

THE UNIVERSITY OF HULL

**Destination Management Systems: towards a holistic
effectiveness evaluation**

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by

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Dedication

To my mother, for her prayers, love and dedication in what eases the trouble of my study and my life in general

To my father who set for me a good model to follow, for his indescribable care and encouragement

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Abstract

This study aims to enhance the understanding of destination management system (DMS) effectiveness and its evaluation. Upon review of the literature, it was established that DMS effectiveness and its evaluation has not yet been researched adequately. Informed by an interpretive approach, this study contributes to research particularly by investigating what constitutes effectiveness and explores the aspects (factors and relationships) that need to be considered in a holistic DMS effectiveness evaluation. Based on a qualitative case study strategy, this study adopts a comprehensive approach that considers multiple stakeholder groups' perspectives. The research evidence is collected through a case-study of the Egyptian DMS experience (the Touregypt project). The Touregypt project gives insights to the understanding of three DMS cases that have not been researched before in DMS literature: first, an actual DMS application in a developing country; second, a public and private sector partnership experience; and third, a failed DMS experience (the system has failed in the course of this research).

Prompted by the interpretive approach, this study tried to explore DMS effectiveness based on the perspectives, attitudes and experiences of the multiple stakeholder groups (Hesse-Biber and Leavy 2010). Accordingly, the empirical data was collected through a multi-method approach that includes interviews, observation, archival document analysis (including Touregypt forum analysis), and website analysis. Data has been analyzed guided by discourse analysis, complemented with the general inductive approach of Miles and Huberman (1994). Following an interpretive theory-building strategy, the analyzed data has been further interpreted in the light of prior theories of DMS and information systems research, particularly the Delone and MacLean IS effectiveness theory (1992, 2003, and 2004).

The main contribution of this study to knowledge is a theory based model that enhances the understanding of DMS effectiveness evaluation. The suggested model identifies the aspects (factors and relationships) that need to be considered when evaluating the effectiveness of DMS. Also, the results of this study give insights to the

understanding of DMS effectiveness by shedding light on what constitutes effectiveness and the possible relationship between such constructs.

Glossary of abbreviations

The Association of Egyptian Travel Businesses on the Internet (AETBI) is the official name of this online association of Touregypt system. The mission statement was to provide information, training and advertising opportunities to Egyptian travel businesses in order that they may better compete in the global online tourism market, See Figure 23.

Destination Management Organization (DMO): is the responsible organization for planning, management, marketing the overall tourism industry in a destination. They are generally undertaken by either public sector or by a partnership between public and private sectors (Buhalis 2003; UNWTO 2004), see Section 2.1.1 for more details. In the case of this study DMO is a term that is used to refer to the Egyptian Tourism Ministry which is the public sector authority that used to own and be responsible for the Egyptian DMS (i.e. Touregypt), see Chapter 6 for more details.

Destination Management System (DMS): many definitions, from different perspectives, have been put forward to describe the functions and aims of DMS (destination databases, and visitor information systems (Pizam 2005)). For the purpose of this study, the following definition is adopted:

"Destination Management Systems (DMS) are systems that consolidate and distribute a comprehensive range of tourism products through a variety of channels and platforms, generally catering for a specific region, and supporting the activities of a destination management organization (DMO) within that region. DMSs attempt to utilise a customer centric approach in order to manage and market the destination as a holistic entity, typically providing strong destination related information, real-time reservations, and destination management tools and paying particular attention to supporting small and independent tourism suppliers" (Horan and Frew 2007, p. 63).

Information systems (IS): different definitions have been associated with the term information system. For the purpose of this study, the following two definitions are adopted: "A group of components that interact to produce information" (Kroenke

2008, p. 6). The five components of an information system are hardware, software, data, procedures, and people. These *“Interrelated components working together to collect, process, store and disseminate information to support decision making, coordination, control, analysis and visualization in an organization”* (and Laudon 2007, p.7). Buhalis (2003) added that each element of the information system needs to be coordinated with the others.

Information technology (IT): is defined as the "collective term given to the most recent developments in the mode (electronic) and the mechanisms computers and communication technologies) used for the acquisition, processing analysis, storage, retrieval, dissemination and application of information" (Poon 1993, cited by Buhalis 1998, p. 3). IT becomes involved in the development and prosperity of destination, since they play a key role in determining their competitiveness in the global marketplace. Moreover, IT floods the functions of strategic and operational management and drive the competitiveness of local enterprises (Buhalis 1998).

Inter-organizational Systems (IOS): is defined as an *“information and management system that transcends organizational boundaries via electronic linkages with its trading partners”* (Eom and Lee 2005, p. 76). IOS is the system that cross the boundaries of organizations and enable them to exchange information and conduct business electronically (Senn 2000). Its aims are to distribute data, business applications, and information, and to provide the business partners with the capabilities of electronic transactions about buying and selling goods and services (Eom and Lee 2005).

Small and Medium size tourist enterprises (SMTE): are defined by the European Commission as all enterprises with fewer than 250 employees (0-10 for micro, 11-50 for small, and 51- 250 for medium sized enterprises). This includes the primarily tourism enterprises such as hotels, tourist and transportation companies and the enterprises that serve the local population and travellers such as restaurants and bars (Buhalis 2003). The UNCTAD (2005a) added that the majority of tourist enterprises in destinations are SMTE.

Chapter 1: Introduction

Introduction

This research is about the evaluation of Destination Management Systems (DMS) effectiveness. This opening chapter aims to provide an overview of the research and thesis. Firstly, the background to the research is presented, followed by a review of gaps in literature and the research problem. The aims and questions of the study as well as how and why the research is conducted are then presented. Finally, the structure of the thesis and the core concepts used in this research will be outlined.

1.1. Research background

Tourism is one of the largest and most rapidly expanding industries in the world (Werthner and Klein 1999; Buhalis and Law 2008). Information Technology (IT) has enabled and supported such expansion, and revolutionized the structure and organization of the tourism industry (Minghetti and Buhalis 2010). Tourism is an information intensive and highly networked business, based on world-wide cooperation of various types of local and international stakeholders (Buhalis 1998). IT innovations have dramatically changed the way in which tourism organizations process, store, retrieve and distribute business information through the development of Information Systems (IS) (Poon 1993; Sheldon 1997) and web-based applications.

The Internet and IT/IS innovations have provided tourists, tourist destinations and tourist organizations with opportunities and new channels through which to empower their communication process while reducing search and distribution costs (Minghetti and Buhalis 2010). IT has reduced operating costs, improving business processes and providing tourism producers with additional opportunities to present and sell their products, as well as to establish partnerships with carriers, tour operators, travel agencies and national tourism offices (UNWTO 2001).

Therefore, tourist destinations need to take advantage of the new opportunities offered by IT to brand and promote their own tourism industries, and accordingly interact effectively in the new global market environment. In support of this view, UNCTAD (2005c) asserted:

“E-tourism could help developing countries exploit the untapped development opportunities tourism offers and, if set up efficiently, could give them better control of their own tourism industry” (2005c, p. 1).

IT and IS applications (such as Destination Management Systems (DMS), which this study is focussed on) have enabled destinations to make tourism products and services directly available to a large number of consumers at a low cost, and to interact with them, as well as with other tourism stakeholders (e.g. local tourism suppliers and intermediaries). The increasing number of consumers that use the Internet to plan vacations or business trips (UNCTAD 2005b) represents a key incentive for tourism destinations to organize and develop their tourism products and their promotion over the Internet.

Consequently, in tourist destinations, DMSs have emerged in order to take advantage of the potential of e-tourism businesses, re-engineering the processes of the tourism industry, and acquiring a competitive advantage. Generally, DMSs are online distribution systems that are developed to manage and market the destination as a holistic entity. They connect online tourists with the local tourism businesses in a destination. They are usually managed by national tourist organizations or Destination Management Organizations (DMOs, which are responsible for managing and marketing the tourism sector in a country); they may be a completely public sector or a public and private sector partnership. Horan and Frew (2007) defined DMS as the systems that:

“Consolidate and distribute a comprehensive range of tourism products through a variety of channels and platforms, generally catering for a specific region, and supporting the activities of a destination management organization (DMO) within that region. DMSs attempt to utilize a customer centric approach in order to manage and market the destination as a holistic entity, typically providing strong destination related information, real-time reservations, and destination management tools and paying particular attention to supporting small and independent tourism suppliers” (2007, p. 63).

Sheldon (1997) asserted:

“[DMSs] are perhaps the most important technological tool for the future of tourist destinations” (1997, p. 151).

DMS are important for marketing the destination both overseas and locally, increasing tourism revenues through providing online booking facilities, integrating the presence of local enterprises online as well as supporting the businesses of Small and Medium Tourism Enterprises (SMTEs), which usually find it hard to compete in the online tourism markets, especially in developing countries.

However, a DMS may not realize its potential if it is not effectively developed and continually evaluated (Irani and Love 2002; Ritchie and Ritchie 2002; Irani 2008). In today's complex business environment, DMOs need to evaluate the effectiveness of their DMSs (Rita 2000; Ritchie and Ritchie 2002) to better utilize resources, ensure the system's effective performance, as well as solve problems that may hinder the purposes of DMS implementation. Failure to understand the vital need for effectiveness evaluation can have undesirable consequences, such as inappropriate resource allocation and competitive disadvantage (Irani 2008) and system failure (Ritchie and Ritchie 2002). Despite its importance to the success of DMS applications, effectiveness evaluation is still not well understood in either practice or academic communities. A lack of understanding of why and how to evaluate the effectiveness of DMS appears to be a central issue facing managers, with little consensus among academics (Irani and Love 2002; Hornby 2004). Fundamentally, it appears (by reviewing the relevant literature) that there is a need for better understanding of what constitutes DMS effectiveness and its evaluation, to ensure realization of its purposes. The following section discusses research problem and identifies gaps of the literature.

1.2. Gaps in literature and the problem statement

As revealed by the foregoing discussion, DMS researchers have asserted the critical importance of evaluating DMS effectiveness (e.g. Sheldon 1997; Buhalis and Deimezi 2003). Some of them even argued that the lack of evaluation of effectiveness of DMS contributes to the noticeably higher rate of failure than success in actual DMS

applications that has been witnessed in recent years (Buhalis and Spada 2000; Ritchie and Ritchie 2002; Buhalis and Deimezi 2003; Wang 2008a).

A review of the related literature (see Chapter 3) has highlighted a few central gaps in knowledge, which contributed to indentifying the research problem:

1. DMS effectiveness and evaluation have been studied from a narrow perspective; many researchers studied DMS effectiveness from a marketing perspective, ignoring the management role of the system (e.g. Wang and Russo 2007; Wang 2008a). Accordingly, such one-sided study influences the way in which DMS effectiveness is researched and results in ignoring a number of important effectiveness factors that have been mentioned in relevant studies (for more details see Chapter 3).

Also, DMS is a multiple stakeholder system that combines local and international parties. The views of such various stakeholders groups on effectiveness need to be considered when identifying what needs to be assessed in DMS effectiveness evaluation in order to approach a holistic understanding. A review of the literature has identified that no study has investigated the perspectives of the many DMS stakeholders on effectiveness. Additionally, the studies of DMS effectiveness have only examined the perceptions of the members of tourism providers in DMS, excluding non-participating enterprises' perceptions on DMS effectiveness (Sigala 2009). To sum up, studies on DMS effectiveness are limited and narrow in their scope, as they either focus only on the views of a limited range of stakeholders, or do not consider important factors that have been mentioned in the prior research on DMS in particular, and IS effectiveness in general.

2. Much DMS research has not made use of prior theories; thus little theoretical development has been made in prior research (Hornby 2004).
3. Investigation of DMS failures is needed (Ritchie and Ritchie 2002); despite the high rate of failure in DMS applications, limited research currently exists to identify the effectiveness factors of DMS (Wang 2008) and to investigate the reasons behind the failures of these systems. The current studies investigate

successful DMS application in developed countries, while failure experiences still need to be explored (Richie and Richie 2002).

4. The great majority of prior studies explore DMS in the context of developed countries; DMS in developing countries remains to be explored. Studies that have discussed DMS effectiveness or success factors have been applied only to investigate DMS in developed countries. It is known that developing and developed countries have different political, cultural, social and economic conditions. In addition, it is believed that DMS effectiveness is affected by such contextual aspects (see Sigala 2009; UNCTAD 2005a and b; Brown 2004). Consequently, the understanding of DMS effectiveness in developing countries is vague. Therefore, there is a need for more research on DMS effectiveness taking into account different influences in developing and developed countries.

In light of the above, attempts to understand and evaluate DMS effectiveness have, so far, been partial and insufficient. The limitations of previous research are discussed in more details in part 3, explaining the absence of a holistic model for understanding and evaluating DMS effectiveness.

It is worth mentioning here that the evaluation of DMS effectiveness is a complex issue. The various stakeholder groups and many internal and external factors contribute to the effectiveness of such systems, as well as the complexity of the relations in the destinations' tourism businesses and the possibility of conflicts between the various system stakeholders. All of these aspects make it difficult to understand and identify DMS effectiveness factors. Accordingly, this drives DMS effectiveness evaluation to be a difficult concern. Given such complexity, the evaluators of DMS effectiveness might neglect some important factors, if they do not well understand what constitutes and influences the effectiveness of DMS.

Thus, DMS effectiveness evaluation is a complex issue that is not well-understood or researched. This calls for a better understanding of what constitutes DMS effectiveness evaluation. The following sections present the purpose of this study and the approaches to filling the above identified gaps in the literature.

1.3. Research purpose and questions

This research aims to enhance the understanding of DMS effectiveness evaluation and aims to find out what aspects need to be considered to evaluate the effectiveness of DMS. The study initially began by focusing on the evaluation of DMS effectiveness. However, a review of the literature revealed that there is a lack of a well-founded and coherent understanding not only of issues of the evaluation of DMS effectiveness, but also of what constitutes the effectiveness of the DMS itself. Therefore, it was important to start from the meaning of DMS effectiveness and explore how it is perceived by stakeholders, which enabled the identification of aspects that need to be considered to evaluate DMS effectiveness holistically. Therefore, this study explores stakeholders' perspectives and considers the multiple influences on effectiveness (see Section 1.4). As a final outcome, this study ends by suggesting a theory-based model that enhances the understanding of what constitutes DMS effectiveness, and identifies what effects need to be considered to approach a holistic effectiveness evaluation (see Chapter 8).

However, it is important here to clarify that this study does not develop a holistic model for understanding of DMS; rather it specifically moves towards a more holistic understanding of DMS effectiveness evaluation (see Appendix 1). Secondly, this study does not aim to produce a "cookbook" (a set of specific procedures to be followed) for the process of DMS effectiveness evaluation. In other words, this study does not aim to answer the question of how to evaluate (how the evaluation is to be carried out), rather it aims to identify what needs to be assessed when evaluating DMS effectiveness. Therefore, the following main and minor questions have been formulated to reach the aim of this study.

The main question:

What aspects need to be considered when holistically evaluating DMS effectiveness?

The minor questions:

The term 'aspects' used in the main question implies both the factors of effectiveness and the relationship between these factors. Reflecting on the foregoing discussion, for

identifying the aspects of DMS effectiveness, this study needs to discover how different stakeholders perceive the effectiveness of DMS. Therefore, minor questions for unpacking the term ‘aspects’ and exploring stakeholders’ perspectives on DMS effectiveness are as follows:

1. According to stakeholders, what are the factors that influence DMS effectiveness?
2. What are the relationships between factors affecting DMS effectiveness?

By answering the above research questions, this study fills gaps in literature as presented in Table 1 (see also Chapters 2 and 3).

Table 1: Literature gaps and how this study will fill them

Literature gaps	How it is filled
DMS effectiveness studied from a narrow view.	Adopting a broader view that investigates the various primary and secondary DMS stakeholders’ views on effectiveness, as well as taking into account the various factors that affect the effectiveness of DMS, e.g. system, organizational and environmental factors.
Investigating DMSs failure are needed (Ritchie and Ritchie 2002)	Investigating a failed DMS experience (i.e. the Egyptian DMS experience).
Most previous DMS studies lack a theoretical background (Hornby 2004).	Guided by prior IS theories (e.g. DeLone and MacLean theory of IS success/effectiveness evaluation).
DMS effectiveness has been studied only in developed countries context.	Exploring DMS effectiveness in a developing countries context (investigating the Egyptian DMS experience, Touregypt project).

In the light of the above discussion on the research problem and research questions, the following points summarize the objectives of this study:

1. To enhance the understanding of DMS effectiveness by exploring what constitutes DMS effectiveness and how the effectiveness constructs are related to each other.
2. To approach a holistic perspective that considers the multiple DMS stakeholders’ views (i.e. international tourism organizations and local tourism

providers) on effectiveness, as well as being open to any emerging internal and environmental effectiveness influences.

3. To qualitatively evaluate a DMS experience in one of the developing countries; the Egyptian DMS effectiveness (see Section 1.4).
4. To research both sides of DMS, in the tourism and information systems fields. DMS is a tourism distribution system and a web-based interorganizational information system (Chen and Sheldon 1997). Thus, DMS is a tourism information system. Accordingly, this thesis aims to bring both sides of DMS - the tourism and the information systems fields – together by reviewing how IS effectiveness and its evaluation is conceptualized in IS as well as DMS (tourism) research.

1.4. Research approach

To generate the necessary information for answering the research questions, this study adopts an interpretive perspective that attempts to understand the inter-subjective meanings about DMS effectiveness within its natural setting from the perspective of the stakeholders (Walsham 1993; Orlikowski and Baroudi 1991). This is in order to move towards a holistic understanding of DMS effectiveness influences from the viewpoint of its various stakeholder groups. Based on the interpretive perspective, and to be able to gain insight into an DMS application, this study adopts a qualitative (or interpretive) evaluation case study as a research strategy (see Section 5.2.2.2). The case study of the research is the Egyptian DMS experience (the Touregypt project). The Touregypt project is an example of a DMS failure experience in a developing country (see Section 6.1.2. for more information) An interpretive evaluation approach is a branch of qualitative inquiries that investigates stakeholders' views to gain *“deep understanding of the nature of what is to be evaluated”* (Cronholm and Goldkuhl 2003, p. 3; see Section 5.2.2.2). The qualitative evaluation case study inquiry provided the materials from which this study constructed a coherent picture of how different stakeholder groups perceive DMS effectiveness. Such stakeholders include local tourism providers, public and private sector organizations, international tourist organizations, and online tourists.

Given the large number of DMS stakeholders, the empirical evidence is collected through a multi-method approach that includes, for example, semi-structured interviews, observation, documentary survey, and analysis of the Touregypt website and forums. Then, data transcription, coding and interpretations are informed by using discourse analysis (Gee 2005) as well as the general inductive approach of Miles and Huberman (1994) (on how the two methods are combined, see Chapter 6). Also, the data analysis is complemented by using the Nvivo computer application for organizing the empirical data (see Appendix 2).

In brief, the research findings, derived from an empirical qualitative evaluation of the Egyptian DMS experience (the Touregypt project), reflect the researcher's own interpretation of stakeholders' interpretations on DMS effectiveness. Also, the research results are examined against prior theories (see Chapters 5 and 6) in order to present the final output, which is a theory based model of DMS effectiveness evaluation (see Chapter 8).

1.5. The structure of the thesis

This thesis comprises nine chapters organized in five parts. Part one (Chapter 1) presents the background of the research context and an overview of the research problem, aims, questions, and some important terms that are used in this study. Part two (Chapters 2, 3, and 4) presents a literature review on concepts that appear to be relevant to this study, such as an overview on the concepts of DMS and effectiveness as presented in literature, as well as a critical analysis of the evaluation of IS effectiveness in IS research. Additionally, part three (Chapters 5 and 6) presents the underpinning assumptions upon which this study is based, as well as the approaches used to generate the theory of this study. Part four (Chapters 7 and 8) presents the outcomes of the study. It presents the results in the form of a theory-based model that identifies the aspects that need to be considered when holistically evaluating the effectiveness of DMS. Finally, part five (Chapter 9) presents a conclusion to the study and verifies the limitations, and suggests some possible future research ideas as informed by this research. A brief summary of the content of each part of the thesis is depicted below.

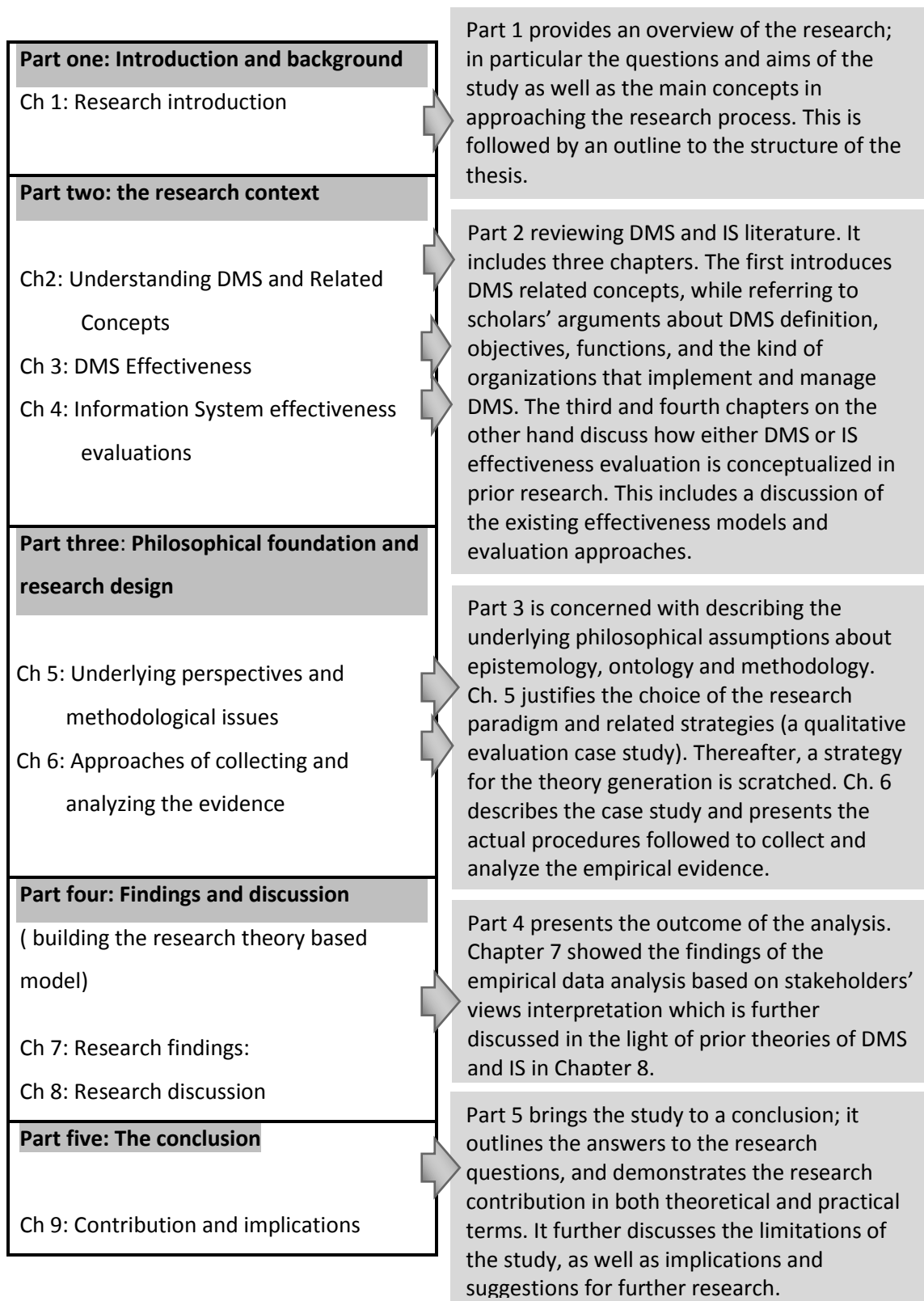


Figure 1: An overview of the structure of the thesis

1.6. Chapter summary

This chapter introduced the purpose of this study, which is to investigate what aspects need to be considered to approach a holistic DMS effectiveness evaluation. This investigation is guided by the assumptions of the interpretive paradigm and involves a qualitative evaluation case study of the Egyptian DMS experience (the Touregypt project). This chapter has stated the research problem from which the idea of conducting this study emerged. Also, it summarizes the gaps in the literature and reveals how this study will fill such gaps. An overview of the research design has been given, summarising the justification for adopting multiple qualitative data collection and data analysis methods. Finally, this chapter has outlined the structure of this thesis and defined the key terms used in this study. The following part of this thesis introduces a critical review of related concepts that have been put forward in the relevant DMS and IS research. The three chapters of part two set the basis for the discussion about DMS and IS effectiveness evaluation for this study.

Part Two: The Research Context

Introduction

This part explores a range of research perspectives in relation to the context of this study in which DMS and IS effectiveness, and their evaluation, are the focus. This part is divided into three chapters. The first chapter commences with a general background on DMS and the context in which these systems are implemented. An overview of DMS definitions and related concepts is then introduced, particularly DMS business models in use, aims and components of DMS as well as DMS development challenges. The second and third chapters of this part contextualise the field of DMS and IS effectiveness evaluation in order to explore how effectiveness is conceptualized in literature and the contributions of researchers regarding what aspects need to be considered when evaluating either DMS or IS effectiveness. Finally, a summary of this part is provided which sets to reflect on concepts derived from reviewing the literature in relation to the purpose and questions of this study. Generally, from the work undertaken in this part, it becomes clear that the research questions raised in the previous chapter remain a challenge and answering them should fill many gaps in the literature.

Chapter 2: Understanding Destination Management Systems (DMS) and Related Concepts

Introduction

This chapter commences with a discussion on the background to DMS. The concepts of DMS are then produced and an overview on DMS objectives and components as well as its adoption and implementation are reviewed. Following on this, the challenges that face the development of DMS are explored. Finally a conclusion to this chapter is drawn to address what has been learned in light of the purpose of the study.

2.1. DMS: a brief background

DMS is a type of information systems, particularly a web-based (Baggio 2003) inter-organizational information system (Sheldon 1997). Drury and Farhoomand (1998) argued that there are two basic types of characteristics in any type of IS, generic or shared by all IS and specific properties to a particular type of IS. Accordingly, DMS has two kinds of properties that need to be explored, the generic properties that are shared by all ISs (see chapter 4) and those specific to DMS as a particular type of IS. This section provides an overview that is relevant to the destination context of DMS, in particular Destination management organizations (DMOs) role, as well as benefits of utilizing DMS for the destination (DMO and local tourism enterprises).

2.1.1. Destination management organizations (DMOs)

DMS are usually managed by national tourist organizations or destination management organizations (DMOs) which are responsible for managing and marketing the tourism industry in a region. The DMOs may be a completely public sector (as in the case of Egypt – the case of this study) or a public and private sector partnership. DMS is seen as an online system that supports the activities of DMO within a destination (Horan and Frew 2007). DMO is referred to as a nonprofit entity that aims at generating tourist visits for a given destination (Gretzel et al. 2006). It is generally responsible for leading the overall tourism business at a destination. Developing a quality image, providing information to visitors, and coordinating

stakeholders interest are among activities of DMO (Buhalis 2003; Gretzel et al. 2006). Literature revealed that two aspects face DMOs in developing their destinations; coping with the new IT innovations of tourism business, and incorporating the multi players of the tourism industry. These two attributes need to be considered to effectively develop the tourism industry (Gretzel et al. 2006). Augustyn and Knowles (2000) advocated that:

“The fragmented nature of tourism supply at destinations, combined with the need for the provision of total tourism products that satisfy the visitors' needs calls for co-operation within tourism regions” (2000, p.341).

In support of the above discussion, DMS researchers (e.g. Collins and Buhalis 2003; Egger and Buhalis 2008) asserted that coping with the new IT and tourism innovations as well as facilitating the co-operation of tourism stakeholders are two factors that call DMOs to develop DMS in their destination. The following discussion presents the benefits that are indicated in the literature form the implementation of DMS for both DMO and the local tourism enterprises, especially small and medium tourist enterprises (SMTE) (see Appendix 1 for the definition of SMTE). Also, Section 2.1.2 deals with the support of DMS in facilitating the co-operation of destination stakeholders. For example, researchers suggested that this could be done when DMS provides benefits to all the stakeholder groups (Buhalis and Spada 2000; Buhalis 2003).

2.1.2. DMS benefits for destination (DMO and the SMTE)

The Internet has become the most important source of information for travel preparations (Egger and Buhalis 2008). Over the last decade the Internet and innovative e-tourism applications have changed the entire field of destinations management (Buhalis and Spada 2000). Nowadays, tourists can directly contact the destination for information. Furthermore, responding to IT developments, tourists' expectations go further to include not only up-to-date and relevant information but also booking facilities for accommodation and services. In the last few years DMOs have realised the key role that IT can play in enhancing the effectiveness of their operations. Therefore, many DMOs try to develop their online presence by employing DMS, in order to encourage and facilitate tourist visits (UNWTO 2001; Buhalis 2008).

Therefore, DMS can be regarded as the response of DMOs to Internet developments and innovative e-tourism application. DMSs have two primary functions; they provide consumers with comprehensive and accurate information to facilitate the preparation of their vacations, and provide booking facilities for tourism services and products (WTOBC 2001).

The term Destination Management System (DMS) came into use over the last decade to describe the IT infrastructure of DMOs which is developed to support the destination e-business activities (WTOBC 2001). Generally, DMS can be used as a strategic ICT tool to help DMOs and local tourism enterprises integrate, promote and distribute tourism products and services (Buhalis 2003). The following bullet points list some of DMS potentials (also see Section 2.3). It can:

- Help DMO to manage the destination and support its functions and objectives (see Section 2.3). For example, working as an info structure tool, DMS enables DMO to co-ordinate its activity and to provide sufficient information to their overseas offices for promoting the destination (Buhalis 2003). Also, DMS support DMO in marketing the destination both overseas and locally (Richie and Richie 2002).
- Increase tourism revenues through providing online booking facilities.
- Provide DMO and local tourism enterprises, through e-marketing and booking facilities, with a means to compete better in the electronic market place and to keep pace with the emergence of e-tourism business. In this regard, DMS is particularly important for SMTE as discussed in the following.

Most of the destination is a SMTE (UNCTAD 2005a). The relationship between the SMTE and the DMO regarding DMS implementation is a symbiotic as follows: The SMTE need the support of DMOs to support their online presence and competitiveness (UNCTAD 2005a), which can be enabled by the utilization of DMS. In general, the SMTE lack sufficient capital and expertise to undertake a comprehensive marketing strategy (Sussmann and Baker 1996; Frew and Davenport 2000; Daniel and Frew 2008). Consequently, the adoption of IT applications, in these enterprises, is negatively influenced and they find it hard to compete internationally and expand

their market opportunities, especially in the developing countries (UNCTAD 2000, 2005b; Buhalis and Deimezi 2003). Therefore, the SMTE need the support of DMS to boost their online business and to compete in the electronic market place. Equally the DMO is in consistent need of the SMTE, which makes a kind of symbiotic relationship between them. The literature revealed that the great majority of tourism businesses in destinations are SMTE (Richie and Richie 2002; UNCTAD 2005a). Seen in this light, DMO seek the participation of SMTE so that DMO can provide DMS with the comprehensive information about the tourism product as promised (see Section 2.3). Therefore, DMO and SMTE need the participation of the latter in order for DMS to provide comprehensive information about the tourism destination and support the online business of the SMTE.

The following presents the argument of prior researchers about DMS related concepts, such as definition, advantages, aims and challenges. This is in order to pave the way for further discussions on DMS effectiveness and how it has been studied in DMS literature.

2.2. DMS: terms and definitions

The lack of a commonly agreed term and definition for DMS is noticeably recognized when the literature of DMS is reviewed. Buhalis and Deimezi (2003), additionally, argued that there is no exact interpretation of what these systems should offer. The different arguments between researchers about DMS term and definition can be attributed to their different perspectives about DMS role, aims and functions, which, in turn, reflect the way they terms such systems. Consequently, DMS literature has derived a number of different definitions and even different terms when referring to the concept of DMS, i.e. Tourist Database, Visitors or Tourists Information Systems, Destination Database, Destination Information Systems, Destination Marketing Systems (DMS), and Destination Management Systems (with the same abbreviation of DMS).

However, there are a number of generally agreed aspects related to DMS role and features. For example: providing a comprehensive information database for the destination products and services in order to work as an IT infrastructure for DMO,

the interorganizational role that connect tourists with tourism suppliers (Sigala 2009), and the important role of DMS in supporting the business of SMTE.

The following discussion presents how different groups of researchers perceived DMS aims and function and how this influences the choice of the term utilized.

2.2.1. DMS as a tool for distributing destination information

Chen and Sheldon (1997) argued that the aim of DMS is to produce unbiased and comprehensive information about the destination. As a consequence they referred to DMS as Destination Information Systems (DIS). They defined DIS as:

"An inter-organizational system (IOS) that provides travellers and travel counsellors with easy access to comprehensive, timely and accurate information on a destination's facilities, and the option of making reservations" (1997, p. 151).

The definition of Chen and Sheldon (1997) regards DMS as an IOS. However, they focused on the distribution of destination information and neglected other aspects related to DMS as an IOS, such as, what Wang and Russo (2007) noted, the need for communication and relationship building capabilities.

2.2.2. DMS as a Marketing tool

For a number of researchers (e.g. Rita 2001; Richie and Richie 2002; Wang and Russo 2007) the main aim of DMS is the promotion of a destination product and services with the prospect of making reservations. These researchers refer to such systems by the term 'Destination Marketing Systems' and tend to study DMS from only a marketing perspective that is customer focused. For example, Frew and O'Connor (1999) define DMS as:

"It is a system that uses computer and communication technologies, especially the Internet and the world wide web, to fulfil the function of a DMO in its primary objective—the promotion of tourism business within geographical defined area, normally including a link to reservations and sales facilities" (1999, p. 399).

Adopting a marketing perspective, Wang and Russo (2007), also, identified DMS as:

“A prevalent distribution channel used by destination marketers’ to provide comprehensive tourism information and a selection of tourism products to potential visitors” (2007, p. 199).

2.2.3. DMS as a tool for destination management

Another group of researchers e.g. Buhalis (2000), Buhalis and Spada (2000), Collins and Buhalis (2003), and Horan and Frew (2007) have embraced a broader view for studying DMS. They go beyond the role of only marketing the destination to study DMS as a Destination Management System. For example, Horan and Frew (2007) defined DMS as follows:

“Destination Management Systems (DMS) are systems that consolidate and distribute a comprehensive range of tourism products through a variety of channels and platforms, generally catering for a specific region, and supporting the activities of a destination management organisation (DMO) within that region. DMS attempt to utilise a customer centric approach in order to manage and market the destination as a holistic entity, typically providing strong destination related information, real-time reservations, and destination management tools and paying particular attention to supporting small and independent tourism suppliers” (2007, p. 63).

This group of researchers argued that the aim of DMS is to support the functions of DMO; e.g. planning, managing and marketing the destination (Buhalis 2003). According to these researchers’ perspective, DMS enables the distribution of a comprehensive range of information about destination products and services, provides online booking facilities, and supports the business of local tourism providers.

2.2.4. DMS as perceived by this study

Reflecting on the above discussions about the different conceptualizations of DMS, this study considers DMS as a management and marketing tool utilized to support the

functions of DMO e.g. develop the tourism business and generate benefits for different stakeholders. In support of this view, Gretzel et al. (2006) mentioned:

“The rising number of constituencies creates a dramatic increase in the complexity of DMO responsibilities. Fewer than 20 years ago, the definition of the acronym DMO was “destination marketing organization.” Today, DMOs are increasingly referred to as “destination marketing and management organizations.” To an ever higher degree, DMOs find that they are in a position in which they have to be responsible to both the buyer and the local communities they represent “(2006, p. 4).

This implies that the role of DMOs covers more than just marketing the destination. Its responsibilities; which DMS can support – cover the overall development of the tourism industry in a destination. Supporting the function of the DMOs, the emergence of DMS as an ‘info-structures’ enables a destination to distribute comprehensive information about destination resources, products and services as well as to facilitate planning, management and marketing the destination as a tourism entity or brand (Buhalis and Spada 2000). Accordingly, this study supports the notion of researchers such as Buhalis (2003) and Horan and Frew (2007) in that ‘Destination Management System’ as a term seems to be more appropriate to express the aims, features and potentials of a DMS than are other terms (see Sections 2.2.1. and 2.2.2.).

The adoption of this study of the term ‘Destination management systems’, therefore, implies the adoption of a holistic view when studying DMS and its effectiveness. Thus, this study argues that studying the effectiveness of DMS considering only a marketing perspective is insufficient as it is very likely to neglect important features of DMS as a result, such as the need for organizing the destination products and services, meeting the needs of the multiple stakeholders and coordinating their relationships.

2.3. DMS aims and objectives

Given the above discussions, the main aim of DMS is to work as a tool for developing the tourism business in a destination. DMOs employ DMS in order to support their functions towards the destination (Horan and Frew 2007). DMS enables DMOs to increase the productivity and improve the business and competitiveness of local

public and private tourism enterprises in addition to achieving long term benefits for stakeholders (Collins and Buhalis 2003) and create economic wealth and jobs for the tourism destination. Therefore, DMS is regarded as a tool to increase DMOs and tourism enterprises capabilities and promote their business and improve destination competitiveness in the electronic market place (Sheldon 1997; Rita 2001; Richie and Ritchie 2002; Collins and Buhalis 2003; Wang and Russo 2007).

In order for DMS to support the activities of DMOs and achieve long term benefits for different stakeholders, DMS should act as a professional link between customers, tourism enterprises, and DMOs (Rita 2001). In addition, DMS should present the destination as a holistic entity displaying a destination orientation rather than product orientation (Horan and Frew 2007). The following is a collection of views from DMS literature about what DMS should encompass to realize its long term aims. As noticed discussion about what DMS should provide go around satisfying the needs of different stakeholders and increasing their satisfaction level through providing comprehensive and reliable information about the destination products and services, a mechanism for effective communication between the primary stakeholders (customers, DMO and tourism providers), improved booking and transaction capabilities, and supporting the operations of local tourism providers especially the SMTE. For example DMS can:

1. Provide comprehensive and accurate information, marketing research and statistical analysis capabilities in order to support the tourism decision making within the destination (for managers of Destination Management Organizations and local tourism businesses) (Richie and Richie 2002).
2. Organize the relationship of stakeholders and work on increasing their satisfaction level through the use of advanced information and communication technology (Buhalis 2003).
3. Facilitate technology access, providing training and promotions for tourism products this is in order to integrate the presence of the local tourism businesses to compete in the electronic market place (Rita 2000; Buhalis and Spada 2000; Sigala 2009).

4. Provide reliable electronic transaction deployment in order to Increase business for the destination and local suppliers (i.e. Buhalis and Spada 2000; Wang and Russo 2007).
5. Provide an appropriate and sustainable relationship building mechanisms with customers (Wang 2008a) and tourism providers through effective, meaningful and continuous communication aiming to increase the satisfaction level of system users (customers and tourism providers).
6. Increase visitors' traffic; attract the right market segment with the provision of an accurate and up-to-date comprehensive electronic database (Sheldon 1997).
7. Define standardized and general selection criteria for the services and products which are including in the DMO website, for the tourists to choose from (Rita 2001).
8. Support research monitoring and evaluation by storing and processing data, for example on arrivals and departures (UNTACD 2005a).
9. Support policy and strategy formulation by providing collaborative areas where staff can work together in developing and getting approval (UNTACD 2005a).
10. Serve as an inventory of tourism products and services, allowing staff, the industry and the general public to view the information (UNTCAD 2005a), as Buhalis (2003) conclude, to work as a destination 'info-structure'.

2.4. DMS components

Components of DMS should be constructed to realize objectives and consider different relations and functions of the DMS in order for its long term aim to be achieved. Proll et al (1998b), the UNTACD (2005a), and Wang and Russo (2007) argued about the components of DMS. In the light of DMS functions, they proposed different sets of components. This can be attributed to the different views they hold on the functions of DMS. Wang and Russo (2007) adopt a marketing perspective, while Proll et al. (1998b) and UNCTAD (2005a) adopt a management perspective for identifying the purpose, function and components of DMS (see Section 2.2). For example, driven

by a customer focused perspective, Wang and Russo (2007) identified four components of DMS as follows:

1. Virtual information space (VIS): to Provide comprehensive and quality information about the destination.
2. Virtual communication space (VCS): to provide effective and constant communication with consumers.
3. Virtual transaction space (VTS): the transaction function enables DMS to generate revenue both internally and also externally for their stakeholders.
4. Virtual relationship space (VRS): facilitate an appropriate and sustainable relationship building mechanisms with tourists.

Although the above list of DMS components includes significant aspects of DMS that have been mentioned in the literature, it cannot be considered as a complete list. Wang and Russo (2007) overlooked important aspects of DMS that need to be taken into account. They focused only on one facet of DMS relationships, which is the relation of DMS with online tourists, ignoring other important relations, e.g. the relationship between DMO and local tourism providers.

Adopting a broader view than that of Wang and Russo (2007), Proll et al. (1998b), and the UNTACD (2005a) argued for another set of DMS components as listed below. The UNCTAD (2005a) presented the main components of DMS by categorizing the functions of DMS according to different user groups. These components (see Figure 2) are the Extranet, Intranet and the public Internet. These are located around a central DMS database:

1. A database, the core component of DMS and is the starting point for providing and managing all information. DMS should include content and graphics; research statistics and information; and an e-commerce module.
2. Three different websites, including an Intranet (for staff only), an Extranet (to link to tourism stakeholders) and the public website on the Internet (online

customers), which should provide each group of potential customers with comprehensive and relative information (see Proll and Palkoska 2002).

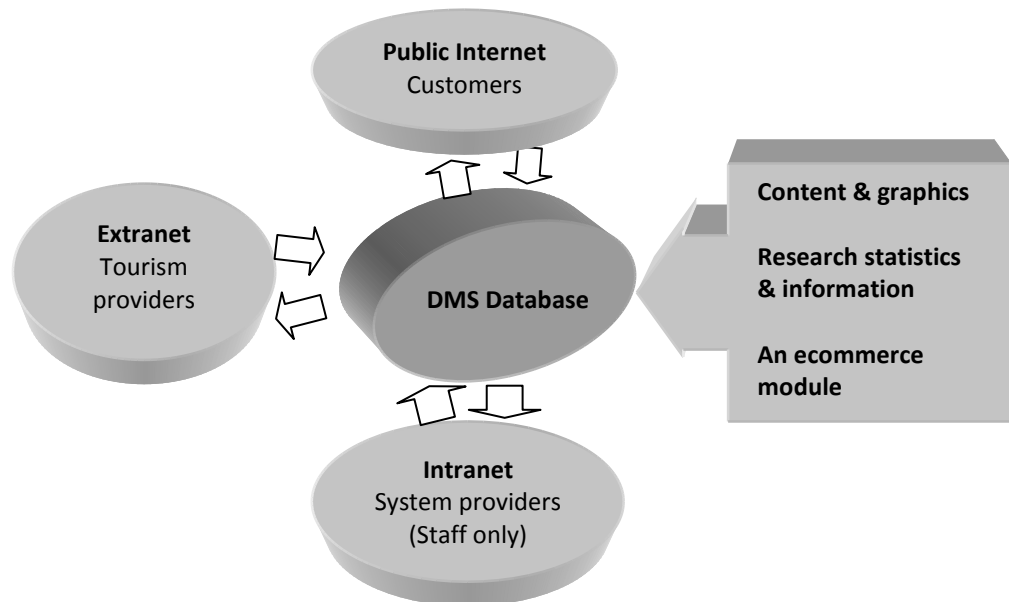


Figure 2: DMS components based on the UNCTAD (2005a)

2.5. DMS adoption and implementation

This section discusses issues related to implementation of DMS. It commences by an overview on the history of DMS adoption. There follows a discussion on the two business models of DMS, from which DMO chooses according to their funding and requirements (UNCTAD 2005b). The challenges that face the development of DMS are, then, reviewed.

2.5.1. History of DMS adoption

It was not until the early 1990s that the production of DMS emerged. The studies on destination systems have been traced back to as early as 1968 (Archdale et al. 1992 cited by Buhalis 2003). This delay in adopting DMS application has been attributed to number of reasons such as (Buhalis 2003, p. 288):

1. The lack of adequate and affordable technology at an earlier stage and in the pre Internet era.

2. The relatively less intensive competition in the e-market place.
3. The concentration of the market efforts in the local markets.
4. The lack of standardization of the industry and the early systems.
5. The lack of IT expertise among tourism professionals.
6. The domination of small and independent tourism enterprises around the world.
7. The conflicting interest of different players in the tourism industry.

Researchers (Rita 2001; UNCTAD 2005a; Wang 2008a) revealed that from the beginning of the 1990s until now, the employment of DMS applications by DMO has been varied according to the degree of requirements and the availability of resources. Regarding the degree of DMS adoption, particularly in the developing countries, UNCTAD (2005a) commented:

“despite the proven benefits of moving DMSs online, only a handful of countries, mainly developed ones, have fully developed DMSs in place” (2005a, p. 10).

The ICT availability and the awareness of the Internet potentials have led the developing countries to invest in developing e-tourism websites. However, the great majority of developing destinations are still unable to exploit the potentials of e-business applications (UNCTAD 2005b). This discussion is further developed in the next section.

2.5.2. DMS business models in use

For employing DMS, DMOs may choose to buy their whole system from one supplier or, alternatively, they may prefer to buy different modules from different retailer and integrate them into a network (WTOBC 2001). Also, the WTOBC (2001) asserted that DMS service providers, providing products to meet specific needs of destination according to the level of sophistication and the amount of funding they wish to provide for developing their DMS. Several DMS system providers, e.g. Tiscover, World.net, Integra, and TouchVision, have emerged in the last few years as the leading suppliers in the marketplace (Buhalis 2008). For example, Tiscover has

emerged as a commonly used Application Service Provider (ASP) for different destinations around the world (Buhalis 2008), e.g. Austria, France, and Germany.

There are two main business models available now in the market on which DMOs can base their DMS development; non-revenue generating (information only or non-commercial) and revenue generating DMS (fully transactional or commercial) (Buhalis and Deimezi 2003). DMOs around the world adopt a combination of commercial and non commercial features that suit their funding and operational needs.

About the adoption of the two levels (commercial and non commercial), the applications of DMS in developed countries differ than from those in developing ones. DMOs in developing countries tend, in generally, to adopt a non-commercial model of DMS, while DMOs in developed countries adopt a more sophisticated revenue generation model (WTOBC 2001; UNCTAD 2005a, 2005b). UNCTAD (2005b) indicated that most DMOs' websites in developing countries are purely informative and online sales or bookings facilities are not available for the majority of DMOs in the developing countries. UNCTAD (2005b) distributed a survey to 50 DMOs in developing countries. They found that only 24 of them had e-tourism websites, which were purely informative (UNCTAD 2005b). Online bookings were not available for any of the websites; however, 18 of them provided links to local tourism enterprises. In contrast, DMS applications of developed countries such as Tiscover and Gulliver have been known as DMS market leaders. Many DMS in developed countries transcend the provision of information to more advanced applications that include online reservations, Intranets, Extranet and work as a strategic tool for their destinations. The next section discusses the barriers that face DMOs to fully integrate DMS, especially in the developing countries.

Literature revealed that DMS can be gradually implemented depending on the degree of requirements and the availability of resources (i.e. skills, funding) of destinations (Buhalis 2003; UNCTAD 2005b). In this respect, O'Connor (1999) proposed a detailed list of four DMS levels for DMOs. He suggested that either these levels could be taken gradually or that the final sophisticated level of DMS is directly implemented (the first level provides information only and the final level provides revenue generation and

strategic tool for managing the destination), for more details on these levels see O'Connor (1999).

The majority of DMS researchers (e.g. Sheldon 1997; Rita 2000; Collins and Buhalis 2003; Brown 2004) support the adoption of the revenue generation model of DMS. They attributed their views to the following argument: In today's competitive marketplace and the technology driven society, many scholars articulated that just a web presence is no longer enough to bring visibility and accessibility, and competitive advantages to tourist destinations (i.e. Sheldon 1997; Rita 2000; Buhalis and Spada 2000; Brown 2004). In order to survive in the e- tourism market, DMOs need to divert to revenue generating or commercial DMS business model. DMO's website visitors need to be turned into customers. Collins and Buhalis (2003) added that offering reservation facilities can, then, result in changing the strategic direction of the DMO from one of sustaining economic regional development to be a commercial entity.

The need to develop fully transactional DMS becomes crucial for the development of tourism destinations not only for the competitiveness of the destination but also to the survival of the DMS. Collins and Buhalis (2003) argued that once DMS is operated, funding – from the DMO - for developing the system is typically reduced and the financial responsibility altered. The responsibility is then increased on the DMS to raise its revenue. Consequently DMS applications face a high risk of failure, if they do not find revenues for their technology development, and their potential competitiveness. Therefore the way to ensure ongoing success for DMS is to move to a revenue generated business model, which as Brown (2004) argued could provide financial support for DMS.

2.5.3. Barriers to the development of DMS

Section 2.5 outlined the reasons of the late adoption of DMS. Despite the fact that more than 20 years have elapsed, most DMS developments nowadays are still facing many of these challenges, especially the last four factors of Buhalis's (2003) list (see Section 2.5.1). Furthermore, researchers have noticed a higher rate of failure than success in DMS application (Frew and O'Connor 1999; Ritchie and Ritchie 2002; Buhalis 2003; Buhalis and Deimezi 2003; UNCTAD 2005). Both the higher rate of

failure and the limited adoption of fully integrated DMS especially in developing countries (UNCTAD 2005b) have been attributed to a number of barriers or challenges, such as financial problems, information quality, insufficient IT skills and knowledge, the conflict of interests due to the large number of stakeholders (Sussmann and Baker 1996; Egger and Buhalis 2008), as well as being unable to attract the support and commitment of the private and public sectors (Buhalis and Deimezi 2003). In relation to DMS effectiveness, these barriers have been further discussed in Section 3.2.

2.6. Chapter summary

This chapter provides an overview on the context of DMS, particularly: DMS definition, objectives, the business model in use, and the development challenges. Also, it reviews the different arguments on the conceptualizations and terms of DMS. In addition, this chapter discusses the multiple challenges and the complex environment at which DMS works (e.g. multiple local and international stakeholders). Alongside such discussions, the chapter highlights the complexity of DMS that needs to be considered when investigating the effectiveness of DMS and its evaluation. How DMS literature dealt with the influence of such complexity on DMS effectiveness will be explored in the next chapter.

Chapter 3

The Effectiveness of Destination Management Systems (DMSs)

Introduction

The preceding chapter highlights different conceptualizations of DMS in terms and definitions, and discusses the aims, adoption, and development barriers of DMS. This chapter presents how DMS effectiveness and its evaluation are dealt with in the literature, particularly the determinants of effectiveness and the models of DMS effectiveness evaluation.

3.1. Complexity and importance of DMS effectiveness evaluation

In the light of the preceding discussion (Chapter 2), DMS is a complex system that operates in a complex context. It is a complex system because it is a web-based inter-organizational system that works with various local and international stakeholder groups (e.g. tourism suppliers, DMO, online tourists, and intermediaries). DMS also works on the worldwide web, which provides DMS in an advantageous environment with the emergence of Internet technologies, as well as tougher competitiveness (e.g. other DMS), and online-based intermediaries such as Expedia and booking.com.

The above highlighted complexity of DMS's characteristics and context makes it difficult to identify the factors influencing DMS effectiveness (Buhalis 2003; Wang and Fesenmaier 2006; Wang 2008a). Researchers shed the light on the fact that there is a higher rate of failure than success in DMS application (Buhalis and Spada 2000; Richie and Richie 2002). Given the complicity of DMS and its context, as well as the many barriers that face the development of DMS (see Section 2.5.3), such a high rate of failure is unsurprising.

Reviewing the literature revealed that, despite a number of attempts, there is currently limited research to understand the effectiveness of DMS usage (Wang 2008a) and its evaluation. However, there are some researchers who asserted the critical importance of the evaluation of DMS effectiveness, even attributing the lack of

evaluating DMS effectiveness in actual applications as one of the reasons behind the higher rate of failure than success noted recently (e.g. Ritchie and Ritchie 2002).

On the importance of evaluating DMS effectiveness, researchers (Irani and Love 2002; Ritchie and Ritchie 2002; Irani 2008) asserted that the system may not realize its potential if it is not effectively developed and continually evaluated.

In today's complex business environment, the evaluation of DMS effectiveness can be seen as a learning process through which DMO ensures the system's effective performance, as well as solving problems that inhibit realization of the aims of DMS. Failure to understand the need for evaluation can have undesirable consequences, such as inappropriate resource allocation and competitive disadvantage (Rita 2000; Hussein et al. 2003; Irani 2008), and may lead to system failure (Ritchie and Ritchie 2002).

