Homogeneity of Variances** of the ages of the young and old participants in some of their activities which this study concludes they all have a significant value which is less than α =0.05. The test of the Levene statistic indicates



that the variance is homogeneous. The following figures prove that the relation is of normal distribution:

Figure 7-2 Correlations between Age (below 25) and E-mail Usage



Figure 7-3 Correlations between Age (over 50) and E-mail Usage

Figures 7-2 and 7-3 indicate the normal Q-Q plots of e-mail for ages below 25 and ages over 50.

Table 11-23 shows that the number of SABIC and Hadeed employees whose ages are below 25 years old is 23, which is 5 per cent of the total number of employees; 70 are 25-30 years old, which is 15.3 per cent; 333 are 31-40 years old, which is 72.9 per cent, and 31 are 41- 50 years old, which is 6.8 per cent of the total number of employees. It has no missing values. Table 11-24 of Sabic and Hadeed indicates the Homogeneity of Variances. The first test of homogeneity is called Kolmogorov-Smirnov. The level of significance is sig =0.000 less than the level of supposed significance α =0.05 after Lilliefors Significance Correction. The second test is called Shapiro-Wilk test which indicates sig =0.000 < α = 0.005. Thus, the null hypothesis that the distribution follows the normal distribution is accepted.

The present study found that correlations of age to IT tools usage and satisfaction is neutral in both the younger and the older users, which agrees with the findings of Al-Gahtani (2004). Although the degree of each IT tool usage differs according to age, the main point is that users adopt any new technology regardless of their age (Al-Abdul-Gader, 1999, Abdul-Gader and Kozar, 1995).

Age determines the users' likelihood of using the new technology and length of time he or she will use it (Morris and Venkatesh, 2000). For younger users, it is their attitude which strongly determines their acceptance to new technology while for older users, it is their important others (i.e., subjective norms) and their perceived constraints on using the new technology were reported as strong determinants of their adoption behaviour (Morris and Venkatesh, 2000).

Age is neutral between the younger as well as the older users. As was noticed from the interviews, the acceptance and use of IT is not a major issue as long as there is full support from the top management. Rather, the key issue is the retention of workers because of the acquired knowledge that they may have as a result of participating in the implementation of e-business systems. Therefore, this has strong links to loyalty and trust, which the researcher has discussed in separate sections in this chapter.

7.3 Gender

In Saudi Arabia, men who are engaged in computer work are in a greater number than women (Al-Gahtani, 2004). The main reason would be that there are constraints on women going to work, or put another way, prior to employment being given to them, only a few women preferred taking up computer courses. Men regard computer technology as very useful to their future job while women consider it as less important unless the people close to them suggest or require them to acquire learning on computer systems and utilise this technology afterwards (Morris and Venkatesh, 2000).

Table 11-7 and Table 11-8 show that there were 205 women of Aramco's participants, which is 16.9 percent of the total number of participants while there were 404 men, which is 33.3 percent and 600 failed to respond. It is understandable that women have a lower degree of computer usage and satisfaction than men. Figure 7-4 shows the frequency of gender of the participants.


Figure 7-4 Gender Participants (Aramco)

Table 11-25 shows the values of T distribution of SABIC and Hadeed participants which determines the value of the area under the curve; if the area is large, the value points to the strength of the variable. If we compare the value of the area for male and female for any item, we find that the areas of all items for males are larger than the areas of all items for females. For example the area of education for females is 29.746 while for males it is 38.743. The second item (How long have you been using the Internet and the World Wide Web?) for females is 24.811 while for males it is 47.189. On the Internet, the value of T is 42.042 for females while for males it is 67.043, and so on for all items of comparison.

This finding supports the study of Al-Gahtani (2004), which says that in Saudi Arabia, the number of men who are engaged in computer work is greater than the number of women. In Saudi Arabia, it is customary that a woman must stay at home to give maximum care for her family. Also, during the tertiary education years, few women take up computer courses. Unlike men, who regard computer technology as useful to their future or current job, women consider it less important except when

people close to them suggested or require them to acquire learning on computer and utilise this technology afterwards (Morris and Venkatesh, 2000).

7.4 Education

Correlations of computer usage and satisfaction is neutral between users with lesser and users with higher educational attainment. The data in the tables and figures below imply that education is relevant but does not hinder the users' likelihood of using IT tools as much as the satisfaction or benefits he or she gains in using them (Sharma, 2000). However, we note that in the context of e-business, intensive training on ERP systems being provided to the users increases their technology ease of use and work productivity (Bingi et al., 1999, Shanks et al., 2000).

Table 11-9 shows that there were 48 Aramco participants with less than a high school diploma, which is 4 percent of the total number of the participants; there were 126 people with a 2-year degree, which is 10.4 percent; there were 140 with a graduate degree, which is 11.6 percent, 4 with a high school diploma, which is 0.3 percent, 204 with a 4-year degree, which is 16.9 percent, and 92 with a postgraduate degree, which is 7.6 percent of the total number of the participants.

Table 11-10 shows that the mean of educated people is 3.909; median is 3; mode is 5; standard deviation is 1.852; variance is 3.43; right skew is 0.211 with standard error which is 0.099; kurtosis is -01.07 with standard error which is 0.197; and lastly, the table shows that the range of educated people is 6. Correlations on education to computer usage and satisfaction is neutral between users with lesser and users with higher educational attainment. Figure 7-5 shows the frequency of users' education.



Figure 7-5 Education of users (Aramco)

Table 11-26 indicates that 48 of SABIC and Hadeed's users have less than high school diploma educational attainment, which is 10.5 percent of the total number of users; 123 users have a 2-year degree, which is 26.9 per cent; 53 have a graduate degree, which is 11.6 per cent; 80 have a high school diploma, which is 17.5 per cent; 107 have a 4-year degree, and 46 users have a post graduate degree, which is 10.1 percent of the total number of users.

In concluding the analysis, the data imply that education is relevant, but does not hinder the users' higher degree of IT tools usage, as well as the satisfaction or benefits he or she gains (Sharma and Gupta, 2003). Instead of education, in the context of e-business, it is the intensive training on ERP systems provided to the users which results in technology ease of use and increase of work productivity (Shanks et al., 2000, Bingi et al., 1999).

7.5 Nationality

Saudis had lower levels of computer acceptance than foreigners. Table 11-11 shows that only 8.3 percent of the total Aramco participants were Saudis and that foreigners such as Asian (11.5 per cent), European (9.1 per cent), and other Arabs (8.8 per cent) outnumbered them. This data is in parallel with previous IS research studies as well as with what is actually happening in Saudi Arabia, that in general, many Saudi companies (e.g., Saudi Aramco, SABIC, etc.) still depend on a foreign workforce in pursuit of acquiring new management and technology breakthroughs or best practice of a specific business as other countries are more advanced in computer technology than in Saudi Arabia. At the same time, consistent work productivity whilst maintaining lower expenses on labour cost and quality service is another advantage of hiring foreigner workers. Foreigners are more knowledgeable than many of the Saudi locals in terms of IT tools and systems. However, it is enough that there were Saudis who are knowledgeable in e-business because this indicates that the business ideas and decisions of foreigners can be scrutinised well before they are applied.

Table 11-27 indicates the correlations between different nationalities within SABIC and Hadeed and the factors on skill of computer usage in that if the coefficient is positive then the relation is proportional and if it is negative, then it is inversely proportional and if the value is over 75 percent, then it is strong; 50-75 percent, average; and if it is under 50 percent, it is weak.

This data is in parallel with previous IS research studies as well as with the actual occurrence in Saudi Arabia, that in general, many Saudi companies (e.g., Saudi Aramco, SABIC, etc.) still depend on foreign workers in pursuit of acquiring higher profit, quality service and consistent work productivity whilst maintaining lower expenses on labour cost. Another reason could be that other countries are more advanced in computer technology than in Saudi Arabia; thus foreigners are more knowledgeable than many of the Saudi locals in terms of IT tools and systems. However, there are enough Saudis who are knowledgeable in e-Business indicating that the business ideas and decisions of foreigners can be scrutinised well before being applied.

7.6 Organisational Level

The organisational level had a positive significant correlation with computer usage and negative but insignificant correlation with satisfaction.

Table 11-12 shows that Aramco's Organisational level had positive significant correlation with computer usage and negative but insignificant correlation with satisfaction. Table 11-28 shows that SABIC and Hadeed's Organisational Level had positive significant correlation with computer usage and negative but insignificant correlation with satisfaction. IT tools were utilised in e-business dealings; however, it can be argued that the users were basically required to use these tools in their jobs and did not do so because they found enjoyment in using them. Users must use the new technology; otherwise, the company would decide to terminate their employment due to uselessness and inefficiency. The company looks for higher productivity in its employees (Mumford, 2006).

7.7 Attitude to e-Business

Attitude had positive and significant correlations with computer usage and satisfaction. Table 11-13 of Aramco agrees with previous IS studies that attitude is a strong determinant of computer utilisation, specifically by Saudi nationals (Al-Khaldi and Olusegun, 1999). Table 11-29 of SABIC and Hadeed show that the coefficients of correlations between 2 items give strong proportional relations with 0.926.

As mentioned earlier in this study, some psychological theories (e.g., TRA, TPB), argue that attitude strongly determines the person's actual behaviour (Fishbein and Ajzen, 1975, Ajzen, 1985). In the context of e-business adoption, when the user perceives that ERP (e.g., SAP) is beneficial to him or her, most likely he or she will use it; otherwise, when the user perceives that the new IT-based technology contains greater risks, most probably he or she will refuse to use it (Davis et al., 1989, Shang and Seddon, 2002, Scott, 2004).

The significance and importance of implementing SAP for Aramco was clearly stated by the president of Aramco. Abdullah S. Jum'ah, Saudi Aramco president and CEO pronounced the Big Bang (implementation of SAP) as a significant milestone in the company's history. He said, "Since I joined the company on April 1, 1968, I

have witnessed the introduction of hundreds of computer systems designed to automate and optimise company processes, keep down costs and maintain internal controls." He said, "This Project has identified all these processes, documented them and changed them to comply with the best practices available in the world. The project provides Saudi Aramco with brand new engines designed to carry the company for the next 60 years" (HCD, 2002). So, this demonstrates the strong importance of the project for the company. Therefore, the attitude towards e-business for any employee will be to adopt the new system in order to achieve organisational and operational success. Personal issues sit in the social and cultural space of Lifeworld, and, here again; a System/Lifeworld model will help build an understanding of these interactions and dependencies.

7.8 Innovation Characteristics

Table 11-14 for Aramco shows that Relative Advantage and Compatibility were both significant at the 0.05 level of significance, while Complexity was significant at the 0.01 level of significance. Table 11-30 for SABIC and Hadeed indicates that all the Pearson coefficient correlations are positive so all the items support each other. Some are strong, some are average. Therefore, levels of colleague collaboration have strong relation with the type of information shared, then e-business supports satisfaction with computer usage. The regression model showed that the five characteristics explained only 37.8 per cent of the overall satisfaction that employees perceived in the implementation of e-business.

Three out of five of Rogers' (1983) innovation characteristics are applicable in ebusiness implementation in the context of Saudi Arabia; that is to say, (1) the *relative advantage* in which the users likened it to the benefits of e-business they perceived; that is why they adopted it; (2) the *compatibility* in which the users realised that e-business fits their knowledge and skills as well as the overall strategic operations of the company, which is why they were willing to be trained more; and lastly, the users preferred to utilise e-business despite its *complexity* because they believed that by doing so, great advantages would await them. On the other hand, trialability (i.e., the perceived opportunities to experiment with the new technology) (Rogers, 1983) and observability (i.e., the visible outcomes of an innovation seen by users) (Rogers, 1983) characteristics of e-business did not hinder the users' adoption decision. Relative Advantage had a positive and significant correlation with computer usage and satisfaction.

7.8.1 Compatibility

Compatibility had positive and significant correlations with computer usage and satisfaction. Table 11-31 indicates that Compatibility had positive and significant correlations with computer usage and satisfaction. therefore-business implementation is costly; it needs significant investment in the information system and highly intelligent human resources and technology which is represented in equipment and software. From the table it is seen that significant investments in tools and equipment have a positive average correlation with the significant investments in the information system, at 0.578, and all its coefficients are positive, so e-business needs much money.

7.8.2 Observability

Observability had positive and significant correlations with computer usage and satisfaction.

Table 11-32 indicates that the observation factors are positive with the satisfaction value of coefficients of correlation. Some are strong and others are average. The significance value supports the relation between the items, 2 tailed means that the curve has two limits from left and right; and we calculate $\alpha/2$, sig < $\alpha/2$.

7.8.3 Trialability

Trialability had positive and significant correlations with computer usage and satisfaction.

If anyone tries to learn the computer, he or she will face problems but with training he or she can overcome them; some hesitate, others cannot continue; some are disabled. Table 11-33 indicates the following:

1) The relation between "Are you a decision-maker or an influencer?" and "New, current, or previous user?" has:

• Negative correlation = -0.017 it has weak inverse relation; with sig =0.718>0.025 two tailed $\alpha/2$ which indicates that there is no relation between

"Are you a decision-maker or an influencer?" and "New, current, or previous user?" (The alternative hypothesis).

2) The relation between "Are you a decision-maker or an influencer?" and "Type of user" has:

- Positive weak correlation=0.042 which indicates it has a proportional relation.
- The value of sig=0.365> 2 tailed $\alpha/2$ =0.025 indicates that the two items have a dependent relation (alternative hypothesis).

3) The relation between "Are you a decision-maker or an influencer?" and "Education" has:

- Negative weak correlation = -0.193, inversely relation.
- The value of sig =0.000 $<\alpha/2$ confirms that it is independent (null hypothesis).

4) The relation between "Are you a decision-maker or an influencer?" and "E-mail is widely used for communication" has:

- Positive weak correlation =0.188 which indicates that the relation is directly proportional
- The value of sig=0.000

5) The relation between "Are you a decision-maker or an influencer?" and "Attitudes to the technology"

• The value of sig = $0.000 < \alpha/2$ depends on the relation between the two items.

7.9 Computer Anxiety

Computer anxiety tends to inhibit computer acceptance and use, and had significant negative correlations with computer usage and satisfaction. Table 11-15 for Aramco's participants shows correlations of four variables of computer anxiety, such as:

- 1- Technological competence lack/shortage of skilled people;
- 2- Trust is important in dealing with people through virtual business transactions;

- 3- E-mail is widely used for communication;
- 4- The Intranet is widely used for internal knowledge sharing and business communications

All are positive, but the trust correlation is important in dealing with people through virtual business. This emphasises the importance of this research, since Business Best Practices (BBP) are designed and tested in the western world. Therefore, Lifeworld is a major element to understand and help boost the success of e-business adaptation. Table 11-34 of SABIC and Hadeed's participants indicates that three items of anxiety faced the employees of company:

- 1. Interpersonal interaction within organisations (e.g., have you experienced problems across different departments say, with ownership of tasks?)
- 2. Technological competence; lack/shortage of skilled people.
- 3. Systems' stability, reliability, and effectiveness were constantly met.

The table shows that there are positive coefficient relations but very weak. Table 11-35 for SABIC and Hadeed indicates the following:

1) The relation between "Technological competence; Lack/shortage of skilled people" and "Lack of trust on the actual E-Business system (SAP) would facilitate implementation failure" has:

- \circ Negative weak correlation = -0.092, which indicates an inverse relation.
- The value of sig = $0.050 > \alpha/2$, so we accept that there is an inverse relation between the two items.

2) The relation between "Technological competence; Lack/shortage of skilled people" and "Hackers were prevented to trace, steal or destroy the new system" has:

- Negative weak correlation, which indicates that there is an inverse relation between them.
- \circ The value of sig = 0.609 indicates that the two items increase in complexity.

3) The relation between "Technological competence; Lack/shortage of skilled people" and "Data entry was easily done" has:

• Negative weak correlation, = 0.056, which indicates an inverse relation (because the option contain two opposite items).

The value of sig = $0.233 > \alpha/2$ shows that the item affects the complexity.

This finding agrees with the study of Thong and Yap (1995) that computer anxiety is one of the things the employees or the users will feel when IT is being introduced to them as part of their new working systems. In simple terms, users are anxious or worried that using IT technology may harm their lives, or specifically their careers. However, computer anxiety can be eradicated when trust is established: users trust that the new system will not harm them by any means; trust the project team; the top management, the company owners and other important stakeholders (Gallivan and Depledge, 2003).

7.10 Training

Training had positive and significant correlations with computer usage and satisfaction.

Table 11-16 for Aramco shows that the three variables of training, i.e. training materials are very useful, training courses were conducted appropriately, and complete training was provided with means of 2.29, 2.30, and 2.29 respectively; and with standard deviations of 1.021, 1.021, and 1.019 respectively. Also, Table 11-17 for Aramco shows that the variable 'training materials are very useful' has a strong positive correlation with 'training courses were conducted appropriately', at 0.872; it is also has a strong positive correlation with 'complete training was provided' which is 0.999.

Table 11-36 of SABIC and Hadeed indicates that, all the coefficients are positive; the direct proportional and correlation is good between "Training courses were done appropriately" and "Training materials are very useful".

The data implies that the type of training provided to the users is, indeed, very important. Training that enhances the users' intellectual and technical capabilities increases their motivation to use the new technology (Davis et al., 1989). The training material (i.e., hand-outs, simulations and workshops) should contain all the details about the e-business project. These training materials and techniques should acknowledge the nature and the culture of trainees. As mentioned earlier, since the

major ERP systems were developed in the western world (SAP, Oracle...etc.), all Business Best Practices (BBP) are designed for western culture, in which it is arguably easier to enforce a "system", in contrast to Saudi culture, on which more importance must be given to Habermas' System/lifeworld. Lastly, users who are trained on technical skills and who understand the business operations holistically are said to be part of the company's IT assets (Ross et al., 1996).

7.11 Support

Support had positive and significant correlations with computer usage and satisfaction. Table 11-18 for Aramco shows the means of support variables: "Course tutors are well aware of the organisational culture", is 2.39, "SAP encourages my innovation", is 2.30, "SAP changed my perception of business", is 2.30, "SAP changed my personal life", is 2.29, and "To support the research and development team when new products are developed", is 2.32; as well as their standard deviations which are 1.019, 1.019, 1.022, 1.020 and 0.994 respectively. Table 11-37 for SABIC and Hadeed shows that all coefficients of correlation are positive and are between good and average correlations; the value of sig 2 tails<0.025 shows that it has good relations. Table 11-19 for Aramco shows that all the correlations are positive; the correlation between "Course tutors are well aware of the organisational culture" and "SAP encourages my innovation" is 1, with that "SAP changed my perception of business" is 0.948, with that "SAP changed my personal life" is 0.935. However, the correlation between "Course tutors are well aware of the organisational culture and to support the research" and "development team when new products are developed" is weak at 0.402.

This finding suggests that support of the top management to the entire e-business project is a significant factor in realising its success (Sarker and Lee, 2003). Senior managers should be part of the ERP strategic planning stage (Motwani et al., 2005) and should address any known problems likely to occur before and during the implementation stage. Senior managers relate technical (i.e., IT) skills is a plus factor (Motwani et al., 2005) contributing to e-business success.

The three companies support their employees by Course tutors provided by the project management, as well as by the implementation firm, which are not local companies. Again, this is a relatively new technology for the Saudi business community which is considered to be a growing business sector. This sector needs the expertise and knowledge of foreigners (consultants) mainly from the western world or educated there. Therefore, those consultants should be aware of the local culture as well as organisational culture. This emphasises the importance and necessity of awareness about the System/lifeworld. As a result of interviewing the consultants, as well as analysing the collected data, foreign consultants and implementation firms should realise that Saudis are lifeworld oriented rather than system oriented like westerners.

7.12 Organisational Culture

This measure is based on the four dimensions of corporate culture (i.e., training, background, technology, and organisational communication) developed by Lau and Idris (2001). According to Cooke and Rousseau (1998), corporate culture is a multidimensional construct, and therefore it is essential to evaluate each dimension. Organisational culture had positive significant correlations with computer usage and satisfaction.

Table 11-20 for Aramco shows that some of the correlations are negative, maybe because participants had not yet applied e-business in their department or had just recently applied it; also most employees were young. The sig. values for all items are less than the assumption level which means we can accept the alternative hypothesis in each case.

Table 11-38 for SABIC and Hadeed indicates that all the coefficients are positive but are very weak.(sig =0.000 < 0,005) except the correlation between Degree of information sharing and What is your professional background?

According to Hofstede (1980, 1984), culture can be learned. Therefore, even though the users' current culture is challenged, for the time being, they can fully adapt to the new culture caused by e-business through their learning efforts. Culture affects organisational actors but it can be modified to fit with them (Hofstede, 1994; Trompenaars, 1994; Brown, 1995).

All the above items of the four dimensions were reduced to the four new variables (Training, Background, Technology, and Organisational Communication) by using linear regression analysis and its method indicated in Tables 11-21 and 11-22.

Tables 11-21 and 11-22 show that five control variables explained 11.8 per cent of the variation in organisational commitment (F change = 9.907, p < 0.01). Of the five control variables (Step 1), gender ($\Box = 0.206$, p < 0.01), age ($\Box = 0.575$, p < 0.01), and experience ($\Box = \Box = 0.451$, p < 0.01) were found to have significant impact on organisational commitment. In terms of gender, male employees had higher organisational commitment compared to female employees. The age results indicate that older employees had higher organisational commitment. This suggests that employees who had been in service for shorter times had higher organisational commitment. This suggests that employees who had been in service for shorter times had higher organisational commitment compared to those with longer service.

When the model variables (corporate culture dimensions) were added into Step 1, the additional variance explained was 41.9 per cent (F change = 83.147), which was significant at the 1 per cent significance level (Sig. F = 0.000), thus confirming the fitness of the model. The Durbin–Watson of 1.827 falls within the acceptable range (1.5 < D < 2.5), indicating that there is no autocorrelation problem in the data and that the error term is independent. The results indicate no multicollinearity problem: the multicollinearity statistics show that the tolerances for all elements of corporate culture are greater than 0.1, and that the Variation Inflation Factors (VIF) are all less than 10 (Hair et al., 1998). Histogram and normal P-P plots of the standardised residuals also indicate normality of the error term, while a scatter plot shows consistent variance of error terms (homoscedasticity). A partial regression plot indicates linearity of the relationship between independent and dependent variables. From these analyses, it can be concluded that the *multiple regression analysis model* generated in this study meets the five assumptions required to ensure validity of its significance test (Ooi et al., 2005). Thus, there is a statistically significant relationship between corporate culture dimensions and employees' organisational commitment.

The results also indicate that the four dimensions of culture—technology ($\Box = 0.259$, p < 0.01), communication ($\Box = 0.289$, p < 0.01), reward and recognition ($\Box = 0.142$, p < 0.01), and training and development ($\Box = 0.144$, p < 0.01)—are positively associated with employees' organisational commitment. Therefore, it can be argued that all these dimensions of culture (Hofstede, 1994; Trompenaars, 1994;

Brown, 1995) are directly involved in improvements in employees' organisational commitment. Moreover, the findings also indicate that the most important culture dimension that explains the variance in employees' organisational commitment was communication, which was significant at the 0.000(p < 0.01) levels. Thus, the four hypotheses are supported.

7.13 Summary

It is clear that web usage in Saudi Arabia is low, and that few Saudis seem to be aware of e-business. The finding that age is not a major determinant of web uptake or even general IT usage, whilst on the face of it a positive one, seems more related to the relative immaturity of e-business and web usage in general within the Kingdom. Further, as might be expected, women are not assimilated into web or IT usage in the way that men are, and even with the latter, they, together with a small number of female Saudi IT users, account for only 8.3% of all IT users in Saudi Arabia.

All of this background information gives a clear picture of the organisational and cultural factors underlying e-business in Saudi Arabia, which helps us understand the issues contributing answers to objectives 1 to 3, and to picture in more detail the organisational and cultural factors represented by the left hand side of the original conceptual model.

The importance of training, using quality materials, can be drawn from the quantitative analysis, and adds weight to the problems identified with this in the qualitative analysis, which were seen to have significant System/Lifeworld implications.

Personal aspects of e-business assimilation were strongly evident in the qualitative analysis and are confirmed in the quantitative, with comments such as "... SAP has affected my personal life". What is derived from the qualitative analysis is more information concerning the business/personal issues, which emerge as strongly cultural, and give weight to the need for a wider social understanding of the kind surfaced by the Systems/Lifeworld analysis.

Culture also surfaced in the earlier qualitative analysis, with issues particularly not only between Saudi cultures, but also between Saudi and foreign cultures. The quantitative analysis, by highlighting the predominance of foreign cultures in ebusiness in Saudi Arabia, tells us more of the importance of addressing these issues.

Overall, there is much in the quantitative analysis to add weight to the findings of the qualitative and to give us confidence that the detailed findings of the latter need to be addressed by a model such as the one derived from this research.

8 Chapter Eight: FINAL DISCUSSION

8.1 Introduction

The aim of this chapter is to bring together the empirical findings on e-business assimilation determined from the qualitative and quantitative research. Since these findings have supported the view of e-business assimilation in Saudi Arabia as a social issue, albeit with organisational and technological implications, this chapter focuses on e-business assimilation in the context of Saudi Arabia through utilising Habermas' lifeworld and system theory.

As this research postulates, the strongest factors affecting an organisation's assimilation of e-business technology into its business activities are social ones, for any technology, old and new, can never be assimilated to the organisation if people opt to reject it.

Companies such as Saudi Aramco, SABIC and Hadeed have shown that although ebusiness technology is a new representation of a 'system', potential users or endusers will still expect their lifeworld to be respected. In this sense, the lifeworld is not totally colonised by the system because, within an Islamic culture, the users are given the privilege to speak up or to act in their own ways.

This study has developed a conceptual model (found in Chapter 3) that is designed to meet the success of e-business assimilation projects. We believe this to be the first research work that presents the usability and usefulness of Habermas' lifeworld and system theory in analysing the impact of e-business technology being assimilated to the Saudi companies' business processes, operations, transactions. The following sections support this argument.

8.2 The Final Conceptual Model

Based on the Stage 2 Conceptual Model (Figure 8-1) also found in Chapter 3 (figure 3-11) and the overall social aspects of the social actors (i.e., workforce and the stakeholders) in the three Saudi companies, a final conceptual model (Figure 8-2) is developed -a more complex, and yet more applicable model for e-business assimilation projects in the context of Saudi Arabia.



Figure 8-1 Stage 2 Conceptual Model: E-business Assimilation Model (EAM)



Figure 8-2 Final Conceptual Model: E-business Assimilation Model (EAM)

Notice that the arrows from the lifeworld construct are pointing toward the open space of each major factor, signifying that each individual has his or her own choices, preferences, strengths and weaknesses, skills and talents, pattern of principles, attitudes, emotions, and the likelihood of adopting the technology can be determined. On the other hand, the arrows from the system construct are pointing to the edges of the major factors, signifying that the people in the organisation are capable of forming a system based on their everyday interactions as well as on the mandate of their superiors or the actors in authority.

Finally, e-business assimilation is definitely realised if the present system of the company, which is based on the social factors inherent in all business aspects, is given consideration and importance by the e-business project team.

8.3 Results

Drawing deeper on e-business assimilation in the context of Saudi Arabia, augmenting the qualitative and quantitative data findings, it is now considered how the Saudi companies (i.e., Saudi Aramco, Saudi Basic Industries Corporation (SABIC), and Saudi Iron and Steel Company (Hadeed) addressed the situations they encountered. Most of the situations are difficult according to the participant companies, primarily because the technology (i.e., SAP) introduced is very new, not only to the employees, but also to the top management. Through the situations they encountered, lifeworld and system concepts were noticeable, and therefore effective actions were applied. In the tables below (Tables 8-1, 8-2, 8-3 and 8-4) it can be seen that because of the appropriate actions applied, the companies were able to accommodate the entrance of e-business, or e-business fitted the current features of these companies.

Particulars	Lifeworld	System	Action undertaken to fit with e-business (SAP)
Age	Qualified applicants were hired regardless of age.	Older Saudis exhibit seniority.	Employees are handeled based on qualifications and capabilities.
Education	High school graduates can work in the company	High school graduates are not allowed to work in computing jobs	Saudi employees were encouraged to continue their studies while working; the company also offers scholarships.
Gender	Men were used to working without women around.	Women are not allowed to mingle with men not related to them.	Providing offices solely intended for men and offices solely intended for women.
Interest/Hobbies	Employees spend more time in drinking tea or coffee, in nonsense conversations, reading newspapers, playing computer game cards, loitering around, etc.	The Tea Boy should provide beverages for managerial and supervisory level people every morning, afternoon break time, or depending on the frequency of demands of these people	Required the employees to contribute higher level of productivity within a short period of time (e.g., Pareto Principle) to eventually stop their slacking habits.
Trust	Tribalism among Arab employees; employees connected in their family line are prioritised first.	Invest trustworthiness so to be trusted	The project team provided intensive orientation (i.e., highly informative) about the project and transparent dealing with the company people.
Loyalty	Nepotism among Arab employees; Arab managers prefer to promote staff who are of the same nationality and religion	Many non-Muslims embrace the Islamic faith to acquire job security and receive huge benefits from a Muslim company	Providing incentives and fulfilling the declared promises on better working conditions.

Table 8-1 Social Factors of Saudi companies' actions to lifeworld/ system

Particulars	Lifeworld	System	Action undertaken to fit with e- business (SAP)
Nationality	Employees were hired regardless of nationality.	Some Arab employees become complacent when they know that working with them are foreign workers who can accomplish the job right away.	Boost the local employees' self-worth and remind them of the consequences of their conducts.
	A cross tattoo on the right arm of a non- Muslim employee is noticeable to Muslim employees.	Public practices of other religion is strictly prohibited in Saudi Arabia	Let the non-Muslim employee inform others the meaning of his or her tattoo: whether it is a mere art or his or her solid loyalty to his or her religion.
Keligion	Muslims pray according to their religious custom while non-Muslims also pray according to their own faith but others cannot conclude if they are praying or not.	It is mandatory that Muslims should attend the 'sala' time (i.e., prayer time) every time they hear the call of mosques or minarets.	Respect the religion of each individual.
Tradition	After Ramadan (i.e., a month long fasting), workers in Saudi Arabia enjoy a vacation which lasts for more than a week.	Muslims are given earlier and longer vacation than non-Muslims; also Muslims are paid their whole day rate despite the shortened working hours given.	Aside from being mandated by the Saudi government, majority of people in Saudi companies are Muslims, therefore e-business should conform to the company's dispositions.
Language	People freely communicate regardless of their mother tongue or known language. To overcome the language constraint, they use manual symbols (i.e., gestures) and familiar sounds in their environment (e.g., sounds of animals such as 'meow' for a cat) in order to attain understanding.	Contracts are written side by side in Arabic and English. In the event that better interpretation is needed, only Arabic is considered as having the legal authority.	Higher usage of Arabic language for Arab people; English for non-Arab people.

Table 8-2 Cultural factors of Saudi companies' actions to lifeworld/ system

Particulars	Lifeworld	System	Action undertaken to fit with e-business (SAP)
Human Resource System	Foreign workers in Saudi Arabia receive higher salary than the Saudis if their qualifications and work experiences are indeed superb.	Saudisation was strictly implemented by the Saudi government which resulted in demotion of foreign workers' working conditions.	Follow the government policy on Saudi Labour system without setting aside that knowledge on IT-based technologies is still the topmost basis for salary and benefits provisions and entitlement.
Change Management	Resistance from the employees due to lots of fear brought by negative perceptions such as thinking that they may lose their job, their inabilities or inefficiencies would be exposed, thinking that they could not survive with the severe changes, and so on	Employees expect that the company will address their urgent concerns when the latter insists the introduction of new technology.	Let the employees know that the project is not meant to remove the current systems but to modify them for the purpose of increasing work productivity and expansion of the company.
Top Management Support	The methods used by the employees in accomplishing the tasks given to them does not matter much to the Saudi managers; what matters most is that the tasks were accomplished on or before the set deadline.	Non-bureaucratic system applied by the Arab managers; they hire people designated for each office/field department yet in actual job execution, for example, the receptionist was asked to write a disciplinary (or warning) letter addressed to the erring employee whereas this should be done by the HR people, not by anyone from the Administrative department.	Redefine the roles of the top management, that is to say, these executives should practice the principle 'right job for the right employee,' and 'right office for the right officer.' The top management with the assistance of the HR department act as role models in following the company rules and regulations. In terms of e-business, bureaucracy is a must in SAP. Users must be empowered in handling their designated responsibility.

 Table 8-3 Organisational factors of Saudi companies' actions to lifeworld/system

Project Team	Anyone who is knowledgeable in IT tools can be part of the Project Team.	Saudis preferred Project Team from Western countries.	Emphasising that knowledge and skills about e-business project is more important than nationality.
Consultants	The company is running even without Consultants.	If the management team is knowledgeable enough, no need to seek the service of Consultants.	To prevent e-business failure, the Consultants' expertise and experiences were included in benchmarking process.
Training	Is available to everybody	Fast learners are prioritised.	Equal qualitative training for all the users regardless of their overall profiles.

Particulars	Lifeworld	System	Action undertaken to fit with e-business (SAP)
Relative Advantage	Employees are content with what they receive from the company as long as their daily needs are sustained.	Employees will accept the new system if they see that huge benefits await them.	The best way to relay all the information to the employees is conducting orientations relative to the project being offered. During orientation, motivate the employees that if e- business is implemented quickly, it will bring benefits beyond their expectations. Streamline the benefits.
Compatibility	Employees based their level of computer usage on the skills they have at present.	Only employees with computing skills can use the computer.	Hands-on training for delegated upcoming SAP users.
Trialability	Employees believe they can test the functionalities of the computer.	Non-IT employees are not allowed to operate the main server; Majority of the computer software and hardware troubleshooting job is exclusively done by the IT people.	Close supervision of users when fixing accidental troubles.
Observability	Employees are satisfied with the current technology they are using because its efficiency was proven.	If no impact is shown, no trust will be given to the new technology.	Inform employees that though not seen right away, the outcomes of SAP is long-term profitability.
Complexity	Employees do not hesitate to ask one another if they do not know something about the computer.	Employees assigned to computing jobs prefer to utilise 'easy to use' software programs and applications to avoid asking for the help of others and hearing negative criticisms from their colleagues.	Can customise SAP but be careful not to compromise the effectiveness of the new systemic technology.
Security & Privacy	Employees do not trust strangers so it is expected they do not disclose their	Personal information is required by the company through the HR and Accounting departments for handling salary matters and	Maximum system security should be assured when the company is connecting to financial institutions (e.g., bank) for other financial

Table 8-4 Technological factors of Saudi companies' actions to lifeworld/system

personal information right	other financial activities.	services to be given to the employees, that is to
away, unless the		say, the employees personal records' should be
management demands it		kept secured in the database system so as not
from them.		to be used in scams or other illegal activities.

It is noted that for each sub-factor, only one lifeworld and system situation is given. Specific actions of the companies were provided. Undoubtedly, actions to be taken differ according to the occurring lifeworld and system situations.

The results of this study imply that the social implications of e-business are best understood if Habermas' concepts of lifeworld and system (operating in four major sources of e-business success factors; i.e., the technological, organisational, cultural, and social factors) are given appropriate consideration relative to project execution, which in turn, results in e-business assimilation success. The lifeworld and system theory has demonstrated its effectiveness in analysing and understanding the overall characteristics of Saudi companies, and thus, these establishments through the collaboration of their top management, e-business project teams and end-users were able to provide best solutions to the issues they encountered.

Today, Saudi Aramco, SABIC and Hadeed are enjoying the benefits of e-business which they have assimilated to their organisations. In this study, it has been shown that people are the main drivers of business activities. People define the success of their goals through their actions (Habermas, 1984). As noticed, in the three companies, e-business assimilation does not mean dissolving the former facets of the company but is rather enhancing it. Also, as this research postulates, the social factors are the strongest in affecting the organisation's assimilation of e-business into its business activities. Therefore, it is argued that, Habermas' lifeworld and system theory is evident in business.

9 Chapter Nine: CONCLUSIONS, IMPLICATIONS AND FUTURE RESEARCH

9.1 Introduction

This chapter summarises the main findings reached throughout this study. It reviews the evidence accumulated to meet the research objectives set out in Chapter One. Also, this chapter contains a presentation of the major contributions of this research to both academic and managerial practices, along with their implications to the participants in this study. Finally, the limitations of this research are outlined, followed by some suggested future research directions.

To start with, it is worth recalling that this study is an exploratory study conducted in Saudi companies, which are effectively running SAP systems.

This study is specifically concerned with achieving the following research objectives.

- 1. To identify the cultural and social factors involved in their e-business implementations;
- 2. To explore possible relationships and interactions of the social and cultural factors to organisational and technological factors;
- To examine the specific factors facilitating and impeding the assimilation of e-business;
- 4. To develop an integrated conceptual model of e-business adoption and assimilation which incorporates socio-cultural factors in a manner related to the social and cultural environment of KSA;
- 5. To find the strength and effectiveness of the conceptual model being developed which can be utilised by academic and business management researchers for their future studies.
- 6. To derive from the experience of the three companies, as early technology adapters, lessons which may guide future e-business initiatives in organisations facing a similar environment.

These research objectives are achieved through answering the following targeted research questions.

- 1. What are the social and cultural factors regarded by the Saudi companies relative to their e-business implementation?
- 2. How do social and cultural factors relate to or come in connection with organisational and technological factors.
- 3. What are the specific sub-factors which may facilitate or may impede ebusiness adoption and implementation?
- 4. Is Habermas' lifeworld and system theory applicable for realising the success of e-business assimilation in the context of Saudi Arabia?
- 5. As a future e-business adapter, how would a company overcome the difficult challenges brought by e-business assimilation? Should it carry out the same things which the Saudi companies did?

To answer and meet these research questions and objectives, the researcher undertook an intensive review of the available literature on social-psychological theories, technology adoption methodologies, e-business success and failure factors, the application of Habermas' social theories in the context of e-business, and the social and cultural customs of Saudi Arabia.

The aim was to explore and construct a strong theoretical background on e-business assimilation in the context of Saudi Arabia through the use of Habermas' lifeworld and system theory. A questionnaire survey, developed exclusively for this research, along with semi-structured interviews conducted with seven ERP consultants were the main primary data collection methods.

9.2 Summary of the Main Findings

Based on the analyses of the quantitative and qualitative data, presented in Chapters 6 and 7 and discussed together in Chapter 8, the following summary of the main findings and conclusions is derived.

9.2.1 Summary of the findings related to social and cultural factors imperative into the Saudi companies' SAP implementation

The first summary findings are related to the first research question and objective, which mainly explored the factors imperative to e-business implementation undertaken in three Saudi companies (i.e., Saudi Aramco, Saudi Basic Industries Corporation, and Saudi Iron and Steel).

• Summary of the Findings Related to Social Factors

Social factors studied in this research included the users' age, gender, trust, loyalty, and their interests and hobbies. In terms of age, both the younger and older users fully accept the SAP systems and are satisfied in utilising it. Rather, the key problem is retention of young workers because of employment mobility. This links strongly to loyalty and trust. Regarding education, users trained by the project team can operate the new system well, regardless of their academic degree. Concerning gender, women are still not fully allowed to mingle with men who are not related to them, even in employment aspects, and therefore their number is less than the number of men who have the knowledge and skills on SAP systems usage. Gender is an issue in so far as the Saudi culture frowns on fraternisation between male and female workers. This is an element of the lifeworld which no amount of system rule making and planning can change – it simply has to work within the constraints set.

With regard to trust, Saudis are very selective on trusting other individuals, especially those who do not belong to their family line or tribe. Meanwhile, the potential users' interests or hobbies which are relevant to accomplishing the ebusiness project also determine their likelihood of embracing and utilising the new system. Loyalty and trust are strong traits in the family-based culture of Muslim Saudi Arabia. This is addressed more fully below, however, it is worthy of note, here, that the need for trust can even be seen to manifest itself in a justification of nepotism within Saudi industry.

• Summary of the Findings Related to Cultural Factors

The users' nationality, religion, customs or traditions, language, and other significant sub-factors comprise the cultural factors which this research studied. Regarding nationality, the finding confirms many IS studies that, because Saudi is one of the developing countries as well as one of the late adapters of computer technology, it is expected that foreigners, especially Western people, are more knowledgeable and skilful than Saudi users. However, it also notes that knowledge is more important than nationality and therefore knowledgeable users, regardless of their nationality, can excel greatly when using the new system. In terms of religion, this aspect is shown to be significant in the lives of the Saudis and other Arab people. The Saudi government and the company senior managers strictly require that Islamic faith is practised in all corners of the land. To avoid possible employment demerits and termination, foreigners living with the majority of Arab Muslims ought to adapt the latter's religious rituals. Ministers or administrators of Saudi government agencies prefer Consultants who are Muslims; perhaps the main reason being that fellow Muslims give high respect to their Muslim superiors, which paves the way to faster completion of the project. With regard to tradition, Saudis expect that foreigners will not go against their accustomed practices. Numerous traditions related to religion, such as the observance of Ramadan, through a-month-long fasting, and the Hajj or a holy pilgrimage to Makkah and Medina, are celebrated yearly. In this case, the non-Muslims are required to adhere to the rules pertaining to these national traditions. Meanwhile, regarding language, not all Saudis are familiar with English, and so for them to use the SAP system with maximum understanding, customising it into the Arabic language should be undertaken. Apparently, the majority of the non-Arab users prefer to speak English while, as has been explained, Arab users (including the Saudis) prefer Arabic. Any e-business implementation within Saudi Arabia, must, consequently, be managed with cultural sensitivity. In terms of this study, this means constantly mapping System to Lifeworld in order to ensure that the outcomes required (from System?) will not be prejudiced by unchangeable cultural constraints. Arguably, it is easier to manage only Muslim or Saudi staff but, in the words of one consultant, "Every culture has its own ways ... [its own] culture, ideology and religion". Managing the complexity of the Lifeworld is key to the success of any project, given the fact that Saudi companies rely heavily on American and European expertise.

Some of the issues may simply be included within the rules of the System. So, for example, the forbidding of interest under Sharia Law means that credit cards cannot be used. This can be seen as Lifeworld determining System; however, it is not difficult to deal with. Other issues are more complex, as with the need, within Saudi culture, for a level of privacy which would not be seen as necessary or even understood by those from many Western cultures (see, for example, e-Accounting and human resources below, in which privacy can severely inhibit e-business development).

• Summary of the Findings Related to Organisational Factors

Organisational factors include the issues of Human Resource systems, the type of training provided, top management's support to the project, the consultants' intervention, and the capabilities of the project team. Monitoring the users' performance determines the efficiency of the human resource system. This way, the workforce is consistently evaluated as to what weaknesses should be addressed and what strengths should be maintained and continuously elevated. Also, behind this performance monitoring is the privilege of users being promoted if found worthy to receive positive appraisals. In terms of training, users are found to produce positive work output when they are properly and intensively trained on a specific SAP functionality to which they will be assigned. Regarding the top management's support of the project, users are highly persuaded to participate in e-business projects if they see that the owners, as well as the senior managers, are focused to achieving the company's goals on definite growth and expansion. If the top management is found as not self-serving, the users will, most likely, have a higher level of involvement and participation in the entire e-business project. Moving to the relevance of the Consultants' intervention, the company can be confident that the project will not fail because well-experienced and well-rounded e-business experts are there to direct the activity until success is met. Consultants usually work handin-hand with the top management and project team. The project team's knowledge and skills are also very important as these intellectual assets will be transferred to the minds of the identified SAP end-users.

• Summary of the Findings Related to Technological Factors

Rogers' innovation characteristics such as relative advantage, compatibility, complexity, observability, and trialability are included in the technological factors studied. Also included are the issues of computer anxiety, the users' attitude towards the technology, and the issues on whether the users' privacy is kept secured by the technology. Relative advantage is seen by the users as to the future benefits the technology can bring and this affects their likelihood to accept technology. Compatibility, on the one hand, also determines the users' self-assessment when they perform difficult tasks by using the new technology. When the users find they have the capability to use the new system they are more likely to adopt it. However, in terms of complexity, users tend to feel frightened and hesitant to adopt new

technology if it posits a very complex new system that they perceive their intellect cannot manage. The other two innovation characteristics, namely observability and trialability, are found insignificant to the user's likelihood of adopting new technology.

Meanwhile, a higher level of computer (i.e., technological) anxiety amongst users is found to inhibit the adoption of new technology. However, worries are eradicated when users are well-informed of the benefits that the new technology gives them compared to its few significant negative effects to some areas of business operations or to their working conditions. Another technological factor is the users' attitude toward the new technology. When users have a good feeling toward using the new technology then they will adopt it; however, if they do not like the new system, for personal reasons, it is hard for them to decide on its adoption. Finally, personal information privacy is also a big concern of users. Users require their privacy to be tightly secured. When new technology contains features relative to providing the highest degree of privacy and security, there is a greater possibility that this new technology will be adopted.

• Summary of the findings related to how Saudi companies resolved the problems they encountered before and during e-business implementation

Part of the e-business assimilation goal is the occurrence of various problems brought by the transition stage, that is to say, a stage wherein drastic changes are infused to the organisation when the traditional system is gradually replaced by new e-business systems. In this regard, effective change management must be applied. Saudi Aramco, SABIC and Hadeed were able to resolve the problems through applying a change management programme suitable to the company's holistic characteristics as well as to its specific change requirements. In general, these Saudi companies modified the change management programmes which were, basically, Western in approach. They developed change approaches applicable to the social and cultural context of Saudi Arabia, such as considering the aspects of religion, customs, management principles, and language. It was remarkable that Saudi companies were fully permitted to utilise the IT tools immediately after the Saudi government had made an effort to promote Saudi companies' presence and involvement in a global scale market by allowing access to the Internet and the World Wide Web. However, illicit information, harmful to the holy reputation of Saudi Arabia, was effectively blocked by the government's IS experts.

Prior to the implementation stage, training and seminars were provided to the potential users to make sure of a problem-free implementation. The users were empowered to resolve both the easiest and the hardest problems, for example, how to get out of a situation where a client is very angry because of bad service given to him by a colleague who is on a rest day; or how to retrieve a financial document which was unintentionally sent to the wrong recipient.

9.2.2 The manifestation of lifeworld/system in Saudi companies

The second summary findings are related to the other research questions and objective(s), which explore the significance of considering the lifeworld and system for the purpose of assimilating e-business into the organisation's social and cultural attributes.

9.2.2.1 The occurrence of lifeworld in the four major factors

Lifeworld is noticeable in the four major factors discussed. In terms of the social factors, lifeworld is dominantly seen through the unbounded interactions of the employees. Regardless of age, gender, education, and social status, employees can perform well in their particular jobs. Another issue is that of employee habits: the majority of Arab employees continue their seemingly unproductive office habits such as non-stop conversations while drinking tea throughout the working hours because the non-Arabs are used to see them behaving in such a way. Also, there is a high degree of mutual sharing of trust and loyalty between the Arab employers and Arab employees. However, the non-Arab employees, or the non-Saudis in particular, do not expect their Saudi employer to trust them, or vice versa, the Saudi employers do not expect their non-Saudi employees to be worthy of their trust and be However, when employees are proven worthy to be trusted, loyal to them. regardless of nationality, the employer will trust them. Trust works together with loyalty.

Within the cultural factors, Saudis are free to practise their national culture as this is supported by the Saudi government. Other Arabs also benefit from such liberation. The Saudis' nationality, religion, traditions, and language are given higher importance than those of foreigners. However, the three companies did not totally set aside the foreigners' distinct culture. For example, Saudi Aramco allows its non-Muslim employees to go for vacation so they can celebrate their national holidays.

Through organisational factors, a situational example in which lifeworld is reflected occurs when the employees are allowed to prove their worth to the company regardless of their designations. However, it is a given fact that Saudis do receive higher salaries than foreigners, especially at the rank-and-file level. The three Saudi companies are composed of employees of diverse nationalities. Saudis remain superior in job designations despite some being undeserving due to apparent questionable knowledge and skills. During systems change, employees can resist it and voice their reactions. Aware of the changes, they want the employers to tell them the purposes of what is currently happening. On the realisation that the new system will benefit them, they opt to participate, see, and wait for the fulfilment of the promised advantages. Training and actual performance monitoring are the two most important aspects for determining users' productiveness.

Lastly, in terms of technological factors, employees are expected to give their negative comments concerning the new technology being introduced to them – and this is a situational example in which a lifeworld is at work. In this case, the top management finds a way to assure the employees that the new technology will not put their welfare at stake. Instead, substantial support will be provided by the top management to show to the users their sincere intentions on accomplishing the project for the company's optimum competitive advantage.

9.2.2.2 The occurrence of system in the four major factors

System is also seen in the four major factors featured in this study. In terms of the social factors, it is seen that system restrains the employees' actions in many cases, especially the non-Arabs and even the non-Saudis in Saudi Arabia. Younger employees are bounded by their employment contract, therefore, is not be easy for them to leave the company whenever they wish to. Women are not allowed to have direct interaction with men who are not related to them. Only employees with higher educational degrees can be part of the top management who will direct the execution of any developmental project. All the details in the employment contract are undertaken by the employees to the extent that this written agreement is more important than the trust and loyalty they give to their company.

Cultural factors, which include nationality, religion, traditions, and language, also possess power in the system. When a Saudi company owner decides that a Consultant must be a Muslim in order for him to become part of the project, this must be obeyed, otherwise no project will start. Saudis prefer Western people (i.e., Americans and Europeans) to become part of the project team because of these peoples' greater knowledge of IT systems. In the absence of Western people, they prefer a project team which is of their same nationality. Also, anyone going against their customs and traditions will be reported to the Saudi authorities and be subject to disciplinary action or a severe punishment. Violators of the law of the land will be imprisoned and punished according to the gravity of the offence committed. Punishments would be in the form of flagellation, amputation of the fingers, or beheading. It is evident that the Saudi business culture is basically based on the country's holistic culture.

Meanwhile, organisational factors are also found exhibiting the characteristics of A most clear of system covered by the organisational factors is system. 'Saudisation'. With this system in effect, Saudi companies prioritise Saudi citizens on deployment terms. This system is reported as having many negative effects. For example, since the Saudi company needs to operate well, they hire more people; yet Saudis, after a few months of being hired, leave the company to transfer to another company in which the salary offered is higher. Another example is that, owing to the limited number of Saudis with work experience and with an outstanding academic background, the company have no choice but to hire people with poor education and/or people who have never worked before. However, we emphasise that perhaps owing to the chance of an affluent life many Saudis prefer to go into establishing their own business rather than employment. In terms of top management support, system in the context of Saudi companies is seen through a non-bureaucratic management style. Here, the employees have their own ways of undertaking tasks which should be finished to a scheduled deadline. Also, Saudi companies prefer that employees have many skills so that even in the absence of the one designated to perform the task, the task can still be done by others and therefore the operation is not hampered. Saudi senior managers do not spend a great deal of time watching their employees performing a task; however, they expect the task to be accomplished well. On the part of the employees in Saudi companies, they prefer senior managers to empower them so that even when the superiors are not around, employees are able to resolve the problems that come along unexpectedly.

With regard to the occurrence of the system through technological factors, a situational example is that employees who do not belong to the IT department are not authorised to operate the main IS server. Of course, this is implemented to avoid system casualties such as the loss of important data and the illegal retrieval of private and confidential information. System is also at work when the company strictly imposes that any new technology must be used; the employees have no choice but to use it.

As was hoped, the in-depth interviews gave us an insight into the problems of implementing e-business. Mapping these findings to the objectives of the study and to the initial conceptual model (Figure 3-11), further developed our understanding of the cultural and social factors affecting e-business assimilation (objective 1), to determine which of these is key (objective 3), and test the initial model (objectives 4/5).

Specifically:

- 1. Discussion of training issues has highlighted issues such as flexibility, preference for face-to-face communications, and family issues which have special meanings within Saudi culture, and which need to be addressed when designing and implementing e-business solutions. These issues provide direct examples of the way in which Lifeworld should be considered when implementing what many see as an organisational system, demonstrating, even at this early stage of the qualitative research, how modelling Lifeworld against System can be viewed as a valuable exercise in understanding the potential and constraints for e-business design and implementation in Saudi Arabia. The findings map most specifically to objective 1, and validate the importance of the left hand side of the initial conceptual model, thereby contributing to the understanding needed to address objectives 4 and 5.
- 2. This analysis of the impact of e-business demonstrates the strong dependence on personal aspects in order to achieve organisational and operational success, and gives insights into the issues set out in objective 3. Personal issues sit in the social and cultural space of Lifeworld, and the
System/Lifeworld model helps to build an understanding of these interactions and dependencies (objectives 4 and 5).