The research on understanding DMS effectiveness and its evaluation in the complex context of DMS is difficult but vital for the survival of DMS in the e-marketplace. Such difficulty is not just because DMS itself is a complex system working in a complex context, but also because different researchers have different conceptualizations of DMS's purpose and even definition (see Chapter 2), and consequently different views on what constitutes DMS effectiveness and how it should be evaluated.

In spite of its importance, there is no sufficient or combined work that approaches a holistic understanding of DMS effectiveness. There have only been limited attempts presenting fragmented effectiveness factors/criteria or insufficiently limited scope frameworks for evaluating DMS effectiveness (i.e. Frew and O'Connor 1999; Buhalis and Spada 2000; Wang 2008a). The following presents in more detail how DMS effectiveness was studied and conceptualized in previous DMS studies.

3.2. Conceptualizing DMS effectiveness

There are three streams of DMS research presenting critical factors influencing the effectiveness of DMS:

1. General studies regarding DMS design and implementation;
2. Studies investigating the effectiveness of DMS website; and

3. Studies interested in identifying factors of DMS effectiveness/success.

The first stream of studies about DMS design and implementation has highlighted a number of critical factors that need to be considered when evaluating the effectiveness of DMS (e.g. Chen and Sheldon 1997; Proll and Palkoska 2002). For example, Collins and Buhalis (2003) investigated the utilization of DMS in England. Their findings have highlighted important issues in the effective implementation of DMS, such as the availability of appropriate funding and technological expertise, and network integration of all the regional and local DMS, see Appendix 6.

The second stream of researchers focused on studying the effectiveness of DMS websites. This notion was based on investigating the marketing function of DMS (Wober 2003; Park and Gretzel 2007). Among these, Li and Wang (2010) suggested five dimensions to evaluate DMO's website effectiveness, namely information, communication, transaction, relationships and technology. Their findings in the five dimension focus on the relationship between DMO and consumers. Li and Wang (2010) added that, of the five dimensions, the technological merits dimension directly influences the performance of the other four dimensions, and that all of the five dimensions work together to fulfil the marketing function of the DMS.

The third stream of researchers has proposed frameworks to evaluate the effectiveness of DMS, such as Buhalis and Spada (2000) and Wang (2008a). These attempts have lacked a holistic perspective in studying DMS effectiveness, and ignored a considerable number of factors that have been indicated as important for the effectiveness of DMS (see Section 3.3).

Overall, DMS research related DMS effectiveness to technical, organizational, and managerial issues. Researchers of DMS indicated factors that challenge the effectiveness of DMS implementation. As discussed in the following, the most agreed factors are quality and comprehensive content and information, online booking facilities, public and private sector efficient partnership and cooperation, adequate funding, and appropriate stakeholders' IT infrastructure, knowledge and skills. Also, see Appendix 6 for a list of factors that have been indicated in DMS literature.

3.2.1. Quality content and information

Timely, relevant, updated and comprehensive information about destination products and services, competitiveness studies and market research were found to be important for DMS effectiveness. Researchers argued that quality content and information need to be offered by DMS in order to satisfy the needs of tourists and to help tourism operators in taking their business decisions (Richie and Richie 2002; Hornby et al. 2008). However, Buhalis (2003) asserted that the majority of DMOs do not have comprehensive and consistent information about destinations' facilities and attractions. He added that ensuring accuracy of information is important not only for users' satisfaction, but also to avoid legal action against the organization. However, in spite its importance, quality content and information is recognized as one of the challenges to DMS effectiveness (Rita 2000; Collins and Buhalis 2003; Wang and Russo, 2007; Wang 2008a, 2008b; Sigala 2009). This is not only because destination tourism information is collected from diverse recourses, but also because a part of destination information is dynamic information, such as times, products and booking availability (Sheldon 1997). Therefore, manual information updates are not enough for presenting precise information, and automated updates become a must (UNCTAD 2005a) for effective DMS implementation.

3.2.2. Generating income and E-booking facilities

The management of information as well as the reservation/booking functions are considered the most significant features of DMS (Collins and Buhalis 2003). However, most DMSs, especially in developing countries, do not provide booking faculties (UNTAD 2005b). Buhalis and Spada (2000), Rita (2000), Collins and Buhalis (2003), Buhalis (2003) and Wang and Russo (2007) argued that online reservation systems are crucial for the effectiveness of DMS. By using DMS mainly as a digital brochure, DMOs have not taken the advantage and fully benefited from DMS and the Web potential as an enabler to facilitate the structure, managerial and commercial reorganization of their online business process (Buhalis and Deimezi 2003; Wang 2008b). Previous researchers found that providing information about the destination products and services is not sufficient for the effective implementation of DMS, and DMOs need to provide reservation and booking facilities through their website in order to generate

income (Rita 2000; Collins and Buhalis 2003; Brown 2004; Wang and Russo 2007). The development of a transactional function enables DMOs to generate revenues to both internal and external system stakeholders (Wang and Russo 2007), which encourage tourism providers' participation in DMS applications (Sigala 2009).

3.2.3. Financial issues: funding, participation fees, and commissions

Financial problems are one of the main challenges that face DMS development in two levels; in the level of the organization which adopts and develops DMS (DMO) and the level of system users; i.e. SMTE when adopting the new technology and participating in DMS. With regard to the first level, DMO faces financial challenges to finding the suitable funding for developing DMS; and in regard to buying new technology, the cost of IS expertise and training programs for staff and users of tourism businesses. In this regard, Brown (2004) indicated that public money generally provides the funding in the beginning of DMS development, and then this funding is decreased when the system is operational. Adequate funding needs to be sustained in different stages of DMS development (Collins and Buhalis 2003), or the system failure will be inevitable (Brown 2004). Therefore, researchers acknowledged adequate funding as a critical factor for DMS effectiveness (Buhalis and Spada 2000; Collins and Buhalis 2003). Researchers suggested two solutions for the funding problems that face the public DMOs; private sector partnership and e-booking facilities. Researchers argued that private sector partnership can sound a good solution for DMS funding problems (Daniel and Frew 2008). However, destination management organization needs to give the private sector the motivation to participate, which consists of immediate financial gains through booking facilities (Brown 2004; Belbaly et al. 2004; UNCTAD 2005a).

The second level of financial barriers influences SMTE participation. Some researchers indicated that poor financial resources is one of the reasons that impedes SMTEs from participation in DMS Daniele and Frew (2008), since adopting new IT applications is costly (Sussmann and Baker 1996; Frew and Davenport 2000). Daniele and Frew (2008) indicated that most the small and medium tourist enterprises (SMTE) face problems such as poor strategic management, poor marketing skills and lack of training. For the SMTEs to participate in the DMS, they need to find solutions for their problems and

implement adequate technological systems, but their poor financial sources stand as a barrier to these solutions. Some researchers indicate that inadequate financial resources is the main reason for the small and medium tourist enterprises to lack interest in using information and communication technologies (ICTs) (Sussmann and Baker 1996; Frew and Davenport 2000).

The above discussions imply that the lack of financial resources influence the kind and degree of technology that the DMO chooses for its DMS, in addition to influencing the number of tourism providers that participate in DMS and the quality of their performance. This, in turn, could affect the entire systems' effectiveness.

Also, there has been prominent focus on DMS participation costs. Researchers found that participation fees (Blank and Sussmann 2000; Buhalis and Spada 2000) and high commission percentages (Gretzel et al. 2006) have an influence on tourism providers' participation, and in turn on the effectiveness of DMS. However, fees and commissions still need to be studied in the relationship with the income generated or financial benefits for system users.

3.2.4. Stakeholders' capabilities and commitment

Many researchers agreed on the influence of SMTE and DMO characteristics on the effectiveness of DMS adoption and implementation (e.g. Daniele and Frew 2008; Sigala 2009). It has been indicated that reluctance to use ICT, lack of IT knowledge and appropriate training (Bedard et al. 2008), poor strategic management and marketing skills (UNCTAD 2005a; Daniele and Frew 2008), short-term operational focus of managers (Sigala 2009), and lack of resources (e.g. financial resources) (Sussmann and Baker 1996; Frew and Davenport 2000) are among factors that influence the effectiveness of DMS. These factors have driven a number of researches investigating DMS effectiveness to attribute the failure of DMS applications to poor SMTE performance and participation in DMS, as well as to organizational and managerial inefficiency (Sigala 2009), and lack of resources in DMO publicity, especially in developing countries (Buhalis 2003; UNTCAD 2005b). Werthner and Ricci (2004) indicated that the great majority of tourism destination products and services are offered mainly by the local SMTE. In effect, DMS depends on these SMTEs for their successful development; DMOs need to acquire the support and commitment of

SMTEs in order to operate a comprehensive system that represents the destination as a holistic entity. However, the main purpose of DMSs is to support the businesses of SMTEs; DMS rely on the support and commitment of SMTEs for their effectiveness (through appropriate performance and participation). SMTEs were found to be less likely to adopt DMS either for reasons related to capabilities and characteristics of local SMTEs, or DMO organizational and managerial capacity. Hornby (2004) said that operation of a DMS involves the collection of information from tourism businesses, and then processing and distributing this information to consumers, therefore the lack of SMTE participation naturally influences the effectiveness of DMS, which cannot be successful without products to distribute.

Indeed, it can be argued that there are two barriers facing the DMOs in their relations with the local SMTE when designing and implementing the system. These are the lack of capability and lack of interest. The lack of capability can be attributed to the poor strategic management and marketing skills, lack of training (Daniel and Frew 2008) and unskilled employees. Consequently, this is affecting the small and medium tourist enterprises in adopting to ICTs applications, competing internationally and expanding their market opportunities (UNCTAD 2000). Lacking interest is a result of insufficient knowledge about the e-commerce potentials (Sigala 2009), as well as the lack of financial resources, which is the major reason for rejecting the use of IT by SMTEs (Sussmann and Baker 1996; Frew and Davenport 2000), see also Section 3.2.3. DMO, then, needs to boost the interest of local SMTE through training programs about the potentials of DMS and how to use them. This is in order to increase the participation of DMS which will be positively reflected on system effectiveness.

3.2.5. Training

Based on the above discussion, through training programs, DMOs need to increase the awareness of local tourism providers about the benefits of DMS to their businesses, otherwise the comprehensive destination picture sought by DMS may be negatively affected. Also, training DMS users (DMO employees and tourism enterprises) on how to effectively use DMS was found to be of importance to the effective usage of DMS (Bedard et al. 2008). For instance, Collins and Buhalis (2003) found that in many cases, local tourism businesses are still using traditional methods

for updating information, and that required training programs concerned with assisting local business in utilizing information technology. Richie and Richie (2002) added that in many cases, training programs for managers become important in order to be able to learn how to use information effectively, especially for small operators who may lack formal training and prior exposure to research.

3.2.6. Efficient Public and private sectors partnership and stakeholders' cooperation

Previous researches have agreed that efficient partnership and cooperation between the public and private sectors, considering the different needs of stakeholders from the early stages of DMS implementation, are considered as critical effectiveness factors of DMS (e.g. Rita 2000; Proll and Palkoska 2002; Richie and Richie 2002; Brown 2004). Collins and Buhalis (2003) asserted that DMS is probably the most important technological tool for the future of destinations. Therefore it is critical for DMO to realize this, and work in partnership with all stakeholders towards an effective development and implementation of DMS.

3.2.6.1. Public and private sector partnership

The previous discussions of Sections 3.2.2 and 3.2.3 pave the way to discuss the degree of the public and private sectors involvement in Destination Management Systems development. Some authors argue that, the private sector partnership appears to be a good solution for DMS funding problems. However, DMO needs to give tourism providers the motivation to participate, namely, immediate financial gains through booking facilities, since the implementation of the transaction function or booking facilities enables DMS to generate revenue both internally and also externally for their different stakeholders, see Section 3.2.2. There has been considerable argument on the degree to which the public and private sector should be involved in managing DMS. The great majority of previous researchers argued for a partnership between both the public and private sectors in implementing DMS (Sheldon 1997; Buhalis and Spada 2000; Ritchie and Ritchie 2002; Brown 2004; UNCTAD 2005a; Daniel and Frew 2008). Researchers' arguments have evolved from the differences between the public and private sectors in relation to motivation, operations and management styles. For example, the public sector is concerned with

the overall destination development, whereas the private sector is more concerned with immediate financial returns (e.g. UNCTAD 2005a). Many researchers considered the involvement of the public sector in managing DMS essential in monitoring and certifying the quality and equity of the content and services provided (Sheldon 1997; O'Connor 2002). In this regard, the public sector should put the appropriate policies to organize the relations among the various stakeholders (Sheldon 1997; Daniel and Frew 2008), otherwise powerful private organizations will take over and may or may not promote the destination in accordance with the best interests of the country (Rita 2000).

However, the private sector partnership is also supported, as it can bring considerable levels of technological expertise and investment power, since it is believed to be more responsive to market needs than the public sector (Buhalis and Deimezi 2003; Daniel and Frew 2008). In this regard, Table 2 summarizes previous researchers' arguments on public and private sector involvement in managing DMS.

Table 2: Arguments about the public and private sector involvement

	With?	Against?
Public sector involvement	<ul style="list-style-type: none"> ▪ Integrating DMS into the overall marketing, promotional and management strategy of the destination (Buhalis and Spada 2000; UNCTAD 2005). ▪ Ensuring Industry equity and unbiased comprehensive destination information (Sheldon 1997; O'Connor 2002). ▪ Control the powerful private tourism organization (Rita 2000). ▪ Increasing the security and credibility of electronic transactions (Zhu et al. 2004 cited from Louillet 2008) ▪ Collecting more trust from the customers toward the transactions process (UNCTAD 2005) 	<ul style="list-style-type: none"> ▪ Unfair competition to travel agents, tour operators. And the overly politicized and bureaucratic nature of the public sector does not successful operating businesses in the digital world (Buhalis and Deimezi 2003). ▪ DMS should operate as commercial enterprises to facilitate responsiveness and innovation (Buhalis and Deimezi 2003). ▪ "Staff should be motivated, empowered with the authority to take advantage of opportunities as they develop. Only private sector organisation is likely to have such a structure" (Buhalis and Deimezi 2003).
Private sector involvement	Source of funding, Technological expertise and Investment power (Daniel and Frew 2008).	Anti competitive behaviour by various industry sectors (Daniel and Frew 2008)

3.2.6.2. Stakeholders' cooperation and shared values

Destination is a complex entity that is difficult to manage. This can be attributed to the complicated relations and different interests of various stakeholders within the destination. Buhalis and Deimezi (2003) stated:

“Acting at the destination or regional level, these systems [DMSs] should incorporate and coordinate the entire range and population of tourism providers” (2003, p. 1).

The complex nature of DMS in dealing with diverse stakeholders provides DMO with an increasing challenge to promote cooperation and trust among system stakeholders (Sigala 2009). As examples of different and sometimes conflicting interests, travel intermediaries tend to see DMS as a competitive entity to their product; they will not then cooperate until DMO presents evidence for booking and immediate financial gains (Buhalis 2003). Similarly, immediate financial gains are an important motivation for the SMTE, which may not have other equal opportunities in the online tourism market. On the other hand, large tourism suppliers, which may be engaged already in another e-market place, may not want smaller suppliers to have equal access and competition (Sheldon 1997). Given this discussion, challenges have been raised on the burden of DMOs to help the different stakeholders realizing the potentials of their cooperation, in addition to providing each of them with convincing reasons or motivations for their commitment.

Previous researchers asserted that in order for DMS to be effectively developed, coordination between different, and sometimes conflict, interest of stakeholders become vital (Frew and O'Connor 1999; Ritchie and Ritchie 2002; Buhalis 2003; Buhalis and Deimezi 2003; UNCTAD 2005a; Wang 2007; Danielle and Frew 2008). Asserting the same notion, in his research about stakeholders' conflict, Warne (2003) argued that managing and resolving conflict among stakeholders in an information systems environment is clearly a difficult, challenging and time-consuming exercise. However, he argued that the rewards, in terms of higher success rate, should be worth the commitment of organizing different interests. Therefore, it is significant for DMOs to find solutions to maintaining positive and productive relationships with and bring benefits to all of the stakeholders, including consumers, to encourage their

cooperation. Furthermore, having shared values has been considered an important factor in DMS effectiveness. The disagreement and different perceptions on DMS role and performance, as well as the lack of target market fit that causes a goal conflict, were found to have an influence on the overall relationship between DMO and tourism providers, and consequently influence the effectiveness of DMS (Hornby et al. 2008). For example, while tourism providers require DMS to generate a considerable number of e-booking, this is not shared by DMS operators, who perceive their role as being responsible for creating, protecting and enhancing the brand image, and promotion of the whole destination (Sigala 2009). Horan and Frew (2007) stressed that DMS implementation success is affected by the different view of various stakeholders on the role of DMS and how performance is evaluated.

3.2.7. Other factors of DMS effectiveness

Previous researchers have indicated other factors that can positively or negatively influence the effectiveness of DMS:

1. Monitoring and evaluation procedures: frequent evaluations of DMS effectiveness are needed (Rita 2000; Ritchie and Ritchie 2002) to ensure the system validity and to realize and solve problems that may face the system's development. In this respect, Ritchie and Ritchie (2002) asserted that different stakeholder's perspectives need to be taken into account when evaluating DMS effectiveness.
2. Appropriate technological infrastructure: use of advanced technology, e.g. interface with global EM systems and link DMS with any Global Distribution System (GDS), is crucial for the effectiveness of DMS (Chen and Sheldon 1997; Rita 2000). Wang (2008a) asserted that creating supportive organizational technology environment includes innovative approaches and technology expertise (Collins and Buhalis 2003); this is an organizational factor that influences the effectiveness of DMS and enhances destinations competitiveness in the e-market place. Wang also found that DMOs management support and involvement, as well as available resources, particularly financial resources, have a negative effect on the adoption and utilization of technology.

3. Power and trust: Sigala (2009) and Hornby et al. (2008) investigated the influence of power and trust on tourism providers' participation and adoption. They found that power and trust have a crucial influence on DMS adoption. Sigala stated that: "Apart from normative pressure, firms with high power in IOIS can influence IOIS adoption by offering a compensation system or using coercive or threatening measures" (2009, p. 485)

Adopting the same notion, Hornby et al. (2008) asserted that the power that may be exerted by some of the stakeholders can influence the adoption of DMS, which reflected on undermining trust among DMOs and different stakeholders. As a consequence, the effectiveness of DMS may be negatively affected. Still, the influence of trust and power on DMS effectiveness is a matter that needs to be further investigated.

4. Other factors such as securing system maintenance and improvements (UNCTAD, 2005a), an appropriate e-marketing strategy (e.g. website promotion on an international level and advertising campaigns on the Internet) (UNCTAD 2005a; Wang 2008a), and top management support and strong leadership (Chen and Sheldon 1997) are factors mentioned in the literature as important influences on DMS effectiveness.

3.3. DMS effectiveness models

A number of researchers examined key effectiveness determinants, see Appendix 6. Among such studies, two studies produced two models for evaluating the effectiveness of DMS (Buhalis and Spada 2000, Wang 2008a). Other studies of DMS effectiveness produced fragmentary effectiveness factors, as discussed in the above section. About the models of Buhalis and Spada (2000) and Wang (2008a), there has been a little further research examining the two models to refine or to check the validity of their dimensions. A critical analysis of the concepts of the two models is provided in the following.

3.3.1. Buhalis and Spada's (2000) model of DMS success

Buhalis and Spada's (2000) model was based on examining the needs of seven stakeholder groups, namely tourists, tourism suppliers, the public sector, investors, tour operators and travel agents (see Figure 3).. Buhalis and Spada's (2000) study revealed that DMS effectiveness is negatively affected by the opposing and dissimilar objectives and interests of different stakeholder groups, and that to ensure long-term, sustainable DMS, coordination and cooperation between stakeholders need to be realized, although this is difficult. Additionally, the needs of these groups of stakeholders need to be satisfied to effectively implement DMS. Buhalis and Spada (2000) also noted that only a few stakeholders realize the benefits that can be gained as a result of their cooperation with other stakeholders, which implies a need for increasing the awareness of participants of the importance of cooperation in the effective performance of the system.

However, in examining DMS success criteria, Buhalis and Spada (2000) focused only on design-related issues to DMS features and services. However, DMS researchers asserted that DMS development and effectiveness are more complex issues involving different stakeholders' perspectives about DMS role, and organizational and financial structure. Therefore, the model of Buhalis and Spada (2000) in itself is insufficient to understand and evaluate the effectiveness of DMS. Furthermore, in spite of being well-referenced, Buhalis and Spada's (2000) model has not been yet validated or refined.

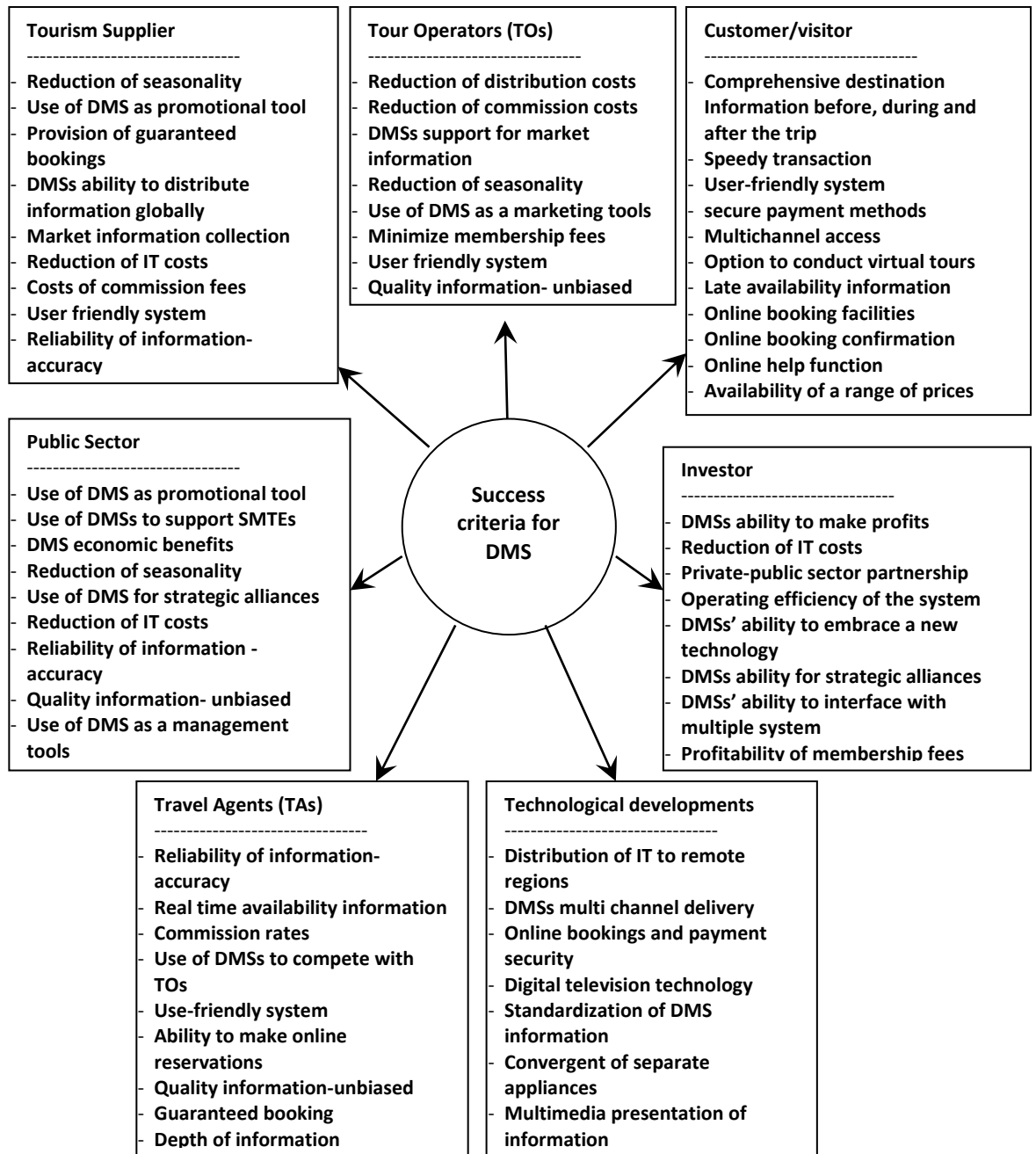


Figure 3: DMS success factors (Buhalis and Spada 2000)

3.3.2. Wang's (2008a) model of DMS effectiveness

Wang (2008a) argued that the effective development and management of DMS requires the following critical factors to be realized (see Figure 4): website function design; website promotion, website performance measurements; and web marketing impact assessment. Wang based his argument about the importance of the above factors on the following: first, the DMS should be developed in a way that serves the needs and interest of the major target markets (Web function design). Second, once

the website is created, appropriate promotional plans need to be launched to attract a large amount of visitors to the website (website promotion). Third, the performance of the website should be assessed so that the DMO gets a sense of the extent to which the website is working (website performance measurement). Fourth, DMS need then to assess the marketing impact of the website in relation to the economic impacts, e.g. cost reduction through savings on printed materials. Lastly, Wang argued that the successful operations of the above areas are related by the organizational technology environment, such as technology budget and technology expertise.

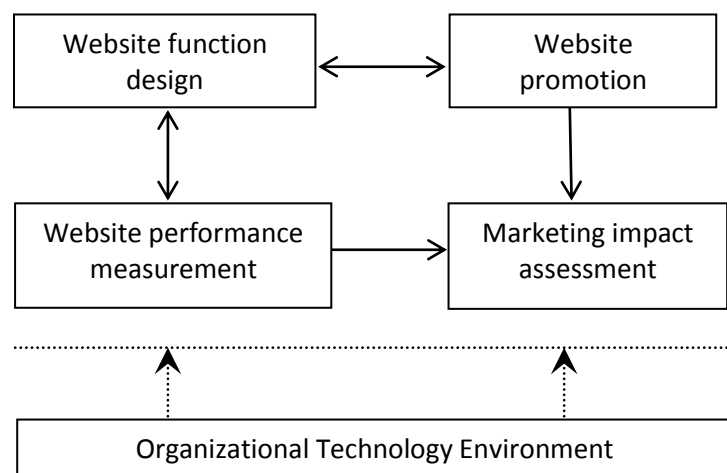


Figure 4: Wang's (2008a) model of critical success factors of web-based DMS

Wang's (2008a) model highlighted significant factors concerning the effectiveness of DMS, such as the influence of enhancing the technological environment of the system, as well as the importance of formulating e-marketing strategies and evaluating the performance and impacts of the system. However, some remarks can be made regarding the insufficiency of Wang's model, which ignores some important aspects of DMS effectiveness, as argued in the following:

1. Wang (2008a) confined the marketing impacts to economic impacts, neglecting other possible impacts of DMS such as facilitating managerial decisions through the provision of marketing research.
2. Although Wang mentioned the critical influence of organizational factors on the effectiveness of DMS, his model included one aspect of organizational factors'

organizational technological environment. In this respect, Wang (2008a) commented on his own study saying:

“Studies on innovation adoption, implementation and diffusion have indicated that organisational factors both facilitate and inhibit Web marketing strategies. In this regard, the current study only assessed the organisational technology environment, with the understanding that many other organisational factors could also affect the process, such as organisational innovativeness, receptivity to change, strategic direction and organisational structure.” (2008a, p. 67).

3. Based on a marketing perspective, Wang’s model adopts a customer-centric view, which ignores other key stakeholders’ perspectives (e.g. tourism providers). Wang also focused on the relationship between DMO and customers, ignoring other important systemic relationships, such as that between DMO and tourism providers, which has been seen as crucial for the effectiveness of DMS (Hornby 2004; Hornby et al. 2008; Sigala 2009).
4. Wang (2008a) tended to confine DMS functions to serving online customers, ignoring other important functions that have been previously indicated by DMS researchers (return to Section 2.3). Also, Wang’s model (2008a) excluded important factors that indicated in previous research on DMS effectiveness (see Appendix 6).

Given the above criticism, Wang’s (2008a) model cannot be considered comprehensive for understanding or evaluating the effectiveness of DMS. A study that considers various groups of stakeholders’ perspectives and relates/includes previous research contributions in this area is still to be created.

3.4. Chapter conclusion

The field of DMS has witnessed a number of attempts exploring factors influencing DMS effectiveness. Researchers (e.g. Buhalis 2003 and Wang 2008a) as well as practitioners (e.g. Proll et al. 1998) investigated actual DMS case studies (e.g. Tiscover and Gulliver projects). Accordingly, a number of factors that need to be considered in

understanding and evaluating DMS effectiveness have been put forward. However, this chapter argued that researchers' attempts to understand DMS effectiveness and its evaluation are partial and insufficient. Limitations of previous research have been discussed, explaining the absence of a holistic model for understanding and evaluating DMS effectiveness, for example:

1. Researchers studied DMS effectiveness from a marketing perspective, ignoring the management role of the system (e.g. Wang and Russo 2007; Wang 2008aa). Accordingly, this influences the way in which DMS effectiveness is studied, resulting in ignoring a number of important effectiveness factors cited in prior research (see Appendix 6).
2. The great majority of prior studies explore DMS in the context of developed countries; DMS in developing countries is yet to be explored (see Appendix 6). Also, these studies investigated successful DMS application; failures, then, still need to be explored (Richie and Richie 2002).
3. DMS studies on effectiveness have only examined the perceptions of tourism providers already being DMS members, excluding other non-participating enterprises' perceptions of DMS effectiveness (Sigala 2009).
4. Much of DMS research has not make use of prior theories, thus little theoretical development has been made (Hornby 2004).

In light of the above discussion, this study is dedicated to filling the above gaps in DMS research by investigating a failure DMS experience in a developing context (i.e. the Touregypt project), and exploring perspectives of stakeholders from both the members and the non-members of the system. Also, given the above discussions about the complex environment in which DMS is developed (see Section 3.1), a holistic view that investigates more than the marketing functions of DMS is sought.

This chapter demonstrated and evaluated DMS literature contributions to DMS effectiveness. The next chapter investigates what can be learned in the context of this study by reviewing IS effectiveness evaluation literature.

Chapter 4: Information System Effectiveness Evaluation

Introduction

DMS are essentially information systems, particularly a web-based (Baggio 2003) inter-organizational information system (Sheldon 1997). The preceding chapters (Chapters 2 and 3) have reviewed how DMS effectiveness and its evaluation are conceptualized in DMS literature. This chapter seeks to go beyond this literature to explore IS effectiveness and the evaluation approaches in the general IS, web-based systems, and IOIS research. This is in order to find grounds for a more holistic approach to DMS effectiveness and its evaluation. In support of this study, Drury and Farhoomand (1998) argued that there are two basic types of factors that need to be considered when evaluating the effectiveness of any information systems:

1. Those generic properties that are shared by all successful systems; and
2. Those specific to a particular type or class of IS.

Hence, this chapter presents a general overview of IS effectiveness, followed by a discussion on the evaluation approaches and methods used in IS field.

4.1. IS effectiveness

The previous chapter has highlighted the influence of different researchers' perspectives on what constitute effectiveness and its complicated influence to our understanding of what needs to be considered when evaluating DMS effectiveness (see Sections 3.1 and 3.4). Therefore, it is important here to demonstrate the perspectives upon which effectiveness is studied in IS literature.

The majority of IS research has used the term *IS effectiveness* interchangeably with *IS success*. In many, studies IS effectiveness has been defined as the extent to which a system achieves its intended goals (e.g. Farhoomand and Drury 1996). Along the same line, a number of researchers were inclined to use the term IS effectiveness to subsume what DeLone and MacLean (2003) label 'net benefits'. Seddon (1997) also argued:

“An information system is “effective” if the person or organization that expended resources in acquiring, building, learning to use, and/or using the system is better off as a result” (1997, p. 168).

Malik and Goyal (2003) argued that the system can be described as effective if it supports organizational business objectives, and “when it is beneficial for the organization as a whole and not for the individual units/sub- units only” (2003, p. 62)

Following a different notion, Cameron and Whetton (1983) defined effectiveness as a construct and not an objective that has an exact specified meaning. They regard effectiveness as a construct of multiple influences which cannot be bounded. Following Cameron and Whetton (1983), Myers et al. (1998) related IS effectiveness to multiple internal and external influences. They highlighted that IS effectiveness is understood when it is related to the system’s influence on its environment, and the results caused by a system, in addition to considering the quality of the system itself as a product (Myer et al. 1998). Furthermore, asserted the view that perceived effectiveness as a construct, Jordon (1996, cited by Agourram 2009a) argued:

“The meaning of information and effectiveness of an information systems can vary substantially in different cultures” (1996, p. 2).

To conclude the above discussion, IS effectiveness has been defined from different perspectives and IS community, and agreement has still not been reached on how IS effectiveness can be understood or defined.

The Oxford Online Dictionary (2010) defines effectiveness by “The degree to which something is successful in producing a desired result”, while success is defined as “the accomplishment of an aim or purpose”. Therefore, based on the Oxford English Dictionary definitions, IS effectiveness can be related to quality system performance, and success is related to the net benefits of the system. Giving the discussion on the definitions of effectiveness in relation to success, it can be said that effectiveness is related to the value or the quality performance of a system to deliver a desirable effect, which very likely leads to success. Therefore, success can implicitly refer to effectiveness as effectiveness is a must that leads to success.

However, for the purpose of this study, the term effectiveness will be open to the interpretations of DMS stakeholders in order to be able to capture a comprehensive understanding and explicitly cover the whole range of suggested effectiveness factors as perceived by DMS stakeholders' groups. The following sections demonstrate the influence of multiple effectiveness conceptualization to the way in which the evaluation of effectiveness are studied in IS research. In this study the term IS success might be used in the circumstances where the literature being cited used the term *IS success* synonymously with *IS effectiveness* (e.g. DeLone and MacLean 1992, 2002, 2003).

4.2. IS effectiveness evaluation

IS effectiveness evaluation has been a key concern in both IS practice and research for some decades (Seddon et al. 1999). Despite many attempts to model effectiveness and its evaluation, the definition and determinants of IS effectiveness remain problematic. Irani (2008) commented:

“Many of the problems originally identified over 15 years ago are still prevalent, exacerbated even further because of the complexity associated with linking intra- and inter-organisational IS” (2008 p. 1).

Reviewing the literature on IS effectiveness has revealed the existence of many approaches to IS effectiveness evaluation, each of which has taken a different stance in researching what needs to be considered when evaluating system effectiveness. In this respect, DeLone and MacLean (1992) noted that there are possibly as many IS effectiveness measures as there are studies. Reviewing the literature has revealed that such variety in IS effectiveness evaluation approaches and measures can be attributed to the following reasons:

- The complexity of the context at which IS are developed (e.g. Irani 2008)
- The sensitivity to internal and external influences (e.g. Myers et al. 1998)
- The subjectivity of the meaning of effectiveness (e.g. Molla and Licker 2001; Fortune and Peters 2005).

Garrity and Sanders (1998) attributed the complexity of the matter of effectiveness evaluation to that:

“There are numerous methodological issues to contend with, a number of agents to satisfy, and many criteria to choose from” (1998, p. 26).

The effectiveness of IS is acknowledged as being sensitive to different circumstances; their environment and the people who use them (DeLone and MacLean 1992, 2003). Therefore, given the different types of IS and the different contexts in which they are developed, it is not surprising to find various effectiveness factors and measures indicated in the related literature.

Furthermore, the complexity of evaluation can be related to the subjective nature of effectiveness, as stakeholders and IS researchers have their own interpretations of what constitutes effectiveness. Molla and Licker (2001) concluded that the problem of complexity is compounded because effectiveness is a multi-dimensional concept that can be assessed at different levels (e.g. technical, individual, and group, organizational), each of which demonstrated the possibility and validity of interpretations of IS effectiveness (Myers et al. 1998).

Therefore, such diversity and complexity is a key research challenge to understand effectiveness, and indicated what should be evaluated. The following presents previous IS researchers' contributions, and highlights their implications as a ground to understand DMS effectiveness and its evaluation. The following section demonstrates approaches of IS effectiveness evaluation, followed by a discussion of the methods used in IS effectiveness evaluation, including the key models referenced in IS studies.

4.2.1. Approaches of IS effectiveness evaluation

The above section highlighted the complexity of IS effectiveness. Such complexity of both effectiveness as a concept and its context offer a challenge in evaluating the effectiveness of IS. Researchers have widely acknowledged the matter of effectiveness evaluation as a difficult task, in which a variety of perspectives, influences, dimensions (Smithson and Hirschheim 1998; Irani 2002; Peppers and Saarinen 2002) and various stakeholders (McAulay et al. 2002) are involved. The variety of approaches and the many perspectives the evaluation of effectiveness is studied from led a number of

researchers to try to organize or divide the research of evaluation in IS literature, such as informal versus formal approaches; goal-based versus goal-free evaluation (Patton 1990); objectivist versus subjectivist approaches (Neville et al. 2003); formative versus summative; and positivistic versus pragmatic and interpretive evaluation (Greene 2000). In this respect, Cronholm and Goldkuhl (2003) suggested that all research of evaluation can be divided under two categories, aiming to answer the questions of *How to evaluate* and *what to evaluate*:

“We derive a matrix consisting of two dimensions “how to evaluate” and “what to evaluate”. The combination of the two dimensions results in six different evaluation types [...] the aim of the matrix is to support different choices of how to perform an evaluation depending on the evaluation situation” (2003, p. 65).

Cronholm and Goldkuhl (2003) divided the answer of the question of how to evaluate into three types; first, goal-based evaluation, which means that explicit goals from the organisational context drive the evaluation. These goals are used to measure the system. Second, goal-free evaluation, in which no explicit goals are used to evaluate the system, rather goal-free evaluation is an inductive and situationally driven strategy. Third, criteria-based evaluation, which includes some explicit general criteria to be used as an evaluation measure. The difference between goal-based and criteria based evaluation is that the criteria are general and not restricted to a specific organisational context. Also, the answer of the question about what to evaluate is categorized into two types of evaluation; the first is ‘IT-systems as such’, which means evaluating the system without any involvement from users. In this situation there is only the evaluator and the system itself involved. The second is ‘IT-systems in use’, which type of evaluation studies the interaction between the system and its users.

The above discussion mainly highlighted the different approaches produced by IS research on how to evaluate and how researchers attempted to divide these approaches. Speaking of what to evaluate, which is the focus of this study, IS literature offers a verity of IS effectiveness measures, as it does with the different approaches of effectiveness. A number of researchers attempted to divide such measures to facilitate the choice for evaluators. Staples et al. (2002) divided IS

effectiveness measures into two groups: 'individual as stakeholders', the major focus of which is on users (e.g. user's satisfaction, user productivity, information quality and perceived usefulness); and 'owner or management as stakeholders', which focuses on the views of managers on the system effectiveness, and includes measures such as return on investment, cost saving, return on management, and sales growth. On the other hand, Willcocks and Lester (1997) presented another way for dividing the existing IS effectiveness measures. They suggested that there are two kinds of measure: assessment of performance, in terms of technical efficiency or project evaluation; and assessment of business related performance of IS/IT (e.g. user satisfaction). These different divisions of measures have contributed in presenting the variety of perspectives on what constructs effectiveness in IS research. During the last four decades, research on IS evaluation has experienced many perspectives and gone through many phases that demonstrated how evaluation perspectives are progressed. Serafeimidis and Smithson (1994) indicated three phases, each with associated evaluation methods. The first is the 'automation stage' (to the end of the 1960s), wherein the evaluation was purely cost-based. The second stage focused on information (1970s to early '80s), wherein predetermined outcomes were considered as the main focus, such as in the use of cost-benefit analysis. The third is the 'transformation stage' (1985 onwards), in which evaluation is based on the intangible benefits offered by IS application (see also Guba and Lincoln 1989, which categorises evaluation perspectives into four generations).

The following discussion presents an overview of IS effectiveness evaluation perspectives and measures. This study divides the evaluation approaches in a broader way than the above mentioned attempts. In literature, evaluation approaches, and hence measures, have ranged from financial approaches such as cost benefit analysis, passing by non-financial approaches such as user satisfaction, objectives analysis and service quality, to reach a multi-dimensional approaches such as DeLone and MacLean IS success model (2003).

4.2.1.1. Financial approaches

Starting with financial approaches, the study of IS evaluation, especially early research, was dominated by a positivistic and scientific paradigm (Walsham 1995). Measuring

the impact of IS on the organization's performance is one approach of IS effectiveness evaluation. This approach quantifies the effect of IS on organizational performance, as it usually uses hard measures through financial approaches such as cost-benefit analysis (e.g. in terms of cost savings and tangible financial benefits). This traditional approach was founded in the late 1970s and is highly criticized by many academics for its limitedness and narrow perspective. Although the financially based approaches to IS effectiveness have been widely adopted, many organizations and researchers nowadays find it to be limited (Ward and Daniel 2006). Myer et al. (2003) argued that past IS research has focused on narrow quantified measures in terms of profit, size and growth, which are easier to research but difficult and less relevant to practicing managers, since these measures only show part of the total contribution of the IS function. Furthermore, researchers noted that benefits of IS varied between tangible, intangible (e.g. satisfaction of users) (Remenyi et al. 1998; Kumar 2004), and even some unexpected benefits (Kohli et al. 2003), which make quantifying IS benefits an elusive measure. Similarly, DMS aims to produce more intangible benefits than tangible ones, and with the variety of stakeholders it becomes difficult to specifically identify or expect all of its benefits (return to Section 2.1.2).

Driven by a contingency perspective, financial approaches to evaluation have been criticised because they neglect important elements of the organizational context and the process of IS development that are considered as critical to the effective application of IS (Smithson and Hirschheim 1998). Supporting the same notion, Serafeimidis and Smithson (2003) have criticized the traditional evaluation approaches for its intensive emphasis on financial aspects at the expense of the organizational and social aspects. They indicated that this traditional approach that quantifying effectiveness treated IS as being isolated from human and organizational effects. Moreover, Irani (2008) added:

"Although, a cash return on investment is necessary for a business operation to remain healthy, a positive result cannot be taken as an indication that the project will succeed to meet its stakeholders' expectations" (2008, p. 90).

Therefore, prior IS studies have acknowledged the importance of other non-financial approaches to the evaluation of IS effectiveness, in which human, social and organizational aspects are to be considered.

4.2.1.2. Non-financial approaches

Built on the above criticism to financial based approaches, a growing number of researchers agreed that the traditional view of financially driven measurement need to be replaced by approaches overcome the weaknesses of the traditional evaluation approach (Irani and Love 2002; Doherty and McAuly 2002; Irani 2008). However, non-financial approaches do not imply that the measures of financial based approaches are not important or will not be included. Rather, non-financial approaches tend to assess aspects related to financial benefits in addition to aspects recognized how effective the system supports organizational objectives (Myers 2003). Such studies investigate aspects of technical, social, organizational and other related effectiveness influences, as demonstrated in the following.

One of the non-financial approaches for evaluating IS has related the effectiveness of IS to the extent of achieving organizational objectives by comparing the actual identified objectives with the actual performance of the system. This approach is represented by Hamilton and Chervany (1981), who named it “goal-centred approach”. In this regard, the approach of focusing only on meeting the expected or previously planned objectives as a measure of IS effectiveness has been criticised. Researchers argued that objectives of the system may be poorly defined, or may shift during the system life (Myers et al. 1998, 2003), and that stakeholders’ perspectives on system objectives may differ which lead assessment of only system objective to be an elusive measure to effectiveness (Guba and Lincoln 1989). Additionally, Irani (2008) argued:

“IS have always taken too long to develop, cost too much to implement and maintain, and are frequently not perceived to be delivering the business benefits that were initially intended [.....] in recent years the changing role of IS in organisations has given new impetus to the problem of its evaluation. The high expenditure on IS, growing usage that penetrates to the core of organisational functioning, together with

unrealistic expectations about its impact, have all served to raise the profile of how IS investments should be evaluated and, the benefits that should be expected" (2008, p. xxiii).

Reflecting on DMS, The same is the DMS development, as the objective of DMS is also hard to define according to the many stakeholders of the system, all with their own particular needs. DMO may not have the accurate objective of DMS from all the system stakeholders, which makes it difficult for the system to be developed according to only measuring the extent of realizing its objectives. Although DMO needs to recognize the needs and wants of different stakeholders to try to realize these aspirations, many of these needs keep changing according to technological innovations, to meet the needs of the fast-changing e-marketplace.

Beside the goal-centred view, Hamilton and Chervany (1981) suggested a system-resource view as another approach used to evaluate IS effectiveness. This focuses on the quality of the system process and related effectiveness to resources viability. Thus, from a resource-view perspective, system effectiveness can be indicated by the quality of the system, human resources or service levels. Hamilton and Chervany (1981) added that the difference between these two views is like the difference between the formative and normative evaluation approaches. The normative evaluation is related to the end benefits, while informative evaluation is concerned with the process quality and providing information to improve the effectiveness of the organization. Both kinds of evaluation can be implemented according to the type and the view of or the need from the evaluation itself.

By the mid-1980s, different stakeholders' views on effectiveness had been recognized. Researchers advocated the need to identify stakeholders, and the fact that effectiveness for one group does not necessarily represent effectiveness for other groups (Abu-Samaha 2003). According to Milis and Mercken (2004), there are many stakeholders involved in IS development, each with its own set of objectives and expectations. They argued that if the evaluation of IS effectiveness is only financially based, and centred on the use of traditional evaluation techniques, then the process would only serve the objectives of management. Neglecting other parties' objectives would negatively affect considering factors that help in realizing these parties'

objectives, and accordingly influence the effectiveness of the system from their point of view. Supporting the same notion, Guba and Lincoln (1989) presented an evaluation approach based on stakeholders' perspectives named "fourth generation evaluation" approach. They argued that the previous three approaches of evaluation, based on financial measures and system objectives, are elusive ways to comprehensively evaluate IS (for more details review Guba and Lincoln 1989).

Other important aspects of IS effectiveness have emerged to support the need of considering both the social and technical aspects in order to appropriately understand and evaluate effectiveness (Garrity and Saunders 1998). The socio-technical approach of IS refers to the interrelatedness of social and technical aspects of an organisation. In the late 1990s, information systems came to be described as socio-technical systems, in which work is done in a socially collaborative way in a technically implemented system (Hirschheim et al. 1998). This approach focused on the achievement of both excellence in technical performance and quality in people's work lives, and social interactions as an indication of effectiveness (Garrity and Sanders 1998).

To conclude, from the research of non-financial approaches encompassing a number of single fragmented measures used to indicate the effectiveness of IS, user satisfaction is worth mentioning here as one of these measures which has been widely researched as a critical indication to the effectiveness of IS. Many researchers tested the question of if user satisfaction is a valid measure of IS effectiveness, and found empirical support for this relationship (e.g. Thong and Yap 1996). However, an opposite notion asserted that user satisfaction is a valid effectiveness measure, but should not be used alone to determine the overall effectiveness of an IS. As IS effectiveness is a multidimensional construct in which user satisfaction is one of them (Seddon 1997; DeLone and MacLean 1992, 2003).

Hence the previous discussions implied that prior IS studies have conceptualized the importance of organizational, social (Farbey et al. 1994; Irani and Love 2002; Myers 2003), and technical aspects of IS effectiveness understanding and evaluation, in addition to considering different stakeholders' views on effectiveness.

4.2.1.3. Multi-dimensional approaches to IS effectiveness evaluation

Given the above discussion, the majority of criticism to the above approaches of IS effectiveness evaluation tend to lay on the fact that considering IS effectiveness as a multidimensional construct in which assessing part of these dimensions would not indicate the extent of which the system is effective. Instead of single measures, a combination of the factors influencing IS effectiveness should be considered. The inconsistency and diversity of evaluation approaches resulted in a number of attempts to develop multidimensional approaches for evaluating IS effectiveness. Such perspectives draw on the various factors influencing IS effectiveness, as discussed in Section 4.2, to present a coherent, unified and generic model for evaluating IS effectiveness. DeLone and MacLean (1992) asserted:

“It is apparent that there is no consensus on the measure of information systems success. Just as there are many steps in the production and dissemination of information, so too are there many variables which can be used as measures of IS success. No single measure is intrinsically better than another; so the choice of a success variable or variables is often a function of the objective of the study, the organisational context and the aspect of the information system addressed. IS success is a multi-dimensional construct which should be measured as such” (1992, p. 80).

Therefore, regarding the complexity of the effectiveness of DMS as a type of IS, DMS is similarly a multidimensional construct which should be measured as such.

Although IS research has produced verities of attempts to evaluate IS effectiveness, researchers still believe that this area of research has not yet been adequately investigated (e.g. Molla and Licker 2001; Irani 2008). The following section presents the ongoing argument about IS effectiveness evaluation measures that have been referenced in the related literature. In general, the main argument raised between researchers is about the method of conducting the evaluation and what should be considered when evaluating the effectiveness of IS.

4.2.2. Influences of IS effectiveness

Over the last three decades a number of methods to evaluate the effectiveness of IS have been proposed. IS effectiveness research has produced a number of evaluation models, as well as many fragmented factors in general IS, Web-based, and IOS studies that urged to be considered when evaluating the effectiveness of IS (see Appendix 7). Generally, Kanungo et al. (1999) argued that IS effectiveness measures are an issue of a high degree of complexity, and prior research seems to associate IS effectiveness with organizational variables like user satisfaction, productivity and financial impacts. Additionally, as Kanungo et al. Asserted:

“There is little understanding of the actual process that brings in effective IS and there is no structured framework to map and understand the causal relationships between the factors of IS effectiveness that helps capture the essence of IS use in the organizations” (1999, p. 496).

However, the theory of IS success of DeLone and MacLean (1992, 2003) has been regarded as a major contribution to IS research on effectiveness (Seddon et al. 1999; Molla and Licker 2001; Garrity et al. 2005). The model has received much attention from 1992 to date, as more than 1420 article have cited, tested and validated DeLone and MacLean’s model of IS success/effectiveness. The following section discuss the concepts of DeLone and MacLean’s model, and demonstrates the reaction of the IS community towards it, either for or against. A discussion of other WBIOS studies’ contributions to effectiveness measures will be then reviewed.

4.2.2.1. DeLone and MacLean model of IS success/effectiveness

One of the oft-cited articles in the field of IS effectiveness is of DeLone and MacLean (1992, 2003). In 1992, DeLone and MacLean published their first version of IS success model. They combined the IS success measures that have been published between 1981 and 1987, and present a unified interactive model and taxonomy for conceptualizing IS success/effectiveness. Their work was based on the theory of the communications of Shannon and Weaver (1949), as well as the information “influence” theory of Manson (1978). The model of DeLone and MacLean has been regarded as a major contribution to the field of IS effectiveness/success, and has been the focus on

many studies since then. Although they did not propose an empirical testing method in their model, the model has been widely accepted and used by IS researchers who attempted to test and validate the usefulness of the model's six dimensions and the interactions between them (DeLone and MacLean 2003). The model has been regarded as a major contribution to IS success/effectiveness evaluation literature (e.g. Ballantine et al. 1996; Seddon 1997; Torkzadeh and Doll 1999; Molla and Icker 2001), and has recently been announced as a new theory of IS success (Yorku 2010).

The original model of DeLone and MacLean (1992) proposed six success dimensions, namely: information quality, system quality, use, user satisfaction, individual impacts and organizational impacts (see Figure 5). DeLone and MacLean described the relationships between the dimensions in their model as follows:

“System quality and information quality singularly and jointly affect both Use and User satisfaction. Additionally, the amount of Use can affect the degree of User satisfaction – positively or negatively – as well as the reverse being true. Use and User satisfaction are direct antecedents of Individual impact [...]” (1992, p. 83).

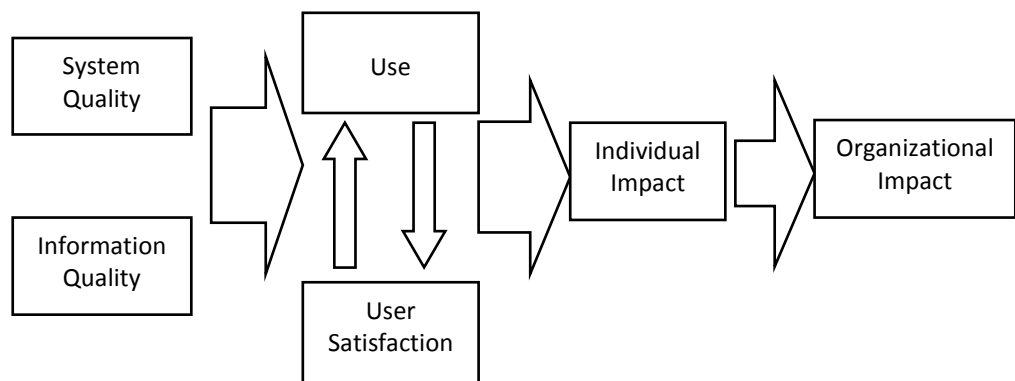


Figure 5: The original DeLone and MacLean IS Success Model (1992, p. 87)

Nine years after being proposed, the model was found to be referenced by more than 150 studies which attempted to apply or test the model (DeLone and MacLean, 2002). In response to the criticisms of researchers such as Myers et al. (1998) and Pit et al. (1995), DeLone and MacLean updated their model by adding the service quality to the

left side of their model. On defending their viewpoint, they cited the following extract from Pitt et al. (1995):

“Commonly used measures of IS effectiveness focus on the product rather than the services of the IS function. Thus there is a danger that IS researchers will mismeasure IS effectiveness if they do not include in their assessment package a measure of IS service quality” (1995, p. 173).

Also, in their updated model (2002, 2003) DeLone and MacLean added *intention to use* in response to the criticism of Seddon (1997). In this regard, DeLone and MacLean (2002) advocated that:

“Given the difficulties in interpreting the multidimensional aspects of USE – mandatory versus voluntary, informed versus uninformed, effective versus ineffective, etc. – we suggest INTENTION TO USE may be a worthwhile alternative measure. INTENTION TO USE is an attitude, while USE is behaviour. Substituting the former for the latter may resolve some of the process versus causal concerns that Seddon (1997) has raised. However, attitudes, and their links with behaviour, are notoriously difficult to measure; and many researchers may choose to stay with USE, but hopefully with a more informed understanding of it” (2002, p. 8).

In addition, DeLone and MacLean (2002) aggregated the individual impacts and the organizational impacts to a single construct named “net benefits”, arguing:

“We have come to prefer the term NET BENEFITS ourselves because our original term IMPACTS may be positive or negative, thus leading to a possible confusion as to whether the results are good or bad. Also, the inclusion of “net” in NET BENEFITS is important because no outcome is wholly positive, without any negative consequences” (2002, p. 8).

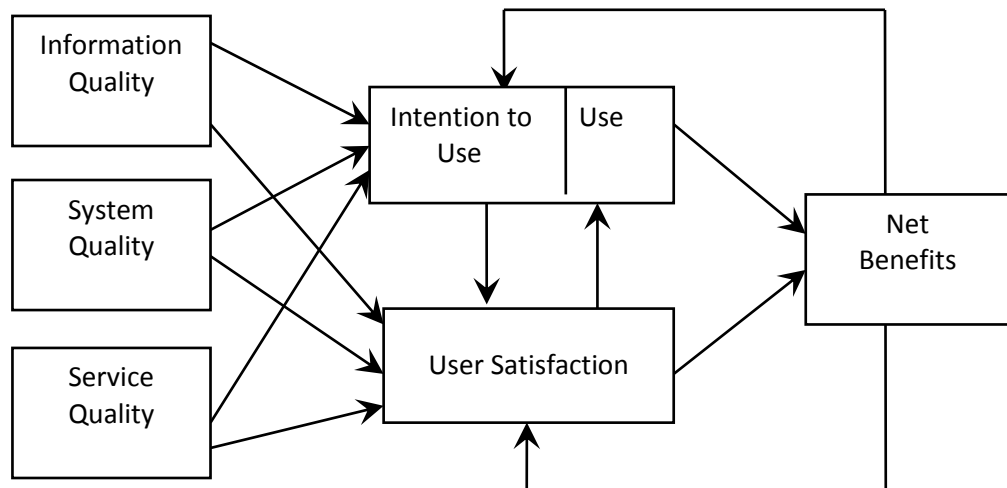


Figure 6: The updated DeLone and MacLean IS Success Model (2003)

It is worth mentioning here that many of the IS success/effectiveness models that have been identified in the literature have used the model of DeLone and MacLean (1992, 2003) as an underpinning framework, which indicates the wide acceptance of DeLone and MacLean model. These models include the Garrity and Sanders model of IS success (Garrity and Sanders 1998), the hierarchical model of IS success (Drury and Farhoomand, 1998), the e-commerce success model (Molla and Licker 2001), the web-based information systems success model (Garrity et al. 2005), and to the IS assessment model of Myers et al. (1998).

4.2.2.1.1. Critics and re-specifications of DeLone and MacLean IS effectiveness theory

Although the IS effectiveness model of DeLone and MacLean (1992, 2003) combined many of the effectiveness factors mentioned in the literature (Molla and Licker 2001), see Appendix 7, it has been criticized by a number of researchers who argued that DeLone and MacLean model cannot stand alone, as it is insufficiently complete to evaluate the effectiveness of IS (Ballantine et al. 1996; Seddon 1997, Myers et al. 1998; Almutairie 2001; Dada 2006; Aasheim 2007). Researchers justified their views on the ground that the model of DeLone and MacLean identified only systems issues and not human issues that have an important influence on the effectiveness of information systems (Gichoya 2005). Seddon et al. (1999) argued that DeLone and MacLean's six

success dimensions lack individual stakeholders' interpretations of effectiveness. They also argued that since different systems may require different measurements for effectiveness, the type of system being evaluated and stakeholders' views on the system have to be considered. However, DeLone and MacLean (2003) mentioned that the detentions of user satisfaction and net benefits measures need to consider the different views of stakeholders, the model is still criticized for not recognizing explicitly that different stakeholders in an organization may come to different results about the effectiveness of the same IS (Guvence 2005).

The relationship between an IS and its external environment is not conceptually included in the model of DeLone and MacLean (1992, 2003) (Ballantine et al. 1996; Myers et al. 1998; Aasheim 2007). In this respect, Malik and Goyal (2003) argued that IS effectiveness should be performed in an integrated approach considering product, process and environment views. Although, DeLone and MacLean (2003) themselves indicated that contextual factors are important and need to be taken into account in selecting effectiveness dimensions and measures, they did not include it in their model, as they argued:

“Despite the multidimensional and contingent nature of IS success, an attempt should be made to reduce significantly the number of measures used to measure IS success so that research results can be compared and findings validated” (2003: 28).

Thus, a range of researchers have re-specified DeLone and MacLean's model (e.g. Garrity and Sanders 1998; Ballantine et al. 1996; Myers et al. 1998; Seddon et al. 1999; Molla and Licker 2001; Garrity et al. 2005), see Appendix 7. Among these, the criticism and re-specification offered by Myers et al. (1998) is considered significant for the purposes of this thesis. This is due to the wide view adopted by Myers' model. Myers (2003) integrated the model of DeLone and MacLean into the contingency theory approach. Their re-specification of DeLone and MacLean's model provides an extensive selection of IS measures, and adds external and organizational factors which argued to affect the effectiveness of IS. The model of Myer's et al. (1998) seems to concur with the views of other researchers (e.g. Raymond and Bergeron 1996; Olson and Williams 2001; Larsen 2003; Aasheim 2007), who criticised the model of DeLone

and MacLean (1992, 2003) in terms of including *organizational* and *external environmental* factors as significant constructs of IS effectiveness. Particularly in the e-government and public sector fields, in which DMS is usually managed, it is been indicated that IS in public organizations are more dependent on the external environment than those in private organizations (Almutairie 2001; Heeks 2002). Given that most of DMSs are managed mainly by public organizations (Collins and Buhalis 2003), external environmental factors need to be taken into consideration when evaluating DMS effectiveness. Supporting the notion of Myers's model (2003), Ballantine et al. (1996) stated that IS success is influenced by factors that exist in the environment (beyond the control of an organization), such as competitor movements and political, social and economic factors. Moreover, Kelegai and Middleton (2004) indicated that political and economic instability, increasing law and order problems, in addition to provision of proper ICT infrastructure and the availability of skilled IS professionals have an impact on IS effectiveness in organizations. Furthermore, they stated that the lack of IS literacy and training, as well as understanding the capacity of IS by management, both result in a lack of proper IS planning and management.

Although Myers's (2003) model of IS effectiveness concurs with many of the academic articles' findings demonstrated above, it has not yet been fully tested or validated by IS researchers, in contrast to the six constructs of DeLone and MacLean, which have been widely validated and accepted by many IS researchers.

4.2.2.2. Web-Based Inter-Organizational Systems (WBIOSs) effectiveness

Given that DMS is a web-based inter-organizational information system; this section incorporates the contributions of web-based (WB) and IOS studies of effectiveness evaluation. Reviewing the literature underscored that the majority of WB and IOS researchers argued that the emergence of the Internet and the radical changes in the global marketplace challenge the use of traditional IS effectiveness measures as indicators of the effectiveness of WBIOS. Researchers asserted that WBIS are considerably different from the traditional IS in terms of their scope and focus (Zwass 1996; Garrity et al. 2005). The most distinctive feature of WBIOSs is that they involve many parties being linked up for the purpose of conducting their business activities based on web technologies (Lu et al. 2006), and sharing infrastructure and

communication protocols of Internet or Intranets (Zwass 1996). According to Garrity et al. (2005), WBISs are:

“Usually built to facilitate consumer oriented tasks and focus on enhancing the consumer decision making process. As the Web environment is characterized as non-linear in nature, presentation and delivery of information and frictionless work support are very critical for attracting consumers and enhancing the shopping experience” (2005, p. 2).

Such views of WBIS researchers imply that issues related to partnerships, communication, management, Internet technologies, and being customer-oriented are likely to feature prominently when evaluating the effectiveness of such systems.

Additionally, Lu et al. (2006) advocated that factors of traditional IS effectiveness studies are applicable to IOS, since it is a sort of IS, however, IOS are more complex and multifaceted than the traditional information systems in terms of their technological and management related issues. Therefore, WBIS may have its own factors of effectiveness besides those of general IS. In this sense, researchers increasingly argued that these unique characteristics of WBIS may require new metrics (Patel 2000; Lu et al. 2006), or at least careful evaluation of the existing ones (Straub et al. 2002) (see Appendix 7).

The literature of WBIS proposed either re-specifications of the model of DeLone and MacLean, or suggested new models for the effectiveness of specific “e- domains”, such as e-business, e-commerce and e-government systems. For example, Molla and Licker (2001) used the theoretical leg of DeLone and MacLean’s model (1992) and produced an extended success model to fit the characteristics of e-commerce systems (i.e. transaction and customers services). Molla and Licker (2001) replaced the information quality dimension by the *content quality*. They argued that many website evaluation articles indicated that content quality (information, transaction and services) is one of the main variables that affect the satisfaction of website users (Zhang et al. 2000), and that the quality of the content was one of the determinants of positive customer attitudes, which can lead to buying product and completing transactions. The second added variables were *trust, support* and *services* (the

dimension of *support and service* was added later to the modified DeLone and MacLean model, and called *service quality*). Molla and Licker (2001) indicated that trust refers to the two important issues that are identified across studies in affecting the future of e-commerce systems; security and privacy. Similarly, many inter-organizational systems success studies asserted that trust is one of the most critical factors for sustained relationships, and that it needs to be raised between stakeholders for effective IOS implementation (McKinney and Gerloff 1997; Allen et al. 2000).

Generally speaking, while reviewing the literature of web-based IS, it has been found that e-customer satisfaction and service quality have dominated the discussion of effectiveness in web-based systems studies (Pather et al. 2003; Cheung and Lee 2005; Schaupp 2005; Lai 2006; Minocha et al. 2006). For example, Schaupp (2005) asserted that consumer satisfaction is a central dimension of e-commerce; consumers must be satisfied with the systems to get more goods and services on-line. It is, therefore, an essential measure to determine the effectiveness of e-commerce systems. Also, Pather et al. (2003) proposed a model to evaluate e-commerce effectiveness based on combination of user satisfaction and service quality theories. However, it can be observed that this model does not give importance to integrate system or organizational factors, contrary to traditional (e.g. DeLone and MacLean model) and IOS studies (Lu et al. 2006). Furthermore, Lai and Wong (2005) added supportive strategies to the important effective implementation factors of WB systems. They named savings-related strategies for B2B and B2C companies, and marketing-related strategies for non-e-commerce companies. They argued that supportive strategies must be driven by analyzing different factors, including past performance as well as the views of different stakeholders.

On the other hand, IOS studies tend to encompass collaborative, organizational, technological and external factors. The collaborative factors stress the importance of the effective partnership in terms of economical, strategic, and social (value sharing and trust) corporation as well as effective communication (e.g. Kumar and Crook 1999; Olson and Williams 2001). While organizational factors stress the need of having organizational support in terms of upper management support and commitment, training, implementation planning, estimation and impact evaluation (e.g. Bergeron

and Raymond 1992; Angeles et al. 2001; Gallivan and Depledge 2003) and control and power (e.g. Raymond and Bergeron 1996; Allen et al. 2000). Moreover, IOS researchers highlighted the key influence of providing significant financial recourse and technological skills on the effectiveness of IOS systems (Lacovu et al. 1995; Zhu et al. 2004). Zhu et al. (2004) revealed that the importance of organizational IT skills and readiness are reflected in the intensity of the system use and in turn on its effectiveness, in addition to effective IS/IT infrastructure (Lu et al. 2006; Premkumar 1995) and the diversity of commercial partners (Bergeron and Raymond 1992; Lacovu et al. 1995). Also, environmental contextual factors' influence on IOS effectiveness have been highlighted by Zhu et al. (2004), who asserted that government has a great influence on IOS success in terms of either intensives or regulations which can increase the security and credibility of electronic transactions.

Considering the discussion above, it can be concluded that although studies on WB and IOS highlighted important aspects that enhanced our understanding on effectiveness and what can be evaluated, no WBIOS studies provide a comprehensive approach to evaluate the effectiveness of WBIOS. These studies produced fragmented effectiveness factors. Similarly, Garrity et al. (2005) asserted:

"there is little research addressing fundamental issues such as how electronic commerce systems success can be measured, whether existing measures of success can be applied. [...] Without a clear understanding of the dynamics of Web-based system success to guide firms, proper strategies and system designs are mere speculation" (2005, p. 2).

Therefore, WBIOS effectiveness is considered a complicated matter with various internal and external influences; such systems combine the characteristics of general IS in addition to their specific characteristics, which still need to be investigated in order to indicate a comprehensive set of factors to be considered when evaluating WBIOS effectiveness.

4.3. Reflection and concluding remarks

The aim of this chapter was to investigate how IS effectiveness evaluation is conceptualized in IS literature in order to find a ground for understanding the effectiveness and evaluation of DMS. This chapter demonstrated that prior IS and WBIOS studies can be drawn together to provide useful ground that paves the way for this study (see Appendix 7). This chapter demonstrated the different perspectives and approaches of understanding and evaluating IS effectiveness. In this regard, the following provides an overview of what have been learned through this review.

Reviewing the literature has indicated that there is a commonality between researchers in regarding IS effectiveness and its evaluation as a complex matter. DeLone and MacLean (2002) acknowledged the difficulty in defining IS effectiveness, and noted that different researchers address different aspects of effectiveness, which makes comparison difficult, and the prospect of building a cumulative tradition for IS research more elusive. Therefore, not only the complexity of IS effectiveness context contribute in the difficulty of understanding and evaluating the effectiveness, but also the multiplicity perspectives, approaches and measures for evaluating IS effectiveness produced by IS research complicated the choice of the appropriate method for evaluating IS effectiveness.

Researchers asserted that for evaluating the effectiveness of IS there is need to use a multiple measure to capture the complexity of IS effectiveness. This includes the consideration of the subjectivity and the context-dependent nature of effectiveness (e.g. different stakeholders' perspectives, and many internal and external influences). Generally, issues of the different technical, social, managerial, organizational, technological and environmental influences have been raised as crucial factors to be considered for the evaluation of IS effectiveness, since these factors are argued to influence positively or negatively, jointly or singularly on the effectiveness of IS (see Appendix 7).

Despite the large amount of research into IS effectiveness evaluation, the question of what constitutes effectiveness and what needs to be considered is still a matter of controversy. Several researchers advocated that this area of research has not yet been adequately investigated (Molla and Licker 2001; Ozkan 2008; Ozkan et al. 2010),

although many of the traditional models of IS effectiveness (e.g. Seddon 1997; DeLone and MacLean, 1992, 2003) have been criticized for studying IS effectiveness evaluation independently from other organizational variables such as structure, strategy, and processes. Research on WBIOS effectiveness was found to be consistent with the results of DMS literature, which highlighted the importance of including technological and organizational contextual factors (e.g. funding, management support, and stakeholder cooperation) alongside the traditional technical and satisfaction measures (e.g. DeLone and MacLean 2003).

It worth mentioning here that Drury and Farhoomand (1998) argued for formulating specific rather than generic IS effectiveness evaluation models for the different types of IS. It has been argued that having an agreed approach for evaluating the effectiveness of IS is not preferable, since defining effectiveness and the way it is evaluated depends on the type of IS, as each has its unique characteristics and considerations (Drury and Farhoomand 1998; Irani 2002; Lu et al. 2006).

Accordingly, this study approached its fieldwork with an open mind, to empirically explore effectiveness embedded in DMS actual applications (Greene 2000), rather than relying on a fragmented, complex and multi-perspective body of literature in both DMS and IS fields. Prior IS studies will be considered as far as they help in informing and shaping the understanding of DMS effectiveness evaluation (Miles and Huberman 1994). The following part (part three; Chapters 5 and 6) of this study discusses the process of collecting, analyzing and interpreting the data in order to realize the purpose of this study, as described in Chapter 1.

Part Three: Philosophical foundation and research design

Introduction

Part two reviewed the literature that is relevant to the proposed research. Part three is dedicated to establishing and justifying the research design by reviewing different philosophical and methodological approaches to research.

Chapter 5: Underlying perspectives and methodological issues

Introduction

This chapter demonstrates justifications for the philosophical perspective and the general dimensional choices in the design of this research. This includes the research paradigm, ontological and epistemological stances, the type of the research strategy chosen, and how the theory of this study was built.

5.1. Research perspectives: paradigm and philosophical assumptions - an introduction

A paradigm is a theoretical framework or a set of beliefs about ontology, epistemology and methodology (Denzin and Lincoln 2003). These beliefs shape the way in which researchers see the world and guide their actions in it (Guba and Lincoln 1994). Epistemology is the philosophy of knowledge that refers to 'how we come to know what we know'. The epistemological position is influenced by the ontological stance or 'the study of being'. Also, the epistemology and the research methodology are closely related to each other. The former involves the philosophy of how we come to know the world; while the latter involves the practice of acquiring knowledge and how we study this practice (Denscombe 2007).

Put simply, the paradigm matters because it influences the underpinning philosophical assumptions of any research; how reality is seen, how we obtain knowledge, what should be studied, how research should be done and how results should be interpreted (Bryman 2007). Given that, this chapter explicitly spells out, justifies and reflects upon the underpinning philosophical assumptions of this study (Remenyi et al. 1998; Denscombe 2007). This chapter aims to enable the reader to judge the validity of the research outputs and the consistency of the research philosophical perspectives, objectives and design. Before locating the philosophical stances of the research, it is important to explore the different choices of the traditional paradigms.

5.1.1. The choices of the traditional philosophical approaches

IS research has been classified according to three well-known philosophical approaches: positivism, interpretivism, and critical realism (Orlikowski and Baroudi 1991).

Positivist research in social science seeks to explain social phenomena or human behaviours based on the approach used in natural sciences (Collis and Hussey 2003). Positivists assume that reality is objectively given; it exists 'out there' waiting to be discovered (Neuman 2006, p. 82), apart from the perceptions of the people who observe it (Schutt 2006). Reality in positivist research can be explained by measurable properties and instruments (Creswell 1994; Myers 2007). Also, positivist studies are highly structured; the variables can be easily identified (Creswell 1994).

Interpretivist research, on the other hand, seeks to understand and interpret human behaviours "from the participant's own frame of reference" (Hussey and Hussey 1997, p. 52). Interpretivists criticised the positivist tradition, arguing that the social world is "far too complex to lend itself to theorizing by definite 'laws' in the same way as the physical sciences" (Saunders et al. 2009, p. 115). Accordingly, interpretivists believe that reality is socially constructed and that the goal of the researcher is to understand the meanings that people assign to their reality. Interpretivist approach assumes that researchers construct "an image of reality based on their own preferences and prejudices and their interactions with others" (Schutt 2006, p. 43). Thus, contrary to the positivist approach, interpretivists see the researcher as an agent in the investigated phenomenon (Collis and Hussey 2003). Contrary to positivism, interpretive research variables are largely unknown where little information exists on the topic of study (Creswell 1994). This is because interpretivists believe that "each situation is seen as unique and its meaning is a function of the circumstances and the individuals involved" (Remenyi et al. 1998, p. 33). Therefore, research adopting interpretive philosophy should not start with predetermined values/variables as interpretivists believe that realities are constantly socially constructed by dynamic human beings (Remenyi et al. 1998).

Critical realism produced a combination of positivist and interpretive perspectives. According to Mingers (2002) realists, similar to positivists, see reality as independent, *“while accepting the relativism of knowledge as socially and historically conditioned in the epistemological domain”* (2002, p. 298). Researchers adopting critical realism assume that social reality is historically constituted and that historical, economic, social, and political conditions have a key influence on the phenomenon under study (Myers 2007). Another belief of the critical philosophy is totality, which implies that things can never be treated in isolation apart from the whole. In this, critical realism concurs with the interpretive perspective. Also, Orlikowski and Baroudi (1991) outlined that:

“The critical researcher attempts to critically evaluate and transform the social reality under investigation. Where the other two research perspectives [positivism and interpretivism] are content to predict or explain the status quo, the critical perspective is concerned with critiquing existing social systems and revealing any contradictions and conflicts that may inhere within their structures” (1991, p. 18).

Given the above discussion on the characteristics of research paradigms, the following discussion justifies the choice of an interpretive perspective over positivism and critical realism perspectives.

5.1.2. Justifying the choice of the research paradigm and the underpinning philosophical assumptions

An interpretive understanding to DMS effectiveness and its evaluation is adopted. The review of literature has revealed that DMS effectiveness is a complex phenomenon (see Section 3.1). Such complexity results from either the complexity of the context in which DMS are developed (e.g. multiple stakeholders), or the subjectivity of the meaning of effectiveness (see Section 4.3). Orlikowski and Baroudi (1991) argued that the interpretive perspective *“Is explicitly designed to capture complex, dynamic, social phenomena that are both context and time dependent”* (1991, p. 18). Also, Greene (2000) argued that the meaning of effectiveness is shaped and modelled in its contextual experiences which need to be explored if the effectiveness of DMS is to be

defined. Following Greene (2000) Orlikowski and Baroudi (1991), Walsham (1993), and Guba and Lincoln (1994), it can be argued that the understanding of DMS effectiveness evaluation can be explored in its natural setting from the perspectives of people who experience it.

According to the outlined research objectives (see Section 1.3.), the positivistic and critical realism approaches are not suitable for this study. Orlikowski and Baroudi (1991) regarded IS research as positivist if it provides evidence of formal propositions, quantifiable measures of variables, hypothesis testing, as well as generalizing from a particular sample to a large population, which is not the case of the current research. The aim of this study is to have rich and in-depth insights to understand DMS effectiveness and its evaluation. This study does not start with predetermined variables and does not aim at testing a particular theory, rather generating one.

As discussed in the above section, this study perceived the effectiveness of DMS as a social construct (see also Section 5.1.2.1). Contrary to the critical realism, it investigates DMS effectiveness as a social construct and not as an independent concept (see Section 5.1.1). Understanding of DMS effectiveness from the perspective of critical realism might be in terms of correspondence to an external, independent reality but would, also, recognize that epistemologically knowledge about DMS effectiveness would be relative (see Section 5.1.1). Therefore, this study moves away from the stance of critical realism in looking at the definition of DMS effectiveness as a construct rather than a concept. Also, *“the critical realism wants to get beneath the surface to understand and explain why things are as they are”* (Mingers 2002, p. 302), while this study tries to understand what are these things (DMS effectiveness) (for more detail on the difference between paradigms, see Mingers (2002), Robson (2002), and Carlsson (2005)). In detail, the following sub-sections explain the underpinning philosophical assumptions of this study.

5.1.2.1. The ontological position: social constructivism

The identification of the research ontology answers the question of how the study views the nature of reality (Denzin and Lincoln 2003). Ontological considerations are either objectivist or constructivist (Bryman and Bell 2007). This means as Orlikowski

and Baroudi (1991) argued, the social and physical world are viewed as either objective and existing independently of humans, or subjective and existing only through human interaction.

Ontologically, this study - following interpretive information systems research - assumes that reality is socially constructed and hence multiple (e.g. Walsham 1993). The social world is constructed *“by humans through their action and interaction”* Orlikowski and Baroudi (1991, p. 14). Meanwhile, Information systems do not exist apart from humans, and hence cannot be understood, characterized, or measured in an objective way. Unlike the positivist perspective, which assumes the discovery of objective social reality, this study regards social reality to be subjective in nature and that it can only be interpreted (Bryman and Bell 2007; Hesse-Biber and Leavy 2010).

5.1.2.2. The epistemological position: interpretivism

The epistemological perspective is influenced by the research ontology (Bryman and Bell 2007). Therefore, because the ontology of this study is that reality is socially constructed, understanding such reality (which is DMS effectiveness) needs to be interpreted and obtained through the exploration of social actors' perspectives. The underlying premise of the interpretive researcher is that:

“individuals act towards things on the basis of the meanings that things have for them, that meanings arise out of social interaction, and that meanings are developed and modified through an interpretive process”
(Boland 1979, p.260, cited by Orlikowski and Baroudi 1991).

Interpretive researchers explicitly recognize that *“understanding social reality requires understanding how practices and meanings are formed and informed by the language and tacit norms shared by humans working towards some shared goals”* (Orlikowski and Baroudi 1991, p. 14). Accordingly, interpretive researchers use interpretive techniques that allow participants to use their own words and images and to draw on their concepts and experiences in order to describe, interpret and understand the social world from participants' perspectives (Denzin and Lincoln 2003). The outcome of this study thus represents the researcher own interpretation of the interpretations of different stakeholders on what constitutes DMS effectiveness and its evaluation.

5.1.2.3. The research methodology

The research methodology refers to *“the procedures framework within which the research is conducted”* (Remenyi et al. 1998, p. 30). It determines what research methods are appropriate for gathering valid evidence (Orlikowski and Baroudi 1991). Methodology is defined as *“a bridge between our philosophical standpoint (ontology and epistemology) and methods; it is related to how we carry out our research”* (Hesse-Biber and Leavy 2010, p. 38) in the light of the predefined ontological and epistemological assumptions (Easterby-Smith et al. 2002). In what follows, the adopted research strategy and how it is designed to gather and interpret the evidence of this study are discussed.

5.2. The research strategy

The terms *“research strategy”* and *“research methods”* have been used interchangeably (e.g. Yin 2003; Myers 2007) to refer to the general plan of how a researcher will go about answering the research questions (Saunders et al. 2009). Research methods can be classified in various ways; however one of the most common distinctions is the one between qualitative and quantitative research methods (Bryman and Bell 2007; Myers 2007).

5.2.1. Qualitative vs. Quantitative strategies

The distinction between qualitative and quantitative research lies in the different philosophical foundation that drives both kinds of research; namely epistemology, ontology and the connections between theory and practices (Bryman and Bell 2007). Quantitative research strategy is based on positivist objectivist foundation. It emphasizes quantification in the collection and analysis of data and is often linked to a deductive approach where theories are tested for their validation. Conversely, qualitative research strategy usually produces findings by making sense of or interprets people’s words and views and is often related to the inductive approach where emphasis is placed on the generation of theories (Bryman and Bell 2007).

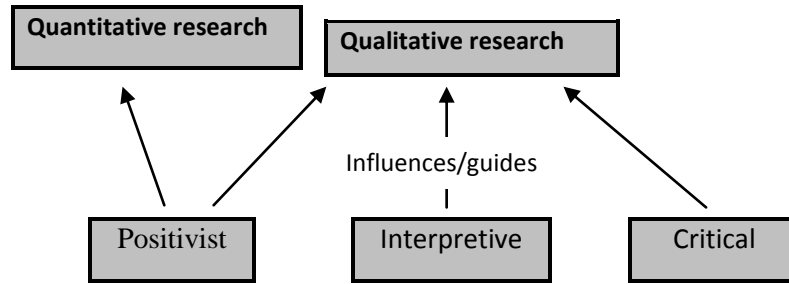


Figure 7: Epistemological Assumptions for Qualitative and Quantitative Research, based on Myers (2007, 2011)

Myers (2011) argued that qualitative research is not equivalent to an interpretive approach as a term and that qualitative research may or may not be interpretive, depending upon the underlying philosophical assumptions of the researcher as seen in Figure 7. Interpretive research assumes that *"our knowledge of reality is gained only through social constructions such as language, consciousness, shared meanings, documents, tools, and other artefacts"* (Klein and Myers 1999, p. 69). Nonetheless, qualitative research is a broader term investigating a social problem in its natural context and provides a rich description and explanation as well as a careful examination of the participants' words and views (Creswell 1994; Bryman and Bell 2007). Therefore, qualitative research can be applied to positivist, interpretivist or critical types of research.

5.2.2. Rationale behind a qualitative evaluation strategy for this study

The preceding discussion has highlighted the underpinning philosophical assumptions of this study, while the following justifies the adopted research strategy. A qualitative evaluation case study inquiry has been employed to understand DMS effectiveness and explore aspects that need to be considered for its evaluation. The following subsection justifies the choice of 'a qualitative inquiry' in relation to the aims, while the succeeding one justifies the adoption of 'a qualitative evaluation' for investigating the case of this study.

5.2.2.1. Adopting a qualitative inquiry

In line with the interpretive epistemology and the subjective ontology employed by this study, a qualitative research strategy is adopted for the following reasons:

1. The exploratory nature: qualitative research is less structured than quantitative research which facilitates a degree of openness to explore the phenomenon under investigation (Easterby-Smith et al. 2002). Patton (1990) emphasized this point by stating that *“Qualitative methods are particularly oriented towards exploration, discovery and inductive logic”* (1990, p. 44).
2. The natural setting: informed by an interpretive perspective, the emphasis of this study is on exploring, understanding and interpreting stakeholders’ perspectives in their natural setting. Seen in this light, the principles of qualitative research are consistent with the needs of this study (see Section 5.2.1). In addition, Kaplan and Maxwell (1994) argued that the goal of understanding a phenomenon, from participants’ viewpoints, and its particular social and institutional context is largely lost if textual data are quantified. Therefore, the choice of qualitative research strategy is consistent with the aim of this research.
3. Exploring the inter-subjective meanings about DMS effectiveness from the perspective of the stakeholders requires a close relation between the researcher and the participants. In this respect, qualitative research enables direct relations and deep investigation and understanding of emergent issues through qualitative techniques such as interviews and focus groups.

Also, the main outcome of this study is generating a theory for enhancing the understanding of DMS effectiveness and its evaluation. One of the key principles of qualitative research is its focus on the process rather than on the outcome (Punch 2002). The process of generating the theory is important so as to ensure the validity of the outcome.

5.2.2.2. Why a qualitative evaluation approach

Qualitative evaluation research is a branch under qualitative inquiries. Patton (2002) indicated that fourth generation evaluation and process evaluation are types of qualitative evaluation. A qualitative or interpretive approach to evaluation is also termed 'goal-free evaluation' (e.g. Patton, 2002; Cronholm and Goldkuhl 2003). The aim of this kind of evaluation is exploration, and it is carried out by investigating a wide range of stakeholders' views. Cronholm and Goldkuhl (2003) argued that the qualitative or interpretive type of evaluation can be used to gain "*a deep understanding of the nature of what is to be evaluated*" (2003, p. 3). Guba and Lincoln (1989) emphasized the importance of distinguishing between evaluations that are intended to add knowledge or understanding (e.g. goal-free evaluation) and those intended to assess some state of affairs (e.g. goal-based evaluation). The exploration and understanding of a phenomenon can be researched by different means; qualitative evaluation is one of them. This study approaches a qualitative evaluation case study aiming for understanding and exploration (Hirschheim and Smithson 1988 cited in Cronholm and Goldkuhl 2003; Patton 2002), in order to identify the aspects that need to be considered for effectiveness evaluation. In this respect, Greene (2000), Patton (2002) and Guba and Lincoln (1989) asserted that researchers do not need prior knowledge of what they will evaluate when following a qualitative evaluation approach, because in this kind of evaluation researchers start by considering the views, values and experiences of stakeholders whose involvement is essential in this kind of evaluation.

According to Cronholm and Goldkuhl (2003), doing a qualitative evaluation should include the description of the functionality of the system via study the system itself through the examination of relevant documents or interviews with the stakeholders, as well as considering the description of the users (their pre-knowledge, interaction between the users and the system). More details on how the strategy of this study was conducted ('A qualitative evaluation case study') is presented in Chapter 6.

5.3. Designing the research strategy

A research design provides a framework for the collection and analysis of data (Bryman and Bell 2007). It is "*the logic that links the data to be collected and the*

conclusions to be drawn to the initial questions of a study; it ensures coherence" (Rowley 2002, p. 18). Researchers can choose from different research designs i.e. experiment, survey, case study, action research, grounded theory, ethnography or archival research Yin (2008). Myers (2007), in particular, has put emphasis on four traditional types that suit qualitative research. These are: case study, action research, grounded theory, and ethnography. The chosen design is determined by such factors as the research questions and objective, the extent of existing knowledge, the amount of time and the philosophical underpinning assumptions as previously discussed (See Section 5.1.1.) (Saunders et al. 2009). This is in addition to the consistency between the research design and the adopted strategy.

Considering the purpose of this study and its philosophical assumptions, a qualitative case study approach is adopted here. Before indicating the rationale behind this choice and why it is seen as appropriate to the aims of the research, it is important to discuss why other approaches are not applied.

This study does not draw on other research design approaches, in spite of their suitability for the aims of this study as forms of qualitative strategies, since they all produce rich and in-depth information, for the following reasons:

1. *Action research* aims at changing a particular situation and monitoring the results of such change (Collis and Hussey 2003). It assumes that *"the social world is changing and the researcher and the research itself are parts of this change"* (Collis and Hussey 2003, p. 66). Action research produces two outcomes: research to learn about a particular situation, and action to be taken to change the conditions of this situation in the studied organization (Robson and Cordoba 2005). This would explain why a close cooperation between the researcher and the staff of the studied organization is needed. The aim of this study is to explore and understand the phenomenon under investigation and not to make changes or monitor the influence. As the researcher of this study is not in a position to gain such deep interaction or make changes in the studied system context.

2. *Ethnography research* requires researchers to spend a significant amount of time in the setting of their studies. Bryman and Bell (2007) asserted that ethnographers become full working members of the group being studied and spend a long time in the workplace. The context and aims of this study do not fit ethnographic. Although the present study focuses on the investigation of a particular application of DMS, it explores perspectives of multiple groups of stakeholders in different contexts. There is no specific setting in which the researcher should spend her time in its study. Rather, there are many fragmented settings from which stakeholders' perspectives need to be explored, e.g. online forum for collecting tourists views, the internal context of the supporting organization, the many members of the system (e.g. from the local SMTE), and the context of international organizations (see Chapter 6 for more details). As a result, the dedication of a significant time for the study of one particular setting is not appropriate to realize a holistic perspective of DMS effectiveness, added to this are the time constraints.
3. Grounded theory approach allows researchers to build theories directly from the immediate data they collect from their fieldwork rather than depending on existing theories (Strauss and Corbin 1997). In this sense, researchers use the empirical research to establish directly the variables, concepts and relationships which will be combined in the theory (Remenyi et al. 1998). Grounded theory strategy is not employed here, as this study aims to combine the findings of the fieldwork in relation to the findings of reviewing the literature so as to improve the understanding of DMS effectiveness. Contrary to the grounded theory, case study approach which is adopted in this study benefits from the prior development of theoretical proposition to guide the data collection and analysis (Yin 2008).

In what follows, the definition and types of case study research – as developed in the literature – will be concisely reviewed. Also, the rationale for adopting a case study approach for this study will be pointed out.

5.3.1. Case study research approach

Yin (2003) defined a case study as “an empirical inquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not clearly evident” (2003, p. 13). Case studies become particularly useful where one needs to understand in depth a particular problem or situation, and where one would identify cases that are rich in information (Patton 2002). Yin (2008) went further to outline that a case study approach is an appropriate way to explore areas where research studies are insufficient. Approaching a holistic view, the depth and richness of information that case studies produce require the use of different techniques and multiple sources for collecting the research evidence such like interviews, observation, participant observation, questionnaire (Veal 2006; Denscombe 2007). Table 3 summarizes the characteristics of case study research and shows the reasons behind its adoption to reach the aims of this study.

Table 3: Case study research characteristics (Denscombe 2007)

Case study research characteristically emphasizes		
Depth of study	rather than	Breadth of study
The particular	rather than	The general
Relationships/processes	rather than	Outcomes and end products
Holistic view	rather than	Isolated factors
Natural settings	rather than	Artificial situations
Multiple sources	rather than	One research methods

5.3.2. Consistency between case study approach and the adopted research strategy

Generally, case study research – depending upon the underlying philosophical assumptions of the researcher – can be employed in positivist, interpretive, or critical research. It can be employed for both quantitative and qualitative research (Stake 1995), or a mixed of both (Yin 2008). Bryman and Bell (2007) argued:

“When a predominant case study is qualitative, a case tends to take an inductive approach to the relationship between theory and research; if a

predominantly quantitative strategy is taken, it tends to be deductive” (2007, p. 64).

Given the discussion in Section 5.3.1, the outlined principles of case study research make it consistent with the three creeds of qualitative research, which are describing, understanding, and explaining (Tellis 1997).

Section 5.2.2.2 has justified the adoption of a qualitative evaluation strategy for exploring the context of DMS. According to Stake (1995):

“All evaluation studies are case studies. The program, person or agency being evaluated is the case. The study is, at least in part, a search for merit and shortcoming of that case” (1995, p. 96).

The context that is investigated in this study is the Egyptian one, in which the effectiveness of the Egyptian DMS is investigated (or qualitatively evaluated) (Chapter 6 presented a detailed description on the case of DMS in Egypt).

Factors such as the depth and richness of data generated, the nature of context, the multiple evidence, and the option of studying small number of cases coalesce make case study an appropriate approach that satisfies the needs of this study. The following presents the rationale behind the adoption of qualitative case study in light of the aims and philosophical perspectives of this research:

1. Studying DMS effectiveness in its natural setting: Following Greene (2000) who asserted that it is in these contextualized experiences that the meanings of system effectiveness is shaped and modelled, a case study research is an appropriate choice as a research design for the aim of this study. This is because the case study design is conducted in a natural setting with the intention of understanding the nature of current processes in areas where research studies are insufficient (Yin, 2008). It allows the researcher to grasp an in depth, detailed and rich information about the phenomenon and its context (Eisenhardt 1989; Collis and Hussey 2003; Yin 2008).
2. Approaching a holistic perspective on effectiveness and its influences: This study needs to adopt a broad perspective to be able to comprehensively

identify all the possible internal and external factors that would affect DMS effectiveness. With this said, Gummesson (2000) and Remenyi et al. (1998) asserted that the main strength of the case study strategy is providing the opportunity to approach a holistic view of specific research project. Remenyi et al. (1998) added that “*case studies allow the student or the researcher to retain a more holistic perspective than can be easily achieved through other approaches*” (1998, p. 162).

3. Multiple source of evidence is needed to cover the diverse and distributed DMS stakeholders and context. Case studies enable researchers to combine data collection methods such as interviews, documents, archival data and observations. Methods of data collection and data analysis are known to hide some details. Therefore, using multiple source of data is significant to maximize the collection of data acquired in order to move towards a holistic understanding (Stake 1995). Yin (2008) stressed that case study strategy is complemented with multiple source of evidence to increase the quality of results and the search for disconfirming evidence.
4. Inadequate research on DMS effectiveness: No research has been adopted to study DMS effectiveness in developing countries, see Section 1.2. This makes DMS effectiveness in developing countries a context that needs to be explored (see the findings of Part 2 of this study). In relation, case studies can be adopted for research areas which require development of new theories or fresh perspectives on existing theories as stated by Eisenhardt (1989) who added that case studies are “*well-suited to new research areas or research areas for which existing theory seems inadequate*” (1989, p. 548). However, contrary to the grounded theory approach, case study benefits from the prior development of theoretical proposition to guide the data collection and analysis (Yin 2008).

5.4. Case study design

Prior to the discussion of data collection methods (see Section 5.4.3) some case study design issues have to be decided for the case selection, i.e. the number of cases to be studied and the sampling type as follows.

5.4.1. Sampling techniques

The selection of cases is subject to two main domains: non-probability samples which are the domain of the interpretivists, and probability samples which are used by positivistic researchers (Remenyi et al. 1998), see Appendix 1. The interest of this study, according to the chosen qualitative interpretive philosophy, is in non-probability samples. There are different types of the non-probability techniques. Saunders et al. (2009) identified five types, these are: quota sampling, purposive sampling, snowball sampling, self-selecting sampling and convenience sampling. From these, purposive sampling has been chosen for this study. The aim of this choice is to enable the selection of the cases that are believed to be capable to provide relevant, deep and rich information that would answer the questions of the study. The choice of a purposive sample involves defining the characteristics of the sites or type of persons to be interviewed. Based upon these characteristics, any sites or persons having those characteristics can be included in the sample (Patton 2002). Also, Denzin and Lincoln (2000) justified the use of purposive sampling in qualitative research by indicating:

“Many qualitative researchers employ purposive and not random sampling methods. They seek out group, settings and individuals where the processes being studied are most likely to occur” (2000, p. 370).

This study has used purposive sampling to choose representatives from groups of the Egyptian DMS (the Touregypt project) stakeholders to investigate their perspectives on effectiveness. Samples have been chosen to include variety of perspectives: the public (The Egyptian Tourism Ministry) and private sectors (Touregypt management organization), members and non-members of the system, local tourist enterprises from different sizes (small, medium and large enterprises), international organizations, and tourists (see Figure 10). There are a range of different approaches to purposive

sampling; the choice between them depends on the study's aims and coverage (Richie and Lewis 2003). Patton (2002) has identified such options and where they can be of help to qualitative research (see Patton 2002, p. 240 - 244). This study has adopted triangulation in choosing the purposeful samples which combine different types of purposive samples for the aim of flexibility and in order to meet the multiple interests and needs of the study in question (Patton 2002). Snowball and Stratified purposeful samplings have been used to select the participants in this research. Both of these types share common principles as types of purposive sampling. These are (Patton 2002):

“Selecting information-rich cases-cases from which one can learn a great deal about matters of importance and therefore worthy of in-depth study”
(2002, p. 242).

5.4.1.1. Justifying sampling techniques choices

The following presents the rationale for choosing these different two types of purposive sampling, Snowball and Stratified purposeful samplings.

The first technique for identifying the participants of the study was a Snowball or chain purposive sampling. The technique identifies cases of interest from people who know what cases might be relevant and can provide rich information. In this sense, one should get hold of one or more participants as a start and they will tell about where the others are or can be found. When those others are found, they will tell where others can be found and the chain continues (Patton 2002). When the actual fieldwork was done, this study specified some characteristics upon which participants were recommended. Strategies included, asking for someone who could be of help to this study in small or medium companies from the members and the non-members of the Touregypt project, asking about someone responsible about Touregypt project in the Egyptian Tourism Ministry or any other public sector authority. In the beginning of this study, identifying some of the desired populations, especially those from the public sector authorities, was difficult. That is why snowball purposive sampling was chosen for this study (Saunders et al. 2003).

According to the multiple types of stakeholders of the Egyptian DMS, stratified purposive sampling is used in this study besides snowball purposive sampling for purpose of variation and comparison of stakeholders' groups' perspectives. Patton (2002) described these as samples within samples and suggested that stratified sampling is a hybrid approach in which the aim is to select groups that display variation on a particular phenomenon, considering which each of them is fairly consistent, so that subgroups can be compared. For instance, this study has divided the population considered to include local enterprises from members and non-members of the Touregypt project. It also divides the sample according to the size of the tourist enterprises to include small, medium and large companies. Further, it was important to include perspectives of both the public and the private stakeholders. Stratified purposive sampling is different from stratified random sampling in that the sample sizes are likely to be too small for generalization.

5.4.2. Determining the numbers of cases: One setting-multiple case studies

This study investigates the Egyptian DMS experience. DMS was described in Chapter 2 as a vast web-based interorganizational system that includes multiple stakeholder groups either inside or outside the destination. Here, this study conducted a single setting, which is the Egyptian DMS; although a multiple cases approach is employed, since the achievement of multiple perspectives is significant to build a comprehensive understanding for DMSs effectiveness.

Regarding the number of cases, researchers asserted that there is no rule or ideal number of cases to be included in qualitative inquiry (Eisenhardt 1991; Patton 2002; Yin 2008). The selection of the sample size depends on *“what you want to know, the purpose of the inquiry, what’s at stake, what will be useful, what will have credibility and what can be done with available time and resources”* (Patton 2002, p. 244).

Researchers also pointed out to that rich and in-depth information from a small number of cases can be very valuable (Eisenhardt 1991; Stake 1995; Voss et al. 2002; Yin 2008). They also asserted that the purposeful samples need to be judged *“on the basis of the purpose and rationale of each study and the sampling strategy used to achieve the study’s purpose”* (Patton 2002, p. 245). In this respect, Patton added:

“The validity, meaningfulness, and insights generated from qualitative inquiry have more to do with the information-richness of the cases selected and the observational/analytical capabilities of the researcher than with sample size” (2002, p. 245).

Eisenhardt (1989) indicated that cases should be added until “theoretical saturation” (1989, p. 545) is reached. Theoretical saturation refers to the point where data starts to be repetitive and no more of it emerges or is heard by the researcher.

Generally, researchers differentiate between two kinds of case studies; single and multiple cases (Eisenhardt 1991; Yin 2008). Single case studies are fitting when the case is rare or critical for investigating (Yin 2008). However, choosing the type of case study depends on the research aims; many researchers prefer the use of multiple cases. For example, Eisenhardt (1991) indicates that multiple cases are a powerful means to create theory because they permit replication and extension among individual cases. She stated that *“good theories are fundamentally the result of rigorous methodology and a comparative, multiple – case logic”* (Eisenhardt 1991, p. 726). Yin (2008) further emphasized that the evidence from multiple cases is often considered more compelling and the overall study becomes stronger, since it increases the generalizability of the study result.

However, researchers such as Voss et al. (2002) indicated that single in-depth case studies can offer researchers the opportunity to carry out an in-depth observation that can lead to very significant research findings. On the other hand, they stated that the generalizability of the conclusions is an important limitation of a single case study design; hence the theory developed from such case would have to overcome perceptions concerning its applicability to other contexts. However, they specified that researchers can overcome this limitation by incorporating events and data from multiple cases when designing the case study.

Although, this study does not aim at external generalizability (see Section 5.6.3), multiple cases were adopted within the setting of the Egyptian DMS experience. Eisenhardt (1991) stressed that researchers should distinguish between two terms; single setting and single case. Eisenhardt (1991) added that many of the pioneering

researchers in social science depended on single setting and multiple case studies in their research, she said:

“This is a critical misreading of these studies. Although these studies may focus on a single setting such as a corporation they are not single cases. Rather, many are multiple-case studies, relying on the comparative multiple-case logic of replication and extension for their theoretical insights” (1991, p. 622).

5.4.3. Data collection methods and techniques

The selection of the research strategy influences the way in which the data are to be collected. For example ethnographic research usually relies on using participant observation while survey research usually relies on questionnaire as a technique for collecting the required data. As for the qualitative case study strategy adopted by this study, Yin (2008) stated that there are six possible sources of evidence for case studies: documents, archival records, interviews, direct observation, participant-observation, and physical artefacts. However, Myers (2007) did not recommend using participant-observation in case study, and argued that it is an ethnography technique. Indeed, the case study's unique strength is its ability to deal with a variety of evidence and to use a combination of different methods to study the same phenomenon, which is described as data triangulation (e.g. Patton 2002; Yin 2008).

Hereby, a combination of data collection techniques (or data triangulation) is adopted in this study for two reasons: first: to cover the multiple stakeholders' perspectives of DMS, as each group of the stakeholders needed a particular way to collect their perspectives, as shown in the following. Second: as a way to increase the credibility and overcome any bias regarding this study (as being one of the main weaknesses of a qualitative research) (Patton 2002; Punch 2005; Mayer 2007; Bryman and Bell 2007; Yin 2008).

In this section, a justification of the general framework for collecting the evidence of this study is presented, while in the next chapter (Chapter 6) the process of collecting and analyzing the evidence is further demonstrated in details. The main purpose of the fieldwork of this study was to collect the needed data to evaluate stakeholders'

perspectives and experiences about the Egyptian DMS effectiveness. Given the large number of DMS stakeholders, as mapped in Figure 10, different data collection techniques were employed as follows:

1. **Interviews:** Data were collected through unstructured (for the exploratory interviews) and semi structured interviews (field study interviews) with the local stakeholders groups of Touregypt.net (the Egyptian DMS online window) from: members and non members of the system, both the public and private sectors, and from different sizes of enterprises; small, medium, and large companies. Such diversity in selecting the local stakeholders for interviews provides a wide perspective on Touregypt experience in the Egyptian context; see Section 5.4.3.1.
2. **Website and forum analyses:** Touregypt.net (website and forum) as well as tripadvisor.com (Egypt forum) have been analyzed. This is in addition to a currying out online (e-mail) interviews with tourists of Touregypt.net. Using the Touregypt.net and Tripadvisor.com forums helped in getting close to tourists' experiences with Touregypt.net, which they expressed in their own words. Generally, Best (2004) asserted that tourists are encouraged to talk openly in familiar settings such as Internet forums or e-mail contacts, see also Sections 5.4.3.2 and 6.2.2.2.3.
3. **Observation:** is another technique that is used in this study to back the understanding of stakeholders' attitudes and behaviours, either on the online forum or during face-to-face interviews. This is In order to aid the interpretation and the comparison of stakeholders' perspectives on Touregypt project effectiveness, see also Sections 5.4.3.3, and 6.2.
4. **Document survey** well known International tourism organizations views of DMS effectiveness (i.e. UNCTAD and UNWTO) have been investigated through document analysis (published reports and online articles collected from their official websites), *as well as online archival research through* reviewing past conversations of tourist in both Touregypt.net and Trip advisor- Egypt forums (see Section 6.1.3.).

5.4.3.1. Interviewing

According to Bryman and Bell (2007), Interviewing is a useful data collection method for enabling respondents to give detailed responses about complex issues. There are different types of interviews; the choice among them depends on the type of research aims and questions (Punch 2005). Based on the degree of structure, interviews can be classified as structured, semi structured and unstructured interviews (Saunders et al. 2003). Interviewing is a research approach that can be used in either qualitative or quantitative research. Quantitative researchers tend to use structure of interviews, where a predetermined set of questions is used in exactly the same way and order (Saunders et al. 2003). The respondents are given a limited fixed choice of possible answers (Bryman and Bell 2007). On the other hand, qualitative researchers tend to use more unstructured interviews than do quantitative researchers in order to grasp more detailed and rich answers. Qualitative interviews (either semi or unstructured) allow respondents to express themselves (their experiences and perspectives) in their own words (May 1997). For the purpose of this study the following is an overview of interview type's used in qualitative studies. In unstructured interviews the researchers do not follow a list of questions. Unlike structured interviews, the questions of unstructured interviews and their order are not fixed, since they are allowed to be changed during the interview. Moreover, the researcher can join the conversation by discussing what s/he thinks about the topic (Bryman and Bell 2007). The respondent also has a great opportunity to talk freely about events, behaviours and beliefs related to the topic under discussion (Saunders et al. 2003). On the other hand, semi structured interview is flexible in its process as it allows the interviewees' own perspectives to be investigated in details. In semi structured interviews, the researcher has a list of issues and prompts to be explored, but has some flexibility in the issues covered and can allow interviewees to elaborate on the issues raised (Denscombe 2007). Researchers then use participants own expressions and words to interpret the situation under discussion.

In regard to the purpose of this research, both semi and unstructured interviews were used. Unstructured interviews were conducted in the early stage of the research while conducting the exploratory study. This is because the researcher did not have much information about the Egyptian DMS setting at that time. Therefore, interviewees

were left to talk freely with few prompts¹ and probes² (see Chapter 6 for more information on the early exploratory interviews). Additionally, semi structured interviews were conducted as one of the data collection techniques in the fieldwork. The reason is that it combines structure with flexibility; therefore this is a type of interviews that is comparable (Mason 1996). Semi structured questions allow researchers to follow predetermined questions and at the same time can be supplemented with related, unanticipated questions that were not originally included beforehand. In other words, through semi structured interviews probing deeper into a response given by an interviewee is permitted and it is still possible to prepare a list of questions to be prompted on the interview guide. Thus, using semi structured interviews allow discovering additional issues which may not be covered in the initial interview guide of this study (Mason 1996; Saunders et al. 2003). This is in order to have insight to the phenomenon under research and to give chance for more issues to be evolved and further explored. Moreover, the Table 4 below lists some of the advantages and disadvantages of semi structured interviews as constructed by Goodson and Phillimore (2004).

¹ Prompts such as: remain silent and repeat the last few words (Denscombe, 2007)

² Probes such as: Ask for clarification or more details (Denscombe, 2007).