- 3. Responses on resistance to e-business indicate the need to play down purely technical issues whilst highlighting those of a human/organisational nature. There is a need to guard against human actors becoming passive in the development (System dominating the Lifeworld), and the resulting suppression of the Lifeworld. The strong, socially cohesive, nature of Saudi culture accentuates these issues and makes them, arguably, more urgent to address (addressing objectives 1, 3, 4 and 5).
- 4. Cultural barriers to collaboration in Saudi Arabia are greater than might be expected by someone from the West. Project teams in which Saudi and foreign workers are mixed need careful handling. The key is to recognise culture as a barrier, however the project should be pursued based on the knowledge and skills of participants regardless of nationality or culture. In terms of this study, we see a System which is coming into conflict with a number of different Lifeworlds, each containing elements which make relationships with others difficult if not sometimes incompatible. This is directly relevant to identifying cultural factors, determining which are key, and assessing the cultural elements in the left side of the conceptual model.
- 5. The need for a programme of change management is greater within the cultural environment of this study. The model addresses System/Lifeworld issues and enables them to be incorporated into any change management initiative.
- 6. Retention of young workers because of employment mobility, the relative inability of male workers to work with and even mix with female workers, and the loyalty and trust which are bound up with the Muslim and strongly family-based culture of Saudi Arabia, are elements of the lifeworld which no amount of system rule making and planning can change; they simply have to work within the constraints set.

Any e-business implementation within Saudi Arabia, consequently, must be managed with cultural sensitivity which, for this study, means constantly mapping System to Lifeworld in order to ensure that the outcomes required (from System?) are not be prejudiced by unchangeable cultural constraints. Some of the issues can simply included within the rules of the System, or Lifeworld determining System (e.g. forbidding of interest). Other issues, such as the need for privacy, are more complex.

So, whilst the business benefits are accepted, cultural issues within Saudi Arabia cannot simply be changed to enable these benefits to be realised.

The consultants' propositions assist the understanding of the theory of lifeworld and system in Saudi companies, especially in terms of e-business projects. The most important strategy is, whilst in the process of assimilating the e-business system to the company, the project team needs to understand very well how to deal with the people in every business aspects and how to handle even the most difficult situations without hampering the on-going e-business project. Each of the subfactors within the major factors is an important determinant of the significance of the lifeworld and system situations that the company should address with appropriate actions, thus, enabling the theory of lifeworld and system to, truly, occur. The new system to be developed by the project team should be derived from the organisation's existing condition of both their lifeworld and their system. Based on the Consultant's propositions, Saudi companies can be considered adapted to the non-repudiation or modifications of their existing system established by the people in a free lifeworld; the modified system, itself, becomes the new system. It is noted that the three Saudi companies' existing systems, prior to e-business adoption, were fully based on Islamic faith and Arab culture. Saudi people, basically, do not allow anyone to disregard their religious practices, cultural values, and traditions. There can be a new system within their organisation, but their customs and beliefs need to remain embedded to their business transactions.

Further details on the four major factors, the (business) situations in Saudi companies where the concepts of lifeworld and system are evident in these factors – in which our tabular analysis is in parallel to our final conceptual model – are provided in chapter eight.

9.3 Major Contributions to Knowledge

This study has made significant original contributions to knowledge at academic and practical levels as an important first exploratory empirical study into Saudi

companies' e-business assimilation initiatives. The following sections present the academic and practical contributions of this study.

9.3.1 Academic contributions

For scholars, these are the academic contributions of this research.

- This study is considered as a step towards theory building relating to ebusiness assimilation through utilising the lifeworld and system theory in the context of Saudi Arabia.
- This study arguably has greater significance that lifeworld and system as proposed by Habermas is happening in all types of business activities.
- This study is an important exploratory study that includes important issues which need to be understood when adopting e-business technology.
- This study emphasises that e-business assimilation is the final result of the acceptance, adoption, and implementation or continued usage or routinisation of e-business into the entire organisation.
- This study raises awareness of the importance of the social and cultural characteristics of certain companies so that the innovator can provide a change management programme that is highly applicable and effective.
- It reveals many new facts and issues that need to be taken into account when studying the impact of e-business assimilation to the company and to its business partners.
- This study has discovered many new ideas and facts to be considered as directions for future work.
- For academic researchers, this research is open for significant criticisms because the author believes that commendable arguments will result to having a strong and logical basis for conducting future researches which will support or modify the present study.

9.3.2 Managerial contributions

The findings of this study have revealed several important implications for companies wishing to conduct e-business assimilation through applying Habermas'

lifeworld and system theory. Specifically, this study is undertaken in the context of Saudi Arabia, the details having been discussed in Chapters 6 and 7.

It is important to stress that:

- to explore and suggest what needs to be done in order to successfully assimilate e-business technology into the entire organisation;
- provide useful guidelines in the form of the critical elements and factors that can enhance success of e-business implementation;
- greater focus must be allotted to the social and cultural aspects, for humans are both the main drivers and passengers to better change;
- emphasises the importance of having an in-depth understanding of the social factors which are present in the business organisation prior to starting the project;
- there would be a greater possibility of project failure if the people's manners, customs, attitudes, and the likes are not properly approached;
- e-business assimilation can be fully achieved when people are valued the most;
- Top management's intervention is very important so the project team will not be autocratic when dealing with the end-users due to their assumed intellectual superiority. Also, it will enhance the trust and the loyalty of the end users.

9.4 Limitations of the Study

Every research project is limited by the constraints on the researcher, and this study is no exception. These are the limitations of this project.

- Owing to the Consultants' limited allotted time for the interviews conducted, not all specific factors were given criticism and recommendation, and therefore, only selected significant sub-factors were mentioned in this thesis.
- The overall result of this study may only be exclusive to Arab countries.
- Researchers who wish to use the conceptual model developed may modify it to fit with the targeted subject.
- The researcher background in the implementation of ERP is considered a drawback.

- This study did not mention in detail the other works of Habermas which may be related to his lifeworld and system theory, and therefore would add strength to the propositions provided.
- However, it is a noteworthy that this study findings should be taken with some caution as the generalisation might be questionable, given the fact that the subjects sample is only from three Saudi companies.

9.5 Further Research

As with all research, the value of this study can be improved upon by further application.

This study requires future researchers to conduct field studies in other Saudi companies to in order to see how far their findings are similar to those of the present study. In addition, the wider application of system/lifeworld concepts within other industries and cultures would further aid our understanding. It is to be hoped that the conceptual models provide a helpful starting point for future researchers, and that through the further application of these models a greater understanding of e-business, and a modification of the models themselves would result.

9.6 Final Statement

The findings show how SAP implementation in the these selected companies was affected by social factors such as age and gender; cultural factors such as religion; organisational factors such as performance motivation, management support and consultancy; and technological factors. The companies' change management programmes had enabled resolution of problems by the adoption of measures suited to each company's holistic characteristics and needs. The occurrence of system lifeworld was demonstrated in all factors. Saudi society was shown to be strongly lifeworld oriented, such that 'system' comes into conflict with elements of the lifeworld, with some lifeworld elements (such as gender roles and constraints) that system cannot change but must work within. The findings demonstrate the value of a system – lifeworld perspective in analysing factors influencing a change such as e-business assimilation, and result in development of an elaborated conceptual model for the holistic analysis of pertinent factors.

10 References

- ABDALLA, I. A. & AL-HOMOUD, M. 1995. A survey of management training and development practices in. *The Journal of Management Development*, 14, 14.
- ABDUL-GADER, A. H. & KOZAR, K. A. 1995. The impact of computer alienation on information technology investment decisions: An exploratory Cross-National Analysis. *MIS Quarterly*, 19, 535.
- ABRAHAMSON, M. 1983. Social research methods, Englewood Cliffs, London:, Prentice-Hall.
- AGARWAL, R. & PRASAD, J. 1999. Are Individual Differences Germane to the Acceptance of New Information Technologies? *Decision Sciences*, 30, 361-391.
- AGNAIA, A. A. 1996. Assessment of management training needs and selection for training: the case of Libyan companies. *International Journal of Manpower*, 17, 31.
- AJZEN, I. 1985. From intentions to actions: A theory of planned behavior. *In:* KUHLAND & BECKMANN (eds.) *Action control: From cognition to behavior*. Berlin: Springer-Verlag.
- AJZEN, I. 1991. The Theory of Planned Behavior. Organizational Behavior and Human Decision Processes, 50:2, 179-211.
- AJZEN, I. & FISHBEIN, M. 1980. Understanding attitudes and predicting social behavior, Englewood Cliffs; London, Prentice-Hall.
- AL-ABDUL-GADER, A. H. 1999. *Managing computer based information systems in developing countries : a cultural perspective*, Hershey ; London, Idea Group.
- AL-AIBAN, K. M. & PEARCE, J. L. 1993. The Influence of Values on Management Practices. International Studies of Management & Organization, 23, 35.
- AL-ALI, A. 1999. Human Resource Development Training and Development Practices and Related Organisational Factors in Kuwaiti Organisations. PhD, Bradford University.
- AL-ATHARI, A. 2000. The Impact of Multimedia Based Training on Employee Training Effectiveness and Organisational Performance. PhD, Bradford University.
- AL-BAHUSSAIN, A. 2000. Human Resource Development: an Investigation into the Nature and Extent of Training and Development in the Saudi Private Manufacturing. PhD, Bradford University.
- AL-FALEH, M. 1987. Cultural Influences on Arab Management Development: A Case Study of Jordan. *The Journal of Management Development*, 6, 19.
- AL-GAHTANI, S. 2001. The Applicability of TAM Outside North America: An Empirical Test in the United Kingdom. *Information Resources Management Journal*, 14, 37.
- AL-GAHTANI, S. S. 2004. Computer Technology Acceptance Success Factors in Saudi Arabia: An Exploratory Study. *Journal of Global Information Technology Management*, 7, 5-29.
- AL-GAHTANI, S. S. 2011. Modeling the electronic transactions acceptance using an extended technology acceptance model. *Applied Computing and Informatics*, 9, 47-77.
- AL-GAHTANI, S. S., HUBONA, G. S. & WANG, J. 2007. Information technology (IT) in Saudi Arabia: Culture and the acceptance and use of IT. *Information*

& Management, 44, 681-691.

- AL-KHALDI, M. A. & OLUSEGUN, W. R. S. 1999. The influence of attitudes on personal computer utilization among knowledge workers: the case of Saudi Arabia. *Information & Management*, 36, 185-204.
- AL-KHATIB, J. A., VITELL, S. J. & RAWWAS, M. Y. A. 1997. Consumer ethics: a cross-cultural investigation. *European Journal of Marketing*, 31, 18.
- AL-MASHARI, M., AL-MUDIMIGH, A. & ZAIRI, M. 2003. Enterprise resource planning: A taxonomy of critical factors. *European Journal of Operational Research*, 146, 352-364.
- AL-MASHARI, M. & ZAIRI, M. 2000. The effective application of SAP R/3: a proposed model of best practice. *Logistics information management*, 13, 156-166.
- AL-MEER, A. R. A. 1989. Organizational Commitment: A Comparison of Westerners, Asians, and Saudis. *International Studies of Management & Organization*, 19, 74-84.
- AL-RASHEED, A. 1996. *Managers Motivation and Job Satisfaction*. PhD, University of Kent at Canterbury, UK.
- AL HOYMANY, F. 2006. Information and Communications Technology (ICT) Policy Statement. Riyadh: Ministry of Communications and IT Saudi Arabia.
- ALADWANI, A. M. 2001. Change management strategies for successful ERP implementation. *Business Process Management Journal*, 7, 266-275.
- ALADWANI, A. M. 2002. An empirical examination of the role of social integration in system development projects. *Information Systems Journal*, 12, 339-353.
- ALI, A. 2009. Business and management environment in Saudi Arabia : challenges and opportunities for multinational corporations, London, Routledge.
- ALI, A. J. 1990. Management Theory in a Transitional Society: the Arab's Experience. *International Studies of Management & Organization*, 20, 7-35.
- ALSUBAIE, A. & NAJAND, M. 2009. Abnormal trading volume and autoregressive behavior in weekly stock returns in the Saudi stock market. *Emerging Markets Review*, 10, 207-225.
- ALVESSON, M. & WILLMOTT, H. 1992. Critical Management Studies, Sage Pubns.
- AMOAKO-GYAMPAH, K. 2004. ERP implementation factors A comparison of managerial and end-user perspectives. *Business Process Management Journal* 10, 171-183.
- AMOAKO-GYAMPAH, K. & SALAM, A. F. 2004. An extension of the technology acceptance model in an ERP implementation environment. *Information & Management*, 41, 731-745.
- ANASTOS, D., BEDOS, A. & SEAMON, B. 1980. The Development of Modern Management Practices in Saudi Arabia. *Columbia Journal of World Business*.
- ARAB NEWS. 2007. Saudi Arabia to Develop Information Technology.Middle East North Africa Financial News (MENAFN). *Arab News*.
- ARABI, N. & BROMIDEH, A. A. 2006. The Impact of E-Commerce on Iranian Insurance Companies [Online]. Lulea University of Technology. Available: <u>http://epubl.ltu.se/1653-0187/2006/03/LTU-PB-EX-0603-SE.pdf</u> [Accessed November 9, 2006].
- ARAMCO 2008. Saudi Aramco Annual Report. Dahran: Saudi Aramco.
- ARCHER, N. & YUAN, Y. 2000. Managing business-to-business relationships throughout the e-commerce procurement life cycle. *Internet Research*, 10,

385-395.

- ARMITAGE, C. J. & CONNER, M. 2001. Efficacy of the Theory of Planned Behaviour: A meta-analytic review. *British Journal of Social Psychology*, 40, 471-499.
- ARMSTRONG, C. P. & SAMBAMURTHY, V. 1999. Information Technology Assimilation in Firms: The Influence of Senior Leadership and IT Infrastructures. *Information Systems Research*, 10, 304-327.
- AT-TWAIJRI, M. I. 1989. A Cross-cultural Comparison of American-Saudi Managerial Values in U.S.-related Firms in Saudi Arabia: An Empirical Investigation. *International Studies of Management & Organization*, 19, 58-73.
- ATIYYAH, H. S. 1989. Determinants of Computer System Effectiveness in Saudi Arabian Public Organizations. *International Studies of Management & Organization*, 19, 85-103.
- ATTEWELL, P. 1992. Technology diffusion and organizational learning: the case of business computing. *Organization Science*, **3**, 1-19.
- AXELSSON, K., MELIN, U. A. & GOLDKUHL, G. 2002. Understanding B2B interaction: a model to accentuate inter-organizational systems design issues. *the 10th European Conference on Information Systems*. Gdansk, Poland.
- BALL, L. D., DAMBOLENA, I. G. & HENNESSEY, H. D. 1987. Identifying early adopters of large software systems. *SIGMIS Database*, 19, 21-27.
- BANAS, P. A. & ROHAN, D. J. 1971. Practical Problems in Questionnaire Design. Academy of Management Proceedings, 55-58.
- BANCROFT, N. H. 1996. Implementing SAP R/3 : how to introduce a large system into a large organization, Greenwich, Conn., Manning.
- BANDURA, A. 1977. Social learning theory, Englewood Cliffs, NJ, Prentice-Hall.
- BANDURA, A. 1982. Self-efficacy mechanism in human agency. American Psychologist, 37, 122-147.
- BANDURA, A. 1989. A social cognitive theory of action. In: FORGAS;, J. P. & INNES, M. J. (eds.) Recent advances in social psychology: An international perspective. North Holland: Elsevier.
- BANDURA, A. 1997. Self-efficacy : the exercise of control, New York, W.H. Freeman.
- BARKI, H. & HARTWICK, J. 1994. Measuring User Participation, User Involvement, and User Attitude. *MIS Quarterly*, 18, 59-82.
- BARTON, J., EMERY, M., FLOOD, R. L., SELSKY, J. W. & WOLSTENHOLME, E. 2004. A Maturing of Systems Thinking? Evidence from Three Perspectives Systemic Practice and Action Research, 17, 3-36.
- BARUA, A., KRIEBEL, C. H. & MUKHOPADHYAY, T. 1995. Information Technologies and Business Value: An Analytic and Empirical Investigation. *Information Systems Research*, 6, 3.
- BATTERSBY, J. L. 1991. Paradigms regained : pluralism and the practice of criticism, Philadelphia, University of Pennsylvania Press.
- BAXTER, H. 1987. System and life-world in Habermas's theory of communicative action. *Theory and Society*, 16, 39-86.
- BENTLER, P. M. & SPECKART, G. 1979. Models of attitude behavior relations. *Psychological Review*, 86, 452-464.
- BERENSON, M. L. & LEVINE, D. M. 1992. *Basic business statistics : concepts and applications*, Englewood Cliffs, N.J., Prentice Hall.
- BERG, E., MORTBERG, C. & JANSSON, M. 2005. Emphasizing technology:

socio-technical implications. *Information Technology and People*, 18, 343-358.

- BERTOLOTTI, D. S. 1984. *Culture and technology*, Bowling Green, Ohio, Bowling Green State University Popular Press.
- BIDGOLI, H. 2004. The Internet encyclopedia, Hoboken, N.J., Wiley.
- BINGI, P., SHARMA, M. K. & GODLA, J. K. 1999. Critical Issues Affecting an ERP Implementation. *Information Systems Management*, 16, 7.
- BJERKE, B. & AL-MEER, A. 1993. Culture's consequences: Management in Saudi Arabia. *Culture's consequences: Management in Saudi Arabia*, 14, 6.
- BLAIZE HORNER, R. & IZAK, B. 2000. Factors that influence the social dimension of alignment between business and information technology objectives. *MIS Quarterly*, 24, 81.
- BLAKE, B., PERLOFF, R. & HESLIN, R. 1970. Dogmatism and Acceptance of New Products. *Journal of Marketing Research (JMR)*, 7, 483-486.
- BLANTON, J. E., WATSON, H. J. & MOODY, J. 1992. Toward a Better Understanding of Information Technology Organization: A Comparative Case Study. *MIS Quarterly*, 16, 531-555.
- BLOCH, M., PIGNEUR, Y. & SEGEV, A. 1996. On the Road of Electronic Commerce a Business Value Framework, Gaining Competitive Advantage and Some Research Issues. *working paper 1996*.
- BOLTON, R. 2005. Habermas's Theory of Communicative Action and the Theory of Social Capital. *Paper read at meeting of Association of American Geographers.* Denver, Colorado: Department of Economics and Center for Environmental Studies Williams College.
- BOUCHARD, T. J. J. R. 1976. Unobtrusive Measures: An I nventory of Uses. Sociological Methods Research, 4, 267-300.
- BOUDREAU, M.-C., GEFEN, D. & STRAUB, D. W. 2001. Validation In Information Systems Research: A State Of The Art Assessment. *MIS Quarterly*, 25, 1-16.
- BOURDIEU, P. 1990. The Logic of Practice, Cambridge, Polity.
- BOWERS, C. A. 2000. Let them eat data : how computers affect education, cultural diversity, and the prospects of ecological sustainability, Athens, GA, University of Georgia Press.
- BOYNTON, A. C., ZMUD, R. W. & JACOBS, G. C. 1994. The Influence of IT Management Practice on IT Use in Large Organizations. *MIS Quarterly*, 18, 299-318.
- BREWS, P. J. 2000. The Challenge of the Web-Enabled Business. Financial Times.
- BROGAN, M. 2006. *Transformation Theory and E-Commerce Adoption*. PhD, Information Science, Edith Cowan University.
- BRYMAN, A. 1988. *Quantity and quality in social research*, London, Unwin Hyman.
- BRYMAN, A. 1999. The debate about quantitative and qualitative research. In: BRYMAN, R. G. B. (ed.) Qualitative Research—Fundamental Issues in Qualitative Research. London: Sage Publications.
- BRYMAN, A. & BELL, E. 2003. Business research methods, Oxford University Press.
- BRYMAN, A. & CRAMER, D. 2000. *Quantitative data analysis with SPSS Release* 10 for Windows : a guide for social scientists, London, Routledge.
- BUDD, R. J. 1987. Response bias and the theory of reasoned action. *Social Cognition*, 5, 95-107.

- BUONANNO, G., RAVARINI, A., SCIUTO, D. & TAGLIAVINI, M. 1998. How Internet connected SMEs exploit the potential of the net. *International Conference on Information Resources Management Association*. Boston, Massachusetts, USA.
- BURRELL, G. & MORGAN, G. 1979. Sociological paradigms and organisational analysis : elements of the sociology of corporate life, London, Heinemann Educational.
- BUSLI, C. & SULIMAN, A.-H. 2002. The development of e-commerce in Singapore. *Business Process Management Journal*, 8, 278.
- BUSSOM, R. S., ELSAID, H., SCHERMERHORN JR, J. R. & WILSON, H. K. 1984. Integrated Management-Organisation Development in a Developing Country: A Case Study. *Journal of Management Development*, 3, -.
- BYRD, T. A. & TURNER, D. E. 2001. An exploratory analysis of the value of the skills of IT personnel: Their relationship to IS infrastructure and competitive advantage. *Decision Sciences*, 32, 21.
- CALANTONE, R. J., GRIFFITH, D. A. & YALCINKAYA, G. 2006. An Empirical Examination of a Technology Adoption Model for the Context of China *Journal of International Marketing*, 14, 1-27.
- CAO, G., CLARKE, S. & LEHANEY, B. 2004. The Need for a Systemic Approach to Change Management - A Case Study *Systemic Practice and Action Research*, 17, 103-126.
- CARMINES, E. G. & ZELLER, R. A. 1979. *Reliability and validity assessment,* Beverly Hills ; London, Sage Publications.
- CARTER, R. 1989. *Students' guide to information technology*, Oxford, Heinemann Newnes.
- CASSELL, C., BUEHRING, A., SYMON, G. & JOHNSON, P. 2006. Qualitative methods in management research: an introduction to the themed issue. *Management Decision*, 44, 161.
- CASTELLS, M. 1996. *The Information Age: Economy, Society and Culture,* Cambridge, Mass.; Oxford, Blackwell Publishers.
- CHAE, B. & POOLE, M. S. 2005. Mandates and technology acceptance: A tale of two enterprise technologies. *The Journal of Strategic Information Systems*, 14, 147-166.
- CHAN, S. C. H. & NGAI, E. W. T. 2007. A qualitative study of information technology adoption: how ten organizations adopted Web-based training. *Information Systems Journal*, 17, 289-315.
- CHATTERJEE, D., GREWAL, R. & SAMBAMURTHY, V. 2002. Shaping Up For E-Commerce: Institutional Enablers Of The Organizational Assimilation Of Web Technology. *MIS Quarterly*, 26, 65-89.
- CHATTERJEE, D. & SEGARS, A. H. 2003. Transformation of the Enterprise through e-Business: An Investigation of Opportunities, Challenges, & Best Practices. Society for Information Management (SIM) International, Chicago, IL.
- CHAU, P. Y. K. & HU, P. J.-H. 2001. Information Technology Acceptance by Individual Professionals: A Model Comparison Approach. *Decision Sciences*, 32, 699-719.
- CHEN, C.-D., FAN, Y.-W. & FARN, C.-K. 2007. Predicting electronic toll collection service adoption: An integration of the technology acceptance model and the theory of planned behavior. *Transportation Research Part C: Emerging Technologies*, 15, 300-311.

- CHEN, W. & HIRSCHHEIM, R. 2004. A paradigmatic and methodological examinations of information systems research from 1991 to 2001. *Information Systems Journal*, 14, 197-235.
- CHEUNG, C. M. & LEE, M. K. 2001. Trust in Internet Shopping: Instrument Development and Validation through Classical and Modern Approaches. *Journal of Global Information Management*, 9.
- CHIEOCHAN, O., LINDLEY, D. & T., D. 2000. Factors Affecting the Use of Information Technology in Thai Agricultural Cooperatives: A Work in Progress. *The Electronic Journal on Information Systems in Developing Countries*, 2, 1-15.
- CHIN-YUEH, H. 2007. The Effect of Investment in Information Technology on the Performance of Firms in the Rubber Industry. *International Journal of Management*, 24, 463-476.
- CHUN, Y. 2004. The Impact of E-Commerce on Buyer Supplier relationships in the Korean Electronic industry. PhD, University of Leeds.
- CLARKE, S. 2007. Information systems strategic management : an integrated approach, London, Routledge.
- CLARKE, S., LEHANEY, B. & MARTIN, S. 1998. A Theoretical Framework for Facilitating Methodological Choice. *Systemic Practice and Action Research*, 11, 295-318.
- CLEGG, C. W., CHU, C., SMITHSON, S. & HENNY, A. 2005. Sociotechnical Study of e-Business: Grappling with an Octopus. *Journal of Electronic Commerce in Organizations*, 3, 53-71.
- COLLIS, J., HUSSEY, R. & HUSSEY, J. 2003. Business research : a practical guide for undergraduate and postgraduate students, Basingstoke, Palgrave Macmillan.
- COOPER, D. R. & SCHINDLER, P. S. 2003. Business research methods, Boston ; London, Irwin McGraw-Hill.
- COOPER, R. B. & ZMUD, R. W. 1990. Information technology implementation research: a technological diffusion approach. *Management Science*, 36, 123-139.
- CORNFORD, T. & SMITHSON, S. 2006. Project research in information systems : a student's guide, Basingstoke, Palgrave Macmillan.
- COUPER, M. P. 2000. Usability evaluation of computer-assisted survey instruments. Social Science Computer Review, 18, 384-396.
- COYNE, R. 1998. Cyberspace and Heidegger's pragmatics. *Information Technology* & *People*, 11, 338-350.
- CRABTREE, B. F. & MILLER, W. L. 1999. *Doing qualitative research,* Thousand Oaks, Calif.; London, Sage.
- CRAGG, P. B. & KING, M. 1993. Small-firm computing: Motivators and inhibitors. *MIS Quarterly*, 17, 47.
- CRESWELL, J. W. 1994. *Research design : qualitative and quantitative approaches*, Thousand Oaks, Calif. ; London, Sage Publications.
- CRESWELL, J. W. 2003. *Research design : qualitative, quantitative, and mixed methods approaches,* Thousand Oaks, Calif. ; London, Sage.
- CRONIN, J. M. 1997. Global Advantage on the Internet: From Corporate Connectivity to International Competitiveness, New York, NY, John Wiley & Sons, Inc. .
- CROOM, S. R. 2005. The impact of e-business on supply chain management: An empirical study of key developments. *International Journal of Operations*

and Production Management, 25, 55-73.