Table 4: Semi structured interviews advantages and limitations (Goodson and Phillimore 2004, p. 222)

Advantages and limitations of semi structured in-depth interviewing
<p>Advantages:</p> <ul style="list-style-type: none"> - An adaptable technique enabling probing of specific themes taking account of each participant's particular experiences. This in turn makes it a flexible technique because as data collection progresses and new ideas relevant to understanding the research topic emerge, interview schedules can be refined to collect these insights. - The face-to-face nature enables the researcher to read body language and other non verbal forms of communication in addition to speech, which can elicit valuable insights. - Possible interconnections between experiences and views can be explored. - It allows for comparability across interviews, as the same questions are asked of each respondent. - This technique can be highly validity, as interviewers can ensure that questions are understood by the interviewees by adapting the wording, or probe to elicit more in-depth responses. <p>Limitations:</p> <ul style="list-style-type: none"> - Misinterpretation of views by the researcher and/or participant is possible. - The method require training and confidence to be fully effective in data-gathering, and some theoretical insight to be able to probe for more detail on valuable ideas as an interview is conducted. - The value of the data is dependent on the honesty of the interviewee. - Interviews, transcription and analysis of interview data are all time consuming activity.

Yet, the semi structured interviewing approach has some limitations as demonstrated in Table 4. Being aware of these limitations helped decrease or overcome them during preparing, conducting and analyzing the interviews. For example, one of semi structured interview limitations is a possible misunderstanding and interpretations of participants' views; therefore, rephrasing what has been understood to interviewees becomes important as one way of verifying the results.

5.4.3.2. Online methods for data collection: observation, forum and website analysis and e-mail interviews

The use of online data collection methods in social research is on the rise (Im and Chee 2006). O'Connor and Madge (2001) stated that, the Internet produces:

"A virtual social arena which is not bound by temporal and spatial restrictions where researchers can, therefore, interact with participants in ways which may not be possible in the real world" (2001, p. 2).

Gaiser (1997), also, stated that the use of online methods is important when:

“The research question involves an online social phenomenon, [because] a potential strength of the method is to be researching in the location of interest” (1997, p. 136).

In this regard, informed by a qualitative research strategy, this study investigates the effectiveness of a web-based information system (i.e. Touregypt project), in which online users’ perspectives need to be explored in their natural context. The use of online data collection methods, therefore, helped in getting close to Touregypt users experiences, which they expressed in their own words. In the same line, Best (2004) asserted that tourists are encouraged to talk openly in familiar settings such as Internet forums or e-mails contacts.

Among online data collection methods, discussion forums observation, website analysis, and e-mail interviews were carried out for the purpose of this study. Generally, online discussion forums (web message boards) and e-mail interviews allow asynchronous³ interactions, through which participants can join the discussions or respond to the e-mail at their convenience, unlike other methods requesting synchronous⁴ interactions, e.g. chat rooms or groups (Im and Chee 2006).

Observation of Touregypt forums is widely used in this study to grasp perspectives and interactions of system users and the Touregypt Management Company (project owner and forum moderators). The e-mail interviews have been used in a limited extent to investigate more of tourists’ views (some active members of the forums) about the Touregypt system during the forum observation stage.

This study has benefited from the advantages provided by Internet research. Researchers argued that the online data collection methods allow people in different geographical areas to communicate and exchange their experiences and opinions

³ Asynchronous interviews take place in non-real time, e.g. e-mail interviews and discussion forums. Neither interviewer nor interviewee needs to be online at the same time. It involves the interviewer emailing interview questions to respondents to answer at their own convenience. (O’Connor and Madge 2001; Im and Chee 2006).

⁴ Synchronous online interviews are those which similar to a traditional research interview in that they take place in 'real time' in an environment such as an Internet chat room. All participants have to be online at the same time and questions and answers are posted in a way that looks like a traditional interview (Im and Chee 2006).

without long-distance travel. Also, Internet research methods increase the ability of studying sensitive topics, and help in generating (and simultaneously record) high quality data (McGivern 2005). In agreement, Cantrell and Lupinacci (2007) added to the advantages of online research being less expensive, decreasing data collection time, increasing accuracy and efficiency of data entry and analysis, as well as having the ability to follow-up with participants.

However, articles of online studies asserted that researchers need to be cautioned with some possible disadvantages of online research. For example, participation in virtual interviews require a higher level of motivation and interest from the interviewee than in a usual interview (Chen and Hinton 1999), low response rates, lack of engagement during conversations and the negative influence of forum moderators (McGivern 2005; Im and Chee 2006). This study has experienced only two of the above listed disadvantage. Firstly, one of the Touregypt forums moderators has not agreed of posting a particular prompt through the forums. The prompts concerned with tourists' views on the difference between the public and private sector management of Touregypt project. The moderator saw it is not appropriate to post such question in a time where stakeholders were conflict (for details see Section 6.1.2.). Secondly, the low response rates to the e-mail interviews were another disadvantage. However, the researcher did not depend on e-mail interviews in collecting tourists' views, rather other online methods such as archival analysis and forum observation were carried out.

5.4.3.3. Observation

The Touregypt discussion forums are the place which most of the observation of this study took place. This is in addition to the observation that took place during the face-to-face interviews. Observation is useful in providing rich description about a phenomenon (Bryman and Bell 2007). It can be used to reveal characteristics of groups or individuals which may be impossible to be discovered by other means (Bell 2005). Bell (2005) stated that *"observation can be useful in discovering whether people do what they say they do, or behave in the way they claim to behave"* (2005, p. 184). In this study, an observation was used to back the interpretations of stakeholders' perspectives (Greene 2000) about system effectiveness and how it

differs between different groups of stakeholders. For acquiring rich and in-depth data for the purpose of this study, it was important to observe the interactions between the staff and owner of Touregypt project and the users of the system through Touregypt forums (see Section 6.2).

In general, observation can be participant or non participant, and structured or unstructured.

In structured observation the researcher depends on predetermined categories and he/she has a view on what to be observed. In contrast, unstructured observation focuses on the larger picture without predetermined categories; it is a natural open-ended way of observation Goodson and Phillimore (2004). Punch (2005) stressed that in the case of unstructured observation:

“The behaviour is observed as the stream of actions and events as they naturally unfold. The logic here is that categories and concepts for describing and analyzing the observational data will emerge later in the research, during the analysis, rather than be brought to the research, or imposed on the data, from the start” (2005, p. 179).

Hence, this study adopted an unstructured approach to observation. Although the fieldwork has been started with a clear idea on the purpose of conducting forums or interviews observation, there was no detailed clarification on exactly what need to be observed (Bell 2005).

Additionally, observation can be divided according to the degree of involvement the researcher has in the research setting, either participant or non participant. Non-participant (direct observation) is distinguished from participant observation in that the researcher is watching rather than taking an interactive part in the context of the study (Schutt 2006). In this study, although the researcher posted some discussions through Touregypt forums, these posts were not related to the focus of this study. There were two aims of these posts; establishing rapport with members of the forums, and providing prompts and probes to encourage discussions on a particular topic (see Chapter 6). Therefore the type of observation conducted in this study can be classified as unstructured, with no participant or direct observation. The researcher also was an

overt observer, since users and moderators of the forums knew the researcher's identity, as well as the purpose of her study.

5.4.3.4. Document survey

Document survey was undertaken as one of the data gathering techniques. Esterberg (2002) defined documents as *"any written materials that people leave behind"* (2002, p. 121). Documents can be e.g. e-mails, blogs, letters, reports, WebPages, newspapers (Myers 2008). Myers (2008) asserted that document survey provides a valid and rich method that portraying the values and beliefs of participants in the setting. Two types of documents were surveyed in this study; the published reports of international tourism organizations and an online archival research of Touregypt.net and Tripadvisor.com forums as follows.

The United Nation World Tourism Organization (UNWTO) and United Nations or particularly the United Nations Conference on Trade and Development (UNCTAD) represent the international tourism organizations group of stakeholders. The two international tourism organizations are well known in the tourism field for their leading role in the development of tourism business, especially in the developing countries.

A survey of relevant published reports and online articles collected from UNCTAD and UNWTO official websites was carried out. The purpose was to explore the perspectives of International tourism organizations about DMS effectiveness in general, and particularly in developing countries. Reviewing such reports was an important source of information to understand the discourses of the two international tourism organizations and how they present it (see Chapter 6 for more details). Additionally, online archival research was conducted; it is considered by Myers (2008) as a type of electronic document survey. This study has reviewed past conversations of tourist in both Touregypt forum and Trip advisors Egypt forums. This is to complement the data obtain from interviews and observation about the perspectives and experiences of tourists about Touregypt effectiveness.

5.5. A strategy for generating the research theory

The aim of this study is to build a theory that enhance the understanding of DMS effectiveness and indicate what needs to be considered when evaluating DMS effectiveness. According to Gregor (2006), the type of theory that this study aims to produces can be labelled as 'explanatory theory' or 'understanding theory'. Gregor (2006) stated that explanation theory provides:

"an explanation of how, why and when things happened, relying on varying views of causality and methods for argumentation. This explanation will usually be intended to promote greater understanding or insights by others into the phenomena of interest ... Explanation is closely linked to human understanding, as an explanation can be provided with the intent of inducing a subjective state of understanding in an individual" (2006, pp. 7-12).

So far, the philosophical assumptions as well as a qualitative case study strategy have been argued as basics approaches of this study. The following addresses the issue of building the research theory from case study under an interpretive approach. Theory building involves:

"A poorly-understood path of moving from broad, ill-defined research themes, collecting masses of data, analysing and interpreting them to build theory and then reporting the research findings" (Carroll and Swatman 2000, p. 235).

Figure 7 outlines the theory building process of this study. This process includes four stages; an activity model for the pre-fieldwork stage, data collection, data analysis/interpretation (analysis and reflection), and thought experiments (or a literature-based scrutiny of the research findings). In formulating the theory generation process, this study is influenced by the work of researchers such as Eisenhardt 1989; Miles and Huberman 1994; Perry 1998; Carroll and Swatman 2000; Patton 2002; Gee 2005; and Maxwell 2005.

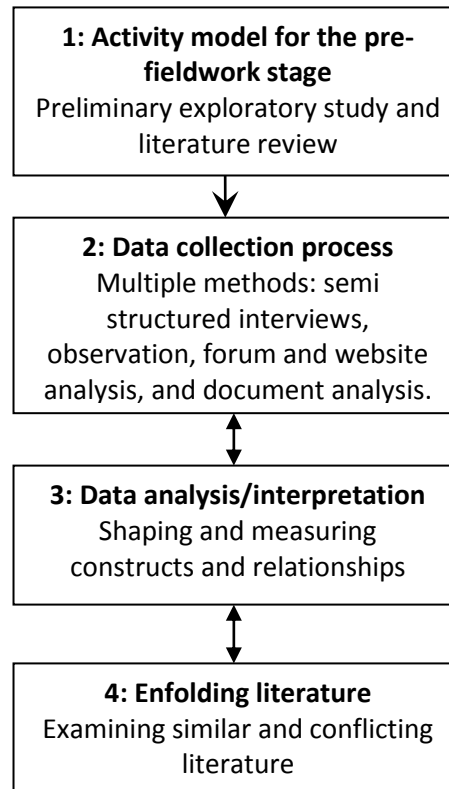


Figure 8: The process of theory generation; see Figure 19 for details on the processes of these stages

5.5.1. Stage one: activity model

The activity model is a map of the activities that make up the process of the pre-fieldwork stage. It shows the interconnections, inputs and outputs (Business Dictionary 2011) of the process of this stage. The activity model includes reviewing the literature and the process of the preliminary exploratory study (see Section 6.2.1 for details of the preliminary exploratory study). Voss et al. (2002) stated that when building theory from case studies, researchers need to have a prior view of the general constructs or categories they intend to study and the relationships between them. Such prior views set out the main areas of interest of the research. Unlike the deductive approach, whereby the researcher enters the field with tightly constructed questions or hypotheses, the inductive qualitative approach starts with broad research themes which are refined during the research process (Carroll and Swatman 2000). According to Perry (1998), these general themes can be identified through the literature and through exploratory studies:

“The prior theory is developed from the literature and from pilot studies and/or convergent interviews to be the first step in the theory-building process of case study research” (1998, p. 790).

Hence, this study conducted a mixed inductive and deductive approach in building its theory. Perry (1998) advocated:

“pure induction might prevent the researcher from benefiting from existing theory, just as pure deduction might prevent the development of new and useful theory. Parkhe (1993, pp. 252-256) argues that ‘both extremes are untenable and unnecessary’ and that the process of ongoing theory advancement requires ‘continuous interplay’ between the two” (1998, p. 789).

In brief, the activity model is developed from reviewing prior research and the exploratory study to be the first step in the theory-building process, see Section 6.2.1. The outcome of the activity model sets out *the territory to be explored* through the fieldwork (Miles and Huberman 1994, p. 20). It depicts the key concepts and relationships of interest (Carroll and Swatman 2000). In other words, the case study protocol benefited from both prior theory and the exploratory study, since some probe questions were formulated in the case study protocol to ensure stakeholders’ perceptions about concerns in the prior theory and exploratory study are raised.

5.5.2. Stage two: data collection

Informed by the underpinning philosophical assumptions and case study approach, multiple data collection methods were used; see Sections 5.4.3 and 6.2.2.2. It is worth mentioning here that although collecting and analysing the data referred to by this study as separate stages of theory building, in practice they are closely interrelated, see Sections 6.2.2, and 6.3. Researchers asserted that, in quantitative research, data collection precedes data analysis while, in qualitative research there are no clear lines between data collection and data analysis (Tesch 1990; Stake 1995; Neuman 2006). For example, during data collection, the field notes taken, which are considered as primary interpretations of the data (Carroll and Swatman 2000), opened up new areas for exploration. As a result, the case study protocol was

adjusted in order to incorporate new themes that emerged (Miles and Huberman 1994). In this respect, Patton (2002) stated:

“Ideas that emerge while researchers still in the fieldwork constitutes the beginning of analysis; they are part of the record of field notes” (2002, p. 436).

5.5.3. Stage three: data analysis/interpretation (shaping and measuring constructs and relationships)

Stage two resulted in vast amounts of raw data that needed to be further analyzed. Miles and Huberman (1994) stated that analysis is the process of organising and reducing this data so as to be able to bring meaning to it. The process of shaping codes, categories, constructs and relationships from the raw data has been informed by Gee’s approach (Gee 2005) to discourse analysis as well as Miles and Huberman approach as demonstrated in Chapter 6. This stage also includes measuring the emerged constructs and verifying relationships within and across cases (Eisenhardt 1989; Miles and Huberman 1994). This process is similar to traditional hypothesis testing research (Eisenhardt 1989). In line with Eisenhardt (1989), throughout the process of analysis and interpretation, the researcher was open to new findings. Along the same lines, Patton (2002) asserted that rushing to premature conclusions need to be avoided. He added that researchers should take care not to permit these initial interpretations to overly confine analytical possibilities. This stage involved:

1. Analyzing data within case analysis and across different cases (Yin 2008). Hereby, this stage increases the internal validity of this study. It was important to look for alternative explanations and confirming (or disconfirming) evidences (Patton 2002), which were seen through multiple lenses within and across cases (Eisenhardt 1989).
2. After the data were analyzed, reflection and critical thinking were performed. The reflection process involved: re-examining inputs of the activity model, refining and sharpening constructs (Carroll and Swatman 2000), collecting evidence from multiple stakeholder groups’ perspectives on relationships between constructs (Eisenhardt 1989). Reflecting on emerging constructs and

their relationships led to clarification from some of the system stakeholders. The reflection stage ended when the primary theory constructs and relationships were revised, updated, challenged and then confirmed (Carroll and Swatman 2000).

5.5.4. Stage four: enfolding literature (or a literature-based scrutiny of the research findings)

An essential feature of theory building is the comparison of the emergent theory (DMS effectiveness constructs and their relationships) with the existing literature. The final stage involved a thorough and extensive comparison of the research findings with the relevant literature (both similar and conflicting) (Tesch 1990; Maxwell 2005). Carroll and Swatman (2000) asserted that conflicting literature may encourage the researcher to dig more deeply, re-examine the data with new insights or isolate contextual factors to explain the differences. The final stage may lead to critical reassessment of findings or re-examination of the data with new insights, raising the theory built to a more abstract level, and increasing its applicability to other contexts. On the importance of this stage, Eisenhardt (1989) stated:

“Overall, tying the emergent theory to existing literature enhances the internal validity, generalizability, and theoretical level of theory building from case study research. While linking results to the literature is important in most research, it is particularly crucial in theory-building research because findings often rest on a very limited number of cases. In this situation, any further corroboration of internal validity or generalizability is an important improvement” (1989, p. 545).

The findings (see Chapter 7) are reviewed in the light of DeLone and MacLean’s IS success/effectiveness theory and other prior research in IS and DMS (review Chapter 8). This is in order to seek a lens to interpret and compare the research findings through prior theories of the relevant literature. Additionally, Chapter 8 argues for an extension to the theory of DeLone and MacLean (2003) to suit the context of DMS effectiveness. The fourth and final stage ended when theoretical saturation was reached *“when marginal improvement becomes small”* (Eisenhardt 1989, p. 533). In

this regard, Carroll and Swatman (2000) stated that the reconciliation with conflicting and the extension of the existing literature indicates the end of the research process.

5.6. Assessing the quality of case study research

A number of qualitative researchers stated that the angles used to judge quantitative studies are quite inappropriate for judging the merits of qualitative studies (e.g. Miles and Huberman 1994; Patton 1999, 2002; Maxwell, 2005). In this regard, Guba and Lincoln (1989) introduced four criteria for judging the trustworthiness of qualitative research, upon which the quality of this study is to be judged. These criteria are alternatives to the traditional quantitatively-oriented criteria in order to better reflect the underlying assumptions of qualitative research. Table 5 presents a comparison between quantitative and qualitative strategies for evaluating research quality (for more details see Miyata and Kai (2009) who researched the difference between evaluation criteria in qualitative and quantitative approaches), also see Table 6.

Table 5: A comparison between quantitative and qualitative criteria for evaluating research quality

Quantitative	Qualitative
Internal validity	Credibility
Reliability	Dependability
Generalizability	Transferability
Objectivity	Confirmability

5.6.1. Credibility

Credibility requires that the results of qualitative research are believable from the perspective of the participant in the research. According to Babbie and Mouton (2001), credibility refers to *“the compatibility between the constructed realities that exist in the minds of the respondents and those that are attributed to them”* (2001, p. 277). Additionally, Credibility refers to the ‘validity of setting the research frameworks’ (Miyata and Kai 2009, p. 67). Researchers suggested activities that can be used during the research process to produce credible findings and interpretations, e.g. prolonged engagement, which means staying in the field until data saturation occurs,

triangulation, and member checking (Guba and Lincoln 1989; Riege 2003; Miyata and Kai 2009). The following are the techniques used by this study to enhance the creditability of the findings (see Table 6):

1. Triangulation: is an approach that employs multiple data sources, theories and methodologies (Patton 2002): Triangulation of data sources: comparing and cross checking the consistency of data collected from multiple sources of evidence (see Section 6.2.) (Yin 2008), as well as theory/perspective triangulation: using multiple perspectives to interpret the findings. For more information on how this study triangulates its methods for data collection and analysis (see Sections 6.2.2.2 and 6.3).
2. Referential adequacy: this refers to being able to prove the existence of the evidence that has been collected, such as video or audio recording.
3. Member checking: related to going back to the source of the information and checking both the data and the interpretation. During the interview the researcher needs to restate or summarize the information received from a respondent and then report back the preliminary findings. This process adds richness to a final report.
4. Disconfirming evidence or negative case analysis: The researcher actively seeks accounts from other respondents that differ from the main account in critical ways. The inclusion of conflicting data may strengthen the validity of the data collected, see Section 6.1.3. on the multiple and different selection on the respondents of the study, for example stakeholders from the members and non-members of the Touregypt project, from public and private sectors, from large and SMTE, as well as investigating internal and external destination stakeholder groups. Such different stakeholders groups have different interest and perspectives. Such different, and sometimes conflict, perspectives (Buhalis 2003) have been investigated to search for either confirming or disconfirming evidence.

5.6.2. Dependability

Dependability is parallel to the positivist criterion of reliability, which assumes unchanging conditions that enable replication of the study. However, in qualitative research, it is difficult to assume stability (Lincoln and Guba 1989), since qualitative studies generally rely on less controllable events, such as those dealing with human emotion (Neuman 2006; Miyata and Kai 2009). Moreover, most the qualitative methodologists accept that different researchers using alternative methods can get different results because data collection is an interactive process between the researcher, setting and methods (Neuman 2006).

Therefore, dependability is used instead of reliability to evaluate quality of qualitative inquiries. It “is an evaluation criterion focused on the consistency of the research process and is applicable in cases where both method and phenomena might prove to be unstable” (Miyata and Kai 2009, p. 70). Dependability can be assessed by the audit trail, which presents how the researcher was able to reach what is reached (Guba and Lincoln 1989). The audit trail includes a complete record of the different phases of the research process, such as problem formulation, the activity model (see section 5.5.1.), tape recordings (available with the researcher), data reduction and analysis products (e.g. some of Nvivo files are included in Appendix 2 and others are held with the researcher in their complete form; this is in addition to the discussions of Chapter 6).

5.6.3. Transferability

Transferability refers to the range of the findings’ applicability (Miyata and Kai 2009). It concerns the degree to which the findings can be applied to other contexts or with other respondents (Guba and Lincoln 1989; Babbie and Mouton 2001). Transferability is parallel term to the positivistic construct of generalizability and external validity. The issue of generalization is a common criticism of qualitative case study research strategy. Many researchers dedicate some of their work to prove the false of this claim such as Yin (2003, 2008), Stake (1995), and Walsham (1995). Yin (2008) for example presented an explanation of the difference between analytic generalization and statistical generalization. He said:

“How can you generalize from a single case study?” is a frequently heard question [...] the short answer is that case studies [...] are generalizable to theoretical propositions “(2008, p. 15).

Yin argued that qualitative case study results can be generalised to theoretical propositions which means the generalizability of a conclusion within the setting or the groups studied (analytical generalisation) but not to populations or universes beyond the setting or the group studied (statistical generalisation). Therefore, the internal generalizability is a critical issue for qualitative research. Also, Guba and Lincoln (1989) said that in traditional positivistic studies, it is an obligation to ensure that findings can be generalized to the population; while in naturalistic studies the obligation for demonstrating transferability belongs to those who would apply it to other contexts.

Additionally, Maxwell (2005) mentioned that although external generalization is not an essential issue, it is possible that theories of qualitative research can be generalized or transferred to other contexts if the following features are included:

“Respondent own assessment to generalizability, the similarity of dynamic and constrain to other situations, the presumed depth or universality of the phenomenon studied, and corroboration from other studies” (2005, p.116).

In this concern, Punch (2005) added:

“Clearly every case that can be studied is in some respect unique. But every case in some respects, similar to other cases” (2005, p. 146).

Similarly, Yin (2008) argued that the detailed examination and knowledge of a case study processes and its context can reveal processes which can be proposed as general or as specific to that case.

Reflecting on the above, generalization from the setting to a population is not sought; rather this study is intend to understand the deeper structure of the studied phenomenon, which is believed can then be used to inform other settings (Orlikowski and Baroudi 1991), see implications for further research Section 9.5. Although the aim of this study is internal generalizability rather than generalizing from setting to

population, this study follows the strategies that are proposed by researchers (e.g. Patton 2002; Maxwell 2005; Yin 2008) to improve the transferability of qualitative studies internally and possibly externally as follows, see Table 6:

1. Thick Description which means a detailed description of the studied phenomenon that includes the researcher's interpretation along with the observed context (see Section 6.1 and the discussions of Chapters 7 and 8).
2. Purposive selection of participant, see Section 5.4.1: quantitative studies usually use random sampling to gain a representative picture. In contrast, naturalistic qualitative research seeks to maximise the range of specific information that can be obtained from and about the research context, by "*purposively seeks both the typical and divergent data*" (Erlandson 1993, p. 148).
3. Corroboration from other studies: Enfolding prior studies in which confirming and disconfirming evidences are argued, and interpreting the results of this study by using prior theories as a lens (DeLone and Maclean IS effectiveness theory- see Chapter 8).

Table 6: A framework for enhancing the quality of this study, based on Miyata and Kai (2009, p. 69)

Category	Criteria	Tactic used	How to use criteria
Validity of setting the research frameworks (validity)	Credibility	Triangulation, Referential adequacy (recording the evidence), member check, disconfirming evidence or negative case analysis (see Sections 6.2.2.2 and 6.3).	Used to evaluate frameworks that are created in the process of the research through validating the research process.
Stability of the phenomena and methods (stability)	Dependability	A complete record of the research process, (the audit trail) e.g. evidence on consistency of data collection and analysis (see Sections 5.5, 6.2, and 6.3).	Used to evaluate those that cannot assume stability. Reliability which means that different researcher can reach the same results is not applicable to qualitative research because data collection is an interactive process between researcher, setting and methods (Newman 2006)
Range and applicability of findings (applicability)	Transferability	Thick description of the research context, Purposive selection of participant, and Corroboration from other studies (see Sections 5.5.1, 5.5.4 and 6.1).	Used to evaluate Extrapolation. it is to evaluate the internal validity of the findings.
Neutrality of the observations and interventions (neutrality)	Confirmability	Confirmability audit: The same as the Audit trail: ensure evidence is accessible to evaluators.	Used to evaluate the consistency of the research process.

5.6.4. Confirmability

Confirmability refers to the neutrality of the observations and interventions in qualitative studies, while the parallel is the objectivity in quantitative research (Miyata and Kai 2009). In studies where the majority of participants are human beings, the observations and interventions may have an effect on the observed and the observer. In these cases, researchers need to demonstrate the confirmability of their studies. Guba and Lincoln (1989) stated that:

“confirmability is concerned with assuring that data, interpretations, and outcomes of inquiries are rooted in the contexts and persons apart from the evaluator and are not simply figments of the evaluator’s imagination” (1989, p. 243).

The usual technique for assuring confirmability is the confirmability audit, see Table 6. Guba and Lincoln (1989) asserted that this audit and the dependability audit mentioned above can be carried out together. According to Miles and Huberman (1994) this is done by certifying that the findings and interpretations are based on raw data and by explicitly provide the methods and process of the research (e.g., raw data, data reduction and analysis products, data reconstruction and synthesis products, process notes).

5.7. Chapter summary

This chapter reviews the underlying philosophical assumptions (ontology, epistemology and methodology) of this study. The study deems the nature of reality (ontology) as multiple and socially-constructed. Reality (DMS effectiveness), then, is seen by the study as subjective and existing only through human interactions. Therefore, such subjective reality needs to be acquired (epistemology) only through understanding and interpretation. Accordingly, this chapter justified the adoption of a qualitative case study under an interpretive paradigm as a research design. This is followed by a discussion on the validity of this study and the four criteria used to judge its quality; credibility, dependability, transferability and confirmability. Figure 9 summarizes the philosophical and methodological choices that were detailed throughout this chapter. The next chapter (Chapter 6) presents the process of data collection and analyses in light of the strategies that were outlined in this chapter.

The research paradigm is a set of beliefs about ontology, epistemology and methodology

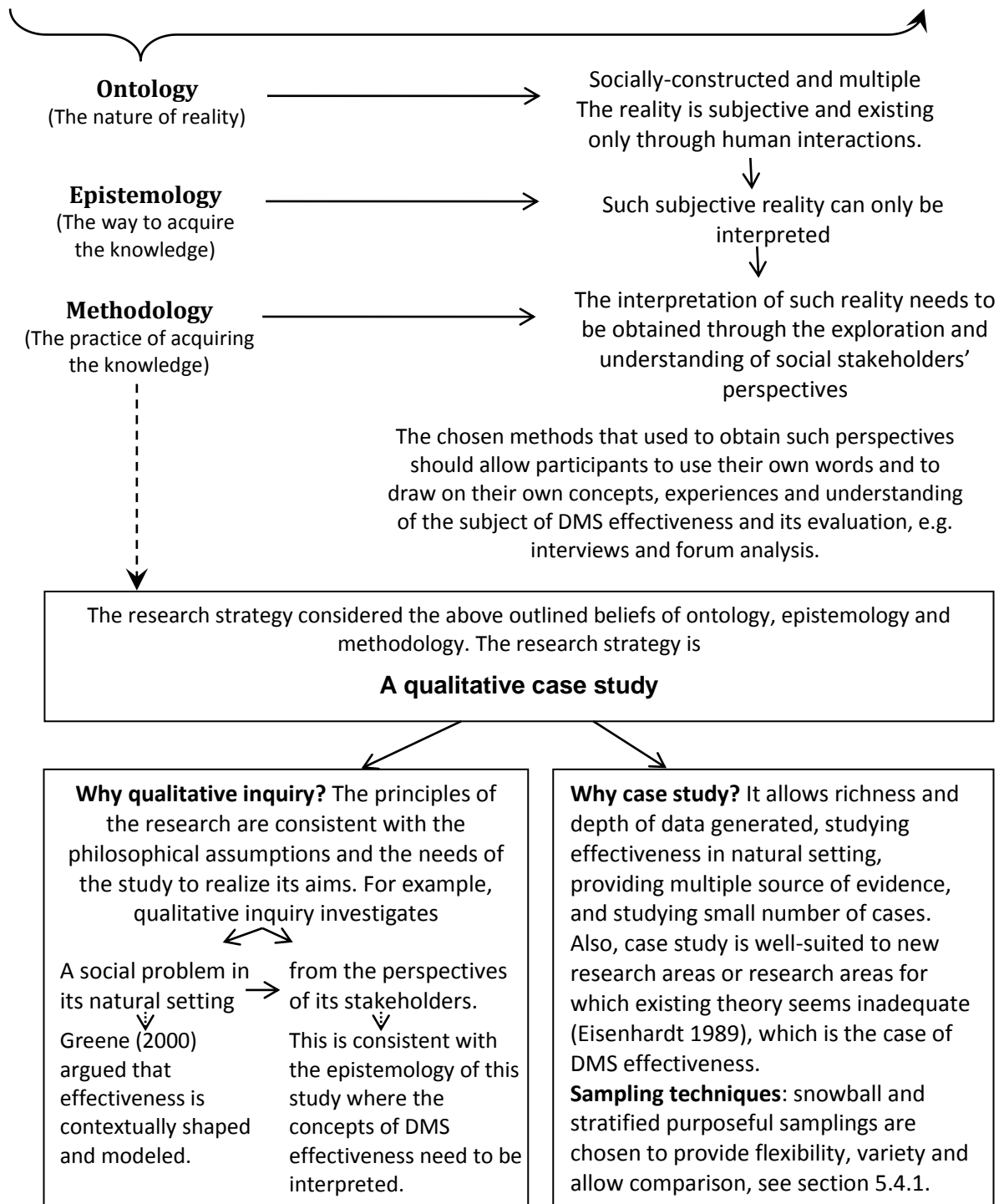


Figure 9: Summary of the philosophical and methodological choices of the study

Chapter 6: Approaches of collecting and analyzing the evidence

Introduction

The previous chapter has presented the approaches upon which this study is based; the underlying philosophical assumptions, the research strategy and the research design. This chapter, however, deals with the process followed to collect and analyze the evidence. This is in order to explain how the final outcome has been reached. It is argued that the quality of qualitative research is constructed in the process used in doing the research (Seale 1999; Yin 2008).

This chapter starts by presenting a description of the research case study (the Egyptian DMS which is named Touregypt project). This includes an overview of the Touregypt project and its primary and secondary stakeholders, of which the informants of the study have been selected. This is followed by discussions on the process of data collection (the preliminary exploratory study and the fieldwork), and the data analysis procedures. There are two complementary tools used to organize the data of this study (i.e. Nvivo and OneNote), Appendix 2 and 3 provides snapshots to demonstrate how the two tools are used in this study.

6.1. The Egyptian DMS context

This section highlights issues related to the context of the tourism sector in Egypt in which the Egyptian DMS is implemented. The Egyptian DMS experience is the case under study in this research. Egypt is a major tourism destination in the Middle East with a largely diverse tourism portfolio. The investigation of the Egyptian DMS (the Touregypt project) gives insights into the effectiveness of DMS and its evaluation in the developing countries (see developing countries definition in Appendix 1). The Touregypt project is an interesting and rich DMS experience due to being

1. A failed public and private sector DMS partnership between the Egyptian Tourism Ministry as the DMO (public sector) and an IT private company (i.e. Inter City Oz). This failure occurred prior to this study, see Section 6.1.2.

2. A failed DMS experience which has turned from a DMS to a normal tour operator business. This failure happened during this study, which give the researcher a close look to such failure experience and its motifs and implications (see Section 6.1.2).
3. An example of a DMS in the developing countries: like the case in all DMS of the developing countries, little is known about DMS effectiveness in Egypt (see Section 1.2).

Also, Egypt is the researcher's own country and culture, which means that the language of the local stakeholders can be better-understood and interpreted (May 1997; Finn et al. 2000).

This section starts by an overview on Egyptian tourism industry. This is followed by the story of Touregypt project as the Egyptian DMS. Finally, the stakeholders of Touregypt project are identified. Also, there will be a discussion on the data collection and analysis process in a followed section.

6.1.1. The Egyptian Tourism: background

Top of the list of priorities of the comprehensive social-economic development agenda in Egypt, tourism development receives much attention from the Egyptian government. Since 2006, the tourism sector has represented one of the country's first foreign currency sources of the Egyptian GDP. Also, there are 70 services and industrial activities related to the flurry of tourism business in Egypt. Besides, 13.7% of the Egyptian labour force is employed in the tourism industry (WTTC 2007). According to the Egyptian Tourism Ministry (2009), arrival, nights and revenues of tourism have improved. The tourist arrivals were 11 millions in 2007, while in 2009 they increased to be 12 millions. The tourist receipts in 2006 were 7.5 billion US\$. In 2007, these increased to record 9.4 billion, and in 2009 they attained 10.7 billion US\$.

Being a major contributor to the country's foreign exchange earnings, as well as to employment, the tourism sector in Egypt is considered as one of the pillars of the national economy, and thus deserves more attention in terms of how to further develop its potential. Therefore, the Ministry of Tourism has set a "Tourism

Sustainable Development Plan" that targets attracting private sector investments of LE41.8 billion over the coming five years and increases foreign arrivals by 2011/2012 to 14 million, as well as generating 1.2 million new jobs. To pursue this plan, there are several development programs in a number of areas including: marketing (e.g. increase market share in core European markets, and open up new markets), ICT infrastructure, transportation infrastructure and human resources (Am Cham 2008).

Given the increase in tourism business and the growing interest of the government to boost the tourism revenues, long-term expectations for Egypt's tourism sector remain optimistic. However, the development of the tourism sector in Egypt, especially its online competitiveness, is affected by various factors as discussed in the following section. The web provides tourism with many opportunities as well as challenges. If opportunities are captured and challenges are handled the web can take the Egyptian tourism industry to new heights. The following section discusses the status and the challenges of the Internet usage in the Egyptian tourism industry.

6.1.1.1. The Internet and the tourism business in Egypt

Although the Internet provides useful tools and functions for marketing tourism products, the use of the Internet in the majority of Egyptian tourism businesses has not been well-developed yet. The majority of the tourism enterprises have not obtained any online presence (Mavromatis and Buhalis 2004). Even the few Local tourism businesses that have an online presence mainly develop it as another tool for communication. With the exception of few interactive sites, most of the sites rely on email facility for making inquiries and communicating with customers (Mavromatis and Buhalis 2004). Thus, most of the websites were formed for the sake of information provision. Commenting on the Egyptian tourism sector online activities, Eraqi (2005) argued:

“Most of the Egyptian tourism business sector enterprises have yet to develop their online presence. Most of the companies that have online presence do not have IT applications or tourism marketing services in place to support online transactions. The e-marketing is therefore immature and requires major strategic management actions from both

the government tourism organizations and private tourism companies”
(2005, p. 14).

As for the barriers of gaining Internet potential in the Egyptian tourism sector, researchers have attributed them to: (i) the limitedness of computing knowledge and acquaintance with information technology (Kamel and Hussein 2002), (ii) managers have not yet fully realized the value of investing in the development of tourism information systems (Mavromatis and Buhalis 2004), (iii) the lack of adequate legislations that are needed for securing information and online transactions (Eraqi 2005).

Mavromatis and Buhalis (2004) found that managers were concerned regarding the privacy of information, the threat of rising competition in the industry, credit card fraud, consumers' lack of credit card ownership (as Egypt is mainly a cash society), and the fact that companies may lose the personal contact with their customers and suppliers that maybe alienated via the electronic technology. The relatively low number of people using the Internet has ingrained the concept that it is an incentive for an e-commerce institutionalization in Egypt (Kamel and Hussein 2002). This has led to the development of a big concern about the suitability of the web for trade, particularly for the domestic market (Mavromatis and Buhalis 2004).

As a result, with the exception of few businesses which are keen to explore and utilize the full potential of the online tourism applications, the majority of tourism businesses in Egypt are late adopters of web technology. El Beltagui, Egypt's former Minister of Tourism, emphasized the need to make full use of the web to meet the challenges facing the domestic tourism sector (Abdel-Razek 2001). These challenges include growing power of global market forces and global mergers, e.g. tour operators and travel agencies, hotel groups and resort companies.

Similarly, Mavromatis and Buhalis (2004) highlighted the importance of web application in the Egyptian tourism business. They asserted that the Internet application in Egypt would help Egyptian tourism to enhance its competitiveness, improve efficiency of its local suppliers, provide tools for development and allow delivery of distinctive tourism products. Therefore, there is a need for DMS in the

Egyptian context to help in marketing, managing, and organizing the tourism business. In keeping with the above discussion, there are two more issues that increase the need for the development of DMS in the Egyptian context. First, the majority of travel agents in Egypt are SMTEs which do not have the appropriate resources (such as computer skills and language), in their majority, to successfully compete alone in the e-market (Mavromatis and Buhalis 2004). Such SMTEs need support from the Tourism Ministry to enhance their competitive abilities in the online tourism market. This can be achieved by the use of DMS. Second, the Egyptian tourism industry pays more attention to attract mass markets than does it with the individual tourism which is the kind of tourism that focuses on attracting individual tourists and not the big tourist groups (Mass tourism). Attracting Individual tourist needs personalized and tailored-made services to be developed (Mavromatis and Buhalis 2004). The dependence of the Egyptian tourism on the mass tourism can negatively affect the tourism business in Egypt. See Mavromatis and Buhalis (2004) for more details, they developed a discussion on the consequences of the massive depending on the mass tourism in the Egyptian market. Such dependence on mass tourism is still, according to their study, the case in the Egyptian tourism industry. However, this is now accompanied with few attempts focused on attracting individual tourists or groups online, see Chapter 8 for more detailed discussion in this regard.

Having discussed the situation of the Egyptian tourism industry and their Internet usage, the following provide an overview on the story of the Egyptian DMS.

6.1.2. The story of Touregypt: an overview

The following is the story of the Touregypt project according to the interpretation of the stakeholders' perspectives and attitudes. The following story is supported by evidence from interviews, clips from the official Touregypt website, and posts of the Touregypt forums.

The story started, in 1995, when a private IT company (named Intercity Oz) proposed an offer to the Egyptian Tourism Ministry to cooperate in order to create an online

association which would support the Egyptian tourism businesses on the Internet⁵ (Touregypt Manager- Egypt branch 2008). When Touregypt was first launched (in 1996) it was a project that was owned by the Egyptian DMO, the Tourism Ministry, and managed by both the Tourism Ministry and the IT private company. The role of the Tourism Ministry was to encourage the Egyptian local tourism companies to become members in Touregypt. In return, Intercity Oz, Inc. was supposed to technically develop the Touregypt system. In creating the system, Intercity Oz, Inc. agreed to use revenues of membership fees and the website advertisements.

Touregypt was then one of the leading DMS in the world and the only online system to market Egyptian tourism online, according to the views of the Manager of the Marketing department, the Tourism Ministry and the Manager of the Touregypt branch in Egypt (2008). After a few years of good work (according to Jimmy Dunn - the owner of Touregypt and some other reviews of tourists posts in the forums of Touregypt), The Egyptian Tourism Ministry decided to cut off its responsibility for Touregypt as a result of a problem that occurred between a tourist, a local Tour Company (of the Touregypt members) and the forum moderators. The problem started⁶ when an online tourist⁷ posted a bad review in the Touregypt forum about a Tour Company he had dealt with during his tour in Egypt. The manager of this Tour Company tried to force the manager of Touregypt branch in Egypt to remove the tourist review from the forum. According to the manager of Touregypt- Egypt branch, he refused to remove the tourist's post as Touregypt policy holds a balanced view among the contending parties. Jimmy Dunn (the current owner and the webmaster of Touregypt), commented on this problem posting the following through Touregypt forums:

⁵ The official name of Touregypt online association is The Association of Egyptian Travel Businesses on the Internet (AETBI), see figure Figure 22: Screen clipping of <http://www.touregypt.net/>. It demonstrates the name of the Tourism Ministry as a responsible authority to Touregypt website (taken in 2010) for a screen clipping of the AETBI statement on the Touregypt website.

⁶ The full story can be reviewed within the Touregypt forums website, available at: <http://www.touregyptforums.com/index.php?showtopic=1097&st=0&p=3216&#entry3216>

⁷ An online tourist: is a tourist who reserves his tour through the Internet. About the problem of Touregypt, the online tourist reserves his tour through the Touregypt website, by choosing one of the tour companies members of the system published on the Touregypt official website.

Jimmy Dunn	April, 2007
Admin Posts: 180 Joined: 8- November 05 From: Lubbock, TX Member No.: 2	What is all of this about? The recent complaint filed on this forum about Professor Travel, mostly. However, it is not the first time that a tour operator has tried to pressure us. Fortunately, we will not take it. Surprisingly, we were threatened with all manner of actions simply due to a user, not Tour Egypt, placing a complaint in our forum. Not only did Professor Travel not wish to negotiate the matter, as others such as Best Way Travel have tried to do, but also instead threatened us and our rep in Egypt if we did not remove it
Touregypt forums: Thread name: "opening the valley of a war, a war with unscrupulous tour operators".	

Afterwards, the Tour Company and the Egyptian Tour Operators Association⁸ sent a complaint to the Tourism Ministry. Jimmy Dunn included the content of this complaint in the following post:

Jimmy Dunn	April, 2007
Admin Posts: 180 Joined: 8- November 05 From: Lubbock, TX Member No.: 2	Apparently, some authorities, such as the tour operators association, are saying that we are harmful because we allow tourists to post reviews of their tour operators. What they don't realize is that if someone takes a tour to Egypt and ends up with a poor tour operator, they come home and tell people, and that hurts Egyptian tourism [.....]
Touregypt forums: thread name: "opening the valley of a war, a war with unscrupulous tour operators"	

The complaint then took a serious form when Touregypt management was referred to a panel of judges. Jimmy Dunn revealed the consequences of the panel in the forum as pictured below, mentioned that Touregypt was not been judged guilty and the Judges recommended contacting the Tourism Ministry as a public sector authority:

Jimmy Dunn	Apr 26 2007, 06:07 PM
Group: Root Admin Posts: 180 Joined: 8- November 05 From: Lubbock, TX	So far, and I must say with the courageous help of Ahmed (and I don't say that lightly), we have managed to avoid an outright war. Yesterday (Wednesday, April 25th), he went before a panel of Judges who told him that they would not consider electronic postings as evidence that we were harming the reputation of a tour operator (to some extent, that is rather interesting, obviously). They also suggested that the best procedure would be to forward these

⁸The Egyptian Tour Operators Association is part of the Egyptian Tourism Federation that is responsible to defend the interests of the local tourism providers in Egypt.

<p>Member No.: 2</p>	<p>complaints on to the Ministry of Tourism. This is something that we have tried to do in the past, to no avail, but we will try once more (If we can get good contact info for exactly where we want to send them). The judges recommended the public relations sector. I mean, the real problem here is that we have tried this. We use to fax complaints to the Ministry, but it seemed like they were sucked into the ethereal vapour of deep space. But like I say, we will try once more because we can use all the help we can get when we run into an uncooperative tour operator (I always need to explain that that is a rare instance actually, just very annoying when it does happen). So maybe things are going to get back to normal. I hope. I prefer developing tourism and not these sorts of problem. Jimmy Dunn – webmaster - Touregypt</p>
<p>Touregypt forums: thread name: “opening the valley of a war, a war with unscrupulous tour operators”</p>	

Hence, the Tourism Ministry had to intervene to solve the problem when complaints from the Tourist and the Egyptian Travel Company were sent to the Minister. According to both the Manager of the Marketing department – the Tourism Ministry and the Manager of Touregypt branch in Egypt, on account of this problem the Tourism Ministry announced that it was to cut off its relations, as the responsible authority, with the Touregypt project. Subsequently the system has been managed by the private IT Company (Inter City Oz), and Jimmy Dunn has become the new owner of the system. The Tourism Ministry explained their stance on cutting off its relations with Touregypt by the reason that the hospitality environment cannot be *controlled* (see the following extract of the Manager of Marketing Department – The Tourism Ministry). Consequently, the Ministry preferred to protect its name from any bad services which, from the Ministry viewpoint “cannot be guaranteed to the fullest in the Egyptian context” according to the Manager of Marketing department - the Tourism Ministry. She said:

“The field of hospitality [she meant the Tourism industry] is not that easy to be controlled because there are many agents to be considered. Yes, there are the unions, the people in charge of complaints in the Ministry. All tourists’ complaints have to be communicated through channels. However, still there are things that cannot be guaranteed [...] if I put the Ministry name, tourists then will think it is a guaranteed service. Suppose the Ministry provided a tourist with information about a hotel and he booked in, afterwards, suppose he had even a small problem. He can say, ‘the Ministry provided me with wrong information and encouraged me to

go to this hotel'. How am I going to deal with the guest?" (interview with the Manager of the Marketing Department of the Tourism Ministry, 2009).

Putting forward the Ministry's view, Mr Sayed Mousa (an Egyptian expert in the tourism field) said:

"Whatever the reasons are, getting out of the Touregypt project is not a correct decision. The Ministry, with the supervision authority, if has, should find where the deficiency lies and in turn tackle it, instead of acting passively" (interview with a tourism expert and ex- president of the Egyptian Tourism Promotion Authority, 2009).

Additionally, as implied from the following extracts from fieldwork interviews, some of the local stakeholder groups commented that the Tourism Ministry had decided to cut off its relations with Touregypt in order to avoid having troubles. The following quotations reflect two different stakeholders groups comments regarding their views in the way the Ministry acted towards the Touregypt project:

"The Ministry preferred not to get involved. This is in order to avoid troubles, for their peace of mind" (interview with the Manager of the Touregypt, Egypt branch, 2008).

"Exactly, In short, the Ministry did not want any troubles [.....] You see, the Ministry did not want any problem, that's why they removed Touregypt from under their umbrella. This decision, by the way, is not a good decision from my viewpoint [...]. They say, as you know, if the wind comes from the door, it is better to close it [this is an Egyptian saying. It means if you have troubles coming through; close its way to avoid it. He means this is what the Ministry did when they disconnected it relations with Touregypt, to avoid troubles]" (interview with a tourism manager in a small tour company, member of Touregypt, 2009).

According to Jimmy Dunn (Owner and Webmaster of Touregypt), the new Management of Touregypt (the IT private company called Inter City Oz) could not

effectively improve the system due to lacking profits of the system and financial support from the Management Company, as seen in the following post

Jimmy Dunn	Feb 16 2007, 05:05 PM
Admin Posts: 174 Joined: 8- November 05 From: Lubbock, Member No.: 2	Guys, and particularly Joerg, You know, the truth is , I am doing my best. I want you all to consider something, and some math. We have less than 100 AETBI members that pay \$300 per year, or less than \$30,000 per year total. We also have an on-line store, but that takes a person to run and it is not paying her salary yet, and the 30,000 per year doesn't hardly come close to paying for the high speed lines, the servers, the technician several writers in Egypt, Ahmed, our office there and in the US, and myself. Our operation is actually financed by myself and our parent company, and has been for years. [.....] .
Touregypt forums - Forum name: General Discussions – thread name: “Three cheers! Our root administrators”	

Because of the bad financial situation of Touregypt, (in the beginning of 2010) Jimmy Dunn decided on radical changes that turned Touregypt from a DMS to a private tour operation. In his own words, the following post explain why Dunn decided to change the activities of Touregypt:

Jimmy Dunn	Aug 2 2009, 01:09 AM
Admin Posts: 174 Joined: 8- November 05 From: Lubbock, Member No.: 2	<p>The truth is, I and the others at Tour Egypt are not profit mongers, [.....] I want Tour Egypt to continue to be the best source of information on Egypt, and I cannot do that without making some money to pay for it. What I really want is reporters inside Egypt, and I really want it to step up but really cannot do that without making some money.</p> <p>One problem is that the AETBI has always been mostly the only source of our funding, but we actually rarely see what little there is of it to see. At \$300 per year for membership, it takes a hundred members just to knock out \$30,000 per year, not enough to really pay one employee these days, but in truth, we rarely saw any of that because we maintained an office in Cairo, and had to do that, which ate up most of it.</p> <p>And then that brings up any number of different problems with the AETBI. First of all, it is very difficult to police and guarantee the work of a hundred tour operators, and at times I have actually paid thousands of dollars out of my own pocket when one of them screwed up, because I wanted the reputation of the AETBI to be a good one.</p> <p>I do have partners in this, and in the end, I am going to ask my partners if we could offer to let AETBI members join in our company. What I am looking for here is a company that is large enough to garner respect from the Egyptian government [.....].</p>
Touregypt forums - Thread name: General Discussions – Hello all	

To conclude, the dramatic changes that Touregypt has gone through from its launching in 1996 until now (the end of 2010) makes it a rich DMS experience to be studied. In its beginning, Touregypt was owned by the Egyptian DMO (managed by both the tourism ministry and an IT private company). It transferred to private sector ownership, and finally after suffering financial problems, Touregypt failed as DMS and turned its activities to those of a normal tour operator. It is no longer the Egyptian DMS as it used to be known. This study witnessed the different change that happen in the Touregypt system (this study was conducted from 2007 till the end of 2010) and collected the many reactions, attitudes, and perspectives of the multiple stakeholders. Investigating the Egyptian DMS experiences provided new insights on DMS effectiveness evaluation, as discussed in part four of this thesis (the findings and discussions chapters, Chapters 7 and 8).

6.1.3. DMS stakeholder mapping

A clear understanding of the attitudes and interests of stakeholders were found to be a necessary antecedent to the planning and management of sustainable tourism developments (Gunn 1994; Jamal and Getz 1995; Sautter and Leisen 1999). Researchers have argued that tourism planners should consider the interests of all stakeholders before proceeding with development efforts (Sautter and Leisen 1999; Hardy and Beeton 2001). Gunn (1994) also suggested that the success of a tourism development is often based on the support of stakeholders. Therefore, tourism development strategies require the inclusion of stakeholders' views and interests.

However, tourism researchers, recognizing the important role of stakeholders, tend to explore perceptions of individual tourism stakeholders to better understand them. Differences were identified between the stakeholder groups' perceptions and attitudes, such as between entrepreneurs and government officials, residents and governmental officials, residents and entrepreneurs, and residents and tourists (Byrd et al. 2009). Although studies that investigated the multiple tourism stakeholders' groups revealed differences in their attitudes and perceptions (e.g. Kavallinis and Pizam 1994; Byrd 1997; Byrd et al 2009), much of the research investigating the complex relationship between stakeholders and tourism has focused on the

perception of individual stakeholder groups such as residents, visitors, business owners, and government officials. Therefore, researchers such as Byrd et al (2009), Byrd and Gustke (2007), and Hardy and Beeton (2001) asserted the need for studies that look at multiple stakeholder groups and compare their interests.

Hence, seeking a better understanding of what constitutes DMS effectiveness, this study seeks to interpret and compare the various stakeholder groups' perceptions and attitudes (see Chapter 5). This comprehensive view in identifying DMS stakeholders comes consistent with the overall interpretive and qualitative approach adopted by this study (see Section 5.1.1.). The following discussion will reveal and justify the approach used to identify the Egyptian DMS stakeholder groups. Generally, there are two different approaches in identifying destination stakeholders; narrow and broad views, an explanation of each of which is presented below.

In his classic work, Freeman (1984) defined stakeholders as *“any group or individual who can affect, or is affected by, the achievement of a corporation’s purpose”* (1984, p. 46). This definition implies a broad view that goes beyond those stakeholders that have purely formal ties with a corporation (Sheehan and Richie 2005). Many researchers believe that this is a wide definition and needs further classification. Clarkson (1995), for example, categorized stakeholders into primary and secondary groups. According to Clarkson (1995), a primary stakeholder group is *“one without whose continuing participation the corporation cannot survive as a going concern”*, while secondary groups of stakeholders are defined as those groups *“who influence or affect, or are influenced or affected by, the corporation, but they are not engaged in transactions with the corporation and are not essential for its survival”* (1995, p. 106).

Generally, researchers who adopt a narrow view in identifying stakeholders tend to focus on the primary groups of stakeholders, while researchers who adopt a wide view usually investigate both primary and secondary stakeholder perspectives. Informed by Clarkson's (1995) classification, this study divides the Egyptian DMS stakeholders into primary and secondary groups, and both groups' perspectives on effectiveness are investigated (see Section 6.2). This study argues that exploring both the primary and secondary stakeholder groups is important for understanding DMS effectiveness. Although they do not affect the immediate survival of the system,

secondary stakeholders' perceptions – as well as the primary group – on effectiveness are important to be explored. As stated by Freeman (2010):

“To be an effective strategist you must deal with those groups that can affect you, while to be responsive (and effective in the long run) you must deal with those groups that you can affect” (2010, p. 46).

Additionally, Sautter and Leisen (1999) asserted that:

“If [tourism] players proactively consider the interests of all other stakeholders, the industry as a whole stands to gain significant returns in the long term” (1999, p.326).

Clarkson (1995) argued that although the secondary stakeholders may not influence the immediate survivor of the corporation (the DMS in this study), they can cause significant negative influences and affect the long-term success. He added that secondary stakeholders may be opposed to the policies or programmes that a corporation has adopted to realize its responsibilities to, or to satisfy the needs and expectations of, its primary stakeholder groups (Clarkson 1995). The following subsections demonstrate the Egyptian DMS stakeholder groups and contains some examples of the likely influence of some DMS secondary stakeholders on the effectiveness of DMS implementation.

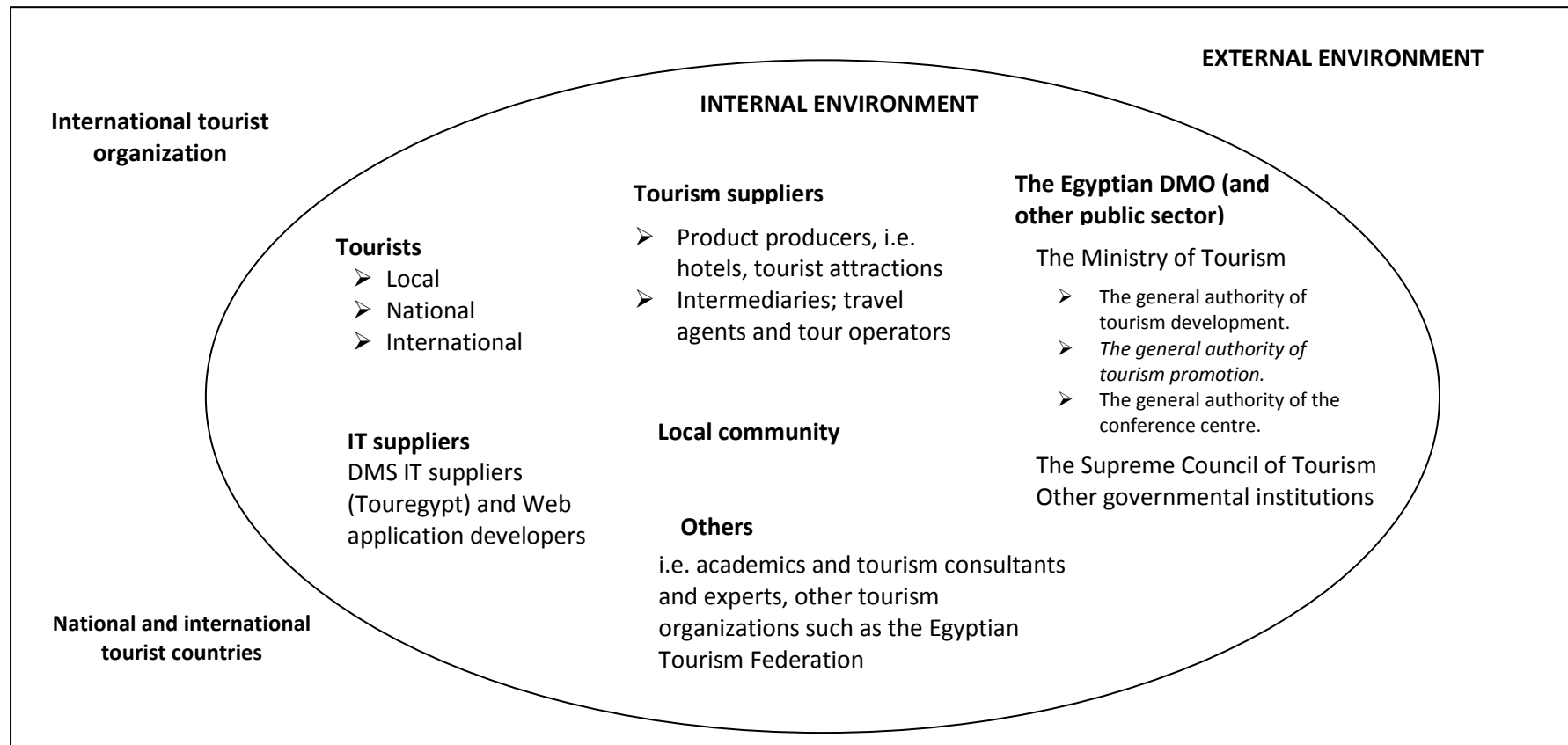


Figure 10: The Egyptian Destination Management System (DMS) stakeholders' map

Drawing on the stakeholders map (Figure 10) the following subsections demonstrate the primary and secondary groups of Egyptian DMS stakeholders (see Section 6.2 on how the following stakeholders' perspectives are investigated in this study).

6.1.3.1. Primary stakeholder groups

Following Clarkson (1995), this study defines a primary DMS stakeholders group as the one without whose continuing participation the DMS cannot survive as a going concern. The primary group of stakeholders “bear some form of risk as a result of having invested some form of capital, human or financial, something of value” in a DMS (Clarkson 1995, p. 5). DMS is an online distribution system that connects tourists with the local tourist businesses in a destination. It is usually managed by a Destination Management Organizations (DMOs) (which is responsible for managing and marketing the tourism sector in a country), whether it is a completely public sector or a public and private sector partnership. Accordingly the following are the primary DMS stakeholder groups:

- Tourists: the online tourists that use the system, whether they are local, national or international.
- The local tourism businesses (or tourist suppliers): they are divided into producers (e.g. hotels) as well as intermediaries; travel agencies and tour operators (Buhalis 2003).
- The Egyptian Tourism Ministry and the current Management Organization of Touregypt project: the Touregypt project was managed by the Egyptian DMO (the Tourism Ministry) as well as a private IT company. After the Tourism Ministry cut off its responsibilities with the project, Touregypt project is now owned and managed by a private IT company (return to Section 6.1 for more information). Therefore, this study considers the Tourism Ministry (as the Egyptian DMO and the ex-owner of Touregypt) as well as the current owner and manager of Touregypt project as primary stakeholders.

6.1.3.2. Secondary stakeholder groups

The secondary stakeholders groups of the Egyptian DMS are defined – informed by Clarkson's (1995) definition – as groups who influence or affect, or are influenced or

affected by, the DMS, but are not engaged in transactions with the system and are not essential for its immediate survival. These are:

- International tourist organizations, which are interested in the development of e-tourism (e.g. DMS applications and online destinations competitiveness), such as the UNCTAD and the UNWTO. These two popular international tourist organizations participate in setting the standards of DMS application success or effectiveness by their reports, such as UNCTAD (2005a and b), and UNWTO (2001).
- National and international tourist countries: DMS applications of other national and international tourist countries are important to be investigated as competitive case studies in the e-market place (e.g. Tiscover project).
- The general population of Egypt: the residents of the tourist destinations were considered as one of the most important stakeholders in tourism studies (e.g. Kavallinis and Pizam 1994; Byrd 1997; Sheehan and Richie 2005; Byrd et al. 2009). Some studies have even argued the need to prioritize the resident' needs and wants over developments for tourists (Byrd et al. 2009). However, while this study considers the perspectives and needs of the general population of Egypt, it does not consider them to be among the primary stakeholder groups, since the residents do not have an immediate influence on the survived or the effectiveness of the DMS; rather, their influence can be seen in the long run.
- Others: These can be any other groups of stakeholders, in either the internal or the external context of Egypt, such as academics, tourism consultants, or experts.

6.2. Data collection approach

Section 5.5 discussed the strategy used to generate the theory of this study. The strategy has four stages. The first two stages are related to collection of evidence and the second two stages concern the analysis and interpretation of the data. This section discusses, in more details, the process of collecting the evidence which is outlined in Figure 11, while the next section (6.3) will deal with the approach adopted

to analyze the research evidence. This section includes a discussion on the preliminary exploratory study and the collection of fieldwork data as follows.

6.2.1. The preliminary exploratory study

Given the discussion in Section 5.5.1, the preliminary exploratory study was the second phase in setting the research activity model after initially reviewing the relevant literature (return to Chapters 2, 3, and 4). The preliminary exploratory phase was, in turn, split off into two sub-phases, collecting primary information on Touregypt project using the online sources, and conducting exploratory interviews in the Egyptian setting. The results of the preliminary exploratory study (Mason et al. 2010) and the preliminary review of literature (Maxwell 2005) 'constitute the basis for future investigations', in relation to the fieldwork of the study (Mason et al. 2010, p. 446).

In general, qualitative researchers agree on the importance of conducting exploratory studies before launching the stage of data collection (Sampson 2004; Maxwell 2005; Marshall 2006; Yin 2008). Exploratory studies in qualitative research are not a pre-test or "full dress rehearsal" of the interview protocol (Yin 1994, p. 74). Rather, they are considered as an integral part in clarifying the focus of the study, illuminating potential issues that could be addressed (Shekedi 2005). They are equally important for developing the interview protocol (Perry 1998), and may also direct researchers to new bodies of relevant literature (Shekedi 2005). In the same vein, Sampson (2004) asserted that qualitative researchers often use exploratory interviews to frame questions and to collect background information on the examined setting.

6.2.1.1. Preliminary analysis of Touregypt.net official website

Conducting the preliminary literature review that helped in identifying the gaps in DMS research and formulating the research aims, it was important to implement a preliminary exploration of the setting of the research case study. Therefore, two exploratory interviews were planned to be carried out in the Egyptian DMS (see Section 6.2.1.2). However, the researcher started an initial online search on Touregypt project before conducting the two exploratory interviews. Afterwards, the official website of Touregypt.net was reviewed. The aim of this initial exploration was:

- Acquiring a general background about the system under study
- Identifying the appropriate participants of the exploratory study
- Collecting adequate information to formulate prompts during interviews.

This review assisted in obtaining a basic background on the history, mission statement, partners and members of the Egyptian DMS (Touregypt). Based on this background and informed by the sampling technique of this study (see Section 5.4.1), the first informant of the preliminary exploratory study (the Manager of Touregypt branch in Egypt) was identified and contacted (see Section 6.2.1.2). The second informant (the Marketing Manager of the Tourism Ministry), however, was recommended by the first informant during the first exploratory interview (which was held on 2008).

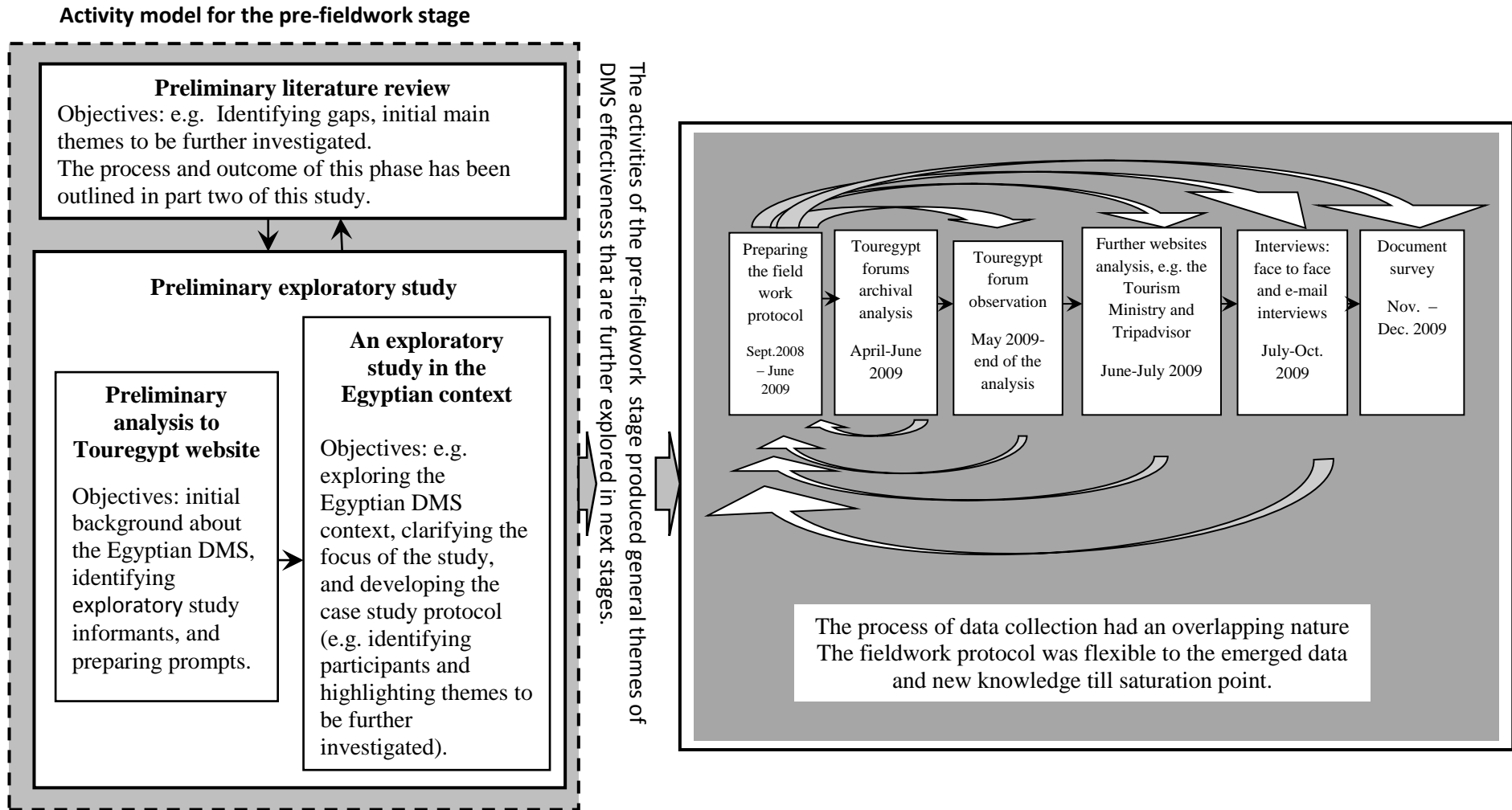
6.2.1.2. The preliminary exploratory interviews of the Egyptian context

Coming after the collection of primary information on Touregypt project using the online sources, two of the key stakeholders' representatives were interviewed during April, 2008. As outlined above (Section 6.2.1.1), the first interviewee was the Manager of Touregypt branch in Egypt (who represents the IT supplier of Touregypt.net as well as the private management organization of Touregypt.net). The second interviewee was the Marketing Manager of the Tourism Ministry (who represents the Tourism Ministry or the public sector group of Touregypt stakeholders). While the first interview lasted for more than 90 minutes, the second exploratory interview took only 30 minutes. Such exploratory interviews provided the researcher with practical experience of conducting the actual interview sessions during the field study (Mason 1996). This is in addition to other important outcomes, as sketched out in the following:

- Exploring the setting of the Egyptian DMS and grasping initial ideas about how the system works and the relations between the multiple stakeholders. For example, the researcher began the exploratory interviews thinking that Touregypt.net is the official online window of the Egyptian DMS, as written on the front page of the website (see Figure 23). However, during the exploratory interviews, it was discovered that the Egyptian Tourism Ministry terminated its contact with Touregypt as a responsible authority, and left the ownership and management of the system to a private IT company (for the full story see

Section 6.1.2.). This story had an important influence on moulding prompts of the fieldwork interviews. Likewise, it influenced issues related to designing the case study protocol. For example the researcher took snap shots of the Touregypt website, which was essential to provide evidence for this study, as the website has subsequently been completely changed (see Section 6.1.2).

- Identifying key stakeholders that can provide the study with rich information. This is in addition to ensuring accessibility to some of the local stakeholders for conducting further field research, and initially deciding upon what to observe during the fieldwork. Hence, the exploratory interviews of the Egyptian context complemented the results that indicated from reviewing the relevant literature (see Section 4.3).
- Clarifying and highlighting important issues that needed further investigation during the field study. As discussed in Section 6.3.2.2., the researcher started the fieldwork with general themes that have been emerged from the activity model of the pre-fieldwork stage (preliminary literature review and the exploratory interviews).



The process of data collection had an overlapping nature
 The fieldwork protocol was flexible to the emerged data
 and new knowledge till saturation point.

Figure 11: The process of the collection of evidence

6.2.2. The field study

This study adopts a qualitative evaluation approach (return to Section 5.2.2) to answer the research questions and realize the research purposes. A qualitative evaluation is an approach for exploring a phenomenon under investigation (Guba and Lincoln 1989; Greene 2000; Patton 2002; Cronholm and Goldkuhl 2003).

In doing a qualitative evaluation (see Section 5.2.2.2), there is no need for prior knowledge on what to evaluate. The qualitative evaluation starts with stakeholders' perspectives and experiences in order to get "deep understanding of the nature of what is to be evaluated" (Cronholm and Goldkuhl 2003). Therefore, the main purpose of the field study is to gather credible evidence to evaluate the effectiveness of Touregypt through the investigation of stakeholders' perspectives and experiences. Informed by the adopted qualitative research strategy, a comprehensive view on identifying the stakeholders and collecting their views were applied. In this respect Punch (2000) said:

"The point of qualitative study is to look at something holistically and comprehensively, to study it in its complexity and to understand it in its context" (2000, p. 192).

In what follows, the process of acquiring the evidence for the study is described. This starts with the preparation of the field study protocol, followed by an explanation of the different techniques used to collect the multiple stakeholders perspectives (see Figure 11).

6.2.2.1. Preparing the field study

Before commencing the field study, the case study protocol was prepared to guide the researcher during the fieldwork. Inputs of the protocol based on the literature review, the preliminary study and the exploratory interviews. The case study protocol is a detailed master plan that specifies the full particulars of the research and details all types of the evidence required for the study (Remenyi et al. 1998). Yin (2003) explained:

“It [the case study protocol] itemizes questions or issues to be addressed by the case study investigator and describes the field procedures to be followed, serving as the investigator’s field agenda” (2003, p. 55).

The various stakeholders identified in Section 6.1.3 needed different approaches of data collection to explore their experiences and perspectives on Touregypt effectiveness. Also, there was a need for the preparation of slightly different set of questions, prompts and issues. These had to be explored while taking into account the different roles and interests of each group of the stakeholders in question.

It is worth mentioning that during the process of data collection, the field notes taken, which are considered as primary interpretations to the data (Carroll and Swatman 2000), opened up new areas for exploration. Consequently, the case study protocol (e.g. prompts and procedures) kept changing to adequately investigate and consider the newly emerging knowledge (Miles and Huberman 1994).

6.2.2.2. The commencement of the fieldwork

Section 5.4.3 justified the data collection techniques used in the present study; why these particular techniques are selected for the exploration of the perspectives of different stakeholders groups. In this section, the discussion is further progressed by presenting the actual fieldwork process. In this regard, Table 7 presents Touregypt stakeholders and the methods used for data collection. Also, the actual data collection process had an overlapping nature. As demonstrated in Figure 11, in some points there were no clear breaks between the outset and the end of a particular technique. Furthermore, the protocol continued to be modified until the saturation point was reached, where data starts to be repetitive and no more of it emerges.

Table 7: DMS stakeholders groups and methods of data collection

Primary stakeholders	Description/ group classifications	Data collection technique
Tourism suppliers	Product producers, i.e. Hotels, tourist attractions Inbound Intermediaries; e.g. Travel companies.	Primary data: Interviewing 15 of the local travel companies (Tour operators) from both the members and non-members of Touregypt, as well as, an interview in one hotel from the non- members.
The public sector and government	The Tourism Ministry. The General Authority of Tourism Promotion.	Primary data: website analysis of the official Tourism Ministry website. And interviewing both the Ministry of Tourism and the General Authority of Tourism Promotion.
IT suppliers	In the context of the system studied in this research, both the IT supplier and the Touregypt Management Organization are one entity.	Primary data: interviews, forums observation, website and archival analysis of Touregypt.net, see also table
Tourists	Local, national, and International	Archival analysis (trip advisor and Touregypt), forum observation, and e-mail interviews, see Appendix 5.
Secondary stakeholders	Description/ group classifications	Data collection technique
International Organization	UNCTAD and UNWTO	Document survey, 5.4.3.4.
National and International tourist countries	DMS case studies: e.g. Tiscover.	Secondary data (see Section 5.4.3).
The general population of Egypt	The residents of the tourist destinations	Secondary data (see Section 5.4.3).
Others (in the internal environment of Egypt)	e.g. Academics, tourism consultants and experts and investors.	Primary data: interviews .

6.2.2.2.1. Touregypt forums archival analysis

The fieldwork started by reviewing the tourists' past conversations on the Touregyptforums.net. The purpose was to investigate the views and experiences of some of the stakeholders (such as tourists, Touregypt Management Company, and some of the local enterprises from the members). This online archival analysis was useful in determining the history of Touregypt system implementation and interactions between the primary stakeholders. Additionally, some important themes that needed further investigation emerged during this stage. This helped modify the field study protocol and formulate further prompts for either face-to-face or e-mail interviews.

6.2.2.2.2. Touregypt forums observation

The process of Touregypt forums observation lasted for around a year from May 2009 to the end of the analysis process in June 2010, for nearly 5 days a week. The observation of the discussions in the forums of Touregypt.net facilitated acquaintance with some of the experiences of the stakeholders which they expressed in their own words. As shown in the following sections, the outcome of this stage informed other stages in data collection process, such as face-to-face interviews and corresponds with tourists. Figure 12 shows a snapshot from the notes taken by the researcher during this stage; it refers to the steps which were taken as early as the beginning of this stage.

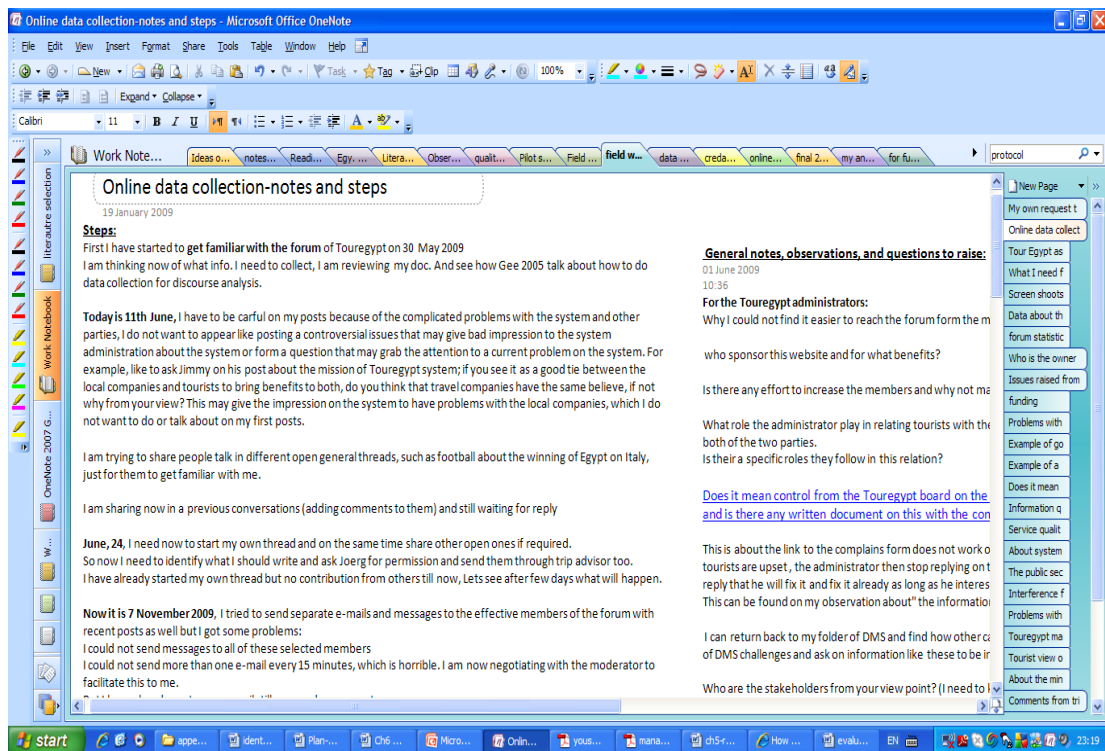


Figure 12: A screenshot, from Microsoft office OneNote, of the notes taken during the Touregypt forums observation stage.

The following are some activities outcomes realized while observing the Touregypt online community:

- The exploration of the perspectives of tourists, Touregypt Management Company, Forum moderators, and some of the members' local tourist enterprises. These included the tourists' views on whether the system is being

delivered and operated as planned; how they perceived the services provided; and its influence on their views regarding the effectiveness of the system.

- The observation of attitudes and interactions between tourists (forums members and guests) and Touregypt Management Company (the online forums moderators and management staff).
- The selection of participants for the study: for e-mail interviews, active and inactive tourists from early and new members of the forums were selected. Such a wide range of tourists is consistent with the broad view adopted by this study. This selection is based on the researcher's perception that such tourists are appropriate to provide rich information (see Section 5.4.1). Other participants from the active local tourist enterprises were selected for face-to-face interviews. The criteria considered to choose the interviewee from the local enterprises varied. For example, two active and reputable small and medium companies were selected and contacted for face to face interview. The owner of the small company and the general manager of the medium-sized company provided important data for the purposes of this study. Also, one of the companies with some bad reviews on Touregypt forums was selected and contacted, but they refused to be interviewed.
- Establishing rapport and making prompts: establishing a relationship with Touregypt forums' moderators and members was important to be accepted in their community. This is to facilitate connection (through e-mail interviews and prompts) and further investigations. The researcher joined with the online community in forum discussions. Some replies were posted to an already existing thread and some threads were opened by the researcher regarding general discussions. Such posts were mainly related to the general interest of the members of the forums as seen in Figure 13. However, some posts were directed to establish prompts concerning the interest of this study within previously open threads (see Figure 14).

Tour Egypt Message Center

Tour Egypt

My Controls · View New Posts · My Assistant · My Friends · 0 New Messages

Logged in as: **Mony** (Log Out) Help Search Members Calendar Blogs

Tour Egypt Forums > Miscellaneous Forums > General Discussions

ADD REPLY NEW TOPIC

Temperature-taking On Landing At Cairo Airport Options

hoppitycow Jul 25 2009, 09:54 AM Post #1

High Priest
Group: Members
Posts: 193
Joined: 27-April 07
From: Paris
Member No.: 4,225

Any one know if they are still taking temperatures from people landing at Cairo airport. The reason I'm asking is that we are leaving next Friday for Egypt and I' suffering from a bad cold and bronchitis with a high temperature (I don't have THE flu), and I don't want to start our trip by being put in quarantine for a couple of days.

Mony Jul 25 2009, 10:09 AM Post #2

Artisan
Group: Members
Posts: 37
Joined: 1-June 09
From: Hull, UK
Member No.: 6,328
User has been to Egypt {Visited Egypt?}

QUOTE (hoppitycow @ Jul 25 2009, 09:54 AM)

Any one know if they are still taking temperatures from people landing at Cairo airport. The reason I'm asking is that we are leaving next Friday for Egypt and I' suffering from a bad cold and bronchitis with a high temperature (I don't have THE flu), and I don't want to start our trip by being put in quarantine for a couple of days.

Hello,
Unfortunately, yes they do. I came to Egypt 10 days ago and they've taken my temperature and everyone as well.
I think if you would like to escape this, you may need to take paracetamol on the airplane before landing.
Good luck,
Marwa

Marwa, PhD researcher in tourism and information systems.

TOP REPORT DELETE EDIT QUOTE REPLY

Mony Jul 25 2009, 10:14 AM Post #3

Artisan
Group: Members
Posts: 37
Joined: 1-June 09
From: Hull, UK
Member No.: 6,328

QUOTE (Mony @ Jul 25 2009, 10:09 AM)

Hello,
Unfortunately, yes they do. I came to Egypt 10 days ago and they've taken my temperature and everyone as well.
I think if you would like to escape this, you may need to take paracetamol on the airplane before landing.
Good luck,
Marwa

User has been to Egypt {Visited Egypt?}

Sorry, I did not mean escape the procedures because everyone should come through it, but to escape being reserved in quarantine for a couple of days.
Wish you luck
Marwa

Marwa, PhD researcher in tourism and information systems.

TOP REPORT DELETE EDIT QUOTE REPLY

Jane Akshar Jul 25 2009, 12:03 PM Post #4

High Priest
Group: Members
Posts: 168
Joined: 11-November 05
From: West Bank, Luxor, Egypt
Member No.: 16

Might be a good idea to get a note from your doctor saying you do not have swine flu and are fit to travel. I think you will find it is not just arrival airports that are checking passengers but departure ones as well. You may not be able to board if you have a temperature and no disclaimer from your doctor

Author of <http://luxor-news.blogspot.com/> and UK co-owner of <http://www.flatsinluxor.co.uk>

TOP REPORT QUOTE REPLY

Figure 13: A screenshot from Touregypt forums - an example of the researcher's contributions to the general interests of the members for establishing rapport - the researcher's ID is 'Mony'

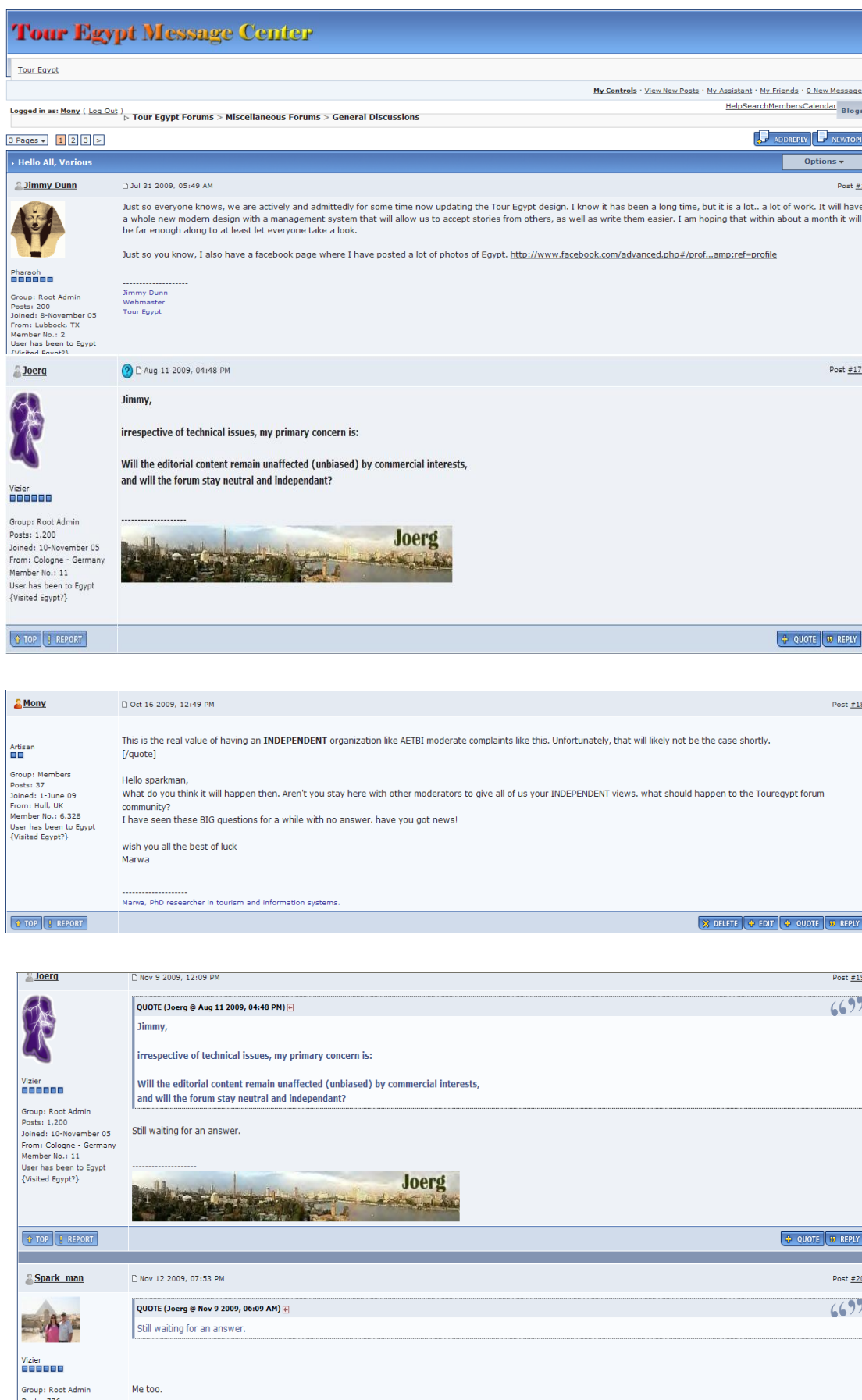


Figure 14: A screenshot from Touregypt forums - an example of the researcher's prompts in one of the topics related to the interest of this study - the researcher's ID is 'Mony'.

6.2.2.2.3. Further analysis to the official websites of Touregypt, trip advisor forums, and the Tourism Ministry

During the stage of Touregypt forums observations and before starting face-to-face interviews, it was important to conduct some further analyses of the websites of Touregypt, the Egyptian Tourism Ministry, and Tripadvisor (Egypt forum). This is in order to be updated about any new changes that happened in the three websites before doing the interviews of the local public and private sectors in the Egyptian context. This action informed the face-to-face interview protocol. For example, the researcher found evidence of the launch of a new reservation system operated by the Egyptian Tourism Federation and linked to the website of the Tourism Ministry. This helped originate prompts to compare the interest and perspectives of the Tourism Ministry regarding the development of e-business applications.

6.2.2.2.4. Conducting face-to-face and e-mail interviews

Data was collected through semi-structured interviews with the local stakeholder groups of the Egyptian DMS, from members and non-members of the system, both the public and private sectors, and from different sizes of enterprises (small, medium and large companies). Such diversity in selecting the local stakeholders for interviews provides a holistic perspective on Touregypt experience in the Egyptian context. A total of 26 participants were interviewed. Table 8 locates the number of interviews in each stakeholder group. Interview time ranged from 30 to 90 minutes. Permission was requested from interviewees so that the discussion could be tape-recorded, strictly for academic purposes. Thirteen interviews (of 15 interviewees) were recorded. Notes were taken during and after each interview. At the time of conducting the field study interviews, the Touregypt project was dramatically changing; the system was shifting from a DMS to a normal travel company (see Section 6.1.2). Consequently, a number of respondents showed discomfort with taping the interviews. In such situations, the researcher wrote down the notes, prompts and answers received immediately after each interview.

Table 8: Fieldwork interviews

Stakeholder group	Position of interviewees		Number of interviewees
The public sector	<ul style="list-style-type: none"> - The Ministry of Tourism: an interview with the Manager of the Hotels department. - The general authority of tourism promotion: 3 interviewees (within 2 interviews) with the Marketing department Manager, chairman office, and two employees of the E-marketing group office. 		4
IT suppliers	<ul style="list-style-type: none"> - The Egyptian Tourism Federation (ETF) hotels portal Manager. - Senior web application developer in Travco tours. - Touregypt office Manager - Egypt branch. - An owner of a software company. 		4
Others	The internal environment of Egypt: An interview with a Tourism expert and consultant and with an academic in 6 October University, Tourism department, e-tourism section.		2
Tourism suppliers	Members of Touregypt project	Non-members of Touregypt project	
Large Tourist enterprises	<ul style="list-style-type: none"> - Travco Tours; an interview with an employee in the sales office, - Wings Tours: interviews with the General and the Sales Managers, and the contracting director of the company. 	Spring tours: an interview with the Operations Manager. Travel ways: an interview with the contracting manager. NTS tours: the Sales Manager. Isis travel; the Executive manager.	8
Medium Tourist Enterprises (MTE)	<ul style="list-style-type: none"> - 2travel 2egypt Tours: an interview with the tourism Manager. - Continental Tours; an interview with the General Manager. 	Excel travel: an interview with the Team leader of outgoing Tourism Leisure. Flamingo hotel: the Sales manager.	4
Small Tourist Enterprises (STE)	<ul style="list-style-type: none"> - Wedjet Tours: interviews with the general and Operations Managers. - Royal Egypt Tours: an interview with the Owner and General Manager. - Agha Tours; interview with the Tourism Manager. 	--	4

Interview guide:

Open-ended questions, probing and follow-up questions were applied. The following is an example of the open-ended questions that were asked. Generally, closed, leading, and double-barrelled questions were avoided (Bryman and Bell 2007).

Informed by the qualitative approach adopted, the interview guide was used in a flexible manner. Therefore, the prompts were changed to suit the kind of stakeholder group and the new knowledge gained from previous interviews. Thus, different probes and follow-up questions were asked in order to ensure that precise and detailed information was obtained (Patton 2002). Furthermore, Aibel (1999) stated:

“In qualitative data collection, the pre-testing of the interview guide is not as critical as when a structured questionnaire is to be used. This is because in qualitative, in-depth interviewing questions can be modified during the data collection process if the way they are phrased does not elicit the type of response desired” (1999, p. 36).

However, based on the early experiences with the interview guide, some modifications were made to better suit the needs of this study (Hesse-Biber et al. 2010).

The primary prompts used in the interviews of the local enterprises such as hotels and tour companies (the members of Touregypt project):

1. Why did you participate in the Touregypt project?
2. How did that happen? The story from the very beginning
3. How do you find your experience with the system?
4. What benefits do you think your company gained from participating in the system?
5. Based on your experience, what would you think the weaknesses of the system are? So, what about the strengths?
6. I would like to ask you about your recommendations for changes. If you had the authority to change or add things about the system, what would you make different.

These are posed if I feel I did not get what I needed from the above questions:

7. What do you need from the Tourism Ministry to support your tourism market competitiveness?
8. What about the needs to compete online?

At the end of the conversation, I asked the interviewees whether there was anything else they would like to add, or that they thought I would ask but did not. Also, I tried to prepare for subsequent interviews by asking questions like ‘who do you think would know more about ...? Who do you think should I talk to? Who else should I ask?’

6.2.2.2.5. Documentary survey

In this study, the UNCTAD and UNWTO represent the international tourism organizations stakeholder group. Their perspectives about DMS effectiveness in general and in developing countries in particular were investigated to support the evaluation of the Egyptian DMS (Touregypt project). Considering their relevance, the document survey included three published reports and a number of online articles collected from the official websites of the UNCTAD and UNWTO. These are:

- The report of the United Nations Conference on Trade and Development (UNCTAD) expert meeting on ICT and tourism for development. The meeting was held in Geneva between 30th November and 2nd December 2005 (UNCTAD 2005a).
- Information economy report prepared by the UNCTAD (UNCTAD, 2005b). This is in addition to another report of the UNCTAD (2005c). This report includes information about E-tourism implementation in the developing countries.
- A practical guide for tourism destinations and businesses reported by the UNWTO Business Council in November 2001 (WTOBC 2001).

6.3. Data analysis approach

Chapter 5, Section 5.5., outlined the strategy of the four stages adopted for generating the research theory. Steps of conducting the first two stages were discussed in the above section (6.2). This section presents the process in which the last two stages of the strategy were performed. Stage three included the data analysis of each case, as well as a cross-case analysis. The aim of stage three was to shape the factors of DMS effectiveness and identify the relationship between them. On the other hand, stage four involved seeing the empirical findings (of stage three) in the light of prior theories in order to increase the validity of this study. In this respect, the present study has employed the DeLone and MacLean (2003) IS success theory, in addition to other IS theories, to interpret and compare the research findings (see Section 5.5.4).

Qualitative research produces a rich and large amount of data in the form of texts (e.g. transcripts and field notes). Based on that, data analysis is conducted to reduce, summarize and organize data in order to produce findings that can be interpreted by the researcher (Tesch 1990). As such, this study has produced a large amount of texts. These texts were segmented into parts (according to groups of stakeholders). The analysis of each part was considered in relation to the whole. In this way, a better understanding of the whole was gained when after each was analyzed (Tesch 1990).

Generally, unlike quantitative data analysis, there are no specific procedures to follow for analyzing qualitative data (Punch 2005). Qualitative studies produced a wide range of different approaches in which qualitative data can be analyzed. Such approaches are differentiated by the tradition, theoretical perspectives and the aims of the study. For this study, data analysis was informed by discourse analysis and Miles and Huberman's (1994) approaches for qualitative analysis. The following subsections describe and justify the use of the two approaches. Furthermore, the overall approach was complemented by the use of a computer application (Nvivo) to support data storage and management.

6.3.1 Data analysis approach: discourse analysis

The term 'discourse' refers to the general perspective or framework within which ideas are moulded (Punch 2000). Discourses reflect human experience, and constitute important parts of that experience. Accordingly, discourse analysis is concerned with any parts of human experience constituted by discourse (Gee 2005). It is considered as a form of analysis that focuses on language above the level of single utterance (words or sentences). Discourse analysis considers the way in which language is used, what it is used for and the context in which it is used (Punch 2000). Phillips and Hardy (2002) pointed out that discourse analysis examines the way in which meanings are constructed throughout the text. They added that this does not mean that discourse analysis is a work with individual or isolated texts, but it involves analyzing a set of texts, and the ways they are meaningful by relating them to each other.

Presenting the meaning of discourse analysis, the following discussion justifies the use of discourse analysis in the light of the study approach and philosophical foundation. The suitability of discourse analysis is further explained by the underpinning philosophical assumptions and the strategy of conducting this study (see Chapter 5 for details on the research foundations). Discourse analysis harmonizes the characteristics of this study. The values underpinning the usage of discourse analysis share several conceptions about social life with the perspectives of this study (see Chapter 5) as follows:

- Discourse analysis, like qualitative case studies, studies phenomena in their natural setting. Discourse analysis provides insightful interpretation of data that involves understanding contexts, since it is believed that *"language and interaction are best understood in context"* (Shaw and Bailey 2009).
- Discourse analysis concurs with this in depth study (see Section 5.2.2.1). It enables the analysis of individual texts in relation to the whole set of texts. Here, discourse analysis supports the notion of this study. As mentioned above, it helps in that a better understanding of the whole is gained after each part (individual texts) is analyzed (Tesch 1990).

- Like the assumptions of this study, discourse analysis sees reality as socially constructed, and only subjectively understood and experienced (Shaw and Bailey 2009).

In the following, approaches to discourse analysis are summarized and the study's own adoption is further discussed.

Reviewing the literature, it seems difficult to find a single definition for discourse analysis, because the term is used in many different ways. It includes somewhat diverse theoretical and methodological approaches within different disciplines, i.e. linguistics, anthropology, and sociology (Fairclough 2003; Gee 2005). Approaches to discourse analysis are different in the way in which they study discourse and view its context. These approaches vary from focus on language in use to a broader view focus on the relationship between language, social action, and social and cultural concerns (Cunliffe 2008). There are two main approaches in analyzing discourse, Discourse analysis (d/discourse or small discourse) and critical discourse analysis (D/discourse or big discourse) (Alvesson and Karreman 2000; Gee 2005). Discourse analysis (or D/discourse) studies:

“The structures of meaning, expressions, themes, routine ways of talking, and rhetorical devices used in constructing reality” (Cunliffe 2008, p. 81).

Cunliffe (2008) added that small discourse analysis uses different research methods including quantitative methods (i.e. content analysis) and qualitative methods, by focusing on subjective meanings and interpretations of words or sentences. This approach focuses on the close empirical examination of specific language in natural occurring contexts with the aim of interpreting the actions that language accomplishes as part of social practice in social contexts.

On the other hand, critical discourse analysis (CDA or D/discourse) (i.e. the Foucaultian approach), rather than D/discourse, focuses on a broader context. Critical discourse analysis views discourse “as systems of thought, social, economic, political, institutional, or cultural discourse” (Cunliffe 2008, p. 82). CDA thus focuses on larger and wider discourses. Analysts who use CDA treat discourse as sets of linguistic and

other cultural texts that inform and powerfully shape the social world. In their perspective:

“Language, put together as discourses, arranges and naturalizes the social world in a specific way and thus informs social practices” (Alvesson and Karreman 2000, p. 1128).

However, Alvesson and Karreman (2000) classified discourse analysis types to include small or d/discourse and big or D/discourse on the edges of two extremes, and added another type of discourse analysis in the middle, which combines some characteristics of both extremes. This middle-level type is called Meso discourse analysis (see Figure 16) It was described by Alvesson and Karreman (2000) as being sensitive to language use in particular contexts, while seeking broader patterns and themes that go beyond immediate textual details and generalize to similar local contexts. Hence, the Meso discourse analysis can be seen as a combination of both d/discourse and D/discourse.

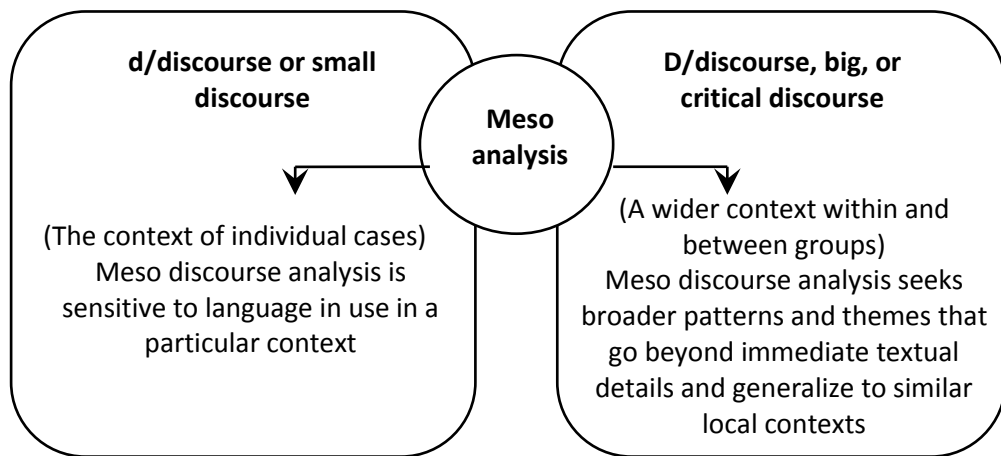


Figure 16: Levels of discourse analysis, based on the work of Alvesson and Karreman (2000)

Given the above discussion on discourse types, the interest of this study lies in some features of both small and big discourse levels. Drawing on Alvesson and Karreman’s (2000) classification of discourse analysis types, this study is positioned in the Meso analysis as further explained. The aim of analysing the data was to explore (or qualitatively evaluate, see Section 5.2.2.2) stakeholders’ perspectives and experiences about Touregypt effectiveness; this includes perspectives on system implementation, capabilities, relations, interactions, activities, procedures and process. Accordingly,

this study needs to highlight the individuality of stakeholders' perspectives, by looking at how individual stakeholders talk about DMS; this refers to a basic feature of small or d/ discourse analysis as discussed previously. Although the researcher has to be aware of language use in a specific context, she needed to be attentive to the emergence of themes through D/discourse analysis. D/discourse will then be used to look at broader views in social and cultural context and stakeholder group perspectives. This is in order to go:

“Beyond the details of language in use and attentiveness to local context [and groups' views] in order to interpret meaning” (Alvesson and Karreman 2000, p. 1147).

Seen in this light, a Meso-discourse analysis would suit the aim of this study, since it is:

“Somewhat more inclined to look for slightly broader and more general themes while still being careful to avoid gross categorizations” (Alvesson and Karreman 2000, p. 1141).

The following discussion presents how this study adopts Meso discourse analysis for its data analysis and interpretation. Here, Gee's approach (Gee 2005) has been adopted in order to guide the application of Meso discourse analysis as introduced in the following.

6.3.1. Applying Meso discourse analysis: the Gee approach

As already suggested the form of discourse analysis which is employed in this study treated language and meaning as tightly coupled. The focus of discourse analysis of this study is on the level of Meso discourse, which enables the exploration of individual stakeholders' perspectives as well as perspectives within wider contexts; whether within each stakeholder group or between groups of stakeholders.

To apply Meso discourse analysis to the collected data, Gee's approach (Gee 2005) to Meso discourse analysis is used to provide the tools of analysis inquiry, while Miles and Huberman's approach (1994) is used to provide the procedures or the systematic steps followed in the process of analysis. The following presents how both approaches

are combined to analyse the data of this study under the concepts of Meso discourse analysis that have been mentioned previously.

6.3.1.1. Gee's approach

According to Gee (2005), language is not only to be seen as a tool for communicating information, but also for supporting social activities, social identities and relationship within cultures and institutions. Matching the same lines of this study (see Figure 16 for locating this study among discourse approaches), Gee's approach aims to make the balance between the talk about individual perspectives and social interactions on one side and talk about society and institutions on another. Gee offers a specific method to investigate all these by offering several tools of inquiry, or as he named them "thinking devices" (see Figure 18 for a summary on concepts of Gee's approach). Gee (2005) defines small discourse (with a little "d") as the language used on site through which activities and identities are enacted. Nonetheless, activities – in his eye – are not simply enacted through language; rather some non-language elements have an influence as well. Here, Gee (2005) describes the influence of big or capital discourse on his approach by saying:

"I use the term "Discourse", with the capital "D," for ways of combining and integrating language, actions, interactions, ways of thinking, believing, valuing, and using various symbols, tools, and objects to enact a particular sort of socially recognizable identity" (2005, p. 21).

Therefore, the basis of Gee's (2005) approach is considering both the language in use and the influence of social context in which both small and big discourses are combined.

6.3.1.2. Combining Miles and Huberman's approach

Gee's approach (2005) provides tools for data analysis and interpretation. Gee (2005) calls the tools of inquiry he provides as 'thinking devices', a set of questions which are asked while analyzing texts. Furthermore, this set of tools of inquiry or thinking devices enable cross-case analysis by asking questions that would identify relationships and compare different stakeholders' discourses. Although Gee (2005)

suggested some steps for doing discourse analysis, the process of doing the analysis (the procedures or steps) has not been appropriately developed in his approach. He stated:

“It is here that the warning in the introduction of this book must be most heeded: the method I have developed in this book is not intended as a set of ‘rules’ to be followed ‘step-by-step.’... rather they are meant merely to show some of the tools we have discussed in this book put to use, not in and for themselves, but to speak to particular themes, points, and issues.[These tools] are meant as ‘thinking devices’ to encourage others to engage in their own discourse related reflections ” (2005, p. 115).

6.3.1.3. The analytical procedures

“In general, data analysis means a search for patterns in data – recurrent behaviors, objects, or a body of knowledge. Once a pattern is identified, it is interpreted in terms of a social theory or the setting in which it occurred” (Newman 2000, p. 426).

The implementation of the discourse analysis, a three-phase process which has been used for data analysis, involves stages of data reduction, data display, and conclusion drawing and verification (Miles and Huberman approach 1994). These three phases are interrelated. They occur concurrently and shape one another as discussed below.

Data reduction: data reduction is a part of analysis that helps to sharpen, sort, focus, discard, and organize the data in a way that allows “final” conclusions to be drawn and verified. It occurs continuously throughout the research, even prior to the actual data collection. In the early stage of analysis, it is represented in e.g. the identification of the research questions, case study, the sub cases, and the data collection methods. In the middle stage, data reduction takes place through coding and memoing. The process of data reduction persists after the fieldwork, until the final report is produced. When reducing the data, it is crucial to be careful not to lose significant data or strip the data from their context (Punch 2000).

Data display: The reduced data need to be organized by displaying it in an immediately accessible, compact or summarized form so that the analysts as well as readers can see what is happening. The displays can include graphs, figures, charts, tables (return to table of contents for examples of figures and table used in this study). Data display became then a base for further analysis to facilitate drawing conclusions.

Conclusion drawing and verification: this is the final phase of analysis. The aim of this stage is to integrate what has been achieved into a meaningful and coherent picture of data. It is in this stage that the researcher begins to formally decide what things mean. Some conclusions might loom to researchers in previous analytical stages of data collection. Yet, however, Miles and Huberman (1994) surmised that researchers need to hold these conclusions to be formed in the final stage and until all data are already in. Also in this stage, the concepts and proposition are presented in a form of the research findings (this is presented in Chapter 6, and further discussion about enfolding prior theories to interpret the findings is presented in Chapter 8). Further, Miles and Huberman (1994) emphasised that the meaning emerging from the data needs to be tested for their trustworthiness (see Section 5.6., Chapter 5 for details on the quality considerations of this study).