- CROSSLEY, N. 2002. *Making sense of social movements*, Buckingham, Open University Press.
- DAVENPORT, T. H. 1998. Putting the Enterprise into the Enterprise System. Harvard Business Review, 76, 121-131.
- DAVENPORT, T. H. 2000. Mission critical: Realizing the promise of Enterprise Systems. *HBS Press*.
- DAVID, O. D. & LARS BO, H. 2002. Philosophical foundations for a critical evaluation of the social impact of ICT. *Journal of Information Technology*, 17, 89.
- DAVIS, F. D. 1989. Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13, 318-340.
- DAVIS, F. D., BAGOZZI, R. P. & WARSHAW, P. R. 1989. User Acceptance of Computer Technology: A Comparison of Two Theoritical Models. *Management Science*, 35, 982-1003.
- DAVIS, F. D. J. 1986. A technology acceptance model for testing new end-user information system: theory and result. Ph.D., Massachusetts Institute of Technology.
- DAVIS, P. S. & HARVESTON, P. D. 2000. Internationalization and Organizational Growth: The Impact of Internet Usage and Technology Involvement Among Entrepreneurled Family Businesses. *Journal of The Family Firm Institute*, 13, 107-120.

DE VAUS, D. A. 1990. Survey in Social Research, London, Unmin Hyman.

DELOITTE CONSULTING RESEARCH REPORT 1999. A Global Research Report "ERP's second wave: maximizing the value of enterprise applications and processes

http://www.deloitte.com/dtt/cda/doc/content/Erps_second_wave(1).pdf.

- DELONE, W. H. 1981. Firm Size and the Characteristics of Computer Use. *MIS Quarterly*, 5, 65.
- DELONE, W. H. & MCLEAN, E. R. 1992. Information Systems Success: The Quest for the Dependent Variable. *Information Systems Research*, *3*, 60-95.
- DENZIN, N. K. 1970. The research act in sociology: a theoretical introduction to sociological methods, London: Butterworths.
- DENZIN, N. K. & LINCOLN, Y. S. 1994. *Handbook of qualitative research*, Thousand Oaks, Calif. ; London, Sage Publications.
- DILLARD, J. F. & YUTHAS, K. 2006. Enterprise resource planning systems and communicative action. *Critical Perspectives on Accounting*, 17, 202-223.
- DILLMAN, D. A. & DILLMAN, D. A. M. A. T. S. 2000. *Mail and Internet surveys* : the tailored design method, New York ; Chichester, John Wiley.
- DONEY, P. M. & CANNON, J. P. 1997. An examination of the nature of trust in buyer-seller relationships. *Journal of Marketing*, 61, 35.
- DOS SANTOS, B. L. & PEFFERS, K. 1998. Competitor and vendor influence on the adoption of innovative applications in electronic commerce. *Information & Management*, 34, 175-184.
- DOWLING, C. & LEECH, S. 2007. Audit support systems and decision aids: Current practice and opportunities for future research. *International Journal* of Accounting Information Systems, 8, 92-116.
- DUBELAAR, C., SOHAL, A. & SAVIC, V. 2005. Benefits, impediments and critical success factors in B2C E-business adoption. *Technovation*, 25, 1251-1262.

- DUE, R. T. 1995. The knowledge economy. *Information Systems Management*, 12, 76.
- DUTTON, W. H. & PELTU, M. 1999. Society on the line : information politics in the digital age, Oxford, Oxford University Press.
- EASTERBY-SMITH, M., THORPE, R. & LOWE, A. 2001. Management research : an introduction, London, Sage.
- EIN-DOR, P. & SEGEV, E. 1978. Organizational Context And The Success Management Information System. *Management Science*, 24, 1064-1077.
- ELBANNA, A. R. 2003. Achieving social integration to implement ERP systems. In: CIBORRA, C. U., MERCURIO, R., DE MARCO, M., MARTINEZ, M., CARIGNANI, A. (ed.) Proceedings of the 11th European Conference on Information Systems. Naples.
- ELBANNA, A. R. 2007. Implementing an integrated system in a socially disintegrated enterprise :A critical view of ERP enabled integration. *Information Technology & People*, 20, 121-139.
- ESICHAIKUL, V. & CHAVANANON, S. 2001. Electronic Commerce and Electronic Business Implementation Success Factors. 14th Bled Electronic Commerce Conference. Bled, Slovenia, June 25-26.
- EVANS, P. B. & WURSTER, T. S. 1997. Strategy and the New Economics of Information. *Harvard Business Review*, 75, 70-82.
- FAIRTLOUGH, G. H. 1991. Habermas' concept of "Lifeworld". Systemic Practice and Action Research, 4, 547-563.
- FAZIO, R. H., HERR, P. M. & OLNEY, T. J. 1984. Attitude accessibility following a self-perception process. *Journal of Personality and Social Psychology*, 47, 277-286.
- FEENY, D. F. & WILLCOCKS, L. P. 1998. Core IS Capabilities for Exploiting Information Technology. *Sloan Management Review*, 39, 9-21.
- FERGUSON, C., FINN, F., HALL, J. & PINNUCK, M. 2010. Speculation and ecommerce: The long and the short of IT. *International Journal of Accounting Information Systems*, 11, 79-104.
- FICHMAN, R. G. & KEMERER, C. F. 1997. The Assimilation of Software Process Innovations: An Organizational Learning Perspective. *Management Science*, 43, 1345-1363.
- FISHBEIN, M. & AJZEN, I. 1975. Belief, attitude, intention and behavior : an introduction to theory and research, Reading, Mass. ; London, Addison-Wesley.
- FISHER, R. J. & PRICE, L. L. 1992. An Investigation into the Social Context of Early Adoption Behavior. *Journal of Consumer Research*, 19, 477-486.
- FITZGERALD, B. & HOWCROFT, D. 1998. Competing dichotomies in IS research and possible strategies for resolution. *the 19th International Conference on Information Systems*. Helsinki, Finland.
- FLANAGIN, J. 2000. Social pressures on organizational website adoption. *Human* Communication Research, 26, 618-646.
- FLYNN, D. & GREGORY, P. 2004. The Use of Social Theories in 20 Years of WG 8.2 Empirical Research. *Information Systems Research*. Boston: Springer Boston.
- FLYVBJERG, B. 1998. Habermas and Foucault: Thinkers for Civil Society? *The British Journal of Sociology*, 49, 210-233.
- FOREIGN POLICY 2006. The Kingdom's Clock. Foreign Policy, 55-61.
- FOUCAULT, M. & SHERIDAN, A. 1979. Discipline and punish : the birth of the

prison, Harmondsworth, Penguin.

- FRANDA, M. F. 2002. Launching into cyberspace : Internet development and politics in five world regions, Boulder, Co. ; London, Lynne Rienner Publishers.
- FRANKFORT-NACHMIAS, C. & NACHMIAS, D. 1992. Research methods in the social sciences, New York, St. Martin's Press.
- FRANZ, C. R. & ROBEY, D. 1986. Organizational Context, User Involvement, And The Usefulness Of Infromation System. *Decision Sciences*, 17, 329-356.
- FU, J.-R., FARN, C.-K. & CHAO, W.-P. 2006. Acceptance of electronic tax filing: A study of taxpayer intentions. *Information & Management*, 43, 109-126.
- GABLE, G. G. 1994. Integrating case study and survey research methods: An example in information systems. *European Journal of Information Systems*, 3, 112.
- GALLIVAN, M. J. & DEPLEDGE, G. 2003. Trust, control and the role of interorganizational systems in electronic partnerships. *Information Systems Journal*, 13, 159-190.
- GALLIVAN, M. J. & KEIL, M. 2003. The user-developer communication process: a critical case study. *Information Systems Journal*, 13, 37-68.
- GARCÍA-MURILLO, M. 2004. Institutions and the Adoption of Electronic Commerce in Mexico. *Electronic Commerce Research*, 4, 201-219.
- GARYEGA, V. B. & BRADY, C. 2005. Success and failure factors of adopting SAP in ERP system implementation. *Business Process Management Journal*, 11, 501-516.
- GATES, B. 1994. The business and social impact of the electronic highway. *Executive Speeches*, 8, 7.
- GHAURI, P. N. & GRØNHAUG, K. 2005. *Research methods in business studies : a practical guide*, Harlow, Financial Times Prentice Hall.
- GIBBS, J., KRAEMER, K. L. & DEDRICK, J. 2003. Environment and Policy Factors Shaping Global E-Commerce Diffusion: A Cross-Country Comparison. *Information Society*, 19, 5.
- GIBBS, J. L. & KRAEMER, K. L. 2004. A Cross-Country Investigation of the Determinants of Scope of E-commerce Use: An Institutional Approach. *Electronic Markets*, 14, 124-137.
- GIDDENS, A. 1984. The constitution of society : outline of the theory of structuration, Cambridge, Polity.
- GILBERT, G. N. 1993. Researching social life, London, Sage.
- GRAHAM, L. 1993. Inside a Japanese Transplant. Work & Occupations, 20, 147.
- GRANT, G. G. 2003. Strategic alignment and enterprise systems implementation: the case of Metalco. *Journal of Information Technology*, 18, 159.
- GREEN, S. B., SALKIND, N. J. & AKAY, T. M. 1997. Using SPSS for Windows : analyzing and understanding data, Upper Saddle River, N.J., Prentice Hall ; London : Prentice-Hall International.
- GREEN, S. B., SALKIND, N. J. & AKEY, T. M. 2000. Using SPSS for Windows : analyzing and understanding data, Upper Saddle River, N.J. ; London, Prentice Hall.
- GREENE, K. & HALE, J. L. 1997. A Test of the Theory of Reasoned Action in the Context of Condom Use and AIDS. *Communication Reports*, 10, 21-33.
- GROVER, V. & TENG, J. T. C. 1992. An examination of DBMS adoption and success in American organizations. *Information & Management*, 23, 239-248.

- GUBA, E. G. & LINCOLN, Y. S. 1989. *Fourth generation evaluation*, Newbury Park, Calif.; London, Sage.
- GULLA, J. A. & MOLLAN, R. 2009. Implementing SAP R/3 in a Multi-Cultural Organization. Norsk Hydro.
- GUPTA, A. 2000. Enterprise resource planning: the emerging organizational value systems. *Industrial Management & Data Systems*, 100, 114.
- HAAS, M. 1992. Polity and society : philosophical underpinnings of social science paradigms, New York, Praeger.
- HABERMAS, J. 1998. Actions, Speech Acts, Linguistically Mediated Interactions, and the LIfeworld,. *In:* COOKE, M. (ed.) *Pragmatics of Communication*. Cambridge, Massachusetts: MIT Press.
- HABERMAS, J. R. 1984. The theory of communicative action, London, Heinemann.
- HABERMAS, J. R. 1987. The theory of communicative action, Cambridge, Polity.
- HABERMAS, J. R. 1996. Between facts and norms : contributions to a discourse theory of law and democracy, Cambridge, Mass., MIT Press.
- HABERMAS, J. R. & MCCARTHY, T. 1979. Communication and the evolution of society, London, Heinemann Educational.
- HABERMAS, J. R. & SHAPIRO, J. J. 1971. *Knowledge and human interests ... Translated by Jeremy J. Shapiro*, Boston: Beacon Press.
- HACKBARTH, G. & KETTINGER, W. J. 2000. Building an e-business strategy. Information Systems Management, 17, 78.
- HAE-KYONG BANG, ELLINGER, A. E., HADJIMARCOU, J. & TRAICHAL, P. A. 2000. Consumer concern, knowledge, belief, and attitude toward renewable energy: An application of the reasoned action theory. *Psychology* & *Marketing*, 17.
- HAIR, J. F. 2003. Essentials of business research methods, Hoboken, N.J., Wiley.
- HALE, J. L., HOUSEHOLDER, B. J. & GREENE, K. L. 2003. The theory of reasoned action. In J.P. DILLARD & M. PFAU (Eds.). *The persuasion handbook: Developments in theory and practice*. Thousand Oaks, CA: Sage.
- HALEY, B. J., CARTE, T. A. & WATSON, R. T. 1996. Commerce On the Web: How is it Growing? *Proceeding of the Americas Conference on Information Systems, Association for Information Systems.* Phoneix, AZ.
- HALL, E. & HALL, M. 1990. Understanding cultural differences, Yarmouth, ME, Intercultural.
- HALL, E. T. 1976. Beyond culture, Garden City, N.Y., Anchor Press.
- HANSEN, T., JENSEN, J. M. & SOLGAARD, H. S. 2004. Predicting online grocery buying intention: a comparison of the theory of reasoned action and the theory of planned behavior. *International Journal of Information Management*, 24, 539-550.
- HARRIS, P. R., MORAN, R. T. & MORAN, S. V. 2004. *Managing cultural differences. Global leadership strategies for the 21st century, Amsterdam ; London, Elsevier/Butterworth-Heinemann.*
- HARRISON, D. A., MYKYTYN JR, P. P. & RIEMENSCHNEIDER, C. K. 1997. Executive Decisions About Adoption of Information Technology in Small Business: Theory and Empirical Tests. *Information Systems Research*, 8, 171.
- HARRISSON, D. & LABERGE, M. 2002. Innovation, identities and resistance: the social construction of an innovation network. *Journal of Management Studies*, 39, 497-521.
- HART, P. & SAUNDERS, C. 1997. Power and Trust: Critical Factors in the Adoption and Use of Electric Data Interchange. *Organization Science*, 8, 23.

- HARTWICK, J. & BARKI, H. 1994. Explaining the Role of User Participation in Information System Use. *Management Science*, 40, 440-465.
- HAYS, W. L. 1994. Statistics, Fort Worth ; London, Harcourt Brace College.
- HCD, H. F. C. D. C. 2002. *Saudi Aramco inaugurate SAP* [Online]. Dhahran: HCD. Available: <u>www.saudia-online.com/press/press2002/jan02/press04.shtml</u> [Accessed 02, January 2011].
- HENG, M. S. H. & MOOR, A. D. 2003. From Habermas's communicative theory to practice on the internet. *Information Systems Journal*, 13, 331-352.
- HERRERO CRESPO, Á. & RODRÍGUEZ DEL BOSQUE, I. 2008. The effect of innovativeness on the adoption of B2C e-commerce: A model based on the Theory of Planned Behaviour. *Computers in Human Behavior*, 24, 2830-2847.
- HIGGIN, R. 1999. E-Business: Report from the Trenches. *Beyond Computing*, 46-48.
- HIRSCHHEIM, R. & KLEIN, H. K. 1994. Realizing Emancipatory Principles in Information Systems Development: The Case for ETHICS. *MIS Quarterly*, 18, 83-109.
- HIRSCHHEIM, R., KLEIN, H. K. & LYYTINEN, K. 1996. Exploring the intellectual structures of information systems development: A social action theoretic analysis. *Accounting, Management and Information Technologies*, 6, 1-64.
- HITCHCOX, A. L. 2001. Finally. Someone knows what he's talking about. *Hydraulics & Pneumatics (1996)*, 54, 4.
- HO, T. H., RAMAN, K. S. & WATSON, R. T. 1989. Group decision support systems: the cultural factor. *the tenth international conference on Information Systems*. Boston, Massachusetts, United States: ACM Press.
- HODSON, R. 1995. Worker resistance: an underdeveloped concept in the sociology of work. *Economic and Industrial Democracy*, 16, 79-111.
- HOFFMANN, A. O. I. & BROEKHUIZEN, T. L. J. 2010. Understanding investors' decisions to purchase innovative products: Drivers of adoption timing and range. *International Journal of Research in Marketing*, 27, 342-355.
- HOFFMANN, R. G., RODRIGUE, J. R. & JOHNSON, J. H. 1999. Effectiveness of a School-Based Program to Enhance Knowledge of Sun Exposure: Attitudes Toward. *Children's Health Care*, 28, 69.
- HOFSTEDE, G. 1980. Culture's consequences : international differences in workrelated values, Beverly Hills ; London, Sage.
- HOFSTEDE, G. 1984. *Culture's consequences : international differences in workrelated values*, Beverly Hills ; London, Sage.
- HOFSTEDE, G. 1994. Cultures and organizations : software of the mind : intercultural cooperation and its importance for survival, London, HarperCollins.
- HOFSTEDE, G. 1997. *Cultures and organizations : software of the mind*, New York ; London, McGraw-Hill.
- HOLLOWAY, I. & TODRES, L. 2003. The Status of Method: Flexibility, Consistency and Coherence. *Qualitative Research*, 3, 345-357.
- HOWCROFT, D. 2001. After the goldrush: deconstructing the myths of the dot.com market. *Journal of Information Technology (Routledge, Ltd.)*, 16, 195.
- HOYT, C. L. & BLASCOVICH, J. 2010. The role of leadership self-efficacy and stereotype activation on cardiovascular, behavioral and self-report responses in the leadership domain. *The Leadership Quarterly*, 21, 89-103.

- HUANG, J. H., HUANG, W. W., ZHAO, C. J. & HUANG, H. 2004. An e-readiness assessment framework and field studies. *Communications of AIS*, 2004, 364-386.
- HUBER, M. W., PIERCY, C. A. & MCKEOWN, P. G. 2008. *Information systems : creating business value*, Hoboken, N.J. ; Chichester, Wiley.
- HUSSEY, J. & HUSSEY, R. 1997. Business research : a practical guide for undergraduate and postgraduate students, Basingstoke, Macmillan Business.
- IACOVOU, C. L., BENBASAT, I. & DEXTER, A. S. 1995. Electronic data interchange and small organizations: Adoption and impact of technology. *MIS Quarterly*, 19, 465.
- IDRIS, A. M. 2007. Cultural Barriers to Improved Organizational Performance in Saudi Arabia. SAM Advanced Management Journal (07497075), 72, 36-53.
- IGBARIA, M., ZINATELLI, N., CRAGG, P. & CAVAYE, A. L. M. 1997. Personal computing acceptance factors in small firms: A structural equation model. *MIS Quarterly*, 21, 279.
- INJAZZ, J. C. 2001. Planning for ERP systems: Analysis and future trend. *Business Process Management Journal*, 7, 374.
- ITU. 2009. Information Society Statistical Profiles 2009 [Online]. [Accessed 12-1 2011].
- JACKSON, P. 1994. Desk research, London, Kogan Page.
- JACOBSON, S., SHEPHERD, J., D'AQUILA, M. & CARTER, K. 2007. The ERP Market Sizing Report, 2006–2011. *AMR Research*, ERP 2007 Market Sizing Series.
- JANESICK, V. J. 1998. Stretching exercises for qualitative researchers, Thousand Oaks, Calif.; London, Sage.
- JANSON, M. & CECEZ-KECMANOVIC, D. 2005. Making sense of e-commerce as social action. *Information Technology and People*, 18, 311-342.
- JANVRIN, D., BIERSTAKER, J. & LOWE, D. J. 2008. An Examination of Audit Information Technology Use and Perceived Importance. *Accounting Horizons*, 22, 1-21.
- JARVENPAA, S. L. & IVES, B. 1991. Executive Involvement and Participation in the Management of Information Technology. *MIS Quarterly*, 15, 205-227.
- JENNINGS, P. & BEAVER, G. 1997. The performance and competitive advantage of small firms: A management perspective. *International Small Business Journal*, 15, 63.
- JIANG, J. J., KLEIN, G. & BALLOUN, J. 1998. Perceptions of system development failures. *Information and Software Technology*, 39, 933-937.
- JOEY, F. G. 2004. The theory of planned behavior and Internet purchasing. *Internet Research*, 14, 198.
- JOHNSON, R. D., MARAKAS, G. M. & PALMER, J. W. 2006. Differential social attributions toward computing technology: An empirical investigation. *International Journal of Human-Computer Studies*, 64, 446-460.
- KALAKOTA, R. & WHINSTON, A. B. 1996. Frontiers of electronic commerce, Reading, Mass. ; Wokingham, Addison-Wesley.
- KANUNGO, S. & BAGCHI, S. 2000. Understanding User Participation and Involvement in ERP Use. *Journal of Management Research*, 1, 47.
- KASLOW, F. W. 2006. Handbook of family business and family business consultation : a global perspective, Binghamton, N.Y., International Business; Hadleigh: BRAD [distributor].
- KAUFFMAN, R. J. & WALDEN, E. A. 2001. Economics and Electronic

Commerce: Survey and Directions for Research. *International Journal of Electronic Commerce*, 5, 5-116.

- KE, W., LIU, H., WEI, K. K., GU, J. & CHEN, H. 2009. How do mediated and nonmediated power affect electronic supply chain management system adoption? The mediating effects of trust and institutional pressures. *Decision Support Systems*, 46, 839-851.
- KEEN, P. G. W. & MCDONALD, M. 2000. The e-process edge : creating customer value and business wealth in the Internet era, Berkeley, Calif. ; London, Osborne.
- KIM, H.-W. & KANKANHALLI, A. 2009. INVESTIGATING USER RESISTANCE TO INFORMATION SYSTEMS IMPLEMENTATION: A STATUS QUO BIAS PERSPECTIVE. *MIS Quarterly*, 33, 567-582.
- KING, J. L., GURBAXANI, V., KRAEMER, K. L., MCFARLAN, F. W., RAMAN, K. S. & YAP, C. S. 1994. Institutional Factors in Information Technology Innovation. *Information Systems Research*, 5, 139-169.
- KING, W. R. 1998. IT-enhanced productivity and profitability. *Information Systems Management*, 15, 70.
- KLEIN, E. E., TELLEFSEN, T. & HERSKOVITZ, P. J. 2007. The use of group support systems in focus groups: Information technology meets qualitative research. *Computers in Human Behavior*, 23, 2113-2132.
- KOBRIN, S. J. 2001. Territoriality and the Governance of Cyberspace. *Journal of International Business Studies*, 32, 687.
- KONANA, P. & BALASUBRAMANIAN, S. 2005. The Social-Economic-Psychological model of technology adoption and usage: an application to online investing. *Decision Support Systems*, 39, 505-524.
- KORUPP, S. E. & SZYDLIK, M. 2005. Causes and Trends of the Digital Divide. *European Sociological Review*, 21, 409-422.
- KORZAAN, M. L. 2003. Going with the flow: predicting online purchasing intentions. *Journal of Computer Information Systems*, 43, 25.
- KRAEMER, K. L. & KING, J. L. 1981. Computing policies and problems : A stage theory approach. *Telecommunications Policy*, 5, 198-215.
- KROENKE, D. 2008. *Experiencing MIS*, Upper Saddle River, N.J., Pearson Prentice Hall.
- KRUMBHOLZ, M. 2003. The implementation of enterprise resource planning systems in different national and organisational cultures [Online]. London: City University. [Accessed].
- KRUMBHOLZ, M. & MAIDEN, N. 2001. The implementation of enterprise resource planning packages in different organisational and national cultures. *Information Systems*, 26, 185-204.
- KUMAR, V., MAHESHWARI, B. & KUMAR, U. 2002. ERP systems implementation: best practices in Canadian government organizations. *Government Information Quarterly*, 19, 147-172.
- LAKHANPAL, B. 1994. Assessing the factors related to microcomputer usage by middle managers. *International Journal of Information Management*, 14, 39-50.
- LAL, K. 2005. Determinants of the adoption of e-business technologies *Telematics* and *Informatics*, 22, 181-199.
- LANGER, E. J. 1989. Mindfulness, Reading, Mass., Addison Wesley Pub. Co.
- LEAVITT, H. J. & WHISLER, T. L. 1958. Management in the 1980's. *Harvard Business Review*, 36, 41-48.

- LEE, A. S. 1989. A Scientific Methodology for MIS Case Studies. *MIS Quarterly*, 13, 32-50.
- LEE, H., O'KEEFE, R. M. & KYOUNGLIM, Y. 2003. The Growth of Broadband and Electronic Commerce in South Korea: Contributing Factors. *Information Society*, 19, 81.
- LEE, H. G., CHO, D. H. & LEE, S. C. 2002a. Impact of e-Business initiatives on firm value. *Electronic Commerce Research and Applications*, 1, 41-56.
- LEE, M.-B., WON-SEOK YOO & KIL-SOO SUH 2002b. Exploring the Factors Enhancing Member Participation in Virtual Communities:. *Journal of Global Information Management*, 10, 55-71.
- LEEPER, R. V. 1996. Moral objectivity, Jurgen Habermas's discourse ethics, and public relations. *Public Relations Review*, 22, 133-150.
- LEGRIS, P., INGHAM, J. & COLLERETTE, P. 2003. Why do people use information technology? A critical review of the technology acceptance model. *Information & Management*, 40, 191-204.
- LEONARD-BARTON, D. & DESCHAMPS, I. 1988. Managerial influence in the impementation of new technology. *Management Science*, 34, 1252-1265.
- LEVY, M. 2001. E-volve or die.com : thriving in the Internet age through ecommerce management, Indianapolis, Ind.; [Great Britain], New Riders.
- LIKER, J. K. & SINDI, A. A. 1997. User acceptance of expert systems: a test of the theory of reasoned action. *Journal of Engineering and Technology Management*, 14, 147-173.
- LIM, E. T. K., PAN, S. L. & TAN, C. W. 2005. Managing user acceptance towards enterprise resource planning (ERP) systems - understanding the dissonance between user expectations and managerial policies *European Journal of Information Systems*, 14, 135-149.
- LIM, J. 2003 A conceptual framework on the adoption of negotiation support systems *Information and Technology Software*, 45, 469-477.
- LIM, J. & LIU, Y. 2006. The role of cultural diversity and leadership in computersupported collaborative learning: a content analysis. *Information and Software Technology*, 48, 142-153.
- LOCKLEY, S. R., WATSON, R. & SHAABAN, S. 2002. Managing e-commerce in construction revolution or e-business as usual? *Engineering Construction & Architectural Management (Blackwell Publishing Limited)*, 9, 232-240.
- LUMAYEM, M. & HIRT, S. G. 2003. Force of Habit and Information Systems Usage: Theory and Initial Validation. *Journal of the Association for Information Systems*, 4, 65-95.
- LYYTINEN, K. 1988. Expectation failure concept and systems analysts' view of information system failures: Results of an exploratory study. *Information & Management*, 14, 45-56.
- LYYTINEN, K. & HIRSCHHEIM, R. 1988. Information systems as rational discourse: an application of Habermas's theory of communicative action. *Scandinavian Journal of Management*, 4, 19-30.
- MAHMOOD, M. A. & SOON, S. K. 1991. A Comprehensive Model for Measuring the Potential Impact of Information Tecnology on Organizational Strategic Variables. *Decision Sciences*, 22, 869.
- MANDORAH, M. 2003. Information Society Indicators for Saudi Arabia. ESCWA (Economic and Social Committee for West Asia).
- MANGIONE, T. W. 1995. *Mail surveys : improving the quality,* Thousand Oaks ; London, Sage.