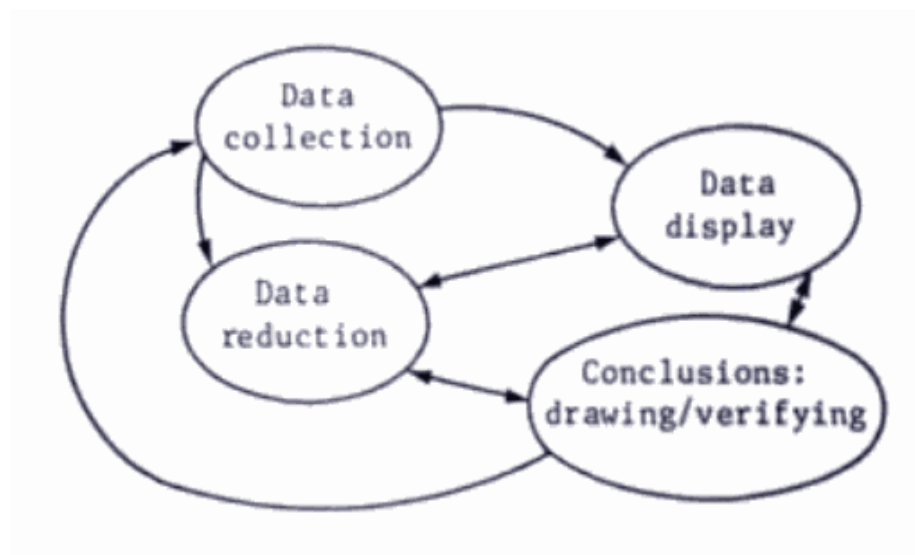


Figure 17: Components of Data Analysis: Interactive model (Miles and Huberman 1994, p. 12)

Taken together, the above introduces three phases: data reduction, data display and conclusion. Drawing and verification include three main concurrent operations: coding, memoing and developing propositions (see 6.3.2.2.):

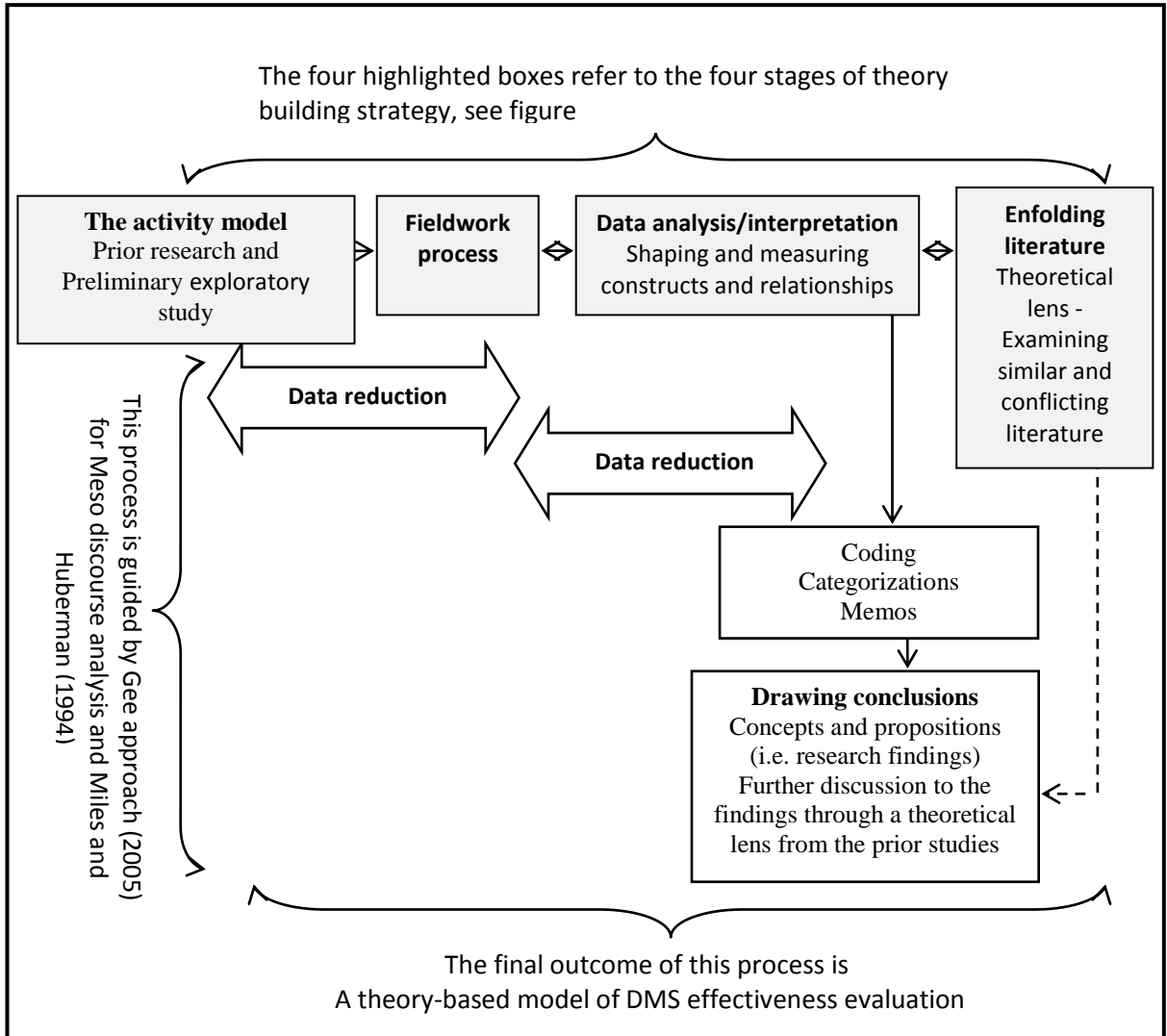


Figure 18: Structure of the data analysis process within the strategy of generating the research theory

Contrary to quantitative research, there are no clear lines between data collection and data analysis in qualitative research (Tesch 1990; Stake 1995; Neuman 2006). In this study, the analysis is conducted concurrently with the data collection. It begins with a thorough reading of the data during the fieldwork to get a sense of their scope (Taylor and Bogden 1998). Hence, thoughts for making sense of data emerged during the fieldwork – which is exploratory in its nature. They were immediately written as a

field notes. This process of field notes taking is regarded as a part of data analysis. Patton (2002) emphasised:

“Ideas that emerge while researchers still in the fieldwork constitutes the beginning of analysis; they are part of the record of field notes” (2002, p. 436).

Based on the above discussion, the analysis of this research is guided by concepts of Meso discourse analysis, informed by thinking devices of Gee approach, as well as his set of primary steps in doing discourse analysis which is further developed by using the systematic approach of Miles and Huberman (1994). The following chapter presents the detailed process of analyzing the research evidence as informed by Meso discourses (Gee approach (2005) combined with miles and Huberman approach (1994)).

Table 9: Main concepts and general steps of Gee's approach (2005)

<p>A discourse analysis, according to Gee's approach, involves "asking questions about the seven building tasks listed below, using the tools of inquiry (situated meanings, social languages, discourse models, intersexuality, Discourses and conversations) as well as thinking about any other language details of the data that look relevant (Gee, 2005).</p>
<p>Tools of inquiry:</p> <p>Situated meanings: The meaning that people give to words or phrases they use. "The specific meanings words take on in specific contexts of use" (Gee 2005, p. 172).</p> <p>Discourse models: "are theories by which people are operating on a given occasion-they may operate by different theories on different occasions. "(Gee 2005, p. 176). (Question: how and why they think about what they think). 'Situated meanings can guide us to Discourse models, since often people are giving words specific situated meanings because they are operating with specific Discourse models.'" (Gee 2005, p. 174). However, we may need to consult other situated meanings of different words to guide us to a particular Discourse model that is used in a conversation.</p> <p>Social languages (the same language used among certain groups), conversations (arguments and motifs) and Intertextuality (cross ref. or spoken text relate to or quotes another one): are tools of inquiry that need to be further analyzed. Gee emphasized that discourse analysis is doing much more than just language in use and these additional elements must also be examined.</p>
<p>Seven building tasks of situation:</p> <p>Gee argues that through language we create situations when we talk or write, However, the situation also influences us in terms of how we speak. Gee identifies seven "building tasks", i.e. areas of reality that we construct when we speak or write. He said "we build situations by using language to carry out seven building tasks" (Gee 2005, p. 97). These tasks are thus the components of any situation; however, it is not necessarily to find them all in each situation. Gee (2005, p. 111) presented 26 questions to be asked when analyzing texts, these include the following seven tasks and the above-mentioned tools of inquiry.</p> <p>Significance: we use language to make things significant, as we give them meaning or value. What are these?</p> <p>Activities: Language is also used when we want to get recognized in a certain kind of activity (building task 2) or in other words, through language certain activities get enacted.</p> <p>Identities: what identity is formed through language? We all have various professional, social and private roles and we speak and write as these identities require us to do.</p> <p>Relationships: we also use language to signal our relationships that we have or would want to have.</p> <p>Politics: it is the implications that the talk hold. We use language to convey our perspective on a particular social situation (social goods). We use language in our talk that is carrying a particular perspective even if we did not say this perspective explicitly, e.g. what is taken to be normal, proper, right or wrong and how does this expressed by language in a piece of conversation.</p> <p>Connections: How can a piece of language connect or disconnect things? How does it make one thing relevant or irrelevant to another?</p> <p>Sign systems and knowledge: language can privilege or disprivilege specific sign systems or ways of knowing, e.g. English over other languages, or technical language over everyday language use.</p>
<p>General steps of Gee's discourse analysis approach guided by the above mentioned tools of inquiry (as he called it Gee's model of discourse analysis)</p> <ul style="list-style-type: none"> - Pick some keywords and phrases in the data or related families of them. - Ask yourself what situated meanings these words and phrases seem to have in your data. (Give what you know about the overall context in which data accrued). - Ask yourself what discourse models these situated meanings appear to implicate. - Think about the social language and discourses that appear to be relevant to, in whatever ways to your data. If it is easier to think about what <i>conversations</i> are relevant to your data, then do that.

6.3.2. The process of analyzing the evidence

After discussing the adoption of Meso discourse analysis, the process of investigating stakeholders' understandings of DMS effectiveness will be explored (see Section 6.2 on the evidence collected and the methods used to collect them).

6.3.2.1. Preparing the data for analysis

The data collected in this study is varied to include both Arabic and English texts. For example, the majority of the interviews were conducted in Arabic. Only 5 of them – those done with tourists of Touregypt project – were conducted in English. As these latter interviews were e-mails written in English, they did not need to be translated. This is in addition to documents and reports of the international organizations (i.e. UNCTAD and UNWTO). The following presents the process of preparing the evidence for analysis collected in the Arabic language.

6.3.2.1.1. Data translation

Crystal (1991) defined translation as a process where:

“The meaning and expression in one language (source) is tuned with the meaning of another (target) whether the medium is spoken, written or signed” (1991, p. 346).

The purpose of data translation is *“to achieve equivalence of meanings between two different languages”* (Regmi et al. 2010, p. 20). Data translation is a crucial stage, if needed, in a research. It involves *“subtle issues of connotation and meaning”* (Marshall and Rossman 2006, p. 111). Esposito (2001) noted that translation is:

“the transfer of meaning from a source language [...] to the target language [and that the translator is] actually an interpreter who [...] processes the vocabulary and grammatical structure of the words while considering the individual situation and the overall culture context.” (2001, p. 570).

Concerning by whom translation should be done, Temple and Young (2004) stated that translating data can be carried out by the researcher as a translator or by a

professional translator. However, because translation entails the construction of meanings, Marshall and Rossman (2006) asserted that *“more issues of meanings and interpretation arise when someone other than the researcher translates spoken or written words”* (2006, p. 112). Some academics (e.g. Temple and Young 2004; Marshall and Rossman 2006) asserted that researchers need to do this process by themselves or, at least, demonstrate how this process is done. Along the same line, and concurring with the above extract of Esposito (2001), Xian (2008), suggested translation is a sense-making exercise and it is a part of the analysis stage. This sense-making process brings the translator’s knowledge; social background; and personal experience into play. Hence, the focus on generating accurate and meaningful data through translation processes is vital (Marshall and Rossman 2006) and can have implications for the quality of the research data. In this respect, Regmi et al. (2010) suggested that accuracy in translation can be enhanced when the process of translation different researchers are employed to check recording tapes and transcripts.

In order to assure accuracy and subtlety of the translated data, the researcher consulted two other experienced professional academic. The process of translation ran as follows: the researcher and a professional translator concurrently translated the Arabic texts. Beforehand, the researcher discussed with the translator certain issues, based on Gee’s approach, that need to be considered during translation. The following is a part of an e-mail to the professional translator:

“If you cannot find the exact English equivalent for an Arabic word or idiom, you can put the nearest meaning between “---”. This is because what I am seeking here is getting the readers understand and capture the sense which such words and idioms bear in Arabic. Another thing is to kindly write the meaning between [...] if such emotions like laugh, surprise, extra, [...] are expressed. The reason why I would like you to do so is that I may wish to check if you got the same sense of the conversation as I did. Thus, the way you interpret the conversations really matters” (A part of the e-mail sent by the researcher to the professional translator 2010).

Then, the translated texts of both the researcher and the translator were further discussed with another Arabian colleague who has good experience in teaching and doing research in both languages. He had also worked in the field of translation. We compared the two translations, discussed the differences and their implications, and saw whether and why there is any disagreement between the two translations. This is in order to grasp the closest possible meaning (Twinn 1998; Regmi et al. 2010).

Reviewing the literature has indicated that researchers may face difficulties caused by linguistic and socio-cultural differences between the source and the target languages while translating qualitative data (Twinn 1998; Temple and Young 2004; Xian 2008). In some cases, the literal translation of an expression used in a conversation may not give the same sense of it and might become meaningless to readers who do not understand the cultural background of the speakers. To overcome such possible problems during cross-culture translation in research, the researcher applied the suggestions of researchers such as Regmi et al. (2010), Xian (2008), Marshall and Rossman, (2006) and Temple and Young (2004). For example Regmi et al. (2010) argued that researchers in the process of meaning-making need to engage with meanings and discourses to come up with accurate and valid translations rather than applying literal translation. Asserting the same view, Xian (2008) proposed a contextualized approach of translation in which the focus is on contextual consistency rather than on verbal consistency between languages. In other words, the translated data needs to be considered according to the meanings embedded in the interviews so as to reflect the feeling, views and experiences of participants. In a similar way, Simon (1996) argued:

“The solutions to many of the translator’s dilemmas are not to be found in dictionaries, but rather in an understanding of the way language is tied to local realities, to literary forms and to changing identities. Translators must constantly make decisions about the cultural meanings which language carries, and evaluate the degree to which the two different worlds they inhabit are ‘the same’. These are not technical difficulties; they are not the domain of specialists in obscure or quaint vocabularies [...] In fact the process of meaning transfer has less to do with finding the

cultural inscription of a term than in reconstructing its value.” (1996, p. 138).

6.3.2.1.2. Using Nvivo

After translating the data, the last stage in the preparation of texts for analysis was to import both the translated texts and the recorded interviews to Nvivo 8 software application. Nvivo8 was used to support data organization and management. It provides different tools that encourage researchers to think about each document in detail while comparing, linking and identifying commonalities among texts. Alternatively, these tools can be used concurrently (Bazeley and Richards 2000). Gummesson (2003) summarised the role of Nvivo by stating that it can:

“Store data in an orderly way, provide structures and hierarchies of data, perform certain analytical tasks and respond to questions that the researcher puts to the data. Software assists, but does not take over interpretation.” (2003, p. 485).

Qualitative researchers gain many advantages by using Nvivo software as a tool to aid the process of analyzing and interpreting the data gained. Gummesson (2003) even argued that *“One of the best-known software packages is Nvivo (formerly Nudist), which can increase speed and efficiency of the interpretation process”* (2003, p. 485). The advantages of using Nvivo are yet further underscored by Bazeley and Richards (2000) and Silverman (2000) who state that it, for example, facilitates handling large amounts of data, allows audio and video trails, decreases the time required for analysis, and enhances the flexibility and comprehensiveness of data management. Appendix (2) presents a snapshot from Nvivo as an example of the audio files used in this study.

6.3.2.2. Generating codes and categories and drawing conclusions:

This section presents the procedures of generating the research findings as informed by insights from Miles and Huberman (1994) and Gee (2005), see Section 6.3.1. The sections includes four subsections represent the process of creating the general research themes, generating the early set of codes and categories, taking memos and drawing the research conclusion (concepts and propositions).

6.3.2.2.1. Step one: Initial/general themes extracted from the research activity model

The coding process of this research has started by a set of general themes that have been generated from the research activity model (the literature review and the preliminary exploratory study, see section 5.5.1). Generally, approaches of coding vary according to the theoretical adopted approach of analysis (Ritchie and Spencer 1994). Miles and Huberman (1994, p. 57) put forward three approaches for coding:

- Creating a provisional “start list” of codes prior to fieldwork. That list comes from the conceptual framework, list of research questions, hypotheses, problem areas, and/or key variables which the researcher brings to the study. Nevertheless, the start list is temporary. It is open to change and modification as the study proceeds. They argued that a start-list helps to orient the researcher to the conceptual purpose of the study.
- A more inductive researcher may not want to pre code any datum until he or she collect it, see how it functions or nests in its context, and determine how many varieties of are there. This is a “grounded” approach that is advocated by Glaser and Strauss (1967).
- Partway between a priori and inductive approaches, is that of creating a general accounting system of codes that is not content-specific but that points to the general domains, in which codes can be developed inductively (see also Checkland and Holwell (1998)).

However, for all the three approaches of coding, codes will change and develop continually during analysis. The final list of codes then needs to be described in detail (Miles and Huberman 1994).

The coding process of this study began with a set of general themes (Miles and Huberman 1994; Checkland and Holwell 1998) informed by the activity model of the pre fieldwork stage (see Section 5.5.1.). Figure 19 illustrates the position of the approach adopted in creating codes; the partway approach. Some codes were determined according to relevant categories emerged in the literature review (see Appendixes 6 and 7 for a full list of the general themes derived from the literature review) while other categories were created inductively from the empirical data. The following list of the initial themes emerged during the preliminary exploratory study (see Section 6.2.1):

1. Organizational factors: control and the need for a written rules and lack of standardizations.
2. Stakeholder's abilities/skills: IT/IS knowledge of stakeholders, technological and managerial abilities of local tourism SME and training.
3. Social relations/Issues: Stakeholders conflict relations in the field.
4. Effective communication with tourists.
5. Other themes and factors: e.g. on line reservation, Public sector involvement, DMS brand, and Regular System evaluation.

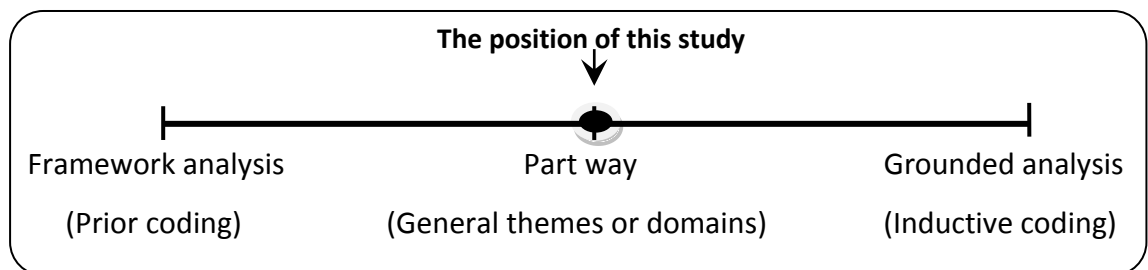


Figure 19: the position of the study within coding approaches, based on Miles and Huberman (1994)

6.3.2.2.2. Step two: generating codes and categories

This step is concerned with the identification of codes taken from the data and the refinement of such codes into more abstract codes (categories). The coding process has started by assigning the codes, which were seen relevant to answering the research questions, to the texts and audios stored in the Nvivo project. The Nvivo was used to facilitate the coding process as informed by the seven thinking devices of Gee approach (2005, see Appendix 8). The codes (which are called free nodes in the Nvivo program) were the factors that influence the effectiveness of DMS from the perspectives of stakeholder groups (see Appendix 2 for examples of assigning codes to data).

Coding was an overlapping process of reading through the texts, listening to the recorded interviews, consulting the activity model outputs, importing new codes, and refining existing ones. Whilst reading the texts (interviews and documents), the annotation tool of Nvivo 8 was used to allow the researcher to add notes and ideas and relate these notes to the data in a text. Annotations are fast to prepare and fast to access (Bazeley and Richards 2000). They allow the addition of more than one note, or idea, to each point if needed. Appendix 2 gives an example of how annotation was used during this study.

Two types of codes have emerged during the analysis: early and abstract codes (Miles and Huberman 1994). The early or initial level of coding is mainly descriptive and requires little or no inference beyond the coded data. On the other hand, the second level of coding is a higher-inference and explanatory pattern coding that brings together less abstract and more descriptive code under it (Punch 2000). The higher level coding, which Miles and Huberman (1994) named 'pattern codes', is usually referred to by literature as categories. In the Nvivo 8 program, the initial or early level codes are named 'free codes', while the more abstract codes or categories are referred to as 'tree nodes'. The following is a list of the early codes that have emerged in the early stage of analysis and which further refined when developed to categories:

1. Direct online booking.
2. Communications with tourists.
3. Conflict in the business environment.

4. Security: the control of the Touregypt Management Company on personal e-mail and rules of communication.
5. Developers' skills and technology availability.
6. Different views about the purpose of the Touregypt project.
7. DMS brand (URL).
8. Adequate Funding.
9. The IT skills and knowledge of large local companies.
10. How they knew Touregypt.
11. Information quality.
12. IT Infrastructure.
13. Intranet- updates.
14. Lacking IS and tourism management knowledge in SMTE.
15. Managerial support of the Tourism Ministry.
16. Online marketing strategy.
17. The influence of online tourists' features.
18. Evaluation of DMS: evaluation from only tourists' perspectives
19. Roles and regulations for DMS
20. Roles and regulations of tourism business.
21. Services quality.
22. Stable business environment
23. Standardized of prices and quality of services obtained.
24. System quality.
25. Technological support
26. The Ministry role in DMS development: nonprofit organization cannot sell destination.
27. The need to listen to stakeholders views on the system.
28. The support of the public sector.
29. Training
30. Trust between the Tourism Ministry and the local enterprises and the trust between the system and the tourists.
31. Type of markets: depending on T.O and mass tourism.

The abstract codes or categories are created when the researcher moves from the descriptive to more interpretive coding (Punch 2000). Nvivo 8 allows the creation of categories (under the name tree nodes as seen in Figure 42, Appendix 2). The tree nodes can be hierarchally-structured to include categories and any number of subcategories (see Figure 41, Appendix 2). In this study, the early codes (the free nodes) were put into categories (tree nodes) on the basis of themes, concepts, and topics with similar features (Neuman 2006). The complete tree of the research categories can be seen in Appendix 2, Figure 42. The following is a list of the tree categories which are further explained in Chapter 7:

1. Quality of DMS:

- Quality of DMS components; hardware, the website, system content and information, and other system components (e.g. security systems, and Intranet and Extranet).
- Communication and service quality.

2. Organizational influences:

- DMS management type: public and private sector involvement.
- Top management support.
- IT/IS knowledge and skills of stakeholders.
- Training.
- Adequate funding.
- Monitoring the system performance and keeping up-to-date with the rapidly changing world.
- The need for regular and coherent ways to evaluate DMS effectiveness.

3. Clear vision and Planned strategies:

- The need for a clear vision and planned strategies to support DMS implementation.
- Including the e-tourism strategies in the national framework of policies.
- Issues need to be considered when formulating DMS supportive strategies, e.g. considering stakeholders needs and having appropriate and detailed regulation.

4. Control and power.

5. Trust.

6. Achieving benefits.

- Achieving appropriate benefits for all stakeholders groups.
- Having common vision and accurate expectations on DMS benefits among stakeholders.

7. Environmental influences:

- Availability of IS and DMS professionals.
- Employing foreign DMS professionalism and consultancy.
- Technological infrastructure.
- Cultural issues related to the effectiveness of DMS.

6.3.2.2.3. Memoing: (categories comments)

Memoing is the second fundamental operation after coding (the early and abstract codes). Yet, this does not imply that it succeeds coding, since memoing, as well as coding, takes place at the start of systematic analysis. Memos are ideas for making sense of data. They are restored for further work on them (Miles and Huberman 1994). Memos can hold suggestions for deeper concepts than what coding has reached so far. They also link between different concepts and thus can produce proposition (Punch 2000). Similarly, Maxwell (2005) mentioned that the ideas, or rather memos, that strike the analyst while coding not only capture the researcher's analytical thinking about data, but also facilitate such thinking. Most of the memos developed during the analysis were imported into Nvivo. Nvivo allows the creation of memos⁹ and links them with their sources (Bazeley and Richards 2000), see Appendix 2. The memos of the categories were used to develop a more abstract concepts and propositions as follows.

⁹ The difference between the memos and the annotations in Nvivo is that annotation is attached to the text and can be seen in the same window of the interview transcript, while memos are hyperlinked in the transcript to a separate folder named memos.

6.3.2.2.4. Step three: concepts and propositions

All the memos under each category were reviewed, analyzed and organized in a word document (as it is more easily managed than in Nvivo when it comes to memo organization). Accordingly, the research findings under a set of related concepts and propositions were produced in relation to the research aims and questions (review Chapter 7 where concepts and its propositions are explained). Concepts are “abstract ideas generalized from empirical facts” (Taylor and Bogdan 1998, p. 141). Concepts sharpen abstracts of categories (Tesch 1990, p. 124). In this study, they included abstract versions of the descriptions of the categories and the memos related to these categories. However, propositions explain or theorize the relationships between concepts and are the foundations for theory building (Tesch 1990), (See Chapter 7 for a review of the concepts and propositions derived by this study). Taylor and Bogdan (1998) stated:

“It is through concepts and propositions that the researcher moves from description to interpretation and theory” (1998, p. 144).

The final result of this stage is thus a descriptive model which explains the data which the researcher has assembled (Becker and Geer 1982; cited in Tesch 1990, p. 83). Based on the strategy adopted to generate a theory (see Figure 8) the findings of this study needed to be further investigated in light of the prior theories. This is in order to realize more validity for the research outcome. Here, the findings of this study are interpreted through a theoretical lens (which includes, mainly, DeLone and MacLean (1992, 2003) IS success theory and other IS and DMS prior theories). Hence, enfolding literature represented the final stage before the introduction of the theory based mode of DMS effectiveness evaluation (see Figure 8).

6.4. Chapter summary

This chapter outlines the process of collecting and analyzing the evidence of this study. It describes the case of this study which is the Egyptian DMS experience (the Touregypt project). Also, both the primary and secondary stakeholders of the Touregypt project as well as the methods used to collect data from each of them have been identified. This chapter, then, details the actual process of data collection

starting by discussing the activity model of the pre-field work stage (the preliminary literature review and the exploratory study). This is followed by a discussion on the procedures and the overlapping nature of the fieldwork process, see Figure 11. Data collection techniques included structured and semi-structured interviews, observation, document survey, and forum and website analysis. Subsequently, the process of the data analysis has been discussed with the aim of justifying the use of Meso discourse analysis approach, see Figure 16. The Meso analysis of this study has combined both Gee approach (2005) of discourse analysis and Miles and Huberman approach (1994), see section 6.3.1. Further, the process of doing the analysis has been presented and justified. The codes of the research have emerged from the data with a few prior ideas. The first step of the process was a set of general themes emerged from the research activity model (see Section 6.3.2.2.1). This is followed by the identification of the early and abstract codes inductively and then drawing the final concepts and propositions as further explained in the next chapter.

PART FOUR: Findings and Discussion

Introduction

In this part the findings of the study will be presented. It has been divided into two chapters (Chapters 7 and 8). While the emergent findings according to the interpretation of the stakeholders' perspective are discussed in Chapter 7, Chapter 8 will examine such findings in light of prior theories of DMS and IS studies.

Chapter 7: Research findings

Introduction

This chapter details the results of evaluating the Egyptian DMS experience, examining factors that influence effectiveness and the emergent relationship among them. The discussion concerns the researcher's interpretation of Touregypt stakeholders' views, experience and attitudes. Generally, qualitative exploration is sensitive to context (Newman 2000), therefore Sections 5.4, and 6.1 discussed the environment in which the case of this study took place, the Egyptian and the Internet contexts. This chapter begins with an overall presentation of the findings, as displayed in Table 10 which will be followed by a detailed discussion on the evidence of each of the findings. The findings will be presented based on an inside-out view according to the environment from which the effectiveness influences emerged; starting from the system-related influences, organizational influences and then ending with environment-related influences (see Table 10). Figure 36 demonstrates the different environments from which DMS effectiveness influences emerged.

Table 10: Factors influencing the effectiveness of DMS from the perspective of Touregypt stakeholder groups

Categories	Description and sub-categories
Quality of DMS	<p>Factors specific to technical and social issues related to the system itself. DMS qualities are divided into:</p> <ul style="list-style-type: none"> - Quality of DMS components; hardware, the website, system content and information, and other system components (e.g. security systems, and Intranet and Extranet). - Communication and service quality.
Organizational influences	<p>Effectiveness factors that have been derived from internal organizational environment:</p> <ul style="list-style-type: none"> - DMS management type: public and private sector involvement - Top management support. - IT/IS knowledge and skills of stakeholders. - Training. - Adequate funding. - Monitoring the system performance and keeping up-to-date with the rapidly changing world. - The need for regular and coherent ways to evaluate DMS effectiveness.
Clear vision and Planned strategies	<p>This is a factor that is related to vision and strategies of DMS, organizational environment and the e-tourism business in the destination as a whole:</p> <ul style="list-style-type: none"> - The need for a clear vision and planned strategies to support DMS implementation - Including the e-tourism strategies in the national framework of policies - Issues need to be considered when formulating DMS supportive strategies, e.g. considering stakeholders needs and having appropriate and detailed regulation.
Control and power	<p>This factor discusses the influence of control and power of DMO on the level of the system and the tourism business in a destination.</p>
Trust	<p>Building mutual trust among stakeholders found to have a strong positive influence on DMS effectiveness.</p>
Achieving benefits	<p>Achieving appropriate benefits for all stakeholders groups. Having common vision and accurate expectations on DMS benefits among stakeholders.</p>
Environmental influences	<p>Supportive business context in relation to the destination environment or external (international) environment such as tourism trends influences on effectiveness:</p> <ul style="list-style-type: none"> - Availability of IS and DMS professionals. - Employing foreign DMS professionalism and consultancy. - Technological infrastructure. - Cultural issues related to the effectiveness of DMS.

7.1. Finding One: quality of DMS

The quality of DMS components and the quality of services were concerns for the majority of Touregypt stakeholders. For the purpose of this study, both DMS components and services are linked together under a more abstract category (see Section 6.3.1.3) and regarded as factors specific to system quality. The system-specific factors defined by the stakeholders in relation to the system components referred to technical issues. They were hardware, website, system content and information, and other system components such as security system, and Intranet and Extranet (see Figure 20). On the other hand, service quality tends to be related to the social relations between stakeholders, e.g. the relationship among online tourists, local service providers and the DMS management.

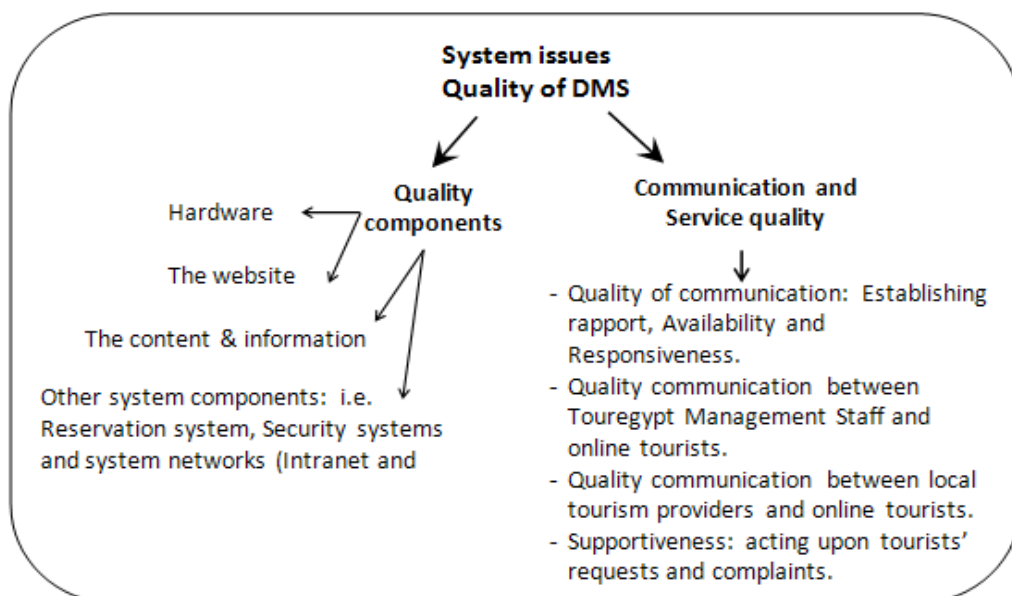


Figure 20: Factors specific to DMS quality that influenced Touregypt effectiveness

7.1.1. Quality of DMS components

According to Touregypt stakeholders the quality of DMS components is strongly linked to the effectiveness of DMS. According to factors referred by the stakeholders, DMS components have divided in this study into quality hardware, quality website, system content and information, and other system components such as security systems and Intranet and Extranet.

For the effectiveness of a DMS, an Egyptian website developer believes that, in general, issues such as robust, usability, availability, and reliability and user-friendly are issues that need to be considered when developing each of DMS components. He said:

“Each of the system components needs to demonstrate a kind of robust, usability, availability, reliability and user friendly. And of course user friendly and usability need to be well maintained especially in the website as it is the window which deal with customers” (Egyptian IT developer and software company owner 2010).

7.1.1.1. The hardware

As for the hardware quality, Touregypt forums hold discussions among members, moderators and the owner of the system about problems related to Touregypt server and networks. These discussions shed light on the importance of hardware quality on creating users' impressions on the reliability of a DMS, for example, the following extract is a tourist post in Touregypt forums, he said:

“Trouble started when we had large volumes of traffic including large number of photos and avatars which the system could not cope with” (AD-Touregypt forums).




Commenting on this post an IT developer said:

“Probably, such problems relate to hardware, or Internet connection. If it relates to the Internet connection, the bandwidth needs to be increased. And, if it is a hardware problem, it can be fixed with what's known as replications¹⁰ and load balance¹¹, these can be two ways to increase the website reliability and availability” (IT developer 2010).

¹⁰ As the IT developer said: replications are to make many copies of the website so as if any has a problem, a copy that is safe and sound is exist.

¹¹ As the IT developer said: load balance is distributing traffic between different copies of the website so as to not have a delay caused by intensive traffic.

Also, the following posts hold another example on how tourists' usage is affected by the Touregypt server's inferiority.

Ahmed Hassan	 Mar 9 2008, 03:06
Group: Members Posts: 29 Joined: 19-April 07	Hello guys been trying to visit touregypt.net for some times now since yesterday and the website seems down. any Info?? N.B : Is there any relation between Touregypt forums and touregypt.net? thanx
Joerg	Mar 10 2008, 11:29 AM
Group: Root Admin Posts: 1,179 Joined: 10-November 05 From: Cologne - Germany	Actually the main server is down for three days now. This fact affects http://www.interoz.com:8080/~5/login http://www.touregypt.net/ http://205.160.12.249/touregypt/ www.interoz.com Coz the forum system is on the IPB server, it`s not affected. As many of our regular members attain to the forum via the Tour Egypt / Message button, they could not get access. In the future you should store the direct link to the forum http://www.touregyptforums.com in your <i>favourites</i> folder to get one-level access. It`s been the first time I`m sort of glad our forum system is hosted off on the Invision server. 
Irma	Mar 11 2008, 05:16 AM
Group: Members Posts: 13	sorry to see it is still down, more than 4 days now, I miss the Luxor news. Irma, Netherlands
Inky	Mar 14 2008, 10:41 PM
Group: Members Posts: 21 Joined: 25-	hi all, i've had a few probs getting on Touregypt.net but i kept trying every 10 mins or so & managed to get on each time. I've just tried now & it's working fine. debbie 
Touregypt forums, Thread name: Touregypt.net Down?	

7.1.1.2. The website

The stakeholders of Touregypt regarded the quality of DMS website as a significant aspect of effectiveness. According to local tourist enterprises, the website is the window of the DMS on the Internet; if it is reliable and well-visualized, this can encourage prospective tourists to stay longer on the website which may lead to purchasing decisions. Conversely, bad quality websites are likely to prevent viewers reaching purchasing decisions, and this negatively affects local suppliers in achieving the financial profits. Many of Touregypt users (tourists and service providers) talked

about the weaknesses of Touregypt effectiveness focussing their views on deficiencies in website quality, as shown through the following extracts and forum posts:

“As a website [he talked about Touregypt], I think it’s a weak one. It’s not consistent with the new e-marketing technology. Its interface, picture quality and information update are weak if compared to other websites like the one of Dubai, there is a big difference” (interview with a manager in a large travel company, member in Touregypt, 2009).

“Okay all you clever guys. From the home page I cannot get to the photos.....what's up.....?” (Goldie, a post in Touregypt forums).

“According to me, for a website to be effective, the following two components must be in place: website design. Whenever we [he means as tourists] view sites on the Internet we see a flash appearing as an advertisement of other sites. I can click on this flashing website and if I like it I will view it. If I don’t get attracted, I’ll close it. It takes no more than 30 seconds. Depending on the Internet speed you view the page and close it. If a website attracts me for a certain reason I’ll open it and view it [...] [Another component was the promotion of the website on the search engine – see the extract at the end of the Website discussion] I don’t think that Touregypt, as a site, markets itself. If it doesn’t market itself well, those who market themselves on this site won’t be successful” (sales manager in a large travel company, member in Touregypt, 2009).

“Good and bad [this is her answer about a prompt of the researcher on how she finds her experience with Touregypt]. Four or more years ago, under the old system, the simple one, and things worked better and more smoothly. Then the owners started to mess with it and "upgrade" it (their words), and simply made it MORE complicated and LESS reliable. The system was down for periods of time [...] it seems it [it refers to the website without fixing its problems] was left to some long-term and loyal members (Jeorg included) to pick up the pieces and keep things running as best they could. This unfortunately resulted in a driving away many

old/long-term members. Myself included” (e-mail interview with a tourist, Touregypt forum member ‘Karen’, 2009).

Reflecting on the above extracts, system users linked the website quality to web interface and design, ease of navigation, ease of use, visibility, availability and reliability.

The visibility of DMS website on the search engine is another issue that has been raised as a negative influence on Touregypt effectiveness. A number of local tourism businesses, from the large and small companies, believe that website visibility on the search engine can be either support or hamper DMS service providers from achieving the will profits. Explained his view, a sales manager in a large travel company said:

“According to me, for a website to be effective, the following [...] must be in place. The promotion of this website [Touregypt]; it’s not when I say I am Touregypt that everybody will find me. As a website, where do I advertise myself? Are advertisements posted on international websites, on which I can depend to advertise my site, or do I depend on travellers to type in Touregypt or tour in Egypt and the site will appear in front of them? I don’t think that Touregypt, as a site, markets itself. If it doesn’t market itself well, those who market themselves on this site won’t be successful” (sales manager in a large travel company, member in Touregypt, 2009).

7.1.1.3. System content and information

The findings revealed that the Touregypt received positive reviews on the quality of the system content and information. However, the quality of Touregypt information has been criticised for two reasons; no recent updates and no language varieties on the website. Lacking language variety on the website has captured the attention of service providers more than tourists. The reason can be because, services providers would prefer to target more than English speakers on the Internet through Touregypt website. Also, UNCTAD (2005a) reported that one of the considerate principles of the effectiveness of DMS is proposing:

“Content in the languages of targeted tourism markets and customize the layout and content in the light of the targeted market” (2005a, p. 159).

As for the importance of content and information quality and the frequent updates, the following groups of extracts demonstrate different stakeholder groups' perspectives in this respect.

For example, the following post of Touregypt forums demonstrates two views on the good quality of content and information of Touregypt, However, it can be noticed the infrequent information updates as the Guest_janicerc cannot reach Touregypt forums administrator through the e-mail address that published in the official website.

Guest_janicerc	May 21 2006, 09:04 AM
Guest	<p>Hello Tour Egypt (and members) - tried contact you through the website 'contact email' but it came back. [.....]</p> <p>I am a magazine editor and was impressed by one of the articles I saw and the photos posted. The BCA (British Community Association) is an NGO in Egypt [.....]</p> <p>I was asking if we could print some of the content on your website if we gave credit to the author/photographer? Either over the next couple of month or in the future? [.....]</p> <p>This is my first visit to your site and discussion board. Janicerc 😊</p>
Karen In Egypt	May 21 2006, 01:54 PM
Group: Members Posts: 390 Joined: 17- November 05	<p>Hi Janice! I haven't seen you since we ran into each other at a British Embassy "do" a few years back... I'm glad to see you're still at the helm of the BCA! You've certainly tapped into an excellent resource here at Tour Egypt - as you've seen for yourself, there are some very talented writers on board! I'll send you a private message giving you the site administrator's correct e-mail address so you can contact him direct regarding your request. Cheers! Karen</p>
Touregypt forums -Thread name: Contact Tour Egypt, Need contact details	

“Touregypt is a good system. Its weakness is the updates, if you see Hotels information these are the same from years ago. Also numbers of new places are existed but did not appear in the website. They [Touregypt] have over 25000 pages on their website, full of good information, but no updates” (owner of a small travel company, an active member in Touregypt project, 2009).

Nomad	Feb 11 2010, 12:11 PM
Group: Members Posts: 11 Joined: 11-November 05 Member No.: 18	[.....] It's now my first port of call regarding travel to and within Egypt. I'm one that would like to promote choice on the net, but Trip Advisor forums has some clout these days and hotels and travel companies can fall at the drop of one bad review there. Touregypt forums are now just a meeting place for several regulars who have put up with little feedback and support from the people who own it. I'd very much like to see Touregypt back at the top as the original idea was sound, but its fallen by the wayside of late. I've always looked here for advice but not at the moment which is a real shame and I hope it can regain some lost ground. But the longer Touregypt sits in the doldrums with no updates, the quicker it falls into obscurity.
Touregypt forums – thread name: “Hello all”	

Neilk	Mar 8 2010, 10:51 AM
Group: Members Posts: 292 Joined: 20-January 07 From: north Yorkshire, Uk	Just viewed the pre-finished tour Egypt website. Very comprehensive, modern looking and easy to get around. [.....] anyway well done neilk
Touregypt forums - Thread name: New Website.	

“DMOs should guarantee the credibility of the system by providing unbiased information and offering an easy-to-use, attractive website”(UNCTAD 2005b, p. 13).

Therefore, DMS website content and information need to be comprehensive and present reliability, creditability, usability and unbiased information In order for the system to be effective from stakeholders' viewpoint.

7.1.1.4. System security

Providing a DMS with a *multilevel security system* found to be a key principle for the effectiveness of Touregypt as expressed by one Egyptian IT developers who said:

“A very important factor is that, we have to have a multilevel security system; [he then mentioned the first level as follows] the system has to have a multilevel authentication, which means that each one use the system [he means of the management team] needs to have a password

and ID. And each one should have a particular authority according to the level he is in. That was the first thing, the second thing [he means the second thing in the multilevel authentication] is the management team should use the security information that has been gathered from the first level and then to know who, Did what, when? This [the previous discussion] is for the management team. Second, keep the people information safe, we have what is named as 'data encryption' for the data when moving, to protect it from being theft. Third, security level against the Hackers, this is to protect the system from breakthroughs" (Egyptian IT developer and software company owner, 2010).

Given the above extract, a multi-level security system is needed for effective DMS; these levels concerning:

- The security on the level of administration and staff: the management team should be able to know about the website staff activities; *who, did what, when.*
- The security of users' (tourists and service supplier) information: DMS need to show a quality in protecting members' information, especially if the system is providing direct transactions. Otherwise, user's experience will be fraught with problems, affecting the DMS's reputation as a reliable and trustful system.
- Protecting the system and users from hackers, spammers and bugs. The experience of Touregypt, as shown in the following tourists' extracts, proved that hackers and spammers problems had a negative impact on users' satisfaction. This led user to be reluctant to trust the system and to doubt Touregypt's effectiveness.

The following extracts highlight the negative influence of the poor Touregypt system security on user satisfaction, system reliability and truthfulness, and consequently on system usage.

fnc	Oct 24 2007, 02:35 AM
Members Posts: 10 Joined: 23-October 07	He [he means a tour company that has responded his distributed tour request] responded to the request for quote through your website. Are there other members not on web list but members of the aetbi?
Kelly	Oct 24 2007, 04:47 PM
Admin Posts: 46 Joined: Oct. 06, From: Texas	If they are receiving the tour leads and are not listed on our member page, they are receiving them illegally and should not be trusted.
Spark man	Oct 24 2007, 08:09 PM
Admin Posts: 775 Joined: 22-November 05 USA	How does that happen? [.....] I'm wondering if it is some kind of disgruntled employee issue or has the contact page software/database been hacked?
Joerg	Mar 11 2008, 10:52 AM
Admin Posts: 1,179 Joined: 10-November 05 Germany	It has been one year now but no comment up to now. Things are becoming critical as posted here Would someone please see to it eventually.
Touregypt forums - thread name: Vienna Tours, don't see them listed	

hoppitycow	Mar 13 2008, 04:55 PM
	I received this email and am not very happy about it. This person got my email address through Tour Egypt. Does anyone know how to block these people from sending out unwanted emails? I am Rallier Arkidy. Good day to you. Request to assist me transfer an inherited money and assist me come over to your country to continue my education; I know how surprise this letter will be to you [.....]
Joerg	Posted on: Mar 13 2008, 04:38 PM
	First of all, the scammer has been removed. Unfortunately not until he had sent 78 PMs to our members.[.....] if you really got this message via email the system is under threat of a serious security hole, because you've set your email access private [.....]
Touregypt forums – Thread name: How To Avoid Unsolicited Emails?	

Karen in Egypt	Posted on: Dec 13 2006, 09:34 PM
Group: Members Posts: 390 Joined: 17-November 05 From: Giza pyramids, Egypt Member No.: 35	[.....] I actually like this new format and have no problems using it at all. However it has been consistently fraught with bugs, spammers, hackers and other nasties that have totally made it a royal pain on occasion. Not to mention the fact that we lost a lot of old... OOPS! ... I mean dear long-term members who had neither the time nor inclination to learn the new system. So basically, I personally don't mind taking a step back in time and going back to the old system, as long as (i) it works properly, and (ii) you can keep the spammers, hackers, pervs and loonies out, and keep the real (and valuable) members in!!!! 😊 Karen In Egypt (member since 2001)
Touregypt forums - Thread name: Old Forum, Who wants to convert back <i>Note: Karen has no longer an active member in Touregypt as she mentioned during her corresponding with the researcher of this study. The loyalty that kept her as a member in year 2006 has been obviously affected by the problems she mentioned in her post (to review part of Karen's email in this regard, go to section 7.2.1.2.</i>	

According to the above extracts, Touregypt has faced *critical* security problems. Tour requests that distributed through Touregypt should be distributed to just the members of the system. Conversely, tourists received replies to their tour requests from many of non members travel companies. The system of Touregypt and its users


suffered from this problem for several years and tourists expressed confusions and dissatisfaction. The above extracts were posted in the years 2007 and 2008; tourist and system moderators have been discussing the same security problems in Touregypt forums until 2010 (Appendix 4 can be reviewed for details showing the researcher's own experience with Touregypt system security problems).

Furthermore, it worth mentioning here that according to 'Karen in Egypt' (see above), tourists prefer the DMS website to be reliable and easy to use with a good security system, rather than a new well-designed website which is complicated and not well secured. Therefore, in addition to ease of use, website security is an issue that needs to be considered in relation to DMS qualities.

7.1.1.5. System networks: Intranet and Extranet

The findings have revealed that it is important for the effectiveness of DMS to be connected to an Intranet and Extranet systems; this is in order to improve stakeholders' communications and information exchange.

The external systems or Extranet is the network that connects the DMO to other service suppliers. Authorized partners in this case are capable to access specific data and change their product information whenever they wish. DMS may need to provide the tourism suppliers with the opportunity to update their own product information, which can be happen through the adoption of Extranet. Discussion about the influence of information updates on the effectiveness of Touregypt project has informed the importance of having Extranet (see Section 7.1.1.3). Extranet will help provide up-to-date product information which will, in return, increase the reliability of the website and the provided information from the perspectives of tourists and the local service providers.

Joerg	 Mar 7 2008, 10:51 AM
Admin Posts: 1,179 Joined: 10- November 05 From: Cologne - Germany	Hi Kelly, since you are the only one from interoz [the management company of Touregypt] visiting the forum on a regular basis, would you please investigate so that this matter can be resolved as soon as possible. Our members are increasingly irritated. There is mounting evidence that there must be a leakage in the Request a Tour System. More and more members are complaining about replies to their request from tour companies not being listed as AETBI members. Significantly those companies undercut the quotations of the legal competitors. To name a few: Rotana-Egypt Travel Traveleg.com [.....] Correct travel: http://www.touregyptserver.com/_sgg/f10000.htm All Season Tours: www.goegypt.org Five star Egypt/Five star travel Vienna Tours Asfour Travel is listed below but how come it's not listed in the ratings forum? http://www.touregypt.net/aetbi/members.htm Thanks for your help. Rotana Egypt Travel Traveleg.com [...] are listed by now. A comment on this matter would be highly appreciated
Touregypt forums – thread name: Request A Tour Form, Shady Third-Party-Replies	

As for the Intranet, it is an internal network for organization staff, through which the authorized staff can exchange information. Lacking an Intranet seemed to influence the Touregypt management staff in communicating with each other, circulating and exchanging information. As evident in the above post, Touregypt forum moderators were talking about security and administration stuff on board and complained about the difficulties of communicating with the web master and other Touregypt staff. Having an Intranet helps staff to discuss problems and exchange information away from the system users (tourists and service providers), which may negatively influence users' views on the system, especially if the management company do not adequately respond to its moderators, as happened when Joerg (Touregypt forum moderator) asked Touregypt managers for modification and has got no reply.

7.1.2. Communication and service quality

Given that a DMS is an online system which connects tourists, local tourism enterprises, and DMOs, the results of this study proposed that having constant quality communication and services among these three parties (tourists, service providers and DMO) can positively influence the effectiveness of DMS (see Figure 21). Optimizing interaction and offering customers support and timely responsiveness services are key principles for DMS service quality. The following demonstrates implications of Touregypt experience on the quality of communication and service.

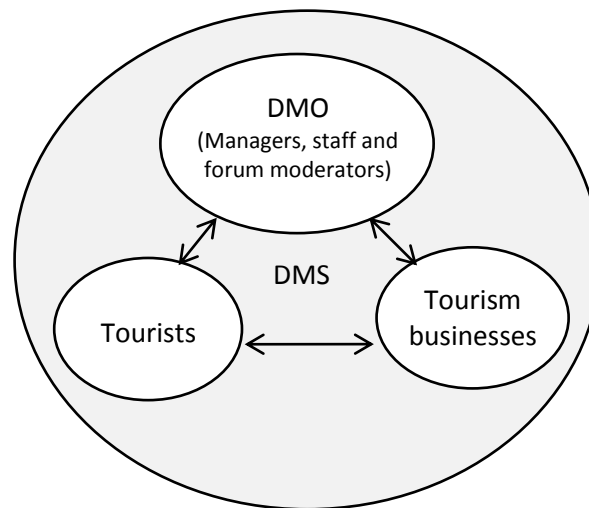


Figure 21: The connection between the main parties of DMS

7.1.2.1. Quality of communication: establishing rapport, availability and responsiveness

According to the Touregypt experience, both the local tourist businesses and tourists need to have quality communications (e.g. availability, responsiveness) with each other and with the DMO, in order to be able to improve the mutual understanding and adequately solve problems. The following two subsections present examples in this regard from stakeholders.

7.1.2.1.1. Quality communication between Touregypt Management and tourists

‘Well-moderated’, ‘friendly’, and ‘willingness to help’ characterised tourists’ descriptions to the strength of Touregypt forums and moderators. The following extracts demonstrate the positive influence of quality communication (quality and prompt response) on tourists’ views about the system:

“Strengths [of Touregypt]: The community - i.e. members who contribute and keep it running” (interview with Karen – Touregypt forums member, 2010).

“It's [Touregypt forum] friendly, people know each other, and the admin is taking good care of the system keeping it tidy. You feel like home” (interview with Hegab - Touregypt forums member, 2010).