- MANN, C. L. 2000. Electronic commerce in developing countries: issues for domestic policy and WTO negotiations, in: S. ROBERT (Ed.), Services in the International Economy: Measurement, Modeling, Sectoral and Country Studies, and Issues in the World Services Negotiations. University of Michigan Press., 34-58.
- MARCO, T., AURELIO, R. & ALESSANDRO, A. 2001. An Evaluation Model for Electronic Commerce Activities within SMEs. *Information Technology and Management*, 2, 211.
- MARCOULIDES, G. A. 1998. *Modern methods for business research*, Mahwah, N.J.; London, Lawrence Erlbaum.
- MARKUS, M. L. 2004. Technochange management: using IT to drive organizational change. *Journal of Information Technology*, 19, 4.
- MARSHALL, C. & ROSSMAN, G. B. 1999. *Designing qualitative research,* Thousand Oaks, CA; London, Sage Publications.
- MATEJKO, A. J. 1986. In search of new organizational paradigms, New York, Praeger.
- MATHIESON, K. 1991. Predicting User Intentions: Comparing the Technology Acceptance Model with the Theory of Planned Behavior. *Information Systems Research*, 2, 173-191.
- MCLAUGHLIN, E. W. & RAO, V. R. 1991. Decision criteria for new product acceptance and success : the role of trade buyers, New York ; London, Quorum.
- MCPHAIL, C. & REXROAT, C. 1979. Mead vs. Blumer: The Divergent Methodological Perspectives of Social Behaviorism and Symbolic Interactionism. *American Sociological Review*, 44, 449-467.
- MCSPARRAN, K. & EDMUNDS, K. 1996. Changing culture: Easier said than done. *Beverage World*, 115, 90.
- MEHRTENS, J., CRAGG, P. B. & MILLS, A. M. 2001. A model of Internet adoption by SMEs. *Information & Management*, 39, 165-176.
- MELONE, N. P. 1990. A THEORETICAL ASSESSMENT OF THE USER-SATISFACTION CONSTRUCT IN INFORMATION SYSTEMS RESEARCH. *Management Science*, 36, 76-91.
- MILES, M. B. & HUBERMAN, A. M. 1994. *Qualitative data analysis : an expanded sourcebook*, Thousand Oaks, Calif. ; London, Sage.
- MILES, R. E. & SNOW, C. C. 1992. Causes of Failure in Network Organizations. *California Management Review*, 34, 53.
- MILLER, R. L. M. A. & BREWER, J. D. 2003. The A-Z of social research : a dictionary of key social science research concepts, London, SAGE.
- MIRCHANDANI, D. A. & MOTWANI, J. 2001. Uunderstanding small business electronic commerce adoption: an empirical analysis. *Journal of Computer Information Systems*, 41, 70.
- MITRAKAS, A. 1996. *Open EDI and law in Europe : a regulatory framework*, The Hague ; London, Kluwer Law International.
- MIYAZAKI, A. D. & FERNANDEZ, A. 2000. Internet Privacy and Security: An Examination of Online Retailer Disclosures. *Journal of Public Policy & Marketing*, 19, 54-61.
- MONTAZEMI, A. R. 1988. Factors Affecting Information Satisfaction in the Context of the Small Business Environment. *MIS Quarterly*, 12, 238.
- MORETON, R. 1995. Transforming the organization: the contribution of the information systems function. *The Journal of Strategic Information Systems,*

4, 149-163.

- MORRIS, M. G. & VENKATESH, V. 2000. Age differences in technology adoption decisions: implications for a change work force. *Personnel Psychology*, 53, 375-403.
- MOTWANI, J., SUBRAMANIAN, R. & GOPALAKRISHNA, P. 2005. Critical factors for successful ERP implementation: Exploratory findings from four case studies. *Computers in Industry*, 56, 529-544.
- MUMFORD, E. 1995. Effective Systems Design and Requirements Analysis, London, Macmillan.
- MUMFORD, E. 2006. The story of socio-technical design:reflections on its successes, failures and potential. *Information Systems Journal*, 16, 317-342.
- MUNA, F. A. 1980. The Arab executive, London, Macmillan.
- MUNENE, J. C. 1991. Organizational Environment in Africa: A Factor Analysis of Critical Incidents.
- MYERS, M. D. 1997. *Qualitative research in information systems* [Online]. MISQ. Available: <u>http://www.qual.auckland.ac.nz</u> [Accessed 23-08-2007 2007].
- NAH, F. F.-H., LEE-SHANG LAU, J. & KUANG, J. 2001. Critical factors for successful implementation of enterprise systems. *Business Process Management Journal*, 7, 285.
- NAKAYAMA, Y. 2009. The impact of e-commerce: It always benefits consumers, but may reduce social welfare. *Japan and the World Economy*, 21, 239-247.
- NAMBISAN, S. & WANG, Y.-M. 1999. Roadblocks to Web Technology Adoption? *Communications of the ACM*, 42, 98-101.
- NANDHAKUMAR, J., ROSSI, M. & TALVINEN, J. 2005. The dynamics of contextual forces of ERP implementation. *The Journal of Strategic Information Systems*, 14, 221-242.
- NÄSLUND, D. 2002. Logistics needs qualitative research especially action research. International Journal of Physical Distribution & Logistics Management, 32, 321-338.
- NEUMAN, W. L. 2000. Social research methods : qualitative and quantitative approaches, Boston [Mass.]; London, Allyn and Bacon.
- NEUMAN, W. L. 2005. Social research methods : quantitative and qualitative approaches, Boston, Mass.; London, Allyn and Bacon.
- NGWENYAMA, O. K. & LEE, A. S. 1997. Communication richness in electronic mail: Critical social theory and the contextuality of meaning. *MIS Quarterly*, 21, 145.
- NIELS, S., MICHAEL, J. A., RUUD, T. F. & RUDY, K. M. 2005. The adoption of information technology in the sales force. *Industrial Marketing Management*, 34, 323.
- O'BRIEN, J. A. 2001. Introduction to information systems : essentials for the internetworked e-business enterprise, Boston, Mass. ; London, Irwin/McGraw-Hill.
- O'KEEFE, D. J. 1990. *Persuasion : theory and research*, Newbury Park, CA, Sage Publications.
- OECD, O. F. E. C.-O. A. D. 2002. Measuring the Information Economy.
- OJELANKI, K. N. & ALLEN, S. L. 1997. Communication richness in electronic mail: Critical social theory and the contextuality of meaning. *MIS Quarterly*, 21, 145.
- OPEN NET INITIATIVE. 2004. Internet Filtering in Saudi Arabia in 2004 [Online]. Open Net Initiative. Available: <u>http://www.opennetinitiative.net/studies/saudi</u>

[Accessed November 10, 2006].

- OPOKU, R. A. & ABDUL-MUHMIN, A. G. 2010. Housing preferences and attribute importance among low-income consumers in Saudi Arabia. *Habitat International*, 34, 219-227.
- OPPENHEIM, A. N. 1992. *Questionnaire design, interviewing and attitude measurement*, Pinter Publrs.
- ORLIKOWSKI, W. & ROBEY, D. 1991. Information Technology and the Structuring of Organizations. *Information Systems Research*, 2, 143-169.
- ORLIKOWSKI, W. J. 1993. CASE tools as organizational change: Investigating incremental and radical changes in systems. *MIS Quarterly*, 17, 309.
- ORLIKOWSKI, W. J. & BAROUDI, J. J. 1991. Studying Information Technology in Organizations: Research Approaches and Assumptions. *Information Systems Research*, 2, 1-28.
- ORLIKOWSKI, W. J., YATES, J., OKAMURA, K. & AND FUJIMOTO, M. 1995. Shaping Electronic Communication: The Metastructuring of Technology in the Context of Use. *Organization Science*, 6, 22.
- PALMER, R. 2002. There's no business like e-business. Qualitative Market Research, 5, 261-267.
- PÄR, J. Å. & OWEN, E. 2006. Socio-instrumental usability: IT is all about social action. *Journal of Information Technology*, 21, 24.
- PARK, J.-H., SUH, H.-J. & YANG, H.-D. 2007. Perceived absorptive capacity of individual users in performance of Enterprise Resource Planning (ERP) usage: The case for Korean firms. *Information & Management*, 44, 300-312.
- PARR, A., SHANKS, G. & DARKE, P. 1999. Identification of necessary factors for successful implementation of ERP systems", New Information Technologies in Organizational Processes – Field Studies and Theoretical Reflections on the Future of Work, . *Kluwer Academic Publishers*, New York, NY, 99-119.
- PAUL, R. J. 2007. Challenges to information systems: time to change. *Eur J Inf Syst*, 16, 193-195.
- PHILLIPS, F. 2001. Market-oriented technology management : innovating for profit in entrepreneurial times, New York, N.Y., Springer.
- PIJPERS, G. G. M., BEMELMANS, T. M. A., HEEMSTRA, F. J. & MONTFORT, K. A. G. M. V. 2001. Senior executives' use of information technology. *Information and Software Technology*, 43, 959-971.
- PLANT, R. & WILLCOCKS, L. 2007. Critical success factors in international ERP implementations: a case research approach. *Journal of Computer Information Systems*, 47, 60-70.
- PONS, A. 2004. E-Government for Arab Countries. Journal of Global Information Technology Management, 7, 30-46.
- PORTER, M. E. 2001. Strategy and the Internet. *Harvard Business Review*, 79, 62-78.
- PORTER, M. E. & MILLAR, V. E. 1985. How information gives you competitive advantage. *Harvard Business Review*, 63, 149-160.
- PREMKUMAR, G. & KING, W. R. 1994. Organizational Characteristics and Information Systems Planning: An Empirical Study. *Information Systems Research*, 5, 75-109.
- PREMKUMAR, G. & RAMAMURTHY, K. 1995. The role of interorganizational and organizational factors on the decision mode for adoption of interorganizational systems. *Decision Sciences*, 26, 303.
- PREMKUMAR, G., RAMAMURTHY, K. & CRUM, M. R. 1997. Determinants of

EDI adoption in the transportation industry. *European Journal of Information Systems*, 6, 107.

- PREMKUMAR, G. & ROBERTS, M. 1999. Adoption of new information technologies in rural small businesses. *Omega*, 27, 467-484.
- PRESS, L., FOSTER, W., WOLCOTT, P. & MCHENRY, W. 2003. The Internet in India and China. *Information Technologies & International Development*, 1, 41-60.
- PUNCH, K. 2000. Developing effective research proposals, London, Sage.
- PURVIS, R. L., SAMBAMURTHY, V. & ZMUD, R. W. 2001. The Assimilation of Knowledge Platforms in Organizations: An Empirical Investigation. *Organization Science*, 12, 117-135.
- RAINER, R. K., TURBAN, E. & POTTER, R. E. 2007. Introduction to information systems : supporting and transforming business, Hoboken, N.J., Wiley.
- RAISINGHANI, M. 2000. Electronic commerce at the dawn of the third millennium. *In:* RAISINGHANI, S. & RAHMAN, S. (eds.) *Electronic commerce: opportunity and challenges.* Hershey: Idea Group Publishing.
- RAMAYAH, T., ROUIBAH, K., GOPI, M. & RANGEL, G. J. 2009. A decomposed theory of reasoned action to explain intention to use Internet stock trading among Malaysian investors. *Computers in Human Behavior*, 25, 1222-1230.
- RAPHAEL, A. & CHRISTOPH, Z. 2001. Value creation in e-business. *Strategic Management Journal*, 22, 493.
- RAPP, A., SCHILLEWAERT, N. & WEI HAO, A. 2008. The influence of market orientation on e-business innovation and performance: The role of the top mamangement team. *Journal of Marketing Theory & Practice*, 16, 7-25.
- RATNASINGHAM, P. 1998. The importance of trust in electronic commerce. *Internet Research*, 8, 313.
- RAYMOND, L. 1988. The Impact Of Computer Training On The Attitudes And Usage Beavior Of Small Business Managers. *Journal of Small Business Management*, 26, 8-13.
- RAYMOND, L. 1990. Organizational Context and Information Systems Success: A Contingency Approach. *Journal of Management Information Systems*, 6, 5.
- REHMAN, T., MCKEMEY, K., YATES, C. M., COOKE, R. J., GARFORTH, C. J., TRANTER, R. B., PARK, J. R. & DORWARD, P. T. 2007. Identifying and understanding factors influencing the uptake of new technologies on dairy farms in SW England using the theory of reasoned action. *Agricultural Systems*, 94, 281-293.
- REMENYI, D. 1998. Doing research in business and management : an introduction to process and method, London, Sage.
- REYNOLDS, J. 2001. Logistics and fulfillment for e-business : a practical guide to mastering back office functions for online commerce, San Francisco, Calif., CMP; [London : McGraw-Hill] [distributor].
- RIEMENSCHNEIDER, C. K., HARRISON, D. A. & MYKYTYN, P. P. 2003. Understanding it adoption decisions in small business: integrating current theories. *Information & Management*, 40, 269-285.
- RITCHIE, J. & LEWIS, J. 2003. *Qualitative research practice : a guide for social science students and researchers*, London, Sage.
- RIYAD, E., MYFANWY, T. & ABDEL MONEIM, A. 2002. A cross-industry review of B2B critical success factors. *Internet Research*, 12, 110.
- ROBERTS, B. 1999. Cisco's billion-dollar plan. Internet World, 5, 70.
- ROBEY, D., BOUDREAU, M. C. & ROSE, G. M. 2000. Information technology

and organizational learning: a review and assessment of research. *Accounting, Management, and Information Technologies,* 10, 125-155.

- ROBEY, D., ROSS, J. W. & BOUDREAU, M.-C. 2002. Learning to Implement Enterprise Systems: An Exploratory Study of the Dialectics of Change. *Journal of Management Information Systems*, 19, 17-46.
- ROBSON, C. 2002. Real world research : a resource for social scientists and practitioner-researchers, Madden, Mass. ; Oxford, Blackwell Publishers.
- ROCKART, J. F. & MORTON, M. S. S. 1984. Implications of Changes in Information Technology for Corporate Strategy. *Interfaces*, 14, 84-95.
- ROGERS, E. M. 1983. *Diffusion of innovations*, New York, Free Press ; London : Collier Macmillan.
- ROGERS, E. M. 2003. *Diffusion of innovations*, New York, N.Y., Simon & Schuster.
- ROJEWSKI, J. W. 2004. International perspectives on workforce education and development, Greenwich, Conn.; [Great Britain], Information Age Pub.
- ROSS, J. W., BEATH, C. M. & GOODHUE, D. L. 1996. Develop Long-Term Competitiveness through IT Assets. *Sloan Management Review*, 38, 31-42.
- ROY, K. C. & SIDERAS, J. 2006. *Institutions, globalisation and empowerment,* Cheltenham, Edward Elgar.
- RUDESTAM, K. E. & NEWTON, R. R. 2001. Surviving your dissertation : a comprehensive guide to content and process, Thousand Oaks, Calif.; London, Sage.
- SALIBA, C. 2001. Study: E-Commerce Nearly Doubled in 2000. E-Commerce Times, Jan.02, 2001 This figure was estimated by ActivMedia Research <u>http://www.ecommercetimes.com/perl/printer/6402.html</u>.
- SANAYEI, A. & NOROOZI, A. 2008. The Roles of Culture, Gender and Experience in the Acceptance of E-commerce in the Developing Countries A Comparative Survey between Iran and the United Arab Emirates. *Third International Conference on E-Commerce with Focus on Developing Countries*. Isfahan-Iran.
- SANCHEZ-RUNDE, C., NARDON, L. & STEERS, R. M. 2011. Looking beyond Western leadership models: Implications for global managers. *Organizational Dynamics*, In Press, Corrected Proof.
- SANDERS, G. L. & COURTNEY, J. F. 1985. A Field Study of Organizational Influencing DSS Success. *MIS Quarterly*, 9, 77-93.
- SANDERS, N. R. 2007. An empirical study of the impact of e-business technologies on organizational collaboration and performance. *Journal of Operations Management*, 25, 1332-1347.
- SAP 2007. SAP Annual Report. In: AG, S. (ed.). Walldorf, Germany.
- SARKER, S. & LEE, A. S. 2003. Using a case study to test the role of three key social enablers in ERP implementation. *Information and Management*, 40, 813-829.
- SARMENTO, A. 2005. Issues of human computer interaction, Hershey, Pa. ; London, IRM.
- SAUNDERS, M., LEWIS, P. & THORNHILL, A. 2000. Research methods for business students, Harlow, Financial Times/Prentice Hall.
- SAUNDERS, M., LEWIS, P. & THORNHILL, A. 2003. Research methods for business students, Harlow; New York, Prentice Hall.
- SAUNDERS, M., LEWIS, P. & THORNHILL, A. 2006. Research methods for business students, Harlow, Financial Times Prentice Hall.

- SCHIFTER, D. E. & AJZEN, I. 1985. Intention, Perceived Control, and Weight Loss: An Application of the Theory of Planned Behavior. *Journal of Personality and Social Psychology*, 49, 843-851.
- SCHILLEWAERT, N., AHEARNE, M. J., FRAMBACH, R. T. & MOENAERT, R. K. 2005. The adoption of information technology in the sales force. *Industrial Marketing Management*, 34, 323-336.
- SCHOLL, R. W. 1981. Differentiating Organizational Commitment From Expectancy as a Motivating Force. Academy of Management Review, 6, 589-599.
- SCOTT, J. E. 2004. Measuring dimensions of perceived e-business risks *Information Systems and e-Business management*, 2, 31-55.
- SCUPOLA, A. 2008. Conceptualizing Competences in E-Services Adoption and Assimilation in SMES. *Journal of Electronic Commerce in Organizations*, 6.
- SEKARAN, U. 2003. Research methods for business : a skill-building approach, New York; N.Y, Wiley.
- SETHI, V. & KING, W. R. 1994. Development of Measures to Assess the Extent to Which an information Technology Application Provides Competitive Advantage. *Management Science*, 40, 1601-1627.
- SHAFIQUE, F. & MAHMOOD, K. 2008. Indicators of the emerging information society in Pakistan. *Information Development*, 24, 66-78.
- SHAH, M. & CLARKE, S. 2009. *E-banking management : issues, solutions, and strategies,* Hershey, PA ; London, Information Science Reference.
- SHANG, S. & SEDDON, P. B. 2002. Assessing and managing the benefits of enterprise systems: the business manager's perspective. *Information Systems Journal*, 12, 271-299.
- SHANKS, G. 2000. A model of ERP project implementation. *Journal of Information Technology*, 15, 289-303.
- SHANKS, G., PARR, A., HU, B., CORBITT, B., THANASANKIT, T. & SEDDON, P. Year. Differences in Critical Success Factors in ERP systems implementation in Australia and China: a cultural analysis. *In:* Proceedings in European Conference on Information Systems, 2000 Vienna. The University of Melbourne, Monash University.
- SHARMA, P. 2000. E-transformation basics; key to the new economy. *Strategy and Leadership*, 2, 27-31.
- SHARMA, S. K. & GUPTA, J. N. D. 2003. Socio-economic influences of ecommerce adoption. Ph.D., Sharma-Ball State University, Indiana, USA
- Gupta-The University of Alabama, Huntsville.
- SHEPPARD, B. H., HARTWICK, J. & WARSHAW, P. R. 1988. The Theory of Reasoned Action: A Meta-Analysis of Past Research with Recommendations for Modifications and Future Research. *Journal of Consumer Research*, 15, 325.
- SHERMAN, J. E. & FETTERS, T. L. 2007. Confidentiality Concerns with Mapping Survey Data in Reproductive Health Research. *Studies in Family Planning*, 38, 309-321.
- SHERRY, F. & MARTIN, C. 2007. ERP implementation: a compilation and analysis of critical success factors. *Business Process Management Journal*, 13, 329-347.
- SHOULT, A. 2002. Doing business with Saudi Arabia, London, Kogan Page.
- SIMSIM, M. T. 2011. Internet usage and user preferences in Saudi Arabia. *Journal* of King Saud University Engineering Sciences, 23, 101-107.

- SMARKOLA, C. 2008. Efficacy of a planned behavior model: Beliefs that contribute to computer usage intentions of student teachers and experienced teachers. *Computers in Human Behavior*, 24, 1196-1215.
- SMITH, H. W. 1975. *Strategies of social research : the methodological imagination,* London, Prentice-Hall.
- SOMERS, T. & NELSON, K. 2001. The Impact of Critical Success Factors across the Stages of Enterprise Resource Planning Implementations. Proceedings of the 34th Annual Hawaii International Conference on System Sciences (HICSS-34)-Volume 8 - Volume 8. IEEE Computer Society.
- SOUFI, W. A. & MAYER, R. T. 1991. Saudi Arabian industrial investment : an analysis of government-business relationships, New York ; London, Quorum Books.
- SPARKS, P., SHEPHERD, R. & FREWER, L. J. 1995. Assessing and Structuring Attitudes Toward the Use of Gene Technology in Food Production: The Role of Perceived Ethical Obligation. *Basic & Applied Social Psychology*, 16, 267-285.
- STAHL, B. C. Year. Life-World and Information Technology a Habermasian Approach. In: INTRONA, L., ed. international workshop on Phenomenology, Information Technology and Management, 2002 London. 36-43.
- STAIR, R. M. & REYNOLDS, G. W. 1998. Principles of information systems : a managerial approach, Cambridge, Mass. ; London, Course Technology.
- STAKE, R. E. 1995. *The art of case study research*, Thousand Oaks ; London, Sage Publications.
- STEIN, E. W. & ZWASS, V. 1995. Actualizing Organizational Memory with Information Systems. *Information Systems Research*, 6, 85-117.
- STEVEN, G. R., GWENITH, G. F., DOUGLAS, C. M., MILTON, D. H. & MICHAEL, H. 2001. Attitudes toward surveys: Development of a measure and its relationship to respondent behavior. *Organizational Research Methods*, 4, 3.
- STEVENS, C. H. 1981. Many-to-many communication. Center for Information Systems Research, Massachusetts Institute of Technology, Sloan School of Management, Cambridge, Massachusetts., 72.
- STEVENS, J. 1996. *Applied multivariate statistics for the social sciences*, Mahwah, N.J., Lawrence Erlbaum Associates.
- STEWART, T. A., FURTH, J. & CARVELL, T. 1994. Managing in a wired company. *Fortune*, 130, 44-50.
- STOGDILL, R. M. 1950. Leadership, membership and organization. *Psychological Bulletin*, 47, 1-14.
- STONE, E. F. 1978. *Research methods in organizational behavior*, Santa Monica, Calif., Goodyear.
- STRATMAN, J. & ROTH, A. Year. Enterprise resource planning competence: a model, propositions and pre-test, design-stage scale development. *In:* 30th DSI Proceedings, 20-23 November 1999. 1199-201.
- STRAUB, D., KEIL, M. & BRENNER, W. 1997. Testing the technology acceptance model across cultures: A three country study. *Information & Management*, 33, 1-11.
- STRAUB, D. W., HOFFMAN, D. L., WEBER, B. W. & STEINFIELD, C. 2002. Toward New Metrics for Net-Enhanced Organizations. *Information Systems Research*, 13, 227-238.

- SUH, B. & HAN, I. 2003. The Impact of Customer Trust and Perception of Security Control on the Acceptance of Electronic Commerce. *International Journal of Electronic Commerce*, 7, 135-161.
- SUMNER, M. 2000. Risk factors in enterprise-wide/ERP projects. Journal of Information Technology (Routledge, Ltd.), 15, 317-327.
- SUNG YOUL, P. 2009. An Analysis of the Technology Acceptance Model in Understanding University Students' Behavioral Intention to Use e-Learning. *Journal of Educational Technology & Society*, 12, 150-162.
- SWANSON, E. B. 1988. Information system implementation : bridging the gap between design and utilization, Homewood, Irwin.
- SWANSON, E. B. 1994. Information Systems Innovation Among Organizations. *Management Science*, 40, 1069-1092.
- TARAFDAR, M. & VAIDYA, S. D. 2006. Information systems assimilation in Indian organizations: An examination of strategic and organizational imperatives. *The Journal of Strategic Information Systems*, 15, 293-326.
- TARGETT, D. 2001. B2B or not B2B? Scenarios for the future of e-commerce. *European Business Journal*, 13, 3.
- TAYLOR, M. S., LOCKE, E. A., LEE, C. & GIST, M. E. 1984. Type A behavior and faculty research productivity: What are the mechanisms? *Organizational Behavior and*
- Human Decision Processes, 34.
- TENG, J. T. C. & CALHOUN, K. J. 1996. Organizational Computing as a Facilitator of Operational and Managerial Decision Making: An Exploratory Study of Managers' Perceptions. *Decision Sciences*, 27, 673-710.
- TEO, T. S. H. & RANGANATHAN, C. 2004. Adopters and non-adopters of business-to-business electronic commerce in Singapore. *Information & Management*, 42, 89-102.
- THATCHER, S. M. B., FOSTER, W. & ZHU, L. 2006. B2B e-commerce adoption decisions in Taiwan: The interaction of cultural and other institutional factors. *Electronic Commerce Research and Applications*, 5, 92-104.
- THONG, J. Y. L. & YAP, C. S. 1995. CEO characteristics, organizational characteristics and information technology adoption in small businesses. *Omega*, 23, 429-442.
- THUONG, T. L. & ANTHONY, C. K. 2002. A Managerial Perspective on Electronic Commerce Development in Malaysia. *Electronic Commerce Research*, 2, 7.
- TIGRE, P. B. & DEDRICK, J. 2004. E-commerce in Brazil: Local Adaptation of a Global Technology. *Electronic Markets*, 14, 36-47.
- TOM, P. L. 1991. *Managing information as a corporate resource*, New York, NY, HarperCollins.
- TORNATZKY, L. G. & FLEISCHER, M. 1990. The processes of technological innovation, Lexington, Mass., Lexington Books.
- TORNATZKY, L. G. & KLEIN, K. J. 1982. Innovation Characteristics and Innovation Adoption-Implementation: A Meta-Analysis of Findings. *IEEE Transactions on Engineering Management*, 29, 28-45.
- TRACTINSKY, N. & RAO, V. S. 2001. Incorporating social dimensions in Webstore design. *Human Systems Management*, 20, 105 - 121.
- TREESE, G. W. & STEWART, L. C. 1998. Designing systems for Internet commerce, Reading, Mass., Addison-Wesley.
- TRIANDIS, H. C. 1980. Values, Attitudes, and Interpersonal Behavior, in Nebraska

Symposium on Motivation. *Beliefs, Attitudes, and Values,*. Lincoln: University of Nebraska Press.