“I am not an expert in systems and such things. Touregypt is the first forum I have ever joined [.....] A friend (Egyptian, though living abroad) sent me the link to Touregypt to show me a recipe. I started reading other parts of it, including the "message centre", and I found it interesting. After a while I registered and started asking questions [.....] I like the idea of people, both Egyptians or foreigners living there, sharing their knowledge about the country, traditions, habits, etc. Besides, most of the members and admin seem to be very friendly and willing to help” (interview with Federica - Touregypt forums member, 2010).

Although tourists expressed their satisfaction with the communication and services of Touregypt forum moderators, tourists have criticised the bad quality communication of some local tourism providers, as well as either the late or the non-response of Touregypt Management Company. Tourists of Touregypt complained of poor quality communication with Touregypt Management staff. Tourists believe that well-moderated and friendly forum atmospheres are not enough, and there is a need for other parts of the Management Company to be involved. One of the tourists (her ID in the forums is Jane Akshar) said, when asked by the researcher about Touregypt strengths and weaknesses, *the ‘well-moderated’ forum is strength*. However, she then added *“there is a need for more management involvement; sadly the owner has opted out”* (interview with Akshar – tourist member of Touregypt forums, 2010).

Asserting the same view about the bad communication of Touregypt Management Company with tourists and moderators of the forums, many unanswered questions from both tourists and forums moderators to Touregypt Management Company (the owner and other staff) were pending in the forums for months up to years with no answer. For example, the following post presents appeals asking Touregypt owner or staff to be involved in the forum discussions, answering and solving tourists’ problems (for details on the poor communication between the Touregypt forum moderators and the Management Company, see Section 7.1.1.5).

Joerg	Aug 11 2009, 03:48 PM
Admin Posts: 1,188 Joined: 10-November 05	Jimmy, [the owner and webmaster of the Touregypt project] Irrespective of technical issues, my primary concern is: Will the editorial content remain unaffected (unbiased) by commercial interests, and will the forum stay neutral and independent?
Joerg	Nov 9 2009, 11:09 AM
Admin Posts: 1,188 Joined: 10-Nov. 05	Still waiting for an answer.
Sparkman	Nov 12 2009
Admin Posts: 774 Joined: 22-Nov. 05, USA	Me too.
Touregypt forums, Thread name: Hello All	

Jimmy Dunn	Feb 23 2007, 01:40 PM
Admin Posts: 200 Joined: 8-November 05	I would like to know which one's replied that are not on the list. Such companies should clearly be avoided. We are investigating how they might be hijacking the information.
Joerg	Mar 11 2008, 11:52 AM
Admin Posts: 1,188 Joined: 10-November 05	It has been one year now but no comment up to now. Things are becoming critical as posted here would someone please see to it eventually.
Touregypt forums, Thread name: Enjoy Your Egypt Tour and Avoid Complaints, Is it a reliable operator???	

7.1.2.1.2. Quality communication between local tourism providers and online tourists

The experience of Touregypt revealed that the local tourism businesses needed to have better communication with tourists. The good communication is defined as establishing rapport, and promptly replies to tourists' requests and complaints. This is in order to create mutual understanding, demonstrate reliability, and improve online competitiveness. Based on the researcher's observation of the forums of Touregypt, it was noticed that travel companies do not contribute much to tourists' online conversations. Although browsing Touregypt forums can show a few good examples of local companies tried to establish rapport with tourists, the majority of examples revealed poor communications (see the following post for an example of negative influence of lacking rapport on tourist's reaction). The poor quality communication that some of the Egyptian local travel companies demonstrate can be related to lack

of adequate knowledge and skills of e-customers relationship management and e-marketing strategies (see Section 7.2.3 and 7.3).

STOLLIE	Mar 24 2008, 01:32 AM
Group: Members Posts: 6 Joined: 6-March 08 from: Gold Coast Australia	After reading the report on Bestway travel I am a little worried as I am organizing a tour from Australia and New Zealand for a party of 5 adults all in our sixties. It is a trip of a life time for all of us, and it would be terrible to have the problems that Bestway seem to have [...]
Best Way Travel	Mar 24 2008, 06:53 PM
Travel Company Joined: 3-March 07	At Least, you could have informed us that you plan to cancel your reservation, we hope you enjoy your tour
STOLLIE	Mar 24 2008, 11:31 PM
Group: Members Posts: 6 Joined: 6-March 08 from: Gold Coast Australia	To Bestway, SORRY, but we only received a quote from you after posting on Touregypt and e-mailed you with a few questions. At no point did we reserve a trip. So nothing to CANCEL as your records would show


7.1.2.2. Supportiveness: acting upon tourists' requests and complaints

The quick and appropriate response to user's requests and complaints was found to have an important influence on their views about Touregypt reliability and effectiveness. A manager in a large tour companies suggested that it is important that the Tourism Ministry have specific strategies for how tourist complaints should be dealt with. He emphasised that Touregypt lacks a reliable authority that can deal with tourists and local companies complaints and act upon them, such as authorities that exist for offline tourism business:

"There is a problem that can face a DMS, where the complaining tourists go, who can take a decision upon this problem. If a tourist is coming to us through a travel agent outbound, then the tourist complains to his outbound travel agent and then the travel agent takes responsibility to solve the problem with us but the online work is another thing" (interview with a marketing manager in a large tour company, not a member in Touregypt, 2009).

Asserting the same view, the following post implies that the Touregypt project does not support tourists after buying their tour through Touregypt website. This post also

demonstrates the confusion of tourists about not knowing where and to whom to present their complaints.

Bener San	Dec 29 2007, 02:11
Group: Members Posts: 3 Joined: 29-December 07 Member No.: 4,731	I visited Cairo at 19-23 Dec 2007 with my family. We stay at Cairotel during the trip and bought ticket knowing 4 star hotels. During entrance the hotel we saw 3 star panels at front desk. They put 3 star panels behind the other information panel, purpose to hide it. I couldn't believe it, and then I took a lot of front desk photos. If you want I can mail you. And I want to back money between 3 to 4 star hotel from you. [...] Please inform me what will you do. Thank you for your interest Best regards Bener Şen
Joerg	Dec 29 2007, 06:55 PM
Group: Root Admin Posts: 1,179 Joined: 10-November 05 From: Cologne - Germany	Sorry to hear about your bad experiences but you cannot hold Tour Egypt responsible for it. Your complaint is utterly misrouted here. Refer to the authorities in charge and use this form: Tourist Complaint BTW: Fleecing tourists by charging excessive commissions is common practice in Turkey too. Isn't it? 😊
Barbara Southpor...	 Jan 11 2008, 02:26 PM
Group: Members Posts: 5 Joined: 9-January 08 Member No.: 4,757	Hi, We to had a bad experience and we have tried to use this for but keep getting an error message, saying there is a fault on the page. Is this an omen? Globetrotter62
Toureypt forums: thread name: Complaints From Egypt	

Therefore, it is important for the effectiveness of DMS to have an authorized channel to act upon complaints, and equally, to announce to tourists how complaints will be dealt with, in order to avoid confusion and improve tourists' views about the system reliability.

Stakeholder	DMS effectiveness influences												
	System issues: Quality of DMS						Organizational influences						
	Components quality					Communication and service quality	Management type	Top management support	knowledge and skills	Training	Adequate funding	Regular and coherent ways to evaluate DMS effectiveness	Monitoring and keeping up to date with e-tourism developments
	Hardware	Website	System content and information	Security systems	Intranet and extranet								
Large travel companies		X	X	X	X	X	X	X	X	X	X	X	X
SMTE		X	X	X	X	X		X	X	X	X	X	X
The Tourism Ministry			X			X		X	X	X		X	
Touregypt Management Company	X	X	X	X	X	X			X		X	X	
IT suppliers /developers	X	X		X		X		X	X		X	X	X
Tourists	X	X	X	X	X	X							X
International Organization			X	X	X	X	X		X	X	X		X
The general population experts			X	X			X	X	X				X

Table 11: Effectiveness factors mentioned by/referred to by Touregypt stakeholders in relation to system and organizational influences

7.2. Finding Two: organizational influences

According to stakeholders' perspectives, organizational related influences found to be crucial for the effectiveness of Touregypt project. The following factors have been referred to by Touregypt stakeholders: the type of Touregypt management (public or private sector), top management support, IT knowledge and skills of managers and working staff, appropriate funding, and appropriate training for Touregypt staff, in both the management company and the local tourism businesses.

7.2.1. DMS management type: public and private sector involvement

Touregypt experience asserted the importance of the partnership between the public (the Tourism Ministry in the Egyptian context) and private sectors for employing an effective DMS. Stakeholders asserted that although the involvement of Tourism Ministry is important, it is not enough for an effective DMS deployment in the Egyptian context. According to stakeholders, a partnership with the private sector is needed as the private sector seems to have better knowledge and more experience in developing online marketing, e-commerce, and the new IT innovations than have the public sector, especially in the context of developing countries. Also, the findings revealed that if DMS is managed or owned by only a private sector, this may not promote the destination in the best interest of the country:

“Tourism involves many different actors from the public and private sectors. The involvement of the public sector is necessary in terms of tourism planning and policy. E-tourism strategies should be integrated within the broader framework of national ICT policies addressing ICT access and liberalization of telecommunication infrastructure, capacity building, the adaptation of the legal and regulatory framework, and trust-building issues related to online transactions.”(UNCTAD 2005a, p. 11).

A DMS that is owned and managed by either the public or the private sector is not preferred, according to Touregypt stakeholders. The public sector positive involvement increases the possibilities of formulating supportive strategies on a national level which help to effectively pave the environment for a DMS

implementation (see Section 7.3.1). Also, the Egyptian DMS experience demonstrates that in such a developing context, in which the local SMTE might lack the appropriate knowledge of DMS (And as a result they lacking the needed enthusiastic to participate in a DMS), the role of the public sector is important to help encourage the local SMTE to participate and boost their awareness, knowledge and skills (see Section 7.2.4). At the beginning of the Touregypt project, the system was a partnership between the Egyptian Tourism Ministry and a private ICT company (Intercity Oz, Inc.). The role of the Tourism Ministry, then, was to encourage the participation of the local tourism businesses as well as stimulated product advertisements on the Touregypt website. In return, Intercity Oz, Inc. was supposed to technically develop the Touregypt system. Dunn, the current owner and manager of Touregypt project, explained:

“They [the Tourism Ministry] would encourage all of the member companies to advertise on the web site, which was how we were supposed to pay for everything” (Touregypt forums, thread name: general Discussion-Hello all, 2009).

The following conversation was held between the researcher and the manager of Touregypt-Egypt branch (2008). It implies the important role that the Tourism Ministry, especially in the beginning of the Touregypt project, encouraged the participation of the local enterprises, at a time where the local enterprises had limited knowledge of the Internet potentials for their businesses. In the following extract ‘He’ refers to the Manager of Touregypt- Egypt branch, while ‘I’ refers to the researcher:

He: “Uh-huh! Yes, that was at the beginning of thinking about the project [he means Touregypt], not much people at that time had the knowledge of the potentials of working online and even many of them did not have Internet connection to their companies [he is talking about year 1995]. I was among the first in Egypt to think of that and I with Jimmy [the owner and webmaster] have got the idea of offering the project to the Ministry and we have had a very good response from them at that time. We make a seminar in the Ministry to explain our idea to all the tourist companies [...].

I: So, why have you proposed the Ministry to cooperate in implementing your idea? And why did not you do it yourself with Jimmy apart from the Ministry?

He: At that time, that was difficult to do; as I told you the general atmosphere of tourism business and the knowledge of people were not like they are now. Things got much better. Although it is not enough for the business to compete online solely, it is better than before. By then the manager of the Tourism Ministry had been conscious enough to accept the idea and work on it, but they did not do anything. Hence, we [he and Jimmy] have done the entire job”.

I: So, you needed the Ministry to achieve something like mm! We can say a credibility to encourage the local tourist business to become members.

He: Yeah, sort of...” (Interview with the Manager of Touregypt, Egypt branch, 2008).

The following extracts represent different views of stakeholders on the importance of the Tourism Ministry involvement in DMS implementation:

“being a non-profit body does not mean that the Ministry does not make any selling; the first thing the Ministry sells is the image of the Egyptian destination, and if it is been proved that this image that the Ministry sells is negatively influenced by the bad service the tourism companies provide, what the Ministry sells then will not be saleable [...] The Ministry is putting an obstacle in front of tourists, if the Ministry let them deal with many websites until they actually find the Egyptian tourism product to buy [...]. Instead, the Ministry should facilitate their buying experience, or we should not complain if we get out of the online competition” (interview with an Egyptian tourism expert, 2009).

“Many of SMTE in developing countries “operate without any technological system or have developed an information website that does not yet offer booking facilities. By integrating these SMEs into their DMS, DMOs bring them into the new e-business environment of the tourism

industry and offer them the technological tools to conduct their operations online” (UNCTAD 2005a, p. 10).

“The Ministry need to be involved not importantly in the management of the DMS, but definitely the DMS will need the support of the Ministry in fixing the surrounding problems that will necessarily drive the system to be failed. We do not talk here about if the system will be effective or not. If the Ministry did not involve, these problems will cause the system to be completely failed; there is a need that the Ministry help the tourist companies to know about the available technology and how to use it, they need to provide training, solve banking-security problems with the banking sector [.....]I do not think private management can fix this alone, or hmm, I do not know may be, but the security problem for example will need the interference of governmental body, or that is what I think.” (employee in a large tour company - non-member of Touregypt project 2009).

“The public sector is the best interlocutor to coordinate the various interests of the stakeholders and to strategically support local tourism enterprises” (UNCTAD 2005b, p. 158).

Therefore, the public sector involvement can positively support DMS effectiveness in aspects such as:

- Integrating e-tourism strategies within the broader framework of national ICT policies in order to support the implementation of DMS (UNCTAD 2005a).
- Having the power to improve the telecommunication infrastructure, building legal and regulatory framework, and working on increasing trust-building issues related to online transactions (UNCTAD 2005a; local stakeholders e.g. Managers of the large local tour companies).
- Supporting SMTE in enhancing their online businesses for better e-market competitive (UNWTO 2001; UNCTAD 2005a, 2005b)
- Creating destination image is one of the DMO objectives. DMS, then, can be used as a marketing and sales tool to support destination image (UNCTAD 2005a).

- Aiding in realizing the financial requirement of DMS development (local stakeholders).
- However, public sector should seek private sector partners that support the DMS implementation and contribute to e-tourism development in aspects such as; “the technical development of the DMS, development of new products and services (e.g. niche tourism distributors), marketing actions, information technology and funding” (UNCTAD, 2005a, p. 12).

7.2.2. Top management support and commitment

The commitment and support of the top management in either the Tourism Ministry or the local tourism enterprises was found to have a major influence on the effectiveness of the Touregypt project. According to stakeholders, top management support and commitment is important in the different stages of the system development in order to facilitate supportive decisions (e.g. supportive strategies and adequate funding).

Two examples have been derived by the Touregypt experience in relation to the negative influence of lacking top management support on the system development:

First, when the Tourism Ministry was responsible on the management of the Touregypt project, it occasionally lacked the appropriate commitment and support which negatively influenced the effective implementation of the system. For example, the extent to which the Tourism Ministry supports Touregypt has changed through the system development; Touregypt experienced support in the beginning of launching the system, and lacked it when the Tourism Ministry cut off its relationship as a responsible authority (see Section 6.1.2). As can be implied from the following interview extracts, local stakeholders considered that if the top management of the Tourism Ministry was interested in DMS application, the DMS implementation would be supported in the Egyptian context.

“Of course if it is something through the Ministry [he means a DMS implementation] it will be [he did not complete his sentence; he was thinking while speaking which from my view point means he doubted or reconsidered what he was saying], but I do not think in the ministry they

put in their minds encouraging the working online... “(owner of small tourist company, active member of the Touregypt, 2009).

“By then [he means by the beginning of launching Touregypt project] the manager of the Tourism Ministry had been conscious enough to accept the idea and work on it” (Touregypt manager – Egypt branch, 2010).

“You know, if the Ministry wants to do something, they will do it, they did not do much to the online marketing, but if they want they will facilitate everything” (sales manager in a medium size hotel, non member of the Touregypt, 2009).

Second, lacking top management support suggested to have a negative influence on developing IT applications in some of the local hotels in the Egyptian context. For example, an Egyptian IT developer said¹²

“Hotels in Egypt do not have the readiness to fund the implementation of online payment systems and the required security issues. They say: ‘developing such online systems need a great deal of pursuits and we are just a Hotel who does not interest in this loads of things, as a Hotel I do not need an online secured system for transactions, I already have my ways; tourists pay me through my bank account. And the bank, then, is responsible to implement his security system and pay for its expenses, why then I should bring such headache to myself [he imagined how a managers in Hotels think]” (interview with an Egyptian IT developer, 2009).

The above extract refers to how local hotel managers consider investing in online reservation systems in general. According the IT developer’s viewpoint, some top hotel managers do not believe that investing in online reservation system is adding to their businesses which negatively affect their participation in online systems.

¹² This is an IT developer who worked in one of the largest TO in Egypt, Travco. He is now responsible for developing the Egyptian hotel reservation system for the Egyptian Tourism Federation.

Stakeholders attributed the lack of support and commitment of the Tourism Ministry and the local tourism businesses to different reasons, such as lacking managerial IT knowledge, supportive strategies and training. Also, the factor 'top management support and commitment' negatively influenced other important factors of Touregypt effectiveness, such as funding decisions (see to Section 7.8).

7.2.3. IT/IS knowledge and skills of stakeholders

Touregypt stakeholders asserted that lacking the appropriate IT knowledge and skills of managers and staff of either the Tourism Ministry or the local tourist enterprises negatively influenced the implementation of DMS in Egypt. They attributed lacking the support and interest of top management in applying DMS in the Egyptian context to the inappropriate understanding and knowledge of the potential of e-tourism and how to deal with its development.

For example, the manager of the marketing department of the Tourism Ministry asserted that lacking IT knowledge and skills of both the Tourism Ministry and the local tourism enterprises was the reason for the decisions of the Tourism Ministry in relation to DMS implementation in Egypt, particularly the decision to cut off its relation with Touregypt as a responsible authority as well as the decision of not implementing a DMS in Egypt in the near future:

“The environment is not beneficial for developing such system [...] we [she meant the Ministry] still do not have that professionalism in the online work [...] [She then talked about the Egyptian marketing business as a whole said that] Even specialized sites like the one of the Egyptian Tourism Federation offer good options. All of these are new to us. First, a website is designed and it passes some time until someone finds out that the option of answering guest comments online can be added” (interview with the Manager of marketing department, the Tourism Ministry, 2009).

The following extracts from different stakeholders assert the negative influence of lacking appropriate IT knowledge and skills on the implementation of DMS in Egypt

“The culture, way of thinking in addition to the online marketing knowledge and skills of many of the tourism companies and Ministry’s management itself as well, all these reasons is preventing the concept of a DMS managed by the Tourism Ministry to be an effective system to the Egyptian online destination marketing” (interview with a marketing manager- a large tour company, not a member of Touregypt project, 2009).

“I do not see the Ministry’s employees have that kind of knowledge or skills to manage such system [a DMS]” (interview with a GM of a large tour company, member of Touregypt project, 2009).

“Many of the small tourism business have not got much experience especially in the online business” (interview with an employee in the Electronic Marketing Team of the Tourism Ministry, 2009).

“The small and medium tourism businesses cannot sell themselves, even on a local base, as easy as the outbound Tour Operators. In the developing country, the use of the Internet is still relatively limited. Even if it is expanded, we still lack the skills of dealing with it” (interview with an Egyptian Tourism consultant, 2009).

Also, when the researcher of this study asked the Manger of Touregypt branch in Egypt the reason behind not developing an Extranet or Intranet in Touregypt project, he attributed that to the lack of IT/IS knowledge and skills of the local tourism providers, both the SMTE and large company:

“I do not think this could be workable [he means using an Extranet in Touregypt project] for Touregypt at this stage, because a lot of the member companies do not apply these new technologies, and it is not easy to start working with it in this stage; they need a lot of practice” (interview with Touregypt Manager, Egypt branch, 2008).

Accordingly, *“The main barrier [that hampers the effective implementation of DMS] is not so much the technology but the adoption of e-business practices in operations” (UNTCAD, 2005a: 13).* Therefore, awareness needs to be raised among managers and

staff of DMO and the local tourist enterprises on the potential of DMS and how to deal with it.

7.2.4. Training

The above discussion (Section 7.2.3), on the negative influences of lacking IT/IS knowledge and skills on the effectiveness of Touregypt project shows the importance of training programs. Stakeholders asserted that to achieve an effective DMS implementation, the Tourism Ministry needs

“to foster the support and commitment of local tourism providers, and it is therefore crucial to create awareness among tourism producers of the benefits of a DMS at an early stage...” (UNCTAD, 2005a, p. 10).

Awareness and capacity building can be created “through education programmers and training in relevant fields (including ICT, web management and marketing)” (UNCTAD, 2005a, p. 13).

The preceding discussions have revealed that not only the SMTE lack the appropriate knowledge and skills for developing DMS, but also the Tourism Ministry managers lack the appropriate IT knowledge to support the development of a DMS in the Egyptian context. Therefore, training programs need to be provided to both managers and staff of the Tourism Ministry as well as the local enterprises.

In relation to training, stakeholders advocated that employing external foreign professionals to assist in developing DMS seemed to be a natural consequence to the lack of appropriate skills, knowledge and professionalism in the Egyptian context (Tourism Ministry and the local enterprises) regarding the DMS development. A number of the local stakeholders believe that the support of a foreign consultant is needed at least in the beginning of the DMS implementation; until the Tourism Ministry develops the required training facilities (see Section 6.1.2.).

“It would be better if the Ministry had been trained to such technology by such international company. I liked their presentation they said they could offer training and may be they can also help with the security issues”

(interview with a manager of a large TO, non member of Touregypt project, 2009).

Similarly, an employee in the electronic marketing office of the Tourism Ministry said:

“I have attended Tiscover presentation [...] It was better if the Ministry would have been accepted this offer and get this new technology they [Tiscover] presented to Egypt. They [the Ministry] then can get benefited from the training the international company would give to the tourism providers and the people who would work for the system. The Ministry then will be learnt how to manage such technology, and then they can cancel the membership and make their own system [he means if the Ministry reasons to not accept Tiscover offer was because it is expensive, as he do not know the exact reasons behind this decision]” (employee, E-marketing Team Office, the Tourism Ministry, 2009).

Therefore, the Tourism Ministry needs to have adequate training in order to develop the IT knowledge and skills to be able to help raising the awareness among local tourist enterprises about the potential of DMS for their business as well as providing them with the appropriate skills to effectively deal with it.

7.2.5. Adequate funding

Inadequate financial support was found to have a negative influence on the effectiveness of Touregypt project. According to the Touregypt experience, appropriate funding is needed in different stages of a DMS, such as planning, developing, training, and further following ups (e.g. monitoring and evaluating) as well as system improvements. The following extracts indicate aspects where funding is needed:

“There is a need for sufficient funding to buy the new technology, and to hire people to manage this technology and to offer training to local companies” (manager in a large tour company, not a member in Touregypt, 2009).

“New technology is expensive and good funding is needed if you talk about the effectiveness of a DMS. Good funding is not just for buying the technology, but you need it also for buying hardware, networks, server, security systems or membership in an international security system. Also you will need it to hire engineers for maintenance” (Egyptian IT developer, 2009).

“The establishment of a DMS depends on the costs involved and the capacity of DMOs to run different functionalities, depending on the technological, human and financial resources available, and the capacity of the various stakeholders” (UNCTAD 2005b, p. 158, 159).

A General Manager (2009) in a large tour company suggested that funding problems facing Touregypt project may hinder adequate developments and marketing plans:

“However, if I am able, through Touregypt, to get in touch with travel agencies in England, America, the Netherlands, then it might be of interest to me. [...] It [Touregypt] has to market travel agencies as I’ve already said, however I don’t think that Touregypt will be able to do this in the right way, because this need a lot of money. Touregypt has to attend a lot of exhibitions, conferences, and to be in contact with the Tourism Promotion Board (TPB) in order to find out which are the tour operators interested in Egypt. It has to compile a large database [he means of these travel agents and TPB]” (interview with a General Manager of a large Tour Company, member of Touregypt project, 2009).

In relation to the negative influence of inadequate funding on Touregypt effectiveness, there were two issues dominated the discussions of stakeholders. The first is lacking IT managerial knowledge and support which negatively influenced funding decisions (for details on the influence of top management support on DMS funding decisions, see Section 7.2.2). The second issue was the negative influence of weak financial revenues (benefits) on funding decisions. The last two extracts of Dunn (the owner and webmaster of Touregypt project) at the end of Section 6.1.2. are examples of the negative influence of the inappropriate financial revenues on the adequate funding (and consequently, the effectiveness) of Touregypt. the two extracts imply that the

poor financial recourses, which are produced by lacking profits and poor capital, lead not only to lacking updating and improvements, but also to Dunn's decision on radical changes concerning Touregypt activities (turning the Touregypt project from a DMS to a normal private Tour Operator; see Section 6.1.2).

7.2.6. Monitoring the rapidly changing e-tourism market and keeping up-to-date with new trends

According to Touregypt stakeholders, the rapidly changing e-tourism market and online tourist characteristics are two important external environmental influences that need to be monitored and complied with, *"otherwise we [the Egyptian DMS] will get out of the competition easily"* (interview with an Egyptian tourism expert, 2009). Discussions of stakeholders revealed that keeping a DMS up-to-date with the new e-tourism trends is important to satisfy the keep changing online tourist characteristics and requirements. This would require DMOs to monitor the e-tourism changes and consider its implications on the development of their DMS. This is in order to sustain the online tourism competition. The UNCTAD reported:

"In order to market their tourism products efficiently, destination and tourism providers should keep abreast of technological developments and standards" (2005a, p. 13).

In relation to this discussion, Section 7.1.1.3 has cited tourists' views on the negative influence of not keeping up-to-date with the changing technology and trends of the e-tourism market (see Normad extract Section 7.1.1.3).

7.2.7. The need for regular and coherent ways to evaluate DMS effectiveness

Results demonstrated that coherent and regular evaluation strategy that considers different views of stakeholders is crucial for the effectiveness of DMS. Stakeholders' practices regarding the evaluation of Touregypt effectiveness seem to be deficient. It was observable that different stakeholders do not assess Touregypt on a regular basis, and they have no clear vision or coherent strategies on what and how to evaluate. Touregypt Company, for example, relied on informal evaluation to only perspectives of tourists, disregarding the views of other stakeholder groups (e.g. local businesses).

Likewise, no formal evaluation to the needs of local tourism business has been conducted in the beginning of launching Touregypt project, as mentioned by many of the members (more on this discussion is presented in the Section 7.3). Most local businesses, on the other hand, rely only on financial profits as an effectiveness indicator. Therefore, tourist satisfaction, system usage, and financial profits are the indicators used by Touregypt stakeholders to evaluating effectiveness. The following section sheds light on the approaches used by the local tourism businesses, the Tourism Ministry and the Touregypt Management Company for assessing the effectiveness of Touregypt:

7.2.7.1. Financial indicators

Local tourism businesses regarded financial profits as the main objective of their business; accordingly they evaluate the effectiveness of their participation in a DMS on the base of financial revenues:

“If I have to assess its [Touregypt] effectiveness, I’d say it’s around 80%-85%, i.e. in terms of generated business [.....]They [Infomark and Exmedia], however, charge you \$300 every 3 months. This is too expensive compared to the service they provide. I’d say that, in this respect, Touregypt is better. In terms of price and request guarantee, Touregypt is better. If we take “Infomark”, for example, we were members of this site for 2 months. There weren’t many clients generated from this site, therefore I cancelled our contract” (tourism manager in a small tour company, a member of Touregypt, 2009).

“Mainly, it is to attract tourists [he talks about what he is looking for when evaluating the effectiveness of a DMS]. Also the most important thing as well to have credibility in dealings; tourist requests should be real. We are also more concerned with groups than with individuals. [.....] The main purpose is to have a good amount of work to enable us to be interested in participating. Because this concept [he means DMS] is a time consuming; it takes us a lot of time and effort from the employees. We then will expect to have a very good number of tourists in return of our

participation” (interview with a marketing manager in a large company, non member of Touregypt, 2009).

It worth mentioning here that, as revealed by Section 7.6, some of the local tourism businesses are alerted to other benefits of a DMS project than the financial ones e.g. technological knowledge and staff training. However, they evaluate the effectiveness of DMS, solely, on a financial basis.

7.2.7.2. System usage and tourists satisfaction

The Management Company of Touregypt project relied on informal indications for evaluating effectiveness; which is based on the perspective of its online tourists. For example, tourist’s feedbacks on Touregypt website and forums, the feedback of tourists on Trip Advisor, and Touregypt ranking on the search engine ¹³and the traffic to Touregypt website (system usage), Touregypt manager said:

“Not really, I do not evaluate the project on a regular basis, but Touregypt is working well [I prompted, how he knows that the system is working well. He then said] we bring a lot of tourists to our members. We get feedback from tourist and try to solve their problems or at least giving them advice about how to sort them out. Furthermore, we try to communicate interactively with tourists and let them feel that we are personally concerned about their satisfaction. Besides, we get feedback also about Touregypt from Trip Advisor. But we did not formally evaluate Touregypt from the perspective of the members” (interview with the Manager of Touregypt, Egypt branch, 2009).

Although Touregypt Management Company regards Touregypt as a system that work for the sake of both Egyptian local tourism business and tourists, they evaluate the system effectiveness only from the perspective of online tourist disregarding the views of other system users from the local tourism businesses.

Also, it was surprising that Touregypt Management do not perform any kind of formal tourist surveys, rather they only rely on informal feedback as illustrated above.

¹³ This information is noted in an unrecorded interview with Touregypt manager-Egypt branch.

Touregypt used to evaluate their system on the basis of tourist usage. They consider the number of website visits and the number of tourists' requests that are distributed through their website to the local tourism businesses. Touregypt Management, in their usage evaluation, departs an important aspect of usage evaluation which is the number of actual completed reservations (DeLone, 2003), which is the focus of the local tourist businesses (see Section 7.6). Also, about the distributed requests, managers of Touregypt considered how many requests are sent but not how many of them are being processed and turned to real product buying. Many of the local businesses asserted that not all the requests resulted on real tour reservation, *"The percentage of achieved materialization of requests, however, is zero or very low"* (interview with a General Manager in a large tour company, members in Touregypt, 2009).

About the Tourism Ministry, when it was responsible for Touregypt management, it did not perform any regular formal evaluation effectiveness. In response to question regarding system evaluation, the Manager of the marketing department of the Tourism Ministry (2009) said:

"our website [the current official website¹⁴ of the Tourism Ministry] got a prize from Berlin for its quality, we do not make regular evaluation, but are developing the website nearly all the time by increasing its information, we are developing new sections and new modules right now, you will see it soon on the web" (interview with the Manager of the Marketing department, the Tourism Ministry, 2009).

Reviewing the literature has revealed that the regular evaluation of DMS is important to improve system effectiveness (DeLone and MacLean 1997, 2003; Molla and Licker 2001; Richie and Richie 2002). However, the experience of the Touregypt project revealed that DMO and Touregypt Management Company use inappropriate ways of evaluating effectiveness, based on partial of stakeholders perspectives (i.e. tourists), and informal and irregular evaluation. DMS needs to be regularly evaluated from different stakeholders' views, and not just tourists. This is in order to keep pace with

¹⁴ The official website of the Egyptian Tourism Ministry is www.egypt.travel/

the changing needs of system users (e.g. local businesses and tourists), and consequently improve the system activities and processes in return.

7.3. Finding three: clear vision and planned strategies

The Touregypt experience revealed that having a general vision and clear strategies on the development of e-tourism in general and the implementation of DMS in particular are important aspects for running an effective system. In this respect, the Tourism Ministry role, as a public sector authority, is important to set new strategies and regulations and modify existing ones on the national level. A strategy is defined by the Oxford Dictionary as *“a plan designed to achieve a particular long-term aim”*. A strategy is a high-level approach that should set out where we are now, what we are aiming to achieve in a particular period of time, how we plan to get there, and how we will know that we have achieved our goals. Accordingly, DMO need to formulate strategies that serve the different development strategies of DMS. Formulating strategies need a clear vision and appropriate knowledge of the needs of an effective DMS implementation. According to the UNCTAD asserted that (2005a) this vision should include:

“Existing and potential market segments, tourism evolution and prospects, consumers’ tourism-related Internet usage and tourism behavior to be able to translate them into web-based technologies and adequate services [languages, presentation, and content] and marketing campaigns” (2005a, p. 9).

Discussions of stakeholders revealed that lacking appropriate visions and strategies concerning the implementation of DMS in Egypt context have negatively influenced the effectiveness of Touregypt project. According to the marketing managers of the Tourism Ministry, these two negative influences lead the Egyptian context to not be beneficial for the implementation of a DMS. An employee in the Electronic Marketing Team of the Tourism Ministry said that because the Ministry does not have a specific e-marketing plan to follow, he and other employers in the Electronic Marketing office depend on their personal efforts in their work.

According to local tourism enterprises' views, having unstable and unclear strategies and rules have negatively influenced Touregypt effectiveness, since these have lead decisions of the Tourism Ministry top managers to be taken according to personal preferences. A Tourism Manger in a small tour company said:

“As you know, most governmental decisions are taken based on personal preferences. They do not follow stable plans; we have the plans changed by changing the managers” (interview with a tourism manger, small tour company-member of Touregypt, 2009).

Similarly, the following two extracts hold two groups of stakeholders' comments on e-tourism strategies and regulations in the Egyptian context:

“we do not have mature and stable e-tourism strategies to be implemented and not to be changed with every management; each management has its ways and tools, moreover, each manager has his ways and tools” (interview with a tourism expert and ex- head of the Egyptian Tourism Promotion Authority, 2009).

“The tourism business environment in Egypt as a whole is a big problem; rules and laws keep changing, sometimes without giving enough time for one to manage his business to cope with the new change. For example, legislation was enacted not long time ago obliging the companies to deal with euro instead of the dollar, and this has caused a lot of problems and complaints. Neither did the Ministry give enough time for the tourist companies to get their commitment settled, nor did it provide a schedule for the decision which cannot be executed next day” (interview with the Manager of Touregypt, Egypt branch, 2008).

Given the above discussion, DMOs need to have planned strategies for the DMS deployment and potential development. Also, not only clear strategies and rules are important, but also the stability of policy is needed for effective DMS. The following sub-sections shed light on issues raised during stakeholders' discussions about what should be considered for formulating supportive DMS strategies and rules.

7.3.1. Including the e-tourism strategies in the national framework of policies

E-Tourism strategies need to be included in the overall framework of national ICT development policies; this is in order to improve the possibilities of implementing an effective DMS. Developed an e-tourism plans on a national level should work as a base for implementing DMS in the destination. According to the UNCTAD (2005a):

“E-tourism strategies should be integrated within the broader framework of national ICT policies addressing ICT access and liberalization of telecommunication infrastructure, capacity building, the adaptation of the legal and regulatory framework, and trust-building issues related to online transactions” (2005a, p. 11).

The following are discussions of a number of issues raised to be considered when formulating e-tourism strategies in general and DMS strategies in particular. These are considering destination and stakeholders resources and capacity, formulating appropriate and detailed regulations, in addition to consider different stakeholders perspectives.

7.3.2. Considering resources and capacity of destination and stakeholders

Having a general e-tourism strategy considering the resources the destination have and the abilities of its stakeholders is the first step in DMS implementation, as UNCTAD emphasized:

“Defining a tourism strategy based on destination resources, consumers’ demand and the interest of local communities is the first step to embarking on an e-tourism strategy, and starting to build the image of the destination, using a DMS as a promotional tool and eventually as an online reservation system [...] The establishment of a DMS depends on the costs involved and the capacity of DMOs to run different functionalities, depending on the technological, human and financial resources available, and the capacity of the various stakeholders” (2005b, p. 158, 159).

7.3.3. Having appropriate and detailed regulations

Having appropriate and detailed regulations that cover different situations facing DMS implementation and processes are important aspects for the effective deployment of DMS. According to the following two extracts, two of the Tourism Ministry employees believe that because there are no detailed regulations for DMS application, it was difficult to develop an effective DMS in the Egyptian context:

“The rules are general and not detailed, still, it is not matured enough to sort out the real problems” (interview with the Manager of the Hotels Department in the Tourism Ministry, 2009).

“Many of the small tourism business have not got much experience especially in the online business, for example: they may say they are committed to such quality in providing the service then they did not get committed to what they said [...] till now the Ministry does not have detailed rules to observe and control such practices, especially in the online work [I prompted; so if you developed a DMS we will need to have new rules to organize relations and processes then] definitely, and also many existing rules will need to be changed” (employee in the Electronic Marketing Team office, the Tourism Ministry, 2009).

In addition, according to the following extract, a general manager of a large travel company raised issues that Touregypt project strategies lack, despite their importance for effective DMS from his perspective:

“[...] are these complaints, however, supported by the Ministry of Tourism? Can a certain measure be taken against a person or company? Is there a committee in place governing such issues? Are there criteria according to which companies are selected as members of Touregypt.com? [...] Are there any criteria for selection of DMS members, like tourism license class A, membership in international organizations guaranteeing the company’s credibility, or with other bodies mainly Tourism Promotion Board of course. I don’t think that when we applied for a membership we were selected

according to any criteria” (interview with a general manager in a large travel company, member in Touregypt project, 2009).

7.3.4. Considering stakeholders’ needs and perspectives

Considering stakeholders’ needs and perspectives when creating the appropriate strategies and relative regulations was found to be a key element for the effectiveness of DMS. The UNCTAD asserted that there is a need to listen to stakeholders’ views, especially in the early stages of DMS planning. The UNCTAD (2005a) reported:

“In order to set up a DMS, Governments and DMOs should organize consultative meetings with relevant partners. [...] In order to define the strategic, administrative and technological aspects of the DMS, feasibility studies should be conducted, and a consensus on objectives, targets and relevant actions should be reached by all stakeholders” (2005a, p. 11).

Thus, understanding the needs and listening to the views of stakeholders is important for formulating effective strategies; otherwise the risk will be that what DMS offers may not match the needs of consumers or system end users (UNCTAD, 2005a, p. 9). The following subsections give examples of the deficient practices of Touregypt in this regard.

7.3.4.1. The local tourism providers business needs

Although Touregypt Management Company said that Touregypt is developed to serve the interest of the Egyptian tourism companies and improve their online business competitiveness, the local large companies articulated that Touregypt project does not serve their business needs. Two managers of the local large tour companies explained the negative influence of the marketing strategy of Touregypt project on the participation of large tour companies, saying:

“Are advertisements (of Touregypt) posted on international websites, on which I can depend to advertise my business, or do they depend only on travellers to type in Touregypt or tour in Egypt and the website of Touregypt will appear in front of them? I don’t think that Touregypt, as a

system, markets itself well. If it doesn't market itself, those who market themselves on this site won't be successful [.....] its purpose is to establish relationships between tourists and local travel agencies, but not between travel agencies inbound and out bound which is the interest of my company" (interview with a sales manager in a large Tour company, Touregypt member, 2009).

"However, if I am able, through Touregypt, to get in touch with travel agencies in England, America, the Netherlands, then it might be of interest to me.[.....] It [Touregypt] has to market travel agencies as I've already said" (interview with a general Manager of a large tour company, a member of Touregypt, 2009).

The above extracts imply that formulating strategies that did not serve the needs of some local tourist enterprises leads to mismatching targets and outcome; as a result some of the stakeholders lack interest in taking part in the Touregypt project.

7.3.4.2. Tourists needs and perspectives

Discussions presented in Section 6.1.2. highlighted the importance of considering tourists' needs and perspectives when formulating strategies for the development of DMS components and services (e.g. the website, information quality and security issues). In relation to this, the UNCTAD (2005a) indicated a number of issues that need to be considered when formulating strategies of development regarding tourists' needs (see the extract of the UNCTAD Section 7.3).

To sum up finding three, according to different stakeholder groups, having matured, stable and clear strategies, relevant and detailed rules as well as considering stakeholders needs and perspectives are critical aspects of DMS effectiveness.

7.4. Finding four: control

Investigating the Egyptian DMS experience revealed that lacking the adequate control of the Tourism Ministry over the tourism business in general and the Touregypt project in particular have negatively influenced the effectiveness of Touregypt as well as the general implementation of DMS in Egypt. Stakeholders attributed three reasons

for inappropriate control of the Tourism Ministry: lacking clear and detailed strategies and procedures to guide the Ministry's decisions; lacking appropriate knowledge and ability to control; and the negative influence of powerful bodies (see Section 7.2.3 for the influence of lacking capacity on DMS effectiveness, and Section 7.4 for details on the relationships between control, power and strategies). A manager in the Tourism Ministry articulated:

“The rules are general and not detailed, still, it is not matured enough to sort out the real problems [...]As you know, most governmental decisions are taken based on personal preferences. They do not follow stable plans; we have the plans changed by changing the managers” (interview with a manager in the Tourism Ministry hotels department, 2009).

According to some stakeholders' views, the lacking of adequate strategies and procedures, which in turn might have led to personal preferences, has given the chance for some powerful bodies to influence the Tourism Ministry decisions concerning the implementation of DMS in Egypt. Commenting on lacking the power to control, a manager in the Tourism Ministry hotels' department (2009) said *“The issue of Touregypt is complicated and dominated by power and capital”*. Also, the Touregypt Manager (Egypt branch) said:

“It is obvious to people in the field that important tourism businessmen are having the power to control the market and raise the prices, whereas the Ministry does not have enough control” (interview with Touregypt Manager, Egypt branch, 2008).

Informed the above interpretation about the importance of having adequate control and its relation with inappropriate power, strategies and procedures, the following subsections present examples of three decisions of the Tourism Ministry and their implications on DMS effectiveness.

7.4.1. The influence of lacking control on DMS effectiveness

There are two decisions and one attitude that have been taken by the Tourism Ministry in relation to Touregypt project and the general implementation of DMS in Egypt. These are:

- Example one: cutting off the Ministry's responsibility for relations with the Touregypt project, delegating management to a private IT company. This decision may inform the importance of DMO control over the system, as discussed below;
- Example two: the unresolved problem between the Tourism Ministry and Touregypt managers about omitting the Ministry's name from the Touregypt website as a responsible authority;
- Example three: not accepting the Tiscover international company's offer to develop a DMS under the supervision of the Egyptian Tourism Ministry. This decision informed the importance of DMO control over the Tourism business sector as a whole; this is in order to pave the way for an effective DMS to be implemented.

These decisions can inform the discussion of the negative influence of lacking control on the effectiveness of DMS; Implications of the above three decisions will be presented in the following and evidence will be derived from different stakeholders' narratives.

7.4.1.1. Implications of the first example

A problem has happened in Touregypt between an online tourist and Touregypt website management from a side, and a tour company and the Egyptian Tour Operators' Association from the other side. On account of this problem, the Tourism Ministry announced cutting off its relationship with the Touregypt project (see Section 6.1.2.). According to stakeholders, this decision was attributable to the lack of control over the tourism business.

For example, the Marketing Manager of the Tourism Ministry articulated that the hospitality environment is hard to control, and thus the Ministry preferred to protect

its name from a possible bad product services which, according to her, *cannot be guaranteed to the fullest in the Egyptian context*; she said:

“The field of hospitality is not that easy to be controlled because there are many agents to be considered. Yes, there are the unions, the people in charge of complaints in the Ministry. All tourists’ complaints have to be communicated through channels. However, still there are things that cannot be guaranteed [...] if I put the Ministry name, tourists then will think it is a guaranteed service. Suppose the Ministry provided a tourist with information about a hotel and he books in; afterwards, suppose he had even a small problem. He can say the Ministry provided me with wrong information and encouraged me to go to this hotel. How am I going to deal with the guest?” (Interview with the Manager of Marketing Department - Tourism Ministry, 2009).

Critical of the Ministry’s view, an Egyptian expert in tourism said:

“Whatever the reasons are, getting out of Touregypt project is not a correct decision. The Ministry, with what it has of a supervision authority, should find where the deficiency lies and in turn tackle it, instead of acting passively” (interview with an Egyptian Tourism Expert, 2009).

Also, a number of local stakeholders’ groups agree that the Ministry decided to cut off its relation with Touregypt in order to *avoid having troubles*, which implies inadequate control and authority:

“The Ministry preferred not to get involved this is in order to avoid troubles, for their peace of mind” (interview with the Manager of Touregypt-Egypt branch, 2009).

“Exactly, In short, the Ministry did not want any troubles [...] You see, the Ministry did not want any problem, that’s why they removed Touregypt from under their umbrella. This decision, by the way, is not a good decision from my view point [...] they say as you know if the wind comes from the door, it is better to close it [this is an Egyptian saying. It means if

you have troubles coming through; close its way to avoid it. He means this is what the Ministry did when they disconnect it relations with Touregypt, to avoid troubles]" (interview with a tourism manager in a small tour company, member of Touregypt project, 2009).

Moreover, according to Jimmy Dunn (the owner and webmaster of Touregypt), the Tourism Minister had been pressured by the Egyptian Tour Operators' Association to solve the problem in favour of the involved tour company and omit the tourist complaint from the forums (see Section 6.1.2.). When the Tourism Ministry could not convince the private IT Company to do so, the Minister took the decision of cut off its relation with Touregypt.

Given the above discussion, the Ministry decision could imply a lack of control as it was as a response to one or all of the following different three pressures: as a response to the Egyptian Tour Operators' Association pressure; as a response to the idea of avoiding troubles (as mentioned by local tourism businesses); or/and as a response to the difficulty of controlling (regulating) the tourism business environment in Egypt.

7.4.1.2. Implications of the second example

After departing from each other, the connection between Touregypt and the Tourism Ministry had not finished. This is because the Managers of Touregypt project insisted on attaching the name of the Ministry to their website as a responsible authority; see Figures 22 and 23. The Tourism Ministry kept negotiating about removing their name from the Touregypt website. After years of negotiations (2007 to 2010) the Tourism Ministry was be able to remove its name from only the front page of the website, and not the inside pages. The Manager of Marketing Department of the Tourism Ministry commented:

" The problem is that, in Touregypt they do not want to omit the name of the Ministry as a responsible authority. There are still some negotiations about that matter. And we will see what will happen, they [she means Touregypt managers] will have to sort it out very soon I think" (interview with the Manager of Marketing Department, the Tourism Ministry, 2008).

The above story can be interpreted in either two ways; firstly, the Tourism Ministry has an interest in deleting their name and is unable to do that. Thus this can imply a problem of lacking appropriate control or adequate power to do what they see as the Ministry's right. The second possible interpretation is that the Ministry did not have an interest or make a serious attempt to omit the Ministry's name from the Touregypt website. The Ministry then may lack the adequate IT knowledge, as having the Ministry name as a responsible authority in a system which is not associated with the Ministry can be deceptive to tourists, and can create serious troubles. Remembering that, avoiding troubles was one of the reasons the Ministry provided to explain its decision of cutting the relations with Touregypt project (see Section 6.1.2.). If the second interpretation is right, it would be said that the lack of IT knowledge, in addition to the shortage in clear strategies for the development of the Egyptian online tourism market (according to employees of the Electronic Marketing Team office – Tourism Ministry and a Manager in the Tourism Ministry, 2009), all of these factors may lead the Tourism Ministry decision-makers to take decisions which may not complement each other. Inconsistent decisions may negatively influence the effectiveness of the Egyptian online tourism market in general, and the effectiveness of DMS implementation in particular.

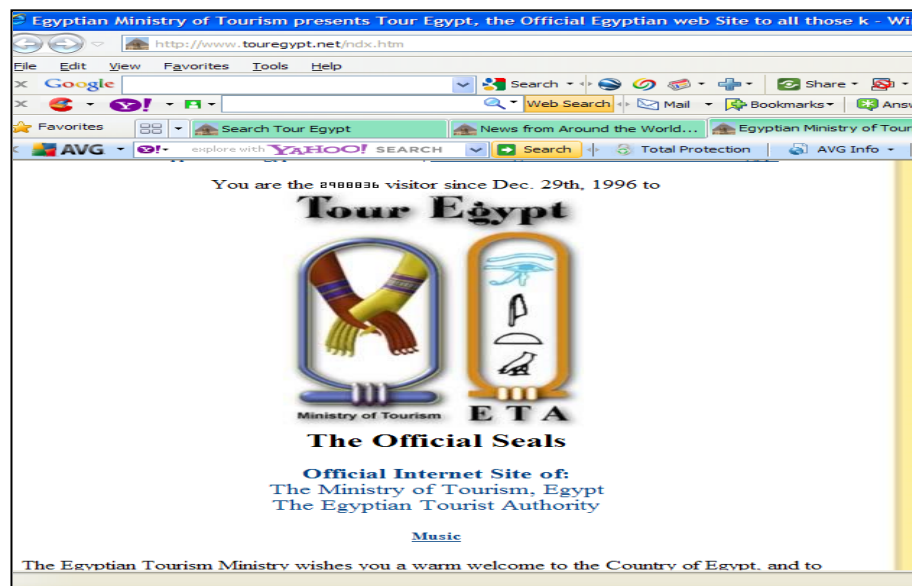


Figure 22: Screen clipping of <http://www.touregypt.net/>. It demonstrates the name of the Tourism Ministry as a responsible authority to Touregypt website (taken in 2010)

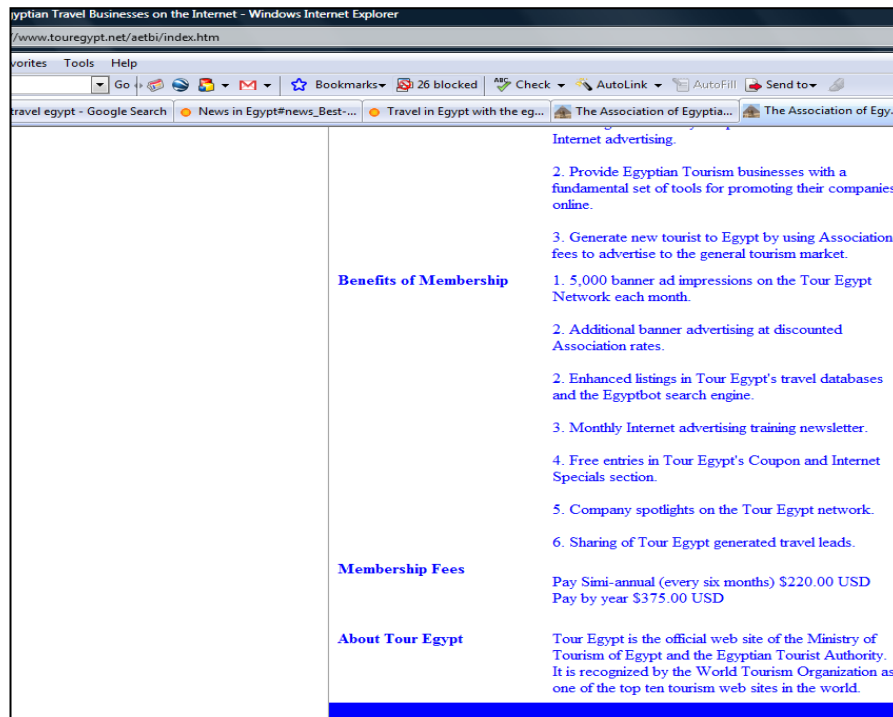


Figure 23: A snapshot of Touregypt.net website highlighted the official authorization of the Egyptian Tourism Ministry (taken in 2009)

7.4.1.3. Implications of the third example

The third decision of the Tourism Ministry was about not accepting the Tiscover company (Australian suppliers for DMS developments) offer to develop a DMS under the supervision of the Egyptian Tourism Ministry. This offer was after the Tourism Ministry cut off its responsibilities with Touregypt. The Tiscover Company made a presentation in the Tourism Ministry to introduce how they can help in developing DMS in the Egyptian context. The Ministry then decided that it was not suitable to accept this offer without explicitly explaining the reasons (see Section 6.1.2.). However, the Manager of the Tourism Ministry Marketing department explained her views on reasons behind the top management's attitude towards Tiscover's offer. According to her the reason was that the Egyptian environment these days is not suitable for implementing DMS project and it is hard to regulate (review the extract of the Marketing Manager of the Tourism Ministry Section 7.4.1.1). Thus, the Ministry was not sure they can shape the Egyptian tourism business environment and pave the way for effective DMS implementation.

Therefore, concerns about lacking control have negatively affected the Ministry decision in relation to Touregypt project and the implementation of a DMS in Egypt. Results also asserted that, for the Tourism Ministry to be able to adequately control the system there is a need to create a framework of proper strategies, plans, and procedures to help in verifying, organizing and directing the activities and processes, and relationships of DMS application.