- TROMPENAARS, A. 1994. *Riding the waves of culture : understanding cultural diversity in business*, London : Brealey, 1993 (1994 [printing]).
- UMBLE, E. J., HAFT, R. R. & UMBLE, M. M. 2003. Enterprise resource planning: Implementation procedures and critical success factors. *European Journal of Operational Research*, 146, 241-257.
- US COMMERCIAL SERVICE. 2006. Doing Business In Saudi Arabia: A Country Commercial Guide for U.S. Companies [Online]. Available: <u>http://commercecan.ic.gc.ca/scdt/bizmap/interface2.nsf/vDownload/CCG_53</u> <u>62/\$file/X_7244764.DOC</u> [Accessed November 10, 2006].
- US DEPARTMENT OF COMMERCE 2009. U.S. Census Bureau. U.S. Census Bureau News. *Washington*.
- UZOKA, F.-M. E., SHEMI, A. P. & SELEKA, G. G. 2007. Behavioral Influences on E-commerce adoption in a developing country context. *The Electronic Journal of Information Systems in Developing Countries (EJISDC)*, 31, 1-15.
- VAN AKKEREN, J. & CAVAYE, A. M. 1999. Factors affecting the adoption of ecommerce technologies by small business in Australia an empirical study [Online]. [Accessed].
- VAN DER VORST, J. G. A. J., VAN DONGEN, S., NOUGUIER, S. & HILHORST, R. 2002. E-business Initiatives in Food Supply Chains; Definition and Typology of Electronic Business Models. *International Journal of Logistics: Research & Applications*, 5, 119-138.
- VERISIGN 2007. How to Best Secure electronic Documents with certified Digital Signatures. *White Paper*.
- VOGT, W. P. 1993. Dictionary of statistics and methodology : a non-technical guide for the social sciences, Sage.
- VROOM, V. H. 1995. Work and motivation, San Francisco, Jossey-Bass Publishers.
- WAJCMAN, J. 1991. Feminism confronts technology, Cambridge, Polity.
- WARSHAW, P., SHEPPARD B. & HARTWICK, J. 1991. The Intention and Self-Prediction of Goals and Behavior. *Advances in Marketing Communication research*, in Bagozzi R.P, (ED.), Greenwich, CT.
- WEISINGER, J. & SALIPANTE, P. 2000. Cultural knowing as practicing: extending our conceptions of culture. *Journal of Management Inquiry*, 9, 376-390.
- WELLS, C. 2003. The Complete Idiot's Guide to Understanding Saudi Arabia, Alpha.
- WILLCOCKS, L. P. & SYKES, R. 2000. The role of the CIO and IT function in ERP. *Communications of the ACM*, 43, 32-38.
- WILSON, R. 2004. *Economic development in Saudi Arabia*, London ; New York, Routledge Curzon.
- WILSON, S. 1997. Certificates and trust in electronic commerce. Information Management & Computer Security, 5, 175.
- WISNER, J. D. 2003. A structral equation model of supply chain management strategies and firm performance. *Journal of Business Logistics*, 24, 1-26.
- YAP, C. S. 1990. Distinguishing characteristics of organizations using computers. Information & Management, 18, 97-107.
- YASIN, M. M. & YAVAS, U. 2007a. An analysis of E-business practices in the Arab culture: Current inhibitors and future strategies. *Cross Cultural Management*, 14, 68 73.

- YASIN, M. M. & YAVAS, U. 2007b. An analysis of E-business practices in the Arab culture: Current inhibitors and future strategies *International Journal Cross Cultural Management*, 14, 68-73.
- YI-SHUN, W., YU-MIN, W., HSIN-HUI, L. & TZUNG, I. T. 2003. Determinants of user acceptance of Internet banking: an empirical study. *International Journal of Service Industry Management*, 14, 501.
- YIN, R. K. 1994. Case Study Research : Design and Methods, Sage Pubns.
- ZAKARIA, N., STANTON, J. M. & SARKAR-BARNEY, S. T. M. 2003. Designing and Implementing culturally-sensitive IT applications: The interaction of cultural values and privacy in the Middle East. *Information Technology and People*, 16, 49-75.
- ZHU, K. & KRAEMER, K. L. 2005. Post-Adoption Variations in Usage and Value of E-Business by Organizations: Cross-Country Evidence from the Retail Industry. *Information Systems Research*, 16, 61-84.
- ZWASS, V. 1996. Electronic commerce: structures and issues. *International Journal* of *Electronic Commerce*, 1.

11 Appendices

11.1 Aramco Quantitative Data

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 1 year	15	1.2	2.4	2.4
	1-2 years	72	6.0	11.7	14.2
	2-4 years	223	18.4	36.3	50.5
	4-6 years	57	4.7	9.3	59.8
	6-8 years	124	10.2	20.2	80.0
	8-10 years	74	6.1	12.1	92.0
	more than 10 years	48	4.0	7.8	99.8
	8	1	.1	.2	100.0

Table 11-1	Analysis on '	How long hav	e you been using the l	Internet and the World Wi	de Web?

	Total	614	50.7	100.0	
Missing	System	596	49.3		
TOTAL	1210	100.0			

			1-2 meenet us	age	
		Frequenc	Percent	Valid Percent	Cumulative Percent
		У			
Valid	Never	24	2.0	3.9	3.9
	Rarely	261	21.6	42.5	46.4
	Occasionally	297	24.5	48.4	94.8
	Always	32	2.6	5.2	100.0
	Total	614	50.7	100.0	
Missing	System	596	49.3		
T	OTAL	1210	100.0		

Table 11-2 Internet usage

Table 11-3 Video-conferencing usage

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	79	6.5	12.9	12.9
	Rarely	224	18.5	36.5	49.3
	Occasionally	274	22.6	44.6	94.0
	Always	33	2.7	5.4	99.3
	Missed	4	.3	.7	100.0
	Total	614	50.7	100.0	
Missing	System	596	49.3		
Т	OTAL	1210	100.0		

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	81	6.7	13.2	13.2
	Rarely	197	16.3	32.1	45.3
	Occasionally	217	17.9	35.3	80.6
	Always	118	9.8	19.2	99.8
	Missed	1	.1	.2	100.0
	Total	614	50.7	100.0	
Missing	System	596	49.3		
Т	OTAL	1210	100.0		

Table 11-4 E-mail usage

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	.2	.2	.2
Not answered	36	5.9	5.9	6.0
<25	12	2.0	2.0	8.0
>50	132	21.5	21.5	29.5
Missed	1	.2	.2	29.6
25-30	72	11.7	11.7	41.4
31-40	150	24.4	24.4	65.8
41-50	210	34.2	34.2	100.0
TOTAL	614	100.0	100.0	

* To apply one-way ANOVA, it is necessary to ensure its five (5) conditions: independence, **homogeneity**, metric, normality and random variables.

	Levene	df1	df2	Sig.
	Statistic			
How long have you been using the Internet and the	46.931	4	609	.000
World Wide Web?				
Internet	6.084	4	609	.000
E-mail	8.209	4	609	.000
Video –conferencing	4.461	4	609	.001
White-boards	14.081	4	609	.000
Personal Digital Assistants (PDAs)	17.809	4	609	.000
Education	45.350	4	609	.000

Table 11-6 Test of Homogeneity of Variances

Table 11-7 Frequency on Internet Usage according to Gender

		Frequency	Percent	Valid	Cumulative
				Percent	Percent
Valid	female	205	16.9	33.6	33.6
	male	404	33.4	66.2	99.8
	11	1	.1	.2	100.0
	Total	610	50.4	100.0	
Missing System		600	49.6		
Total		1210	100.0		

Table 11-8 Analysis on Gender

Descriptive Statistics				
Gender				
N	Valid	610.000		
	Missing	600.000		
	Mean	1.679		
	Std. Error of Mean	0.025		
	Median	2.000		
	Mode	2.000		
	Std. Deviation	0.605		
	Variance	0.366		
	Skewers	5.644		
	Std. Error of Skewness	0.099		
	Kurtosis	90.924		
	Std. Error of Kurtosis	0.198		
	Range	10.000		

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than high school diploma	48	40	7.8	7.8
	2-year degree	126	10.4	20.5	28.3
	Graduate degree	140	11.6	22.8	51.1
	High School Diploma	4	.3	.7	51.8
	4-year degree	204	16.9	33.2	85.0
	Post-graduate degree	92	7.6	15.0	100.0
	Total	614	50.7	100.0	
Missing	System	596	49.3		
	TOTAL	1210	100.0		

Table 11-9 Education of users

Table 11-10 Analysis on Education

Descriptive Statistics		
Education		
N	Valid	614.000
	Missing	596.000
	Mean	3.909
	Median	3.000
	Mode	5.000
	Std. Deviation	1.852
	Variance	3.430
Skewness	.211	
------------------------	--------	
Std. Error of Skewness	.099	
Kurtosis	-1.070	
Std. Error of Kurtosis	.197	
Range	6.000	

Table 11-11 Nationalities of the users

		Frequency	Percent	Valid	Cumulative
				Percent	Percent
	I				
Valid	Saudi	100	8.3	16.3	16.3
	African	30	2.5	4.9	21.2
	European	110	9.1	17.9	39.1
	Asian	139	11.5	22.6	61.7
	Arab	106	8.8	17.3	79.0
	North	76	6.3	12.4	91.4
	American				
	Others	53	4.4	8.6	100.0
	Total	614	50.7	100.0	
Missing	System	596	49.3		
TO	DTAL	1210	100.0		

Table 11-12 Correlations on Organisational Level

\sim	
10 10100	
l orre	iannns -
	auvus

Correlations												
Organisation Level	al	How long have you been using the Internet and the World With Work?	Internet	E-mail	video -conferencing	White-boards	Personal Digital Assistants (PDAs)	Education	Familiarity with e-Business (SAP)?	New, current, or previous user?	Type of user?	Major applications you use on your e-Business (SAP) dealinos?
HowlonghaveyoubeenusingtheInternetandtheWorldWideWeb?	Pearson Correlation	1	0.116426957	-0.09331211	-0.01581407	0.029164559	-0.03285617	-0.13466157	0.091502694	0.197725357	0.171934252	3.4848E+308
	Sig. (1-tailed)		0.001932974	0.010374556	0.347867926	0.235347058	0.208193825	0.00041107	0.011680286	3.94048E-07	9.19382E-06	3.4848E+308

		614	614	614	614	614	614	614	614	614	614	2
	N											
Internet	Pearson Correlation	0.116426957	1	0.141737972	0.628408565	-0.01353929	0.037807919	-0.16676548	-0.0435977	-0.05601927	-0.0927987	3.4848E+308
	Sig. (1-tailed)	0.001932974		0.000213529	4.44359E-69	0.368879666	0.174824927	1.64086E-05	0.140378621	0.082818053	0.010731485	3.4848E+308
	Ν	614	614	614	614	614	614	614	614	614	614	2
E-mail	Pearson Correlation	-0.09331211	0.141737972	1	0.093276391	-0.18658229	-0.00828864	-0.1123502	-0.15191495	-0.11249712	-0.13900402	3.4848E+308
	Sig. (1-tailed)	0.010374556	0.000213529		0.010399051	1.62114E-06	0.418797997	0.002659234	7.88608E-05	0.002629286	0.000276018	3.4848E+308
	N	614	614	614	614	614	614	614	614	614	614	2

Video - conferencing	Pearson	-0.01581407	0.628408565	0.093276391	1	-0.00258009	0.008029651	-0.1565586	-0.04060025	-0.2444064	-0.21008571	3.4848E+308
	Sig. (1-tailed)	0.347867926	4.44359E-69	0.010399051		0.474563965	0.421301646	4.89961E-05	0.157593247	4.20146E-10	7.44743E-08	3.4848E+308
	N	614	614	614	614	614	614	614	614	614	614	2
White- boards	Pearson	0.029164559	-0.01353929	-0.18658229	-0.00258009	1	0.242723682	0.252112122	0.874222664	-0.21421979	-0.23452557	3.4848E+308
	Sig. (1-tailed)	0.235347058	0.368879666	1.62114E-06	0.474563965		5.52151E-10	1.17137E-10	1.6871E-194	4.16843E-08	2.0304E-09	3.4848E+308
	Z	614	614	614	614	614	614	614	614	614	614	2
Personal Digital Assistants	Pearson	-0.03285617	0.037807919	-0.00828864	0.008029651	0.242723682	1	-0.23925098	0.274069338	0.167549442	0.079540121	3.4848E+308

(PDAs)												
	Sig. (1-tailed)	0.208193825	0.174824927	0.418797997	0.421301646	5.52151E-10		9.64164E-10	2.42201E-12	1.5045E-05	0.02441733	3.4848E+308
	N	614	614	614	614	614	614	614	614	614	614	2
Education	Pearson	-0.13466157	-0.16676548	-0.1123502	-0.1565586	0.252112122	-0.23925098	1	0.375444895	0.056344969	0.206322148	3.4848E+308
	Sig. (1-tailed)	0.00041107	1.64086E-05	0.002659234	4.89961E-05	1.17137E-10	9.64164E-10		2.73447E-22	0.081592963	1.25043E-07	3.4848E+308
	Z	614	614	614	614	614	614	614	614	614	614	2
Familiarity with e- Business	Pearson	0.091502694	-0.0435977	-0.15191495	-0.04060025	0.874222664	0.274069338	0.375444895	1	0.003504506	-0.03176111	3.4848E+308

(SAP)?												
	Sig. (1-tailed)	0.011680286	0.140378621	7.88608E-05	0.157593247	1.6871E-194	2.42201E-12	2.73447E-22		0.465470268	0.216049849	3.4848E+308
	Z	614	614	614	614	614	614	614	614	614	614	2
New, current, or previous user?	Pearson Correlation	0.197725357	-0.05601927	-0.11249712	-0.2444064	-0.21421979	0.167549442	0.056344969	0.003504506	1	0.864186424	3.4848E+308
	Sig. (1-tailed)	3.94048E-07	0.082818053	0.002629286	4.20146E-10	4.16843E-08	1.5045E-05	0.081592963	0.465470268		5.2585E-185	3.4848E+308
	Z	614	614	614	614	614	614	614	614	614	614	2

Type of user?	Pearson	0.171934252	-0.0927987	-0.13900402	-0.21008571	-0.23452557	0.079540121	0.206322148	-0.03176111	0.864186424	1	3.4848E+308
	Sig. (1-tailed)	9.19382E-06	0.010731485	0.000276018	7.44743E-08	2.0304E-09	0.02441733	1.25043E-07	0.216049849	5.2585E-185		3.4848E+308
	Z	614	614	614	614	614	614	614	614	614	614	2
Major applications you use on your e- Business (SAP) dealings?	Pearson Correlation	3.4848E+308										
	Sig. (1-tailed)	3.4848E+308										

	Z	2	2	2	2	2	2	2	2	2	2	2
**. Correlation is significant at the 0.01 level (1-tailed).												
*. Correlation	*. Correlation is significant at the 0.05 level (1-tailed).											
a. Cannot be computed because at least one of the variables is constant.												

Table 11-13 Correlations between the variables of Attitude to e-Business

Correlations	

		e-Business gives new opportunities for growth and prosperity	e-Business represents a moderate risk taken by the company	The top management initiated the adoption of e-Business	The staff have enough knowledge of e-Business	e-Business is central to the business strategy	e-Business enables the company to excel	Government would help the company to engage in using e-Business
e-Business gives new	Pearson Correlation	1	.999	.979**	.935**	.867**	.977**	.995**
opportunities for growth and								
prosperity								
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
	N	614	614	614	614	614	614	614
e-Business represents a moderate risk taken by the company	Pearson Correlation	.999**	1	.978**	.934**	.866**	.976**	.996**

	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000
	N	614	614	614	614	614	614	614
The top management	Pearson Correlation	.979**	.978**	1	.933**	.844**	.956**	.982**
initiated the adoption of e-								
Business								
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000
	N	614	614	614	614	614	614	614
The staff have enough	Pearson Correlation	.935**	.934**	.933**	1	.816**	.919**	.936**
knowledge of e-Business								
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000
	N	614	614	614	614	614	614	614
e-Business is central to the	Pearson Correlation	.867**	.866**	.844**	.816**	1	.877**	.863**
business strategy								
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000
	N	614	614	614	614	614	614	614

e-Business enables the	Pearson Correlation	.977**	.976**	.956**	.919**	.877**	1	.972**
company to excel								
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000
	N	614	614	614	614	614	614	614
Government would help the	Pearson Correlation	.995**	.996**	.982**	.936**	.863**	.972**	1
company to engage in using								
e-Business								
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
	N	614	614	614	614	614	614	614
**. Correlation is significant at 1	the 0.01 level (2-tailed).		<u> </u>					
*. Correlation is significant at th	ne 0.05 level (2-tailed).							

Innovation Characteristics	Standardised Coefficient	t-value	Significance
(Constant)		2.951	0.004
		2001	
Relative Advantage	0.284	2.438	0.018^{a}
Complexity	0.265	2.076	0.042 ^a
Compatibility	-0.312	-2.691	0.009 ^{aa}
Trialability	-0.022	-0.192	0.849
Observability	0.067	0.551	0.584
$R^2 = 0.374$ adjusted $R^2 = 0.327$	F-statistics =7.522 Observations=7	71	

Table 11-14 Regression Analysis on Innovation Characteristics and Overall Satisfaction on e-business implementation

a: Significant at the 0.05 level

aa: Significant at the 0.01 level

Table 11-15 Correlations on Computer Anxiety

Correlations					
		Technological competence; lack/shortage of skilled people	Trustisimportantindealingwithpeoplethroughvirtualbusinesstransactions	E-mail is widely used for communication	The Intranet is widely used for internal knowledge sharing and business communications
Technological competence – lack/shortage of skilled people	Pearson Correlation	1.000	.343**	.531**	.507**
	Sig. (1-tailed)		.000	.000	.000
	Ν	614.000	614	614	614
Trust is important in dealing with people through virtual business transactions	Pearson Correlation	.343**	1.000	.550**	.509**

	Sig. (1-tailed)	.000		.000	.000			
	Ν	614	727.000	727	727			
E-mail is widely used for communication	Pearson Correlation	.531**	.550**	1.000	.873**			
	Sig. (1-tailed)	.000	.000		.000			
	Ν	614	727	973.000	969			
The Intranet is widely used for internal knowledge sharing and business communications	Pearson Correlation	.507**	.509**	.873**	1.000			
	Sig. (1-tailed)	.000	.000	.000				
	Ν	614	727	969	969.000			
**. Correlation is signific	**. Correlation is significant at the 0.01 level (1-tailed).							

Table 11-16 Analysis on Training								
Descriptive Statistics								
Training								
	Mean	Std. Deviation	Ν					
Training materials are very useful	2.29	1.021	964					
Training courses were done appropriately	2.30	1.021	960					
Complete training was provided	2.29	1.019	964					

Table 11-17 Correlations on Training

Descriptive Statistics				
Training				
		Training materials are very useful	Training courses were done appropriately	Complete training was provided
Training materials are very useful	Pearson Correlation	1.000	.872**	.999**
	Sig. (1-tailed)		.000	.000

	Ν	964.000	960	964				
Training courses were done appropriately	Pearson Correlation	.872**	1.000	.873**				
	Sig. (1-tailed)	.000		.000				
	Ν	960	960.000	960				
Complete training was provided	Pearson Correlation	.999**	.873**	1.000				
	Sig. (1-tailed)	.000	.000					
	Ν	964	960	964.000				
**. Correlation is significant at the 0.01 level (1-tailed).								

Table 11-18 Analysis on Support			
Descriptive Statistics			
Support			
Support			
	Moon	Std Deviation	N
	Iviean	Std. Devlation	IN
Course tutors are well aware of the organisational culture	2.29	1.019	964
SAP encourages my innovation	2.30	1.019	964
SAD abanged my perception of business	2 30	1.022	967
SAT changed my perception of business	2.30	1.022	201
		1.000	0.50
SAP changed my personal life	2.29	1.020	968
To support the research and development team when the new products	2.32	.994	768
are developed			
αι τ υτντισμτα			

Correlation								
Support								
		well the	my	my iess	my	the and team		
		Course tutors are aware of	SAP encourages innovation	SAP changed perception of busin	SAP changed personal life	To support research development		
Course tutors are well aware	Pearson Correlation	1.000	1.000**	.948**	.935**	.402**		
of the organisational	Sig. (1-tailed)		.000	.000	.000	.000		
culture	N	964.000	964	964	964	768		
SAP encourages my	Pearson Correlation	1.000**	1.000	.948**	.935**	.402**		
innovation	Sig. (1- tailed)	.000		.000	.000	.000		

Table 11-19 Correlations on Support

	Ν	964	964.000	964	964	768
SAP changed my perception	Pearson Correlation	.948**	.948**	1.000	.973**	.406**
of business	Sig. (1- tailed)	.000	.000		.000	.000
	N	964	964	967.000	967	768
SAP changed my personal	Pearson Correlation	.935**	.935**	.973**	1.000	.399***
life	Sig. (1- tailed)	.000	.000	.000		.000
	N	964	964	967	968.000	768
To support the research and	Pearson Correlation	.402**	.402**	.406***	.399**	1.000
development team when new products are	Sig. (1- tailed)	.000	.000	.000	.000	
developed	N	768	768	768	768	768.000

****.** Correlation is significant at the 0.01 level (1-tailed).

Table 11-20 Correlations on Culture's Third Dimension: Background

Descriptive Statistics

Culture's Third Dimension: Reekground							
Culture s Time Dimension.	Dackground	Γ	1	1	Γ		
		our	rent	ully our	of you of use		
			cur	en 1 in y	es s do ss es you		
		is nal ınd?	your itle?	 be nted 	typ acces typ do		
		t essio grou	t is job t	SAI	t t t for?		
		Wha profe back	Wha role/	Has impla depa	Wha funct have Wha activ SAP		
What is your professional	Pearson Correlation	1.000	422**	.126**	.241**		
hackground?							
Dackground:	Sig. (1-tailed)		.000	.002	.000		
	Ν	614.000	614	614	614		
What is your current	Pearson Correlation	422**	1.000	237**	.255**		
role/job title?	Sig. (1-tailed)	.000		.000	.000		

	Ν	614	614.000	614	614
Has SAP been fully	Pearson Correlation	.126**	237**	1.000	.251**
implemented in your department?	Sig. (1-tailed)	.002	.000		.000
	Ν	614	614	614.000	614
What types of	Pearson Correlation	.241**	.255**	.251**	1.000
functionalities do you have access to? What types of	Sig. (1-tailed)	.000	.000	.000	
activities do you use SAP for?	Ν	614	614	614	614.000
**. Correlation is significant	t at the 0.01 level (2-taile	d).			

Background, Technol	logy and Or	rganisational	l Communica	tion (a)		
		Depen	dent Variable			
Independent Variable						
		Step2			Step1	
			Data			D-t-
	sig	τ	Beta	Sig	t	Beta
		Contro	lling Variables			
Gender*	0.206	2.617	0.009 ^{aa}	0.050	0.867	0.386
Age	0.575	5.817	0.000 ^{aa}	2.035	2.036	0.042 ^a
Education	0.017	0.209	0.835	0.027	0.451	0.652
Location	0.003	0.035	0.972	0.027	0.462	0.645
Experience	451	-0.075	0.000 ^{aa}	0.119-	1.766-	0.078
		Respo	nse Variables			_
Training				0.004 ^{aa}	2.894	0.144
Background				0.004 ^{aa}	2.910	0.142
Technology				0.000 ^{aa}	5.158	0.259
Organisational				0.000 ^{aa}	5.417	0.289
communication						
ंR squared		I	0.118		0.	537
Adjusted R ²					0.	526
Sig F change		(0.0000		0.	000
R ² Change			0.118		0.	419
F change		(0.9070		83	.147
Durbin Watson =	-					
1.827						

Table 11-21 Reduced 4 Organisational Dimensions into 4 New Variables: Training,

Table 11-22 Reduced 4 Organisational Dimensions into 4 New Variables: Training,

		Collinearit	y Statistics			
Independent Variable	Tole	rance	V	IF		
	Step 1	Step 2	Step 1	Step 2		
			•			
Gender*	0.384	0.375	2.601	2.668		
Age	0.288	0.219	4.106	4.577		
Education	0.346	0.341	2.891	2.931		
Location	0.365	0.363	2.739	2.757		
Experience	0.301	0.276	3.322	3.628		
	1	I	L			
	Response	e Variables				
Training	0.5	511	1.9	958		
Background	0.5	529	1.8	392		
Technology	0.4	199	2.0)06		
Organisational	0.4	142	2.260			

Background, Technology and Organisational Communication (b)

11.2 SABIC and Hadeed Quantitative Data

		Frequency	Percent	Valid	Cumulative
				Percent	Percent
Valid	<25	23	5.0	5.0	5.0
	25-30	70	15.3	15.3	20.4
	31-40	333	72.9	72.9	93.2
	41-50	31	6.8	6.8	100.0
тс	DTAL	457	100.0	100.0	

Table 11-23 Age of Participants

	Tes	ts of Norma	lity ^b			
	Kolm	nogorov-Smi	rnov ^a	5	Shapiro-Will	5
	Statistic	df	Sig.	Statistic	df	Sig.
How long have you been using the	0.220	999	0.000	0.895	999	0.000
Internet and the World Wide Web?						
Internet	0.282	999	0.000	0.818	999	0.000
E-mail	0.224	999	0.000	0.879	999	0.000
Video -conferencing	0.202	999	0.000	0.810	999	0.000
White-boards	0.220	999	0.000	0.822	999	0.000
Personal Digital Assistants (PDAs)	0.296	999	0.000	0.778	999	0.000
Education	0.194	999	0.000	0.883	999	0.000
a. Lilliefors Significance Correction						
b. age = 31-40						

***df** is called the degree of freedom. (**df** = number of variables -1) which helps us to

know

the

statistic

tables

values.

Table 11-25 Analysis on Gender of Participants

		One Sa	ample Tes	t								
		Test Value = 0										
		Sig. Mean Difference 95% Confidence										
		t	df	(2-tailed)		Lower	Upper					
Gender												
		29.746	116	.000	4.120	3.85	4.39					
Female	Age	36.504	116	.000	2.590	2.45	2.73					
	How long have you been using the Internet and the World Wide Web?	24.811	116	.000	4.419	4.07	4.77					
	Internet	42.042	116	.000	2.530	2.41	2.65					
	E-mail	23.966	116	.000	2.256	2.07	2.44					
	video -conferencing	33.305	116	.000	2.615	2.46	2.77					
	White-boards	23.123	116	.000	1.778	1.63	1.93					

	Personal Digital Assistants (PDAs)	23.858	116	.000	2.564	2.35	2.78
	Familiarity with e-Business (SAP)?	23.123	116	.000	1.778	1.63	1.93
	New, current, or previous user?	51.229	116	.000	2.077	2.00	2.16
	Type of user?	44.452	116	.000	2.214	2.12	2.31
	Education	38.743	338	.000	3.248	3.08	3.41
Male	age	97.883	338	.000	2.888	2.83	2.95
	How long have you been using the Internet and the World Wide Web?	47.198	338	.000	4.212	4.04	4.39
	Internet	67.043	338	.000	2.525	2.45	2.60
	E-mail	55.471	338	.000	2.566	2.48	2.66
	video -conferencing	42.657	338	.000	2.357	2.25	2.47
	White-boards	40.269	338	.000	2.525	2.40	2.65
	Personal Digital Assistants (PDAs)	55.176	338	.000	3.027	2.92	3.13
	Familiarity with e-Business (SAP)?	40.269	338	.000	2.525	2.40	2.65

New, current, or previous user?	92.384	338	.000	2.236	2.19	2.28
Type of user?	77.111	338	.000	2.277	2.22	2.34

Table 11-26 Education of Participants

	•	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than high school diploma	48	10.5	10.5	10.5
	2-year degree	123	26.9	26.9	37.4
	graduate degree	53	11.6	11.6	49.0
	high school diploma	80	17.5	17.5	66.5
	4-year degree	107	23.4	23.4	89.9
	postgraduate degree	46	10.1	10.1	100.0
	TOTAL	457	100.0	100.0	

				14010 1		orrelation		anonany	3			
Correlations												
Nationality			How long have you been using the Internet and the	Internet	E-mail	video -conferencing	White-boards	Personal Digital Assistants	Familiarity with e-Business	New, current, or previous	Type of user?	Major applications you use on your e-Business (SAP)
Saudi	How long have you been using	Pearson Correlation	1	005-	.028	018-	.030	.007	.030	.037	.087	a •
	the Internet and the World Wide Web?	Sig. (2- tailed)		.955	.766	.850	.754	.938	.754	.693	.356	
		N	115	115	115	115	115	115	115	115	115	1
	Internet	Pearson Correlation	005-	1	.090	.428**	.118	.108	.118	.082	- .070 -	a •
		Sig. (2- tailed)	.955		.336	.000	.205	.248	.205	.380	.454	

Table 11-27 Correlations on Nationality

	Ν	115	116	116	116	116	116	116	116	116	2
E-mail	Pearson Correlation	.028	.090	1	.000	035-	.000	035-	- .154 -	- .146 -	a ·
	Sig. (2- tailed)	.766	.336		.994	.707	.998	.707	.098	.118	
	Ν	115	116	116	116	116	116	116	116	116	2
video - conferencing	Pearson Correlation	018-	.428**	.000	1	.037	043-	.037	- .156 -	- .065 -	a
	Sig. (2- tailed)	.850	.000	.994		.693	.649	.693	.094	.491	
	Ν	115	116	116	116	116	116	116	116	116	2
White-boards	Pearson Correlation	.030	.118	- .035 -	.037	1	.880**	1.000 **	.084	- .248 **	a
	Sig. (2-	.754	.205	.707	.693		.000	.000	.370	.007	

	tailed)										
	N	115	116	116	116	116	116	116	116	116	2
Personal Digital Assistants (PDAs)	Pearson Correlation	.007	.108	.000	043-	.880**	1	.880**	.011	- .289 **	a
	Sig. (2- tailed)	.938	.248	.998	.649	.000		.000	.910	.002	
	Ν	115	116	116	116	116	116	116	116	116	2
Familiarity with e-Business (SAP)?	Pearson Correlation	.030	.118	- .035 -	.037	1.000	.880**	1	.084	- .248 **	a
	Sig. (2- tailed)	.754	.205	.707	.693	.000	.000		.370	.007	
	Ν	115	116	116	116	116	116	116	116	116	2
New, current, or previous user?	Pearson Correlation	.037	.082	- .154 -	156-	.084	.011	.084	1	.494 **	a

		Sig. (2- tailed)	.693	.380	.098	.094	.370	.910	.370		.000	
		Ν	115	116	116	116	116	116	116	116	116	2
Туре	Type of user?	Pearson Correlation	.087	070-	- .146 -	065-	- .248 ^{**}	- .289 ^{**}	- .248 ^{**}	.494 **	1	a •
		Sig. (2- tailed)	.356	.454	.118	.491	.007	.002	.007	.000		
		Ν	115	116	116	116	116	116	116	116	116	2
	Major applications you	Pearson Correlation	a	a	a	a ·	a	a	a	a	a •	a
	use on your e- Business (SAP) dealings?	Sig. (2- tailed)										
		Ν	1	2	2	2	2	2	2	2	2	2
African	How long have you been using	Pearson Correlation	1	337-	.277	402*	a •	- .821 ^{**}	a •	a •	a •	a

	the Internet and the World Wide	Sig. (2- tailed)		.100	.180	.046		.000				
	Web?	Ν	25	25	25	25	25	25	25	25	25	0
	Internet	Pearson Correlation	337-	1	.026	.313	a •	.253	a •	a •	a •	a
		Sig. (2- tailed)	.100		.902	.128	-	.223		•	•	
		Ν	25	25	25	25	25	25	25	25	25	0
	E-mail	Pearson Correlation	.277	.026	1	252-	a	- .600 ^{**}	a •	a •	a •	a
		Sig. (2- tailed)	.180	.902		.225		.002				
		Ν	25	25	25	25	25	25	25	25	25	0
	video - conferencing	Pearson Correlation	402*	.313	- .252 -	1	a •	.354	a	a •	a •	a

		Sig. (2- tailed)	.046	.128	.225			.082				
		Ν	25	25	25	25	25	25	25	25	25	0
	White-boards	Pearson Correlation	a	a	a •	a •	a •	a	a •	a •	a •	a
		Sig. (2- tailed)			•					•		
		Ν	25	25	25	25	25	25	25	25	25	0
	Personal Digital Assistants (PDAs)	Pearson Correlation	821**	.253	- .600 **	.354	a	1	a	a •	a •	a
		Sig. (2- tailed)	.000	.223	.002	.082						
		Ν	25	25	25	25	25	25	25	25	25	0
	Familiarity with e-Business (SAP)?	Pearson Correlation	a	a	a	a	a	a	a	a	a	a ·

		Sig. (2- tailed)										
		Ν	25	25	25	25	25	25	25	25	25	0
	New, current, or previous user?	Pearson Correlation	a	a	a •	a	a	a	a	a •	a •	a
		Sig. (2- tailed)									•	
		Ν	25	25	25	25	25	25	25	25	25	0
	Type of user?	Pearson Correlation	a	а	a	a			a ·	a	a	a
		Sig. (2- tailed)										
		Ν	25	25	25	25	25	25	25	25	25	0
	Major applications you use on your e- Business (SAP)	Pearson Correlation	a	a	a	a	a	a	a	a	a	a

	dealings?											
		Sig. (2- tailed)										
		N	0	0	0	0	0	0	0	0	0	0
European	How long have you been using the Internet and the World Wide Web?	Pearson Correlation	1	.197	- .300 -	.050	.139	- .838**	.139	a	а	a
		Sig. (2- tailed)		.316	.121	.800	.479	.000	.479			
		Ν	28	28	28	28	28	28	28	28	28	0
	Internet	Pearson Correlation	.197	1	.024	.887**	169-	178-	169-	a	a	a
		Sig. (2- tailed)	.316		.902	.000	.389	.364	.389	•	•	
		N	28	28	28	28	28	28	28	28	28	0

	E-mail	Pearson Correlation	300-	.024	1	167-	465*	.283	465 [*]	a •	a •	a
		Sig. (2- tailed)	.121	.902		.395	.013	.145	.013			
		Ν	28	28	28	28	28	28	28	28	28	0
	video - conferencing	Pearson Correlation	.050	.887**	- .167 -	1	043-	117-	043-	a	a •	a ·
		Sig. (2- tailed)	.800	.000	.395		.827	.552	.827			
		Ν	28	28	28	28	28	28	28	28	28	0
	White-boards	Pearson Correlation	.139	169-	- .465 *	043-	1	027-	1.000 **	a	a	a
		Sig. (2- tailed)	.479	.389	.013	.827		.893	.000			
		N	28	28	28	28	28	28	28	28	28	0
Personal Digital Assistants (PDAs)	Pearson Correlation	838**	178-	.283	117-	027-	1	027-	a	a •	a	
--	------------------------	-------	--------	----------------	------	--------	------	------	--------	--------	--------	
	Sig. (2- tailed)	.000	.364	.145	.552	.893		.893				
	Ν	28	28	28	28	28	28	28	28	28	0	
Familiarity with e-Business (SAP)?	Pearson Correlation	.139	169-	- .465 *	043-	1.000	027-	1	a	a	a ·	
	Sig. (2- tailed)	.479	.389	.013	.827	.000	.893					
	Ν	28	28	28	28	28	28	28	28	28	0	
New, current, or previous user?	Pearson Correlation	a	a •	a •	a	a •	a	a	a •	a •	a	
	Sig. (2- tailed)			•						•		
	Ν	28	28	28	28	28	28	28	28	28	0	

	Type of user?	Pearson Correlation	a •	a •	a	a	a	a	a	a	a	a
		Sig. (2- tailed)										
		Ν	28	28	28	28	28	28	28	28	28	0
	Major applications you use on your e- Business (SAP) dealings?	Pearson Correlation	a	a	a	a	a	a	a	a	a	a
		Sig. (2- tailed)										
		Ν	0	0	0	0	0	0	0	0	0	0
Asian	How long have you been using the Internet and the World Wide Web?	Pearson Correlation	1	.145	- .073 -	.132	024-	158*	024-	.131	.131	a

	Sig. (2- tailed)		.062	.350	.090	.756	.041	.756	.092	.092	
	Ν	166	166	166	166	166	166	166	166	166	0
Internet	Pearson Correlation	.145	1	.029	.908**	145-	029-	145-	.192 *	.192 *	a
	Sig. (2- tailed)	.062		.715	.000	.062	.711	.062	.013	.013	
	Ν	166	166	166	166	166	166	166	166	166	0
E-mail	Pearson Correlation	073-	.029	1	.030	.205**	017-	.205**	- .462 **	- .462 **	a •
	Sig. (2- tailed)	.350	.715		.704	.008	.833	.008	.000	.000	
	Ν	166	166	166	166	166	166	166	166	166	0
video - conferencing	Pearson Correlation	.132	.908**	.030	1	172*	.026	172*	.202 **	.202 **	a

	Sig. (2- tailed)	.090	.000	.704		.027	.736	.027	.009	.009	
	Ν	166	166	166	166	166	166	166	166	166	0
White-boards	Pearson Correlation	024-	145-	- .205 **	172*	1	.071	1.000 **	- .014 -	- .014 -	a ·
	Sig. (2- tailed)	.756	.062	.008	.027		.362	.000	.859	.859	
	N	166	166	166	166	166	166	166	166	166	0
Personal Digital Assistants (PDAs)	Pearson Correlation	158*	029-	- .017 -	.026	.071	1	.071	.178 *	.178 *	a ·
	Sig. (2- tailed)	.041	.711	.833	.736	.362		.362	.022	.022	
	Ν	166	166	166	166	166	166	166	166	166	0
Familiarity with e-Business	Pearson Correlation	024-	145-	-	172 [*]	1.000 **	.071	1	- .014	- .014	a

(SAP)?				**					-	-	
	Sig. (2- tailed)	.756	.062	.008	.027	.000	.362		.859	.859	
	N	166	166	166	166	166	166	166	166	166	0
New, current, or previous user?	Pearson Correlation	.131	.192*	- .462 **	.202**	014-	.178*	014-	1	1.00 0 ^{**}	a
	Sig. (2- tailed)	.092	.013	.000	.009	.859	.022	.859		.000	
	Ν	166	166	166	166	166	166	166	166	166	0
Type of user?	Pearson Correlation	.131	.192*	- .462 **	.202**	014-	.178*	014-	1.00 0 ^{**}	1	a
	Sig. (2- tailed)	.092	.013	.000	.009	.859	.022	.859	.000		
	N	166	166	166	166	166	166	166	166	166	0

	Major applications you use on your e- Business (SAP) dealings?	Pearson Correlation	a	a	a	a	a	a	a	a	a	a
		Sig. (2- tailed)										
		Ν	0	0	0	0	0	0	0	0	0	0
Arab	How long have you been using the Internet and the World Wide Web?	Pearson Correlation	1	.313**	.053	014-	.376**	137-	.376**	- .010 -	- .010 -	a
		Sig. (2- tailed)		.009	.667	.907	.002	.267	.002	.934	.934	
		N	68	68	68	68	68	68	68	68	68	0
	Internet	Pearson Correlation	.313**	1	.096	.266*	.289*	200-	.289*	- .130	- .130	a

									-	-	
	Sig. (2- tailed)	.009		.437	.028	.017	.103	.017	.289	.289	
	Ν	68	68	68	68	68	68	68	68	68	0
E-mail	Pearson Correlation	.053	.096	1	.106	048-	.384**	048-	- .097 -	- .097 -	a
	Sig. (2- tailed)	.667	.437		.389	.695	.001	.695	.430	.430	
	Ν	68	68	68	68	68	68	68	68	68	0
video - conferencing	Pearson Correlation	014-	.266*	.106	1	.402**	.100	.402**	- .202 -	- .202 -	a
	Sig. (2- tailed)	.907	.028	.389		.001	.417	.001	.098	.098	
	Ν	68	68	68	68	68	68	68	68	68	0

White-boards	Pearson Correlation	.376**	.289*	- .048 -	.402**	1	.078	1.000 **	- .337 **	.337 **	a
	Sig. (2- tailed)	.002	.017	.695	.001		.529	.000	.005	.005	•
	Ν	68	68	68	68	68	68	68	68	68	0
Personal Digital Assistants (PDAs)	Pearson Correlation	137-	200-	- .384 **	.100	.078	1	.078	- .189 -	- .189 -	a
	Sig. (2- tailed)	.267	.103	.001	.417	.529		.529	.122	.122	
	Ν	68	68	68	68	68	68	68	68	68	0
Familiarity with e-Business (SAP)?	Pearson Correlation	.376**	.289*	- .048 -	.402**	1.000	.078	1	- .337 **	- .337 **	a
	Sig. (2- tailed)	.002	.017	.695	.001	.000	.529		.005	.005	

	Ν	68	68	68	68	68	68	68	68	68	0
New, current, or previous user?	Pearson Correlation	010-	130-	- .097 -	202-	.337**	189-	.337**	1	1.00 0 ^{**}	a
	Sig. (2- tailed)	.934	.289	.430	.098	.005	.122	.005		.000	
	Ν	68	68	68	68	68	68	68	68	68	0
Type of user?	Pearson Correlation	010-	130-	- .097 -	202-	.337**	189-	.337**	1.00 0 ^{**}	1	a •
	Sig. (2- tailed)	.934	.289	.430	.098	.005	.122	.005	.000		
	Ν	68	68	68	68	68	68	68	68	68	0
Major applications you use on your e- Business (SAP) dealings?	Pearson Correlation	a	a	a	a	a	a	a	a	a	a

		Sig. (2- tailed)										
		Ν	0	0	0	0	0	0	0	0	0	0
North American	How long have you been using the Internet and the World Wide Web?	Pearson Correlation	1	123-	1.00 0**	123-	1.000	a	1.000	a	a	a
		Sig. (2- tailed)		.689	.000	.689	.000		.000	•	•	
		Ν	13	13	13	13	13	13	13	13	13	0
	Internet	Pearson Correlation	123-	1	- .123 -	1.000	123-	a	123-	a	a	a •
		Sig. (2- tailed)	.689		.689	.000	.689		.689			
		Ν	13	13	13	13	13	13	13	13	13	0

E-mail	Pearson Correlation	1.000**	123-	1	123-	1.000 **	a •	1.000 **	a •	a •	a
	Sig. (2- tailed)	.000	.689		.689	.000		.000			
	Ν	13	13	13	13	13	13	13	13	13	0
video - conferencing	Pearson Correlation	123-	1.000 **	- .123 -	1	123-	a	123-	a	a •	a
	Sig. (2- tailed)	.689	.000	.689		.689		.689			
	Ν	13	13	13	13	13	13	13	13	13	0
White-boards	Pearson Correlation	1.000**	123-	$1.00 \\ 0^{**}$	123-	1	a •	1.000 **	a •	a •	a
	Sig. (2- tailed)	.000	.689	.000	.689			.000			
	Ν	13	13	13	13	13	13	13	13	13	0

Personal Digital Assistants (PDAs)	Pearson Correlation	a	a	a •	a	a	a	a	a •	a	a
	Sig. (2- tailed)										
	Ν	13	13	13	13	13	13	13	13	13	0
Familiarity with e-Business (SAP)?	Pearson Correlation	1.000**	123-	1.00 0 ^{**}	123-	1.000 **	a	1	a	a	a ·
	Sig. (2- tailed)	.000	.689	.000	.689	.000					
	Ν	13	13	13	13	13	13	13	13	13	0
New, current, or previous user?	Pearson Correlation	a	a •	a •	a •	a •	a •	a •	a •	a •	a
	Sig. (2- tailed)	•	•	•				•		•	
	Ν	13	13	13	13	13	13	13	13	13	0

	Type of user?	Pearson Correlation	a •	a •	a •	a	a •	a	a	a •	a •	a
		Sig. (2- tailed)										
		Ν	13	13	13	13	13	13	13	13	13	0
	Major applications you use on your e- Business (SAP) dealings?	Pearson Correlation	a	a	a	a	a	a	a	a	a	a
		Sig. (2- tailed)										
		Ν	0	0	0	0	0	0	0	0	0	0
Others	How long have you been using the Internet and the World Wide Web?	Pearson Correlation	1	317*	- .094 -	317*	.513**	- .553**	.513**	a	a	a

	Sig. (2- tailed)		.043	.560	.043	.001	.000	.001			
	Ν	41	41	41	41	41	41	41	41	41	0
Internet	Pearson Correlation	317*	1	.084	1.000 **	368*	.079	368*	a •	a	a
	Sig. (2- tailed)	.043		.600	.000	.018	.625	.018			
	Ν	41	41	41	41	41	41	41	41	41	0
E-mail	Pearson Correlation	094-	.084	1	.084	205-	.361*	205-	a	a	a
	Sig. (2- tailed)	.560	.600		.600	.199	.021	.199			
	Ν	41	41	41	41	41	41	41	41	41	0
video - conferencing	Pearson Correlation	317*	1.000 **	.084	1	368*	.079	368*	a •	a •	a
	Sig. (2-	.043	.000	.600		.018	.625	.018		•	•

	tailed)										
	Ν	41	41	41	41	41	41	41	41	41	0
White-boards	Pearson Correlation	.513**	368*	- .205 -	368*	1	.599**	1.000 **	a •	a •	a
	Sig. (2- tailed)	.001	.018	.199	.018		.000	.000	•	-	
	Ν	41	41	41	41	41	41	41	41	41	0
Personal Digital Assistants (PDAs)	Pearson Correlation	553**	.079	.361 *	.079	- .599 ^{**}	1	- .599 ^{**}	a •	a •	a
	Sig. (2- tailed)	.000	.625	.021	.625	.000		.000			
	Ν	41	41	41	41	41	41	41	41	41	0
Familiarity with e-Business (SAP)?	Pearson Correlation	.513**	368*	- .205 -	368*	1.000 **	.599**	1	a •	a	a

	Sig. (2- tailed)	.001	.018	.199	.018	.000	.000				
	Ν	41	41	41	41	41	41	41	41	41	0
New, current, or previous user?	Pearson Correlation	a	a	a •	a •	a	a	a •	a •	a	a •
	Sig. (2- tailed)										
	Ν	41	41	41	41	41	41	41	41	41	0
Type of user?	Pearson Correlation	a	a	a	a		a	a •	a •	a	a ·
	Sig. (2- tailed)										
	Ν	41	41	41	41	41	41	41	41	41	0
Major applications you use on your e- Business (SAP)	Pearson Correlation	a	a	a	a	a	a	a •	a •	a	a

	dealings?											
		Sig. (2- tailed)										
		Ν	0	0	0	0	0	0	0	0	0	0
a. Cannot be co	mputed because at le	east one of the	variables is	s constar	nt.							
**. Correlation	is significant at the ().01 level (2-tai	led).									
*. Correlation i	s significant at the 0.	05 level (2-taile	ed).									

Table 11-28 Correlations on Organisational Level

Correlations

Organisational Level		Are you a decision- maker or an influencer?	Major applications you	Work roles in your	Business processes	Working practices	Interpersonal interaction across organisation	Has SAP been fully implemented in vour	Made the workflow simple and error-free	Benefited my organisation
Are you a decision-maker or an influencer?	Pearson Correlation	1	a ·	- .224 ^{***}	023-	.099*	075-	.193**	.156**	.053
	Sig. (2- tailed)			.000	.631	.034	.110	.000	.001	.256
	N	457	2	457	457	457	457	457	457	457
Major applications you use on your e-Business (SAP) dealings?	Pearson Correlation	a •	a •	a •	a ·	a ·	a ·	a •	a	a
	Sig. (2- tailed)									
	N	2	2	2	2	2	2	2	2	2

Work roles in your organisation	Pearson Correlation	- .224 ^{**}	a •	1	099*	.123**	.190**	057-	.075	.053
	Sig. (2- tailed)	.000			.034	.008	.000	.227	.108	.260
	N	457	2	457	457	457	457	457	457	457
Business processes	Pearson Correlation	023-	a	099*	1	- .372 ^{**}	.430**	.197**	.051	- .129 ^{**}
	Sig. (2- tailed)	.631		.034		.000	.000	.000	.278	.006
	N	457	2	457	457	457	457	457	457	457
Has SAP been fully implemented in your department?	Pearson Correlation	.099*	a •	.123**	- .372 ^{**}	1	- .370 ^{**}	- .419 ^{**}	.094*	.172**
	Sig. (2- tailed)	.034		.008	.000		.000	.000	.045	.000
	N	457	2	457	457	457	457	457	457	457
Interpersonal interaction across organisation	Pearson	075-	. ^a	.190**	.430**	-	1	.389**	.136**	108*

	Correlation					.370**				
	Sig. (2- tailed)	.110		.000	.000	.000		.000	.004	.021
	N	457	2	457	457	457	457	457	457	457
Has SAP been fully implemented in your department?	Pearson Correlation	.193**	a •	057-	.197**	- .419 ^{**}	.389**	1	.091	.014
	Sig. (2- tailed)	.000		.227	.000	.000	.000		.053	.769
	Ν	457	2	457	457	457	457	457	457	457
Made the workflow simple and error-free	Pearson Correlation	.156**	a •	.075	.051	.094*	.136**	.091	1	.797**
	Sig. (2- tailed)	.001		.108	.278	.045	.004	.053		.000
	N	457	2	457	457	457	457	457	457	457
Benefited my organisation	Pearson Correlation	.053	a	.053	- .129 ^{**}	.172**	108*	.014	.797**	1

	Sig. (2- tailed)	.256		.260	.006	.000	.021	.769	.000	
	N	457	2	457	457	457	457	457	457	457
a. Cannot be computed because at least one of the variables is constant.										
**. Correlation is significant at the 0.01 level (2-tailed).										
*. Correlation is significant at the 0.05 level (2-tailed).										

Correlation			
		Attitudes to	Attitudes to
Attitude		new ways of working	the technology
Attitudes to new ways of	Pearson	1	.926**
working	Correlation		
	Sig. (2-tailed)		.000
	N	457	457
Attitudes to the	Pearson	.926**	1
technology	Correlation		
	Sig. (2-tailed)	.000	
	N	457	457

Table 11-30 Correlations on Relative Advantage

Correlation							
Relative Advantage		Levels of face-to-face contact	Levels of colleague collaboration	Degree of information sharing	Type of information shared	Degree of closeness of the relationship	Smooth communication
Levels of face-to-	Pearson	1	.477**	.435**	.517**	.479**	.403**
face contact	Correlation						
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	Ν	457	457	457	457	457	457
Levels of colleague	Pearson	.477**	1	.798**	.949**	.740**	.719**
collaboration	Correlation						
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	Ν	457	457	457	457	457	457
Degree of	Pearson	.435**	.798**	1	.778**	.783**	.631**

information sharing	Correlation						
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	Ν	457	457	457	457	457	457
Type of information shared	Pearson Correlation	.517**	.949**	.778**	1	.771**	.671**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	Ν	457	457	457	457	457	457
Degree of closeness of the relationship	Pearson Correlation	.479**	.740**	.783**	.771**	1	.495**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	457	457	457	457	457	457
Smooth communication	Pearson Correlation	.403**	.719**	.631**	.671**	.495**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	Ν	457	457	457	457	457	457

**. Correlation is significant at the 0.01 level (2-tailed).

Correlation						
Compatibility		A lot of time and money for the training of personnel	Significant investments in tools and equipment	An effort to recruit new personnel	Deploy time and resources	Significant investments in the information system
A lot of time and money for the	Pearson Correlation	1	.477**	.435**	.517**	.479**
training of personnel	Sig. (2-tailed)		.000	.000	.000	.000
	Ν	457	457	457	457	457
Significant investments in tools	Pearson Correlation	.477**	1	.798**	.949**	.740**
and equipment	Sig. (2-tailed)	.000		.000	.000	.000
	Ν	457	457	457	457	457

Table 11-31 Correlations on Compatibility

An effort to recruit	Pearson	.435**	.798**	1	.778**	.783**
new personnel	Correlation					
	Sig. (2-tailed)	.000	.000		.000	.000
	Ν	457	457	457	457	457
Deploy time and	Pearson	.517**	.949**	.778**	1	.771**
resources	Correlation					
	Sig. (2-tailed)	.000	.000	.000		.000
	Ν	457	457	457	457	457
Significant	Pearson	.479**	.740***	.783**	.771**	1
investments in the	Correlation					
information system	Sig. (2-tailed)	.000	.000	.000	.000	
	N	457	457	457	457	457
** Correlation is sign	ificant at the 0.01	lovol (2 f	(balled			

******. Correlation is significant at the 0.01 level (2-tailed).

Table 11-32 Correlations on Observability

Correlation		-						
Observability		Dishonesty or false claims are absent	Personnel are cautious in using their information access	Communications via e-mail can be done in a friendly approach	Fulfilled promises given by the top management increased staff loyalty	Both parties in the conversation are accountable for the outcomes of	Business negotiations are official even without a hand-written	Feedback or criticism are acknowledged
Dishonesty or false	Pearson	1	.332**	.814**	.871**	.486**	.522**	.767**
claims are absent	Correlation							
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
	N	456	456	456	456	456	456	456
Personnel are	Pearson	.332**	1	.308**	.321**	.664**	.104*	.364**
cautious in using	Correlation							
their information	Sig. (2-tailed)	.000		.000	.000	.000	.027	.000

access	N	456	457	457	457	457	457	457
Communications	Pearson	.814**	.308**	1	.914**	.504**	.558**	.772**
via e-mail can be	Correlation			-				
done in a friendly								
approach	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000
	N	456	457	457	457	457	457	457
Fulfilled promises	Pearson	.871**	.321**	.914**	1	.573**	.612**	.846**
given by the top	Correlation							
management	~ ~ ~ ~							
increased staff	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000
loyalty	N	456	457	457	457	457	457	457
Both parties in the	Pearson	.486**	.664**	.504**	.573**	1	.329**	.583**
conversation are	Correlation							
accountable for	~ ~ ~ ~							
the outcomes of	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000
their decisions	N	456	457	457	457	457	457	457
Business	Pearson	522**	104*	558**	612**	329**	1	671**
negotiations are	Correlation	.522	.104	.550	.012	.527	1	.071

official even	Sig. (2-tailed)	.000	.027	.000	.000	.000		.000				
without a hand-												
written signature	Ν	456	457	457	457	457	457	457				
Feedback or	Pearson	.767**	.364**	.772**	.846**	.583**	.671**	1				
criticism are	Correlation											
acknowledged												
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000					
	N	456	457	457	457	457	457	457				
**. Correlation is significant at the 0.01 level (2-tailed).												
*. Correlation is significant at the 0.05 level (2-tailed).												

Table 11-	33 Corre	elations on	Trialability
-----------	----------	-------------	--------------

Correlation		<u> </u>					
Trialability		Are you a decision- maker or an	New, current, or previous user?	Type of user?	Education	Attitudes to the technology	E-mail is widely used for communication
Are you a decision-maker	Pearson Correlation	1	017-	.042	193 **	.064	.188**
or an influencer?	Sig. (2-tailed)		.718	.365	.000	.171	.000
	N	457	457	457	457	457	457
New, current, or previous user?	Pearson Correlation	017-	1	.775**	.179**	.651**	.027
	Sig. (2-tailed)	.718		.000	.000	.000	.569
	N	457	457	457	457	457	457
Type of user?	Pearson Correlation	.042	.775**	1	.036	.578**	076-
	Sig. (2-tailed)	.365	.000		.443	.000	.106
	N	457	457	457	457	457	457
Education	Pearson Correlation	193 **	.179**	.036	1	120*	.251**
	Sig. (2-tailed)	.000	.000	.443		.010	.000
	N	457	457	457	457	457	457
Attitudes to the technology	Pearson Correlation	.064	.651**	.578**	120*	1	.033
	Sig. (2-tailed)	.171	.000	.000	.010		.487
	N	457	457	457	457	457	457

E-mail is widely	Pearson	.188**	.027	076-	.251**	.033	1	
used for	Correlation							
communication	Sig. (2-tailed)	.000	.569	.106	.000	.487		
	N	457	457	457	457	457	457	
**. Correlation is signific	cant at the 0.01 leve	el (2-tailed)).					
*. Correlation is significant at the 0.05 level (2-tailed).								
Correlation								

Computer Anxiety		Interpersonal interaction	within organisations? (e.g.,	have you experienced	Technological competence;	lack/shortage of skilled	people	Systems' stability,	reliability, and effectiveness	were constantly met
Interpersonal	Pearson		1			.064			.018	
interaction within	Correlation									
organisations? (e.g.,						170			60.0	
have you	Sig. (2-tailed)					.172			.699	
experienced	N		457			457			457	
problems across										
different										
departments say,										
with ownership of										
tasks?)										
Technological	Pearson		.064			1			.084	
competence;	Correlation									
lack/shortage of			1.50						0.5.1	
skilled people	Sig. (2-tailed)		.172						.074	
	Ν	457			457			457		
Systems' stability,	Pearson		.018			.084			1	
reliability, and	Correlation									
effectiveness were										
constantly met	Sig. (2-tailed)		.699			.074				
	N		457			457			457	
**. Correlation is significant at the 0.01 level (2-tailed).										

Table 11-34 Correlations on Computer Anxiety

Correlation	L	U					
Complexity		Technological competence; lack/shortage of skilled people	Lack of trust on the actual e-Business system (SAP) would facilitate implementation failure	Hackers were prevented to trace, steal or destroy the new system	Data entry was easily done		
Technological	Pearson	1	092*	024-	056-		
competence;	Correlation						
lack/shortage of skilled people	Sig. (2-tailed)		.050	.609	.233		
	Ν	457	457	457	457		
Lack of trust on the	Pearson	092*	1	096*	025-		
actual e-Business system (SAP) would	Correlation						
facilitate	Sig. (2-tailed)	.050		.040	.597		
implementation failure	N	457	457	457	457		
Hackers were	Pearson	024-	096*	1	.623**		
prevented to trace,	Correlation						
steal or destroy the		(00	0.10		000		
new system	Sig. (2-tailed)	.609	.040		.000		
	N	457	457	457	457		
Data entry was easily	Pearson	056-	025-	.623**	1		
done	Correlation						
	Sig. (2-tailed)	.233	.597	.000			
	N	457	457	457	457		
*. Correlation is significant at the 0.05 level (2-tailed).							
**. Correlation is signific	cant at the 0.01 lev	el (2-tailed).					

Table 11-35 Correlations on Complexity

Training		Complete training was provided	Training materials are very useful	Training courses were done appropriately
Complete	Pearson	1	.200**	.352**
training was	Correlation			
provided -	Sig. (2- tailed)		.000	.000
-	N	457	457	457
Training materials are	Pearson Correlation	.200**	1	.627**
very useful	Sig. (2- tailed)	.000		.000
-	N	457	457	457
Training courses were done	Pearson Correlation	.352**	.627**	1
	Sig. (2- tailed)	.000	.000	
		I	-1	-

Table	11-36	Correlations	on	Training

Table	11-37	Correlations	on	Support
Lanc	11-57	Correlations	on	Support

Correlation										
Support		e-Business gives new opportunities for growth and prosperity	e-Business represents a moderate risk taken by the company	The top management initiated the adoption of e-Business	The staff have enough knowledge of e- Business	e-Business is central to the business strategy	e-Business enables the company to excel	Government would help the company to engage in using e-Business		
e-Business	Pearson	1	.288**	.747**	.428**	.449**	.747**	.715**		
gives new	Correlation									
opportunities	Siz (2		000	000	000	000	000	000		
for growth	$\operatorname{Sig.}(2 - 4\pi i \log d)$.000	.000	.000	.000	.000	.000		
and	taned)									
prosperity	N	457	457	457	457	457	457	457		
e-Business	Pearson	.288**	1	.510**	.775**	.644**	.510**	.491**		
represents a	Correlation									
moderate	Sia (2	000		000	000	000	000	000		
risk taken by	51g. (2-	.000		.000	.000	.000	.000	.000		
the company	talled)									
	Ν	457	457	457	457	457	457	457		
The top	Pearson	.747**	.510**	1	.621**	.683**	.994**	.969**		
management	Correlation									
initiated the	Siz (2	000	000		000	000	000	000		
adoption of e-	Sig. (2-	.000	.000		.000	.000	.000	.000		
Business	tailed)									
	N	457	457	457	457	457	457	457		
The staff	Pearson	.428**	.775**	.621**	1	.513**	.624**	.598**		
have enough	Correlation									
knowledge of	Sig. (2-	.000	.000	.000		.000	.000	.000		
e-Business	tailed)									
--	---------------------	--------	--------	--------	--------	--------	--------	--------	--	--
	N	457	457	457	457	457	457	457		
e-Business is	Pearson	.449**	.644**	.683**	.513**	1	.687**	.656**		
central to the	Correlation									
business	G: (2	000	000	000	000		000	000		
strategy	Sig. (2- tailed)	.000	.000	.000	.000		.000	.000		
	N	457	457	457	457	457	457	457		
e-Business	Pearson	.747**	.510**	.994**	.624**	.687**	1	.965**		
enables the	Correlation									
company to	Sig (2	000	000	000	000	000		000		
excel	tailed)	.000	.000	.000	.000	.000		.000		
	Ν	457	457	457	457	457	457	457		
Government	Pearson	.715**	.491**	.969**	.598**	.656**	.965**	1		
would help	Correlation									
the company	Sig (2-	000	000	000	000	000	000			
to engage in	tailed)	.000	.000	.000	.000	.000	.000			
using e-	tuneu)									
Business	N	457	457	457	457	457	457	457		
**. Correlation is significant at the 0.01 level (2-tailed).										

Correlation						
Organisational Cult	What is your professional background?	Course tutors are well aware of the	Course tutors are well aware of local culture	Type of information shared	Degree of information sharing	
What is your professional	Pearson Correlation	1	.287**	.319**	.170**	.040
background?	Sig. (2-tailed)		.000	.000	.000	.399
	Ν	457	457	457	457	457
Course tutors are well aware of the	Pearson Correlation	.287**	1	.145**	.238**	.272**
organisational culture	Sig. (2-tailed)	.000	.002		.000	.000
	N	457	457	457	457	457
Course tutors are well aware of local	Pearson Correlation	.319**	.145**	1	.264**	.165**
culture	Sig. (2-tailed)	.000	.002		.000	.000
	Ν	457	457	457	457	457
Type of information	Pearson Correlation	.170**	.238**	.264**	1	.778**
shared	Sig. (2-tailed)	.000	.000	.000		.000
	Ν	457	457	457	457	457
Degree of information	Pearson Correlation	.040	.272**	.165**	.778**	1
sharing	Sig. (2-tailed)	.399	.000	.000	.000	
	Ν	457	457	457	457	457

**. Correlation is significant at the 0.01 level (2-tailed).

11.3 Questionnaire



Dear Sir/Madam,

I am a researcher at the Centre of System Studies, University of Hull. My research title is "Social Factors in Assimilation of E-Business: An Empirical study of Aramco Oil Company in Saudi Arabia." I am interested in exploring the social issues that need to be considered in the implementation of the e-Business concept (SAP) at Aramco. The purpose of this questionnaire is to identify and better understand these issues.

As a researcher, I am obliged by the University of Hull's Code of Conduct to protect the confidentiality of your responses: as such, nothing you say today would be attributed to you in any way unless you specifically want me to do so. <u>ALL YOUR</u> **RESPONSES WILL BE TREATED IN THE STRICTEST CONFIDENCE.**

You need to spare approximately 30 minutes to answer this questionnaire.

Please feel free to add your comments whenever you think it is necessary.

Truly yours,

Abdullah S. Al-Ariefy

1) Internet-Based technologies and services						
a. How long have you been using the Internet and the World Wide Web	? (Pls. check)					
Less than 1 year 1-2 years 2-4 years 4-6 years						
6-8 years 8-10 years more than 10 years						
b. How often do you use the following in your business dealings?						
<u>1-Never 2-Rarely 3-Occasionally 4-Always</u>	1	2	3	4		
1 Internet						
2 E-mail						
3 Video-conferencing						
4 White-boards						
5 Personal Digital Assistants (PDAs)						

2)]	Demographical Information
1	Are you a decision-maker or an influencer?
1	Influencer Decision-maker
	Familiarity with e-Business (SAP)?
	Not Familiar Somewhat familiar Mostly familiar Very familiar
2	New, current, or previous user?
3	Previous Current New
4	Type of user?
4	Power Frequent Occasional
	Major applications you use on your e-Business (SAP) dealings?
	1)
5	2)
	3)
	Location:
6	
	Gender:
	Male Female
	Age:
8	□ < 25 □ 25—30 □ 31—40 □ 41—50
	□ > 50
9	Full time Work Experience with this organisation:
	\square < 2 Years \square 2 – 5 years \square > 5 years \square > 15 years

	Nationality :							
10	Saudi	African	European					
	Asian	Arab	North American		Oth	ers		
	Education:							
11	Graduate degree 2-year de	egree	Less than high school diplom	na				
	Postgraduate degree 🗌 4-ye	ear degree	High school diploma					
10	Religion:							
12	Muslim	Other						
	3) Human and organisation	nal issues						
Has	e-business (SAP) affected or c	changed any of the f	following?					
				YES	NO	OTHERS		
1	Work roles in your organisation	on						
2	Business processes							
3	Working practices							
4	Interpersonal interaction acros	ss organisation						
5	Interpersonal interaction with	thin organisations?	(e.g., have you experienced					
	problems across different dep	partments say, with o	ownership of tasks?)					
6	Communication							
7	Attitudes to new ways of wor	king						
8	Attitudes to the technology							
9	Technological competence; la	ack/shortage of skil	led people					
10	Training							
11	Senior management support							
4) I	4) Background							

	1	What is your professional background?							
		PhD MCA MBA MS BS DEd Other							
ſ	2	What is your current role/job title?							
		M.D G.M I.T Manager Admin. Manager							
		H.R. Manager Secretary Programmers System Manager							
		System Administrator Purchasing Manager							
		Sales Manager Production Mgr. Accounts Manager Account							
		□ Other							
		If Other, Please Specify:							
	3	Has SAP been fully implemented in your department?							
		Yes No							
		If No, which factor prevents you from doing so?							
		Cost Lack of Trust Top Management Decision							
		Organisational Culture							
		If Yes, approximately how far have you gone with implementing SAP:							
		□ <25% □ >50% □ >75% □ 100%							
-	4	What types of functionalities do you have access to? What types of activities do you use SAD for?							
	4	what types of functionanties do you have access to? what types of activities do you use SAP for?							
		Administrative Access User Level Access Superpower Access HR Access Production Access Manufacture Access							
		□ Others							
		If Others , Please Specify:							

5) Impact of e-business tools on relationships

Please measure how e-Business had changed your relationship with your colleagues in terms of the following:

<u>1-S</u> Dis	trongly Agree <u>2-Agree 3-Neutral 4-Disagree 5-Strongly</u> agree	1	2	3	4	5	
1	Levels of face-to-face contact						
2	Levels of colleague collaboration						
3	Degree of information sharing						
4	Type of information shared						
5	Degree of closeness of the relationship						
6	Smooth communication						
6) I	Need for trust				<u> </u>		
It w	asn't hard to employ trust in e-Business (SAP) because:						
<u>1-S</u> Dis	trongly Agree <u>2-Agree 3-Neutral 4-Disagree 5-Strongly</u> agree	1	2	3	4	5	
1	SAP is proven for its effectiveness						
2	SAP is proven for its ease of use						
3	3 It had changed the autonomy or control levels in proper ways						
4	Trust is important in dealing with people through virtual business transactions						
5	Lack of trust on the actual e-Business system (SAP) would facilitate implementation failure						
6	External parties (e.g., Consultants) are committed to successfully completing the project						

7) Criteria, methods and tools for e-business system design and implementation

How was the implementation of SAP handled?

<u>1-S</u>	trongly Agree <u>2-Agree</u> <u>3-Neutral</u> <u>4-Disagree</u> <u>5-Strongly</u>	1	2	3	4	5
<u>Dis</u>	agree					
1	Problems were encountered during the SAP development stage					
2	The solutions provided were readily adopted					
3	Significant financial investments were provided for e-Business (SAP) implementation					
4	Information given about the SAP implementation was satisfactorily comprehensive					
5	Information on SAP was given later than expected					
6	Sufficient time was provided to adapt with the change					
7	Complete training was provided					
8	Resources were readily available					
9	Relevant ideas and/or inputs were all accounted for during the system development stage					
10	Key enablers and inhibitors to SAP were identified prior to its development stage					
11	The project team customised the processes without hampering the current business operation					
13	SAP project development reports were given at the right time					
14	There was enough database backup					
15	Data entry was easily done					
16	Systems' stability, reliability, and effectiveness were constantly met					
17	Consistent monitoring of the project resulted in earlier completion					

18	SAP benefits were shown and readily available throughout the implementation			
18	SAP benefits were shown and readily available throughout the implementation			

8) e-Business (SAP) being introduced								
The	e introduction of e-Business (SAP)							
<u>1-S</u> <u>Dis</u>	1-Strongly Agree2-Agree3-Neutral4-Disagree5-Strongly12345Disagree							
1	Affected the execution of work in many ways							
2	Made the workflow simple and error-free							
3	Enabled the staff to share information in a fast and open manner							
4	Resolved the major issues in the company – e.g., problems with salaries, systems upgrade, financial accountabilities, manpower shortage, etc.							
5	Provided awareness of the company's condition in the market world							
6	Benefited my organisation							
7	Training materials are very useful							
8	Training courses were done appropriately							
9	Courses were well organised							
10	Most of the courses done face-to-face							
11	The language used for introducing SAP is familiar							
12	Training materials are very useful							
13	Course tutors are well aware of the organisational culture							
14	Course tutors are well aware of local culture							
15	Communication with course tutors was done smoothly face-to-face							
16	Some courses were conducted during my free time							

9) Attitude to e-Business

It is	likely to	bring out	a positive	attitude	when
10 10	mery u	, oring out	u positi ve	attuace	winen

		1	2	3		5
1-Strongly Agree 2-Agree 3-Neutral 4-Disagree 5-Strongly Disagree		1	2	5	+	5
1	e-Business gives new opportunities for growth and prosperity					
2	e-Business represents a moderate risk taken by the company					
3	The top management initiated the adoption of e-Business					
4	The staff have enough knowledge of e-Business					
5	e-Business is central to the business strategy					
6	e-Business enables the company to excel					
7	Government would help the company to engage in using e-Business					
10)	Technology for e-Business					
<u>1-8</u> Dis	Strongly Agree <u>2-Agree 3-Neutral 4-Disagree 5-Strongly</u> agree	1	2	3	4	5
<u>1-8</u> <u>Dis</u> 1	Strongly Agree 2-Agree 3-Neutral 4-Disagree 5-Strongly agree E-mail is widely used for communication	1	2	3	4	5
<u>1-5</u> <u>Dis</u> 1	Strongly Agree 2-Agree 3-Neutral 4-Disagree 5-Strongly agree E-mail is widely used for communication The Intranet is widely used for internal knowledge sharing and business communications	1	2	3	4	5
1-5 Dis 1 2 3	Strongly Agree 2-Agree 3-Neutral 4-Disagree 5-Strongly agree E-mail is widely used for communication The Intranet is widely used for internal knowledge sharing and business communications SAP encourages my innovation SAP encourages my innovation	1	2	3	4	5
1-5 Dis 1 2 3 4	Strongly Agree2-Agree3-Neutral4-Disagree5-StronglyagreeE-mail is widely used for communicationThe Intranet is widely used for internal knowledge sharing and business communicationsSAP encourages my innovationSAP changed my perception of business	1	2	3	4	5
1-5 Dis 1 2 3 4 5	Strongly Agree2-Agree3-Neutral4-Disagree5-StronglyagreeE-mail is widely used for communicationThe Intranet is widely used for internal knowledge sharing and business communicationsSAP encourages my innovationSAP changed my perception of businessSAP changed my personal life	1	2	3	4	5
1-5 Dis 1 2 3 4 5 6	Strongly Agree2-Agree3-Neutral4-Disagree5-StronglyagreeE-mail is widely used for communicationThe Intranet is widely used for internal knowledge sharing and business communicationsSAP encourages my innovationSAP changed my perception of businessSAP changed my personal lifeThe SAP business process is logically designed	1	2	3	4	5
1-S Dis 1 2 3 4 5 6 7	Strongly Agree2-Agree3-Neutral4-Disagree5-StronglyagreeE-mail is widely used for communicationThe Intranet is widely used for internal knowledge sharing and business communicationsSAP encourages my innovationSAP changed my perception of businessSAP changed my personal lifeThe SAP business process is logically designedSAP increased my work performance		2	3	4	5

9	SAP reduced the number of work-related meetings							
11)	11) Activity via e-Business							
Ber	Benefits of e-Business (SAP) are seen in the following activities:							
<u>1-S</u> <u>Dis</u>	<u>1-Strongly Agree</u> <u>2-Agree</u> <u>3-Neutral</u> <u>4-Disagree</u> <u>5-Strongly</u> <u>Disagree</u>					5		
1	For providing information on procurement policy							
2	For receiving data regarding the products or issue							
3	For negotiating prices, quantities, and terms of products							
4	For placing orders done by purchasing staff							
5	When confirming delivery of the products							
6	For receiving payments for the products							
7	When the products are produced as required							
8	To support the research and development team when new products are developed							
9	To inform all the staff about the new product							
10	To collaborate with the sales team when market research is conducted							
12)	Intensity of e-Business							
Upo	on utilising e-Business (SAP), the staff —							
<u>1-S</u> Dis	<u>1-Strongly Agree 2-Agree 3-Neutral 4-Disagree 5-Strongly</u> <u>Disagree</u>				4	5		
1	Can accomplish more tasks in a shorter period of time							
2	Increased their level of information-accuracy							
3	Became more aware of maintaining job quality							

4	Became more organised in their workplace			
5	Consistently coordinate work duties with each other			
6	Execute faster communication			
7	Regularly follow the required standards			

13) Environmental Uncertainty						
e-B	usiness (SAP) overcomes the market challenges, especially when –					
<u>1-S</u> Dis	1-Strongly Agree2-Agree3-Neutral4-Disagree5-Strongly1234Disagree					
1	Prices are difficult to predict in the market					
2	Design trends are difficult to predict in the market					
3	It is difficult to forecast the expected volumes of sales					
4	Products have a very high innovation rate					
5	Products have a short life cycle due to rapidly changing trends					
14)	Assets Specificity	1			•	•
Up	on completion of e-Business (SAP) project, it is normal to commit –					
<u>1-Strongly Agree</u> <u>2-Agree</u> <u>3-Neutral</u> <u>4-Disagree</u> <u>Disagree</u>				3	4	5
1	A lot of time and money for the training of personnel					
2	An effort to recruit new personnel					
3	Deploy time and resources					
4	Significant investments in tools and equipment					
5	Significant investments in the information system					

15) Trust Higher level of trust is manifested in e-Business when ----2 3 4 5 1 **1-Strongly Agree 3-Neutral 4-Disagree 5-Strongly** 2-Agree Disagree 1 Dishonesty or false claims are absent 2 Personnel are cautious in using their information access 3 Communications via e-mail can be done in a friendly approach 4 Fulfilled promises given by the top management increased staff loyalty Both parties in the conversation are accountable for the outcomes of their 5 decisions 6 Business negotiations are official even without a hand-written signature 7 Feedback or criticism are acknowledged **16) Dependability** Impact of e-Business in terms of dependability: 3 4 5 1 2 **1-Strongly Agree** 2-Agree **3-Neutral 4-Disagree** 5-Strongly **Disagree** 1 The staff are working with less supervision Many staff are knowledgeable on a single system process that enables 2 continuous operation 3 The staff are qualified for promotions due to their increased capabilities 4 Management is assured that all business activities are reported to them 5 The company can operate well even with less manpower The company has a competitive advantage because it can easily go beyond the 6 current business trend

7	The company is protected from the threats of global economic recession					
17)	17) Inter-Departmental Relationships					
The	best interaction between staff from different departments working on e-Business	is w	hen	_		
<u>1-S</u> Dis	trongly Agree <u>2-Agree 3-Neutral 4-Disagree 5-Strongly</u> agree	1	2	3	4	5
1	They work as a team					
2	They are adaptable to every changing circumstances					
3	Problems are joint responsibilities and are resolved right away					
4	Failures are overcome while success is shared by all					
5	They respect business protocol					
6	They practice harmonious employee-relationships					
7	They promote work ethics in the workplace					
8	They maintain excellent communication					
9	Confidential matters are kept undisclosed					
10	They come up with a unified consensus on achieving goals					

18)	18) e-Business on Saudi perspectives							
A S	A Saudi company which will adopt e-Business (SAP) believes that –							
<u>1-S</u> Dis	trongly Agree <u>2-Agree 3-Neutral 4-Disagree 5-Strongly</u> agree	1	2	3	4	5		
1	Trust is very important for the success of e-Business operations							
2	e-Business can assist with a variety of commercial activities that are required to be undertaken							

3	e-Business can provide better connectivity and information			
4	e-Business can provide better control of work that is carried out by the employees			
5	Adoption of e-Business will lead to greater skills being imparted to Saudis			
6	Human resources are likely to be available or capable of being quickly trained for e-Business operations being contemplated			
7	Adoption of e-Business is likely to offer enhanced economic returns as a result of an ability to rapidly deal with business-related orders			
8	Adoption of e-Business is likely to be useful in the performance of the job function of company employees			
9	Ordinary Saudi nationals are likely to have an interest in the e-Business activities			
10	The company can operate its e-Business operations in line with the religious values of Islam			
11	E-business will not be in conflict with the traditional and cultural values of Saudi Arabia			
12	Having the e-Business platform located inside Saudi Arabia is likely to be more effective			
13	Women are more likely to be accommodated in e-Business operations			
14	The adoption of e-Business is likely to be in the national interests of Saudi Arabia			
15	The e-Business solution is unlikely to create unemployment problems for Saudi nationals			
16	The e-Business system is likely to bring about order and structure in the work environment			
17	The e-Business system is likely to optimise the power distance in the company under consideration and enhance the effectiveness of corporate management			
18	The e-Business system is likely to generate more funds that can be injected into the social programs			

19	The e-Business system will enhance the tradition and culture of doing business within Saudi Arabia			
20	It is likely that the implementation of the e-Business system will encourage the proliferation of other e-Business solutions for Saudi Arabia and the proliferation of IT in the country			
21	E-business makes running an online store a highly desirable thing to do			

19) Suggestion and/or Recommendation

Please present any other perspectives that you feel are important in regard to the implementation of an e-Business concept for the company associated with the Saudi business sector.

Thank you for completing the questionnaire. Your help is very much appreciated.