7.5. Finding five: trust

The Touregypt experience revealed that building mutual trust among stakeholders has an important influence on DMS effectiveness. The DMO need to consider building trust issues while developing a DMS, and work on the aspects that can avoid mistrust among stakeholders (e.g. in adequate security systems). The UNCTAD reported:

“Tourism involves many different actors from the public and private sectors. The involvement of the public sector is necessary in terms of [...] addressing ICT access and [...] the adaptation of the legal and regulatory framework, and trust-building issues related to online transactions” (2005a, p. 11).

Touregypt experience asserted that lacking trust in DMO (the Tourism Ministry in the Egyptian context) has negatively influenced stakeholders’ willingness to participate in the system. It has been noticed during the fieldwork that many of local enterprises have a problem in trusting the Ministry of Tourism to work fairly or effectively for their benefit. This can be seen either from direct extracts as presented below, or from some stakeholders’ impressions when the idea of a possible DMS to be managed by the Tourism Ministry was mentioned during the interviews. For example:

“[...] as you know the Minister is an owner of a private tourist company, oh God, can you imagine! Of course, if I were him and even if I am not corrupted - I do not mean that the Minister is corrupted, but even so - half of the market will go directly to my company even if I am not the actual current chairman of the board of directors, but this is how things going, or what? [He means what I think of what he says]. How can I then trust the

Ministry to support me?” (interview with an owner of a small tourist company, member of Touregypt, 2009).

“Say I work on a hotel where we need a certain occupancy rate. How do I get it? On the phone! If we had, however, an updated computer system, we would automatically get the occupancy rate. There should be a scenario of trust. Hotels may ask why you need to know my occupancy rate. In order to calculate my insurance, taxes, etc. [this is how he believes the hotel might think] [...] [they also might think that] They [he means the Ministry] need it in order to harm on me. There is a lack of trust which damages all gears in the machine” (interview with a Manager in the Tourism Ministry, Hotels Department, 2009).

Mistrust is a result of various aspects of a DMS, such as lacking adequate strategies and regulations; inadequate control over the system; and dominating powers (see Sections 7.3 and 7.4.1). Furthermore, mistrust has resulted in a reluctance of some of the stakeholders to participate in or use Touregypt project. For example, the findings of Section 7.1 imply that inadequate security systems and inferior services tend to undermine the trust of tourists in Touregypt’s effectiveness, which in turn influenced the satisfaction and usage of users.

7.6. Finding six: achieving benefits

Achieving benefits was found to be a critical influence on Touregypt effectiveness. The kind of benefits achieved is a key issue for stakeholders to decide on participating in a DMS. Given that DMS is a large web-based inter-organizational information system that includes various stakeholders groups, each of these groups need to achieve benefits that meet their expectations; otherwise, usage will be negatively influenced.

According to Touregypt’s owner, the lack of financial profits was the main cause of spinning Touregypt to a normal travel company instead of maintaining the system as a DMS (see Section 7.2.5). Therefore, achieving financial benefits seems to be a key factor for Touregypt effectiveness from the perspectives of Touregypt Management Company. Agreeing with Touregypt Management Company on the negative influence

of inappropriate financial benefits from Touregypt effectiveness, a manager of a medium travel company articulated:

“Would this website be worthy if I paid thousands of dollars every month on the expenses and the subscriptions this website would need to be developed. [...] whatever the size of the company, no company will pay money to invest in something and then go down, we are still far behind in such technology. [I then prompted, so it is not about funding but about being not skilled enough in using the new technology? He then said] it is a circle lacking the skills will not lead the website to be valuable and then if the website is not beneficial, as a tour company, I will not have the interest to invest in such system” (interview with a manager in a medium tour company, member of Touregypt project, 2009).

Furthermore, alongside achieving financial benefits, increasing tourist flows was referenced by many of the local tourism businesses as a key desired benefit from participating in a DMS. The local tourism enterprises believed that increasing tourist flow was an important issue in deciding upon the effectiveness of a DMS.

Reflecting on the stakeholders’ narratives, local tourist enterprises tended to refer to DMS benefits from the perspective of the final system outcome. All tourism enterprises’ main purpose is to increase tourist numbers in order to achieve financial profits. Although increasing tourist flow and gaining financial benefits dominated the discussions of local tourism businesses about the benefits of DMS, this does not decrease the importance of other benefits that the local businesses believe they can achieve from participating in a DMS project. However, local stakeholders believe that all other benefits are important only as a way to enhance the final business aims, which are increasing tourist numbers and consequently achieving financial rewards. Other benefits that were mentioned by stakeholders were:

- Using DMS as a marketing tool for DMO as well as local tourism businesses
- Offering new technology to local tourism enterprises and providing training on how to compete online.

- A source of reliable, unbiased information which can provide communications on tourists' experiences and new market trends.

7.6.1. Having shared vision and accurate expectations on potential benefits

Findings revealed that lacking shared vision on the potentials of DMS benefits among stakeholder groups has negatively influenced Touregypt effectiveness. Shared vision can reduce mismatching between stakeholders' expectations and the actual realized benefits. Therefore, it is found important that DMO should have a discussion with the involved stakeholders about DMS targets and the potential benefits that can be achieved to each of the members. This conversation about DMS benefits needs to be held in the beginning of the system planning and development, in order to reach a consensus on objectives and system targets among stakeholders, the UNCTAD articulated:

"In order to set up a DMS, governments and DMOs should organize consultative meetings with relevant partners. [...] feasibility studies should be conducted, and a consensus on objectives, targets and relevant actions should be reached by all stakeholders" (2005a, p.11).

About the negative influence of mismatching visions on targets and benefits, Touregypt can draw an example in this regard as follows. Investigating the Egyptian DMS experience revealed that some of the local tour companies have specific targets when participating in Touregypt that do not fit with the system targets.

Given the discussion and extracts in Section 7.3.4, a number of local large tour operators, either from the members or the non-members of Touregypt project, expressed their lack of interest in participating due to the different market targets; large tour companies target tourist groups while Touregypt targets individuals. Therefore, Touregypt marketing strategy and, consequently, the system outcome does not fit the needs of large tour companies, and so they become uninterested in participation (as presented in Section 7.3.4.1).

7.7. Finding seven: environmental influences

The Touregypt experience revealed that the environment in which the project was implemented influenced its effectiveness. Two types of environmental factors were referred to by stakeholders; internal and external environments. The internal environment refers to the destination environment, while the external environment refers to the outer destination or international environmental influences such as characteristics of online tourists, and IT innovations in general. This section presents the discussion of internal or destination environmental influences on Touregypt effectiveness, while Section 7.2.6 shows the discussion on the influence of the external environment and the importance of monitor the changing of e-tourism trends, and keeping the DMS up-to-date. This is in order to satisfy the keep changing characteristics of online tourist. It worth mentioning here that the following subsections are not the only internal factors that have been emerged in this study, other factors that can be related to both the internal destination as well as the organizational factors have been discussed in the above sections (e.g. top management support and commitment, vision and planned strategies, IT/IS knowledge and skills, see Sections 7.2.3, 7.4., 7.3, and 7.1.). Such factors have been discussed in such sections (e.g. Section 7.2.3) by taking into consideration their interrelationships between the destination and organization effects. For example, Section 7.2, which discussed effectiveness factors in relation to organizational effects, mentioned the need for the national framework of policies to include a clear vision and detailed strategies on the e-tourism development in general and DMS in particular.

7.7.1. Internal destination environment: the need for a supportive context

Discussions of local stakeholders in the public and private sectors proposed that the unsupportive environment is one of the main obstacles facing the development of DMS in Egypt. They agreed that the Egyptian context still needs to be prepared for an effective DMS deployment. In the view of destination influences, stakeholders referred to influences such as DMS professionals and consultants, technological infrastructure, and culture as explained in the following subsections.

7.7.1.1. Availability of IT and DMS professionals in the Egyptian context

According to stakeholders' perspectives, the availability of appropriate IT and DMS professionals seems to be a critical issue for securing professional guidance to effectively implement a DMS. According to the Manager of the Tourism Ministry's Marketing Department, as a sequel of lacking DMS professionalism, the implementation of DMS has been negatively influenced:

"We [she means the Ministry] still do not have that professionalism in the online work [...] [She then talked about the Egyptian marketing business as a whole said that] Even specialized sites like the one of the Egyptian Tourism Federation offer good options. All of these are new to us. First, a website is designed and it passes some time until someone finds out that the option of answering guest comments online can be added" (Manager of Marketing Department, the Tourism Ministry, 2009).

Stakeholders asserted that the professionalism needed for effectively employing DMS in the Egyptian context is not just concerned with the availability of quality IS technicians (creating a website and database for the system), but also the availability of different kinds of professionals in aspects of DMS development (e.g. in e-marketing). However, local stakeholders believe that the Egyptian environment does not lack IT/IS professionals, but expertise in DMS development, as seen in the following extracts:

"There are good developers and technicians in Egypt. Moreover, Egypt exports them to the Arabian companies abroad, it worth mentioning that Egypt and Indian are the top list countries that export technicians to the Arab countries. So in Egypt we do not have a problem or a lack in this matter. The problem may be is that the customers [the business companies] do not know what they want from the system. when I set with one of them making his company a website he asked me on many things to do in his website some of them are impossible and others are very expensive, they do not know what they want and how things cost I can make a website with 100 dollar and I can make it with 100000 dollar" (interview with an owner of a software company, 2010).

“A developer, he can just help me to establish a website, but what after! it is more important to have the expertise of how to market this website, what do I need my website to have and what keywords, and other things that can help my website to be in the online top ranking [he means to get his website in the search engine first group of results]. Good developer and good IT marketing expertise, both together can establish effective online business” (interview with an owner and manager of small travel company – an active member of Touregypt project, 2009).

Therefore, although that the Egyptian environment can produce IS professionals, this seems to be insufficient for the effective implementation of DMS in the Egyptian context, according to stakeholders. Stakeholders believe that DMS is a new technology and a new concept that needs not just professionals in IS in general, but specific professionals in developing DMS.

In parallel, the majority of stakeholders who tended to reference the lack of DMS professionals and skilled and knowledgeable staff (see Section 7.2.3) mentioned the need to employ foreign consultants as a natural consequence of the shortage of indigenous DMS professionals.

7.7.1.2. Employing foreign DMS professionalism and consultancy: secure DMS professional support

Informed by the above discussion on lacking appropriate DMS professionalism for employing DMS in Egypt, many of the stakeholders revealed that seeking external assistance and employing foreign DMS consultants is important to guide an effective DMS implementation. In the Egyptian context, in which it is difficult to find the required knowledge and skills to implement an effective DMS, it is important for DMO to secure proper expertise when designing, implementing and maintaining a DMS. The following extracts show different views of stakeholders on supporting the employment of DMS specialists:

“It is better that the Ministry make a contract with an international company to manage such DMS [...] the Ministry do not have a target to search how to achieve it; it is a country of individual efforts and individual

strategies...”(interview with a sales manager in a large tour company, a member in Touregypt, 2009).

Also, an employee of the electronic marketing team in the Tourism Ministry believes that the Ministry will need external specialist support, at least until the Ministry and its employees get the appropriate training in order to be able to manage the system and its developments later on by themselves:

“I have attended Tiscover presentation [...] It was better if the Ministry would have been accepted this offer and get this new technology they [Tiscover] presented to Egypt. They [the Ministry] then can get benefited from the training the international company would give to the tourism providers and the people who would work for the system. The Ministry then will be learnt how to manage such technology, and then they can cancel the membership and make their own system [he means if the Ministry reasons to not accept Tiscover offer was because it is expensive, as he do not know the exact reasons behind this decision]” (interview with employee in the Electronic Marketing Team, the Tourism Ministry, 2009).

Quite the opposite, the Tourism Ministry believes that external expertise in developing a DMS is not a practical option. The Marketing Manager of the Tourism Ministry articulated that the Egyptian tourism business environment is complicated, and different than the more developed countries' business environments. Therefore, in her opinion, developing a DMS with external expertise cannot fit in the Egyptian context. Contrary to the Tourism Ministry's view, seeking the support of external DMS expertise does not mean, as the Tourism Ministry claims, implementing a technology that is not suitable for the Egyptian context. External DMS specialists can secure designing and implementing a DMS that is tailored to the Egyptian environment. For example, Tiscover, a well known international company for implementing DMS, proposes tailored DMS which can be applied in stages according to the capacity of the tourism business in a destination. Similarly the tourism international organizations support outsourcing DMS specialists in developing contexts. The World Tourism Organization (UNWTO) for example stated that DMOs may consider seeking external help in a number of elements, including:

- Preparing an e-business strategy.
- Building specific components of the DMS.
- Project managing the implementation.
- Organizing the data collection and input of the products and editorial.

It worth mentioning here that three sections of the preceding discussion on effectiveness factors informed the need for securing external expertise, the first of which is the discussion on IT/IS knowledge and skills (Section 7.2.3); the second, the discussion on the proper involvement of the public sector in a DMS project (Section 7.2.1); and the third, the discussion on the shortage in availability of DMS professionals in the tourism destination as a whole (Section 7.7.1.1.). These three discussions indicated that both the Egyptian Tourism Ministry and the local tourism businesses lack the knowledge and skills needed to design and implement an effective DMS.

Ultimately, reflecting on Touregypt stakeholders' perspectives, securing DMS expertise is important for implementing an effective DMS. This expertise can be obtained externally if the DMO finds that the tourism destination cannot provide proper professionalism to effectively develop DMS.

7.7.1.3. Technological infrastructure

Stakeholders agreed on the significance of having quality technological infrastructure to the effectiveness of DMS. Although views about the sufficiency of the Egyptian technological infrastructure have differed, the majority of stakeholders agreed that Egypt has a good technological infrastructure to develop an effective DMS. Moreover, one of the IS technicians believes that even if Egypt has not got quality infrastructure for technology, DMS still can be effectively implemented in Egypt:

“The available infrastructure in Egypt from my view point is good and reliable for DMS development. But if we need additional excellent quality, regardless if our infrastructure is good or not, the server does not need to be in Egypt. Another higher technological country can host our DMS server [.....] or we [he means the DMS company] can have two servers; the server that deals with tourists can be hired in an external good quality

technological country, and a server of the tourism business can be built in Egypt” (interview with an owner of an IT company in Egypt, 2010).

However, stakeholders who believe that Egypt has not got an appropriate technological infrastructure to develop an effective DMS attributed their views to that Egypt is still not mature enough to host such a big system as DMS, and its technological infrastructure is limited and inadequate for the latest tourism business activities. A general manager in a large travel company said:

“In England and other developed countries, there is a great infrastructure one can count on. One can find a car waiting for him in front of the airport with the key inside, etc. There is a whole system in place. This is not the case in Egypt. Our infrastructure is still under development. Therefore, this is the way I can treat customers. If a group goes directly to the tour operator they’ll be able to book a bus. They’ll be able to download information. We don’t have this information because we don’t have such an infrastructure. For example we introduced GPS for the first time only two months ago. It has not even been activated yet. Therefore, independent travellers face a lot of difficulties here. We cannot provide information on how to cross a street from point A to point B” (interview with a general manager of a large tour company, 2009).

As has been noticed, the groups which viewed the Egyptian technological infrastructure as to be inappropriate mostly related this to the definition of technological infrastructure (e.g. having quality connection to the Internet and download speed). On the other hand, stakeholders who believed that the technological infrastructure of Egypt is immature viewed infrastructure as concerned with information and other networks such as GPS. Replying to these claims on what technological infrastructure is concerned with, a website developer said:

“The appropriateness of technological infrastructure depends on what you need to judge on it for. There are infrastructures concerned with mobile networks and other concerned with systems such as DMS development.

Having infrastructure to develop GPS is different than the requirements of implementing DMS [...] I see Egypt has a proper technological infrastructure to develop DMS effectively” (interview with an owner of an IT company in Egypt, 2010).

To conclude, local stakeholders differ in their views on considering the Egyptian technological infrastructure as one of the obstacles that might face the development of an effective DMS in Egypt. However, they agree on the importance of having a quality technological infrastructure in DMS effectiveness.

7.7.1.4. Cultural issues related to the effectiveness of DMS

Findings affirmed that destination culture is an important issue that influences the ability of destinations to accept and deal with a DMS application. The majority of interviewees in the public and private sectors asserted that DMS and other e-applications (e.g. e-business, e-marketing, e-tourism and e-commerce) are still new concepts to the Egyptian culture and are not yet well understood. It has been noticed in interviews that the feeling of the majority of Egyptians towards dealing online is not certain; some tourism managers (either in small or large companies), in addition to local citizens, do not trust communicating and purchasing online. This in turn can affect the way people accept DMS applications and online business, and how they deal with it.

Local tourism businesses and Tourism Ministry employees expressed concern about employing online systems and consequently depending on such online systems in their work. These concerns may spring from the lack of skills and required knowledge on either the potentials of online applications or on how to manage them. Some tourism business managers prefer to “*stay on the safe side, and work through outbound tour operators*” (a manager in a large tour company, 2009), as long as it makes profits. Tour operators’ deals and packages are known to be the ordinary way of making business by the Egyptian travel companies, especially in the medium and large companies. In this regard, the following two extracts explain different groups’ viewpoints:

“It is not a part of our culture to buy online. We [he means in the Egyptian culture] do not buy online [...] the matter is to what extent is this type of buying is spread in the country, and then we can measure if it is effective or not” (interview with an Egyptian tourism expert, 2009).

“The culture, way of thinking in addition to the online marketing knowledge and skills of many of the tourism companies and Ministry’s management itself as well, all these reasons are preventing the concept of a DMS managed by the Tourism Ministry to be an effective system to the Egyptian online destination marketing” (a marketing manager in a large tour company – non-member of Touregypt project, 2009).

Thus, local stakeholders asserted that the Egyptian culture had a negative influence on the employment of DMS in the Egyptian context. Stakeholders attributed their views to that accepting and using DMS can negatively be influenced by the Egyptian culture and people’s customs and way of thinking. Furthermore, local stakeholders deemed that DMS and e-commerce are still two new concepts that need to be fed in to the Egyptian culture. This is in order to pave the environment for accepting and effectively dealing with DMS and general online applications.

Stakeholder groups	DMS effectiveness influences							
	Vision and Planned strategies	Control	Trust	Achieving benefits	Environmental influences			
					Availability of IS and DMS professionals.	Employing foreign DMS professionalism and consultancy	IT infrastructure	Cultural
Large travel companies	×	×	×	×	×	×	×	×
SMTE	×	×	×	×	×	×	×	×
The Tourism Ministry	×	×	×	×	×			×
Touregypt Management Company	×	×	×	×				
IT suppliers/ developers				×	×	×	×	×
Tourists			×	×				
International organization	×	×	×	×	×	×	×	
The general population			×					×
Experts		×			×			×

Table 12: Effectiveness factors mentioned by/referred to by Touregypt stakeholders in relation to strategies, control, trust, benefits, and environmental influences

7.8. Relationships among DMS effectiveness influences: as emerged from the interpretation of stakeholders' views

The experience of DMS in the Egyptian context highlighted possible various relationships between effectiveness influences. Factors are related to each other; through direct or indirect relationships, and through either an influence, or an interaction relationship. The influence relationship in this study refers to the type of relationships in which a factor has an impact on or lead to another factor (an influence relationship can be recognized, for example in Figure 24, by “→”). On the other hand, an interaction relationship refers to a mutual influence between two or more factors. An interaction can be recognized by the shape “↔”. It worth mentioning here that the preceding discussions in this chapter shed light on the need for considering the impacts and interactions of DMS effectiveness influences on each other in order to improve the understanding of Touregypt effectiveness, causes and effects. The emerged relationships between Touregypt effectiveness influences are revealed in the following Figure 24:

1. Arrow 1 (Figure 24 and Figure 27) refers to an influence relationship between service quality and IT/IS knowledge and skills: a relation between the quality communication and stakeholders IT/IS knowledge and skills has emerged in Section (7.1.2). It was suggested that poor IT/IS knowledge of staff and managers of tour companies influence the quality communication with online tourists.
2. Arrows 2 (2a, 2b and 2c) refer to an interactive relationship between Top management support and IT knowledge and skills. This interaction resulted in another two influences relationship between Top management and Training from a side and between Training and IT knowledge and skills from the other side; see Figure 24: Stakeholders' perspectives asserted a possible interactive relationship between top management support, and IT/IS knowledge and skills. The discussions in Sections 7.2.2, 7.2.3 and 7.2.4 demonstrate that the lack of IT/IS knowledge and skills in the top management level is affecting the support the DMS has in a destination and vice versa. On the other hand, if there is a support from the top management level in the Tourism Ministry to a DMS

implementation, the Tourism Ministry then should provide training and help in increasing local tourism providers knowledge on DMS (as happened in the beginning of the Touregypt project under the Tourism Ministry's authority; see Section 7.2.1). Thus, Touregypt stakeholders asserted that training can increase IT/IS knowledge and skills, and in turn IT/IS knowledge and skills of top management possibly leads to top management support. In addition, the proper support of the top management influences the availability of training involved stakeholders such as managers and staff of the Tourism Ministry and the local tourism enterprises.

3. Arrows 3 (3a and 3b) refer to an influence between IT knowledge and skills from a side and both the need for regular and coherent ways to evaluate DMS effectiveness, as well as the need to monitor the system and keep it up-to-date with the rapidly changing e-tourism market from the other side. The Egyptian DMS experience asserted that the lack of IT/IS knowledge on the importance of following up a DMS development is a matter that negatively influences both; the regular and coherent evaluation to the multiple stakeholders' views, this is in addition to properly monitoring the system performance to keep up-to-date with the changing technology of the e-tourism market (return to the discussion in Sections 7.2.7 and 7.2.6).
4. Arrows 4 (4a and 4b, see Figure 24) refers to an influence between top management support and deciding upon adequate funding for DMS development. Also, this relation between top management support and adequate funding can imply an indirect relationship between IT knowledge and skills and adequate funding, as follows: according to Touregypt stakeholders' views, lacking the adequate IT managerial knowledge of the Tourism Ministry and the local tourism enterprises leads to lacking the support of top management when deciding upon funding a DMS (see Section 7.2.5). Hence, lacking IT managerial knowledge leads to lacking the support of top management, which is in turn affecting decisions on adequate funding.

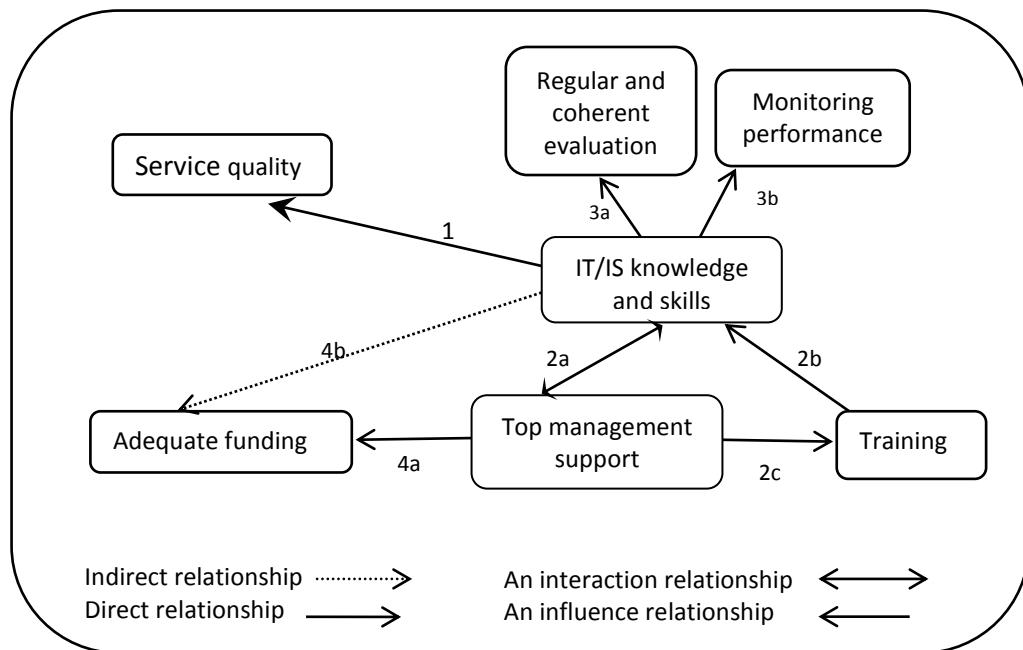


Figure 24: Part of Figure 27 referring to arrows 1- 4b

- Arrows 5 (5a, 5b, 5c, 5d and 5e), Figure 25, refer to a number of factors that have a relationship, either an influence or an interaction relationship, with “trust”, as follows: the preceding discussion revealed that mutual trust among stakeholders can be regarded as a sequel to a number of DMS effectiveness influences such as: having adequate control and power, having a vision and planned strategies, and the qualities of DMS (service and information quality). Accordingly, the findings revealed a possible interactive relationship between trust from one side, and usage and user satisfaction from the other.
- Arrows 6 (6a and 6b; see Figure 25) refer to a relationship among DMS qualities (system issues) as follows: having an intra and extra net has emerged as an important influence on the quality of information and content. Also, an intra and extra net are found to have an influence on Touregypt service quality. Returning to discussions of Sections 7.1.1.5 and 7.1.2, it is been found that an intra and extra net can possibly improve the communication between Touregypt online staff, local service providers, and Touregypt Management Company. This is because an intra and extra net will facilitate the circulation and exchange of information among the involved stakeholders (for more

information sees Section 7.1.2.1). Furthermore, an influence of having Extranet is to impact DMS content and information quality. The system should provide a way to facilitate information updates from its sources. An Extranet then can be integrated to improve information quality and to give tourism service providers to update their information on the DMS website (see Section 7.1.1.3).

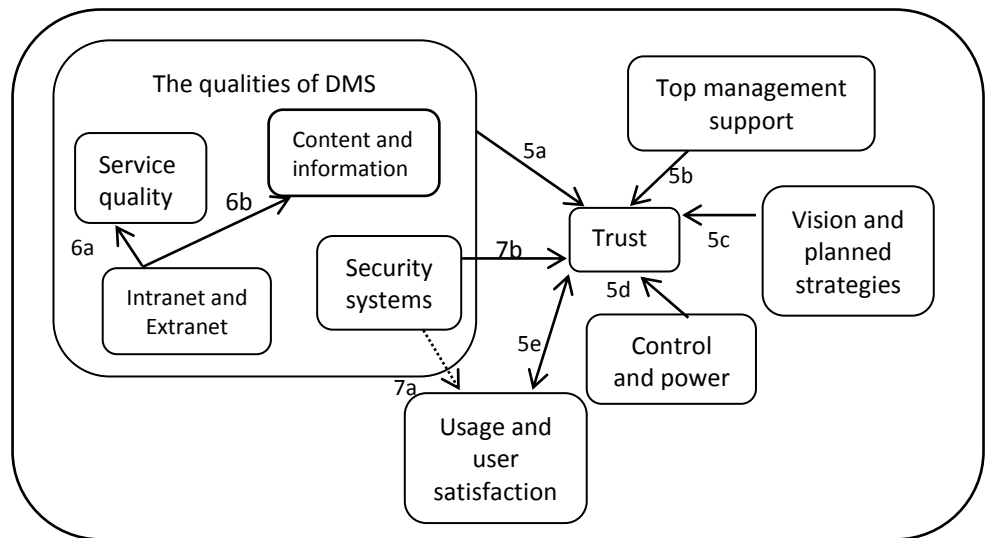


Figure 25: Part of Figure 27, It refers to arrows 5a – 7b

7. Arrows 7 (7a and 7b; see Figure 25) refer to a relationship between inadequate system security, trust, and usage and user satisfaction. The discussion in Section 7.1.1.4 revealed that the inadequate security system has a negative influence on tourists' trust, which negatively influences satisfaction their usage in return. Thus, an indirect relationship between security systems and both satisfaction and usage has been highlighted.
8. Arrows 8 (8a and 8b; see Figure 26) refer to an emerged influence relationship between DMS qualities (components and services), and usage as well as satisfaction. For example, the discussions of Sections 7.1.1 and 7.1.2 shed light on a negative direct influence of poor server status, as well as other poor services, either from the Touregypt Management Company or the local tour companies, on stakeholders' usage and satisfaction.
9. Arrow 9 refers to an emerged interactive relationship between control, power, and appropriate strategies. The experience of Touregypt revealed that lacking

appropriate strategies and detailed procedures negatively influenced the control of the Tourism Ministry and gave the chance to some powerful bodies from the local tourism field to hamper the development of the Touregypt project, as well as the general implementation of DMS in Egypt (see Section 7.4). Also, lacking the Tourism Ministry's lack of adequate control and sufficient power has emerged as a barrier to the formulation of adequate and detailed strategies (see Section 7.4.1.1). Therefore, according to the Egyptian experience, the relationship between formulating strategies, control and power is an interactive relationship.

10. Arrows 10 (10a, 10b and 10c) refer to the emerged relationships (either interactive or influence) derived from the factor 'clear vision and planned strategies'. These relations are: firstly, an interaction, either positively or negatively, between vision and planned strategies, top management support, and IT/IS knowledge (see Section 7.3 on the influence of these three factors on each other); and secondly, an influence relationship, either negatively or positively, in vision and planned strategies on factors such as DMS qualities, training, adequate funding, monitoring changes and performance, and regular evaluation (see Section 7.3.).
11. Arrow 11 (Figures 26 and 27) refers to an emerged influence relationship between achieving benefits and providing adequate funding. Sections 7.2.5 and 7.6 revealed that the inadequate funding of Touregypt project improvements was influenced by the inappropriate financial benefits gained by running the system (a direct influence from benefits to adequate funding). Results found that realizing benefits for stakeholders encouraged them to adequately fund further developments, which in turn influence the quality of the system and increase the benefits achieved (an indirect influence from adequate funding on benefits through system qualities and users reactions, e.g. usage and satisfaction; see Section 7.6).
12. Arrows 12 (12a and 12b) highlight an emerged relationship between lacking IS/DMS professionals, and the need to employ foreign DMS professionalism or consultancy. Also, availability of DMS professionals is a sequel to the availability

of IT/IS knowledge and skills in the destination. Section 7.2.4 also revealed an indirect relationship between availability of DMS expertise and providing training, which is influenced by the top management support.

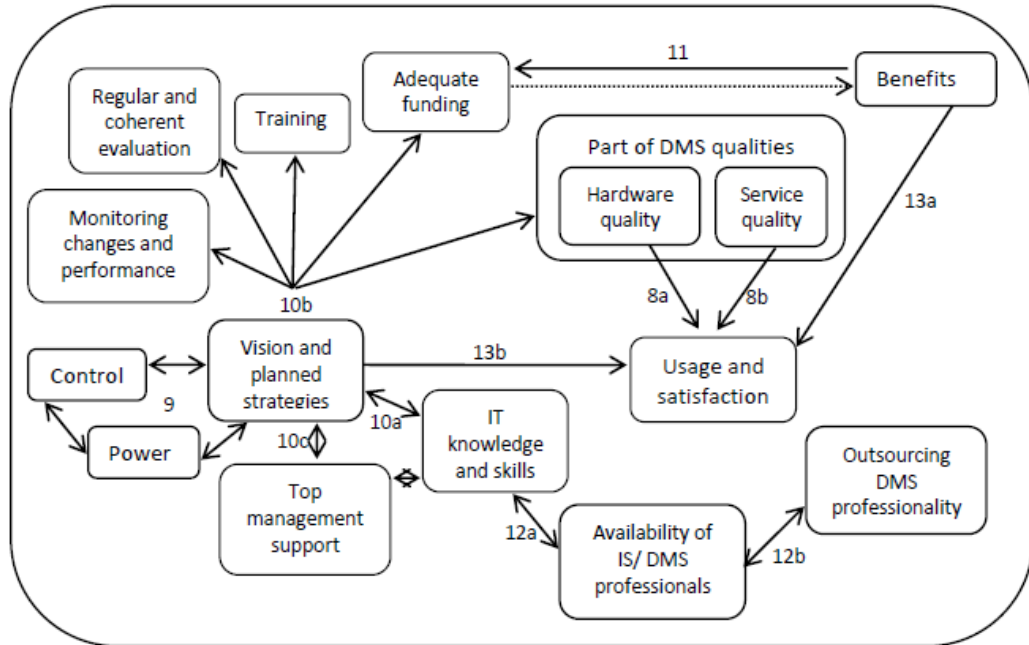


Figure 26: Part of Figure 27 referring to arrows 8a - 13b

13. Arrows 13 (13a and 13b; see Figure 26) refer to the influence of achieving appropriate benefits, and having clear and detailed strategies and regulations on the satisfaction and use of the system. Section 7.3.4 shed light on the negative influence of not considering the needs of a number of local stakeholders on their satisfaction. Also, Section 7.6. highlighted the direct relationship between the appropriateness of the achieved benefits on the satisfaction and, accordingly, the usage of Touregypt project.

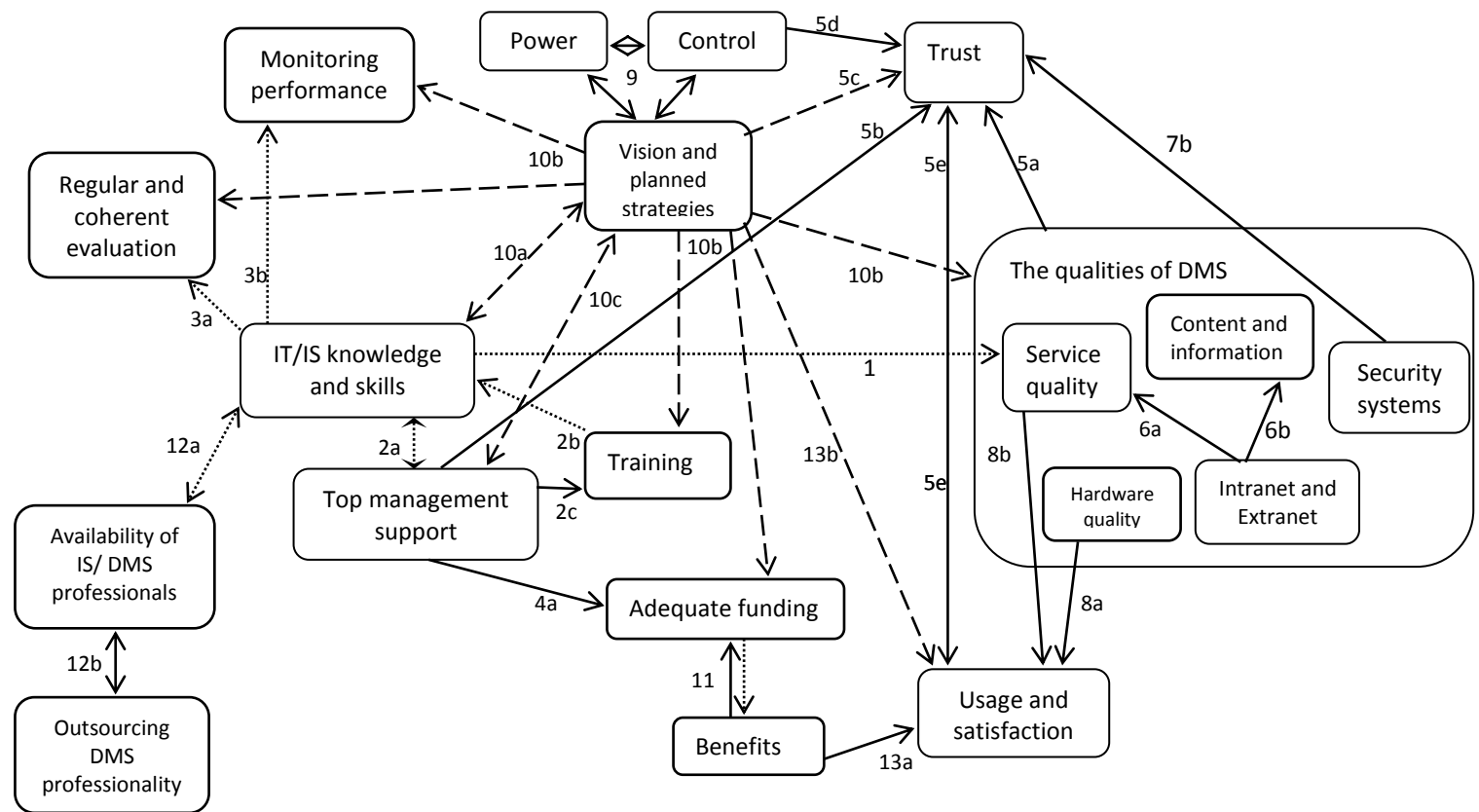


Figure 27: The emerging relationships among DMS effectiveness influences.

Note: the numbers of on arrows refer to the numbers in the text where the discussions on the relationships are explained

7.9. Chapter summary

This chapter presents the research findings in relation to qualitatively evaluate the Egyptian DMS experience (Touregypt project). Results asserted that DMS effectiveness influences emerged from issues related to different systems, and internal and external environments. Also, the relationships (influence or interaction) among these influences are multiple and complicated, as discussed in Section 7.8. Given that research findings of themselves do not build a theory, the wider implications of the findings need to be considered. Asserting this, Carroll and Swatman (2000) articulated:

“Theory is built through a conscious process of reflection, focusing on such issues as ‘what do these findings mean?’, ‘what disconfirming evidence is there for these explanations?’ and ‘how may these findings relate to the outcome from previous research cycles?’ The researcher returns to the data collected in this and previous research cycles, the literature and the insights of experts to extend these reflections” (Carroll and Swatman 2000, p. 6).

Thus, in the following chapter (Chapter 8), arguments are put forward to interpret, give meaning and make sense of the outlined findings of this study (Eisenhardt 1989; Miles and Huberman 1994). This is in order to be able to move from “substantive theory (applicable to the particular) to formal theory (may be applied to a variety of situations)” (Carroll and Swatman 2000, p. 6). Chapter 8 then is dedicated to surveying relevant literature to examine the emergent concepts discussed in this chapter (Eisenhardt 1989).

Chapter 8: Building the research theory based model

Introduction

This chapter represents stage four of the process of theory building adopted in this study, examining the findings and drawing on the literature (see Section 5.5). It is divided into four sections: the first section introduces the process of moving from chapter, the empirical findings, to this one. In particular, it ties the aims of each of these chapters (Chapters 7 and 8) in the light of the adopted theory building strategy (see Section 5.5). Also, the theoretical lens adopted by the study is overviewed. The second section briefly presents DeLone and MacLean's theory of IS success/effectiveness. It explains why this study argues that an extension to the model and a modification to its underlying concepts are deemed necessary for approaching a holistic evaluation of DMS effectiveness. The third section discusses the concepts emerging from the research findings, reported in Chapter 7, in the light of DeLone and MacLean's theory and other prior theories of DMS and IS effectiveness (Eisenhardt, 1989). Eventually, a conclusion about the proposed model and the interactions between its dimensions are presented.

8.1. Introduction

This chapter enfolds relevant literature to examine the emergent concepts argued in Chapter 7, the empirical findings. In particular, the wider implications of the findings are considered and critically discussed in the light of prior theories of DMS and IS research (both similar and conflicting theories) (Maxwell, 2005; Tesch, 1990). Carroll and Swatman (2000) argued:

“Theory is built through a conscious process of reflection, focusing on such issues as ‘what do these findings mean?’, ‘what disconfirming evidence is there for these explanations?’ and ‘how may these findings relate to the outcome from previous research cycles?’ The researcher returns to the data collected in this and previous research cycles, the literature and the insights of experts to extend these reflections” (2000, p. 6).

In the following sections, arguments are put forward to interpret, give meaning to and make sense of the findings of this study (Eisenhardt 1989; Miles and Huberman 1994). The next section discusses the process of moving from the research findings (Chapter 7) to the suggested theory based model of the evaluation of DMS effectiveness.

8.1.1. Moving from the findings to the research theory

The research findings of Chapter 7 presented the researcher's interpretation of stakeholder groups' perspectives on Touregypt effectiveness.

Figure 28 summarizes the course of actions through which the process of theory building is transferred from the research findings to build the research theory and answers the study's main question of what aspects need to be considered to approach a holistic DMS effectiveness evaluation. This is informed by the research strategy for generating theory as discussed in Section 5.5.

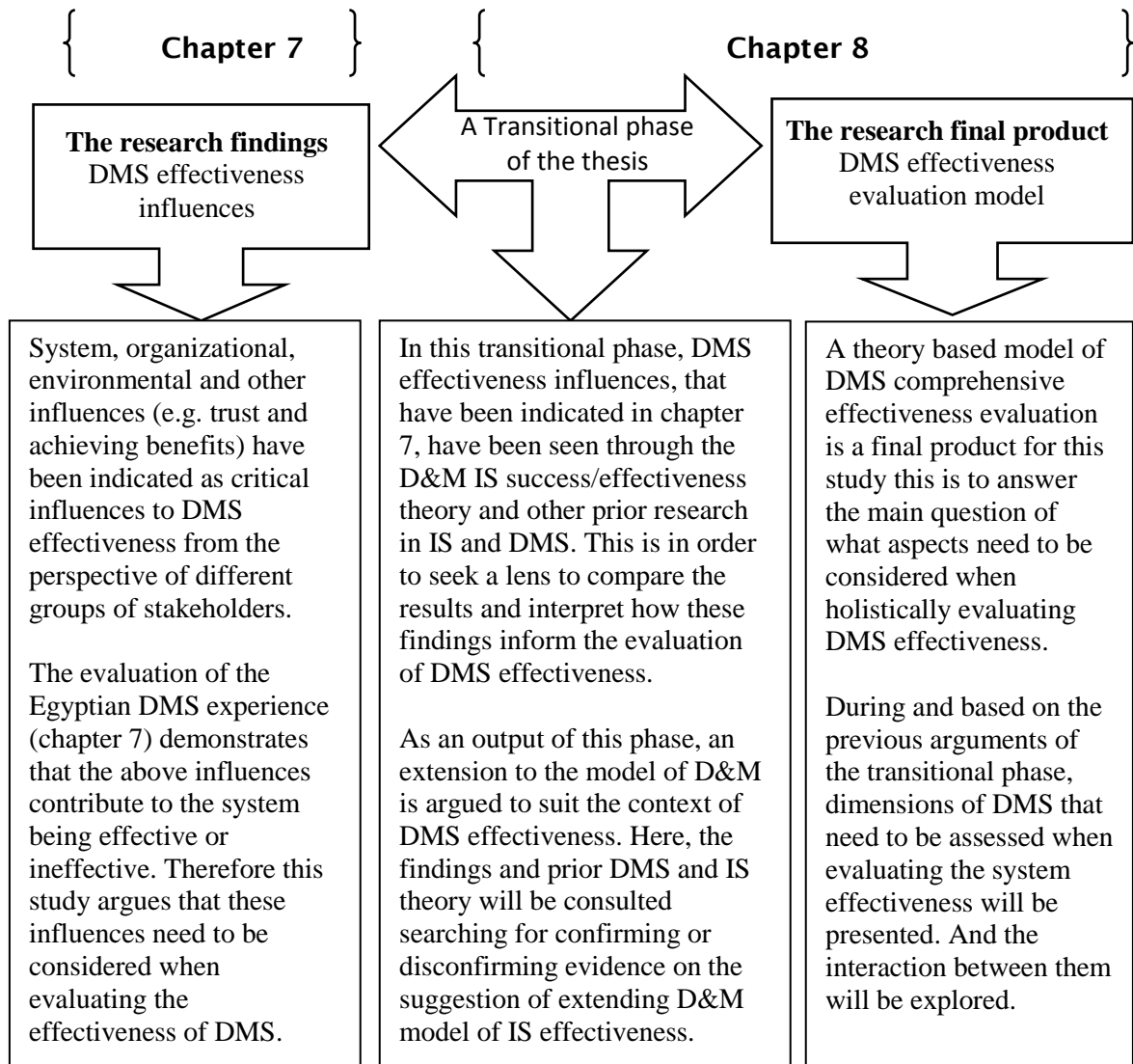


Figure 28: Moving from the findings to build the theory based model of DMS effectiveness evaluation

8.1.2. IS success/effectiveness theory: a theoretical lens

This study uses the theory of DeLone and MacLean’s IS success/effectiveness to aid the interpretation of the research findings. This theory is relevant to the aim of this study for the following reasons: it is widely accepted and used by many IS researchers who have tested and validated the usefulness of different dimensions and relationships within the model (DeLone and McLean 2003); the model is regarded by many researchers as a comprehensive work on IS success evaluation (see Ballantine et al. 1996; Seddon 1997; Torkzadeh and Doll 1999; Molla and Licker 2001); and DeLone and McLean’s theory is consistent with the values of this study (which have been

declared previously in Chapter 5), because it gives importance to social and technical aspects of information systems in a technological environment (which means it can be applied to DMS's context), and it also gives importance to the exploration of different stakeholders' perceptions.

It is worth mentioning here that many of the IS success/effectiveness models that have been identified in the literature have used the model of DeLone and MacLean (1992, 2003) as an underpinning framework, which indicates the wide acceptance of the IS success theory of DeLone and McLean. These models include the Garrity and Sanders model of IS success (Garrity and Sanders 1998), the hierarchical model of IS success (Drury and Farhoomand 1998), the e-commerce success model (Molla and Licker 2001), the web-based information systems success model (Garrity et al. 2005), and to the IS assessment model of Myers, Kappelman, and Prybutok (Myers et al. 1998). These models are not yet fully tested or validated by IS researchers. Conversely, the constructs of DeLone and MacLean's model have been widely validated (consider 'DeLone and MacLean 1992, 2003; Peter et al. 2008).

Therefore, according to its suitability and the wide validity of its constructs, this study adopts the theory of DeLone and MacLean as a theoretical lens to interpret the findings of this study. Also, this study takes into consideration other theories of DMS and IS effectiveness (e.g. Myers et al. 1998).

According to the research findings, this study argues that the theory of DeLone and McLean is not enough in itself to understand and evaluate the effectiveness of DMS, because it does not address internal and external factors that have emerged as important influences on DMS effectiveness (see Chapter 7). Also, the relationship between an IS and its external environment is not conceptually included in the model (Ballantine et al. 1996; Myers et al. 1998; Aasheim 2007), which argument is further developed in the following sections.

8.2. DeLone and MacLean's IS success theory: an overview

The DeLone and MacLean multidimensional success/effectiveness model provides a framework for measuring the performance of information systems (DeLone and McLean, 1992). The model has been regarded as a major contribution to the theory of IS success/effectiveness evaluation (e.g. Ballantine et al. 1996; Seddon 1997; Torkzadeh and Doll 1999; Molla and Licker 2001). It is based on the communication theory of Shannon and Weaver (1949) and the work of Mason (1978), who proposed an extension to the theory of communication. The original DeLone and McLean model proposed six dimensions of IS success/effectiveness. Since its publication in 1992, the model has been referred to by many researchers who attempted to test and validate the usefulness of different dimensions and relationships within the model (see Section 4.2.2.1 for more details on their model). The six original dimensions were *information quality*, *system quality*, *use*, *user satisfaction*, *individual impacts* and *organizational impacts*. DeLone and MacLean updated their model in 2003 in response to the criticisms of other researchers such as Pit et al. (1995) and Seddon (1997; see Section 4.2.2.1.1). In their updated model (2003), DeLone and McLean added *service quality* and *intention to use*. In addition, they aggregated the *individual impacts* and the *organizational impacts* to a single construct named *net benefits* (see Figure 29). In their updated model, DeLone and McLean (2003) proposed that the three *quality* dimensions (information quality, system quality, and service quality) individually or jointly influence subsequent use and user satisfaction. Also, use and user satisfaction are closely interrelated as use must precede user satisfaction in a causal sense. Similarly, increased user satisfaction will lead to increased intention to use and thus use. As a result of use and user satisfaction, certain net benefits will occur. The negative or positive net benefits will similarly influence the use and the user satisfaction either negatively or positively (DeLone and MacLean 2003).

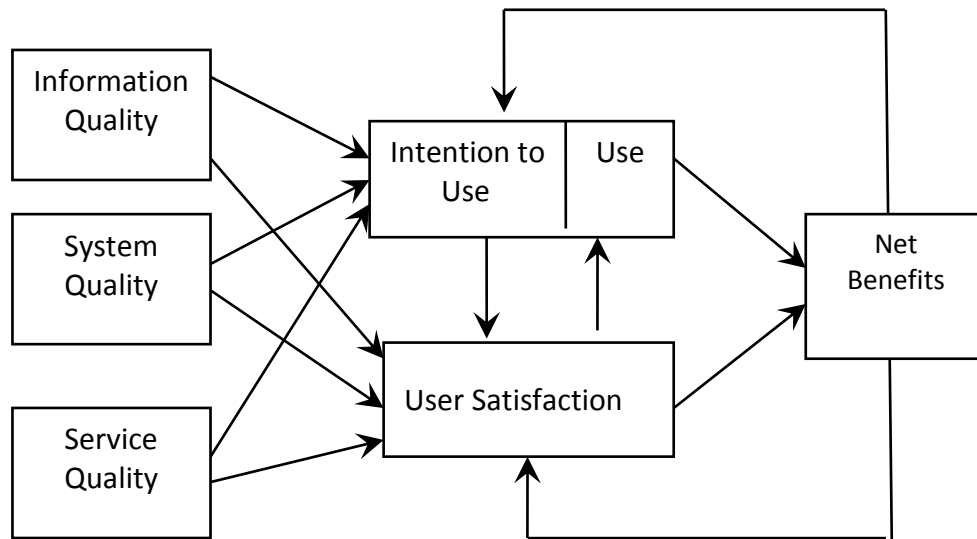


Figure 29: The updated DeLone and MacLean IS Success Model (2003)

8.2.1. DeLone and MacLean's IS success theory: an extension needed

This study argues that the constructs of DeLone and MacLean's theory of IS success/effectiveness are necessary - but not sufficient - to approach a holistic evaluation of DMS effectiveness. It argues that to move towards a holistic evaluation, the model of DeLone and MacLean need to be extended to include factors that have been indicated - by the findings of this study as well as by some of DMS literature - as important constructs of DMS effectiveness. This section justifies this argument and the following section discusses the suggested DMS effectiveness evaluation model.

Parsimony vs. holistic perspectives:

DeLone and MacLean (2003) have said that their updated model provides "*a parsimonious framework to organize the various success metrics identified in the IS and e-commerce literature*" (2003, p. 25). Their use of the word *parsimonious* implies their adoption of the simplest assumptions in formulating the theory of IS success/effectiveness. By consulting the Oxford English Dictionary, the principle (or law) of parsimony is defined as a scientific principle which means that "*things are usually connected or behave in the simplest or most economical way [...] the principle*

(attributed to William of Occam) that in explaining a thing no more assumptions should be made than are necessary. The principle is often invoked to defend reductionism or nominalism” (Oxford English Dictionary 2011).

Consequently, to obtain a description of what needs to be included when evaluating effectiveness, which conforms to the principle of parsimony, one has to ignore or neglect many elements, facts and influences of the system effectiveness. Comprehensiveness, on the other hand, tends to fully describe the phenomena under investigation; whereby one would not need to limit one’s choices, factors or elements, on the contrary different factors influence the system effectiveness are to be considered. Thus comprehensiveness prevents parsimony. Therefore, reflecting on this study, the parsimony perspective which is adopted by the DeLone and MacLean theory is not enough from the holistic perspective adopted by this study.

Necessary but not sufficient: disregarding important effectiveness factors:

This study is following researchers such as Cameron and Whetton (1983), Patton (2002), and Guba and Lincoln (1994) in adopting a holistic perspective for understanding and evaluating the effectiveness of DMS. Guba and Lincoln (1994) and Cameron and Whetton (1983) asserted that depending just on a narrow view for understanding IS effectiveness can negatively influence the possibility of capturing either important internal or external influences of effectiveness. Concurring the findings of this study about the incompleteness of DeLone and MacLean’s (2003) model, the model has been criticized by a number of IS researchers who considered the six dimensions of the model to be important aspects, but not sufficient for evaluating the general IS effectiveness (e.g. Seddon 1997; Myers et al. 1998; Almutairie 2001; Aasheim 2007). These researchers justified their views on the grounds that DeLone and MacLean’s model identified only system issues and not human issues that have an important influence on the effectiveness of information systems (Gichoya 2005), and that the relationship between an IS and its external environment is not conceptually included in DeLone and MacLean’s model according to Myers et al. (1998), Aasheim (2007), and Ballantine et al. (1996). The model of DeLone and MacLean disregards the influence of organizational and environmental factors on IS effectiveness. In contrast researchers such as Malik and Goyal (2003) and

Myers et al. (1998) asserted the necessity of including organizational and external influences when evaluating IS effectiveness.

In this regard, DeLone and MacLean (2003) commented on the inclusion of organizational and contextual factors in their model by arguing that organizational and contextual factors may influence system success/effectiveness; however, these factors cannot be indications of the system effectiveness from their viewpoint. They attributed their views to that researchers need to differentiate *“between what is an independent variable and what is part of the dependant variable, IS success”* (2003, p. 17). DeLone and MacLean added as an example that a factor such as top management support is an independent variable that may cause effectiveness rather than being part of it. DeLone and MacLean (2003) said:

“Investing in “ERP” may (or may not) lead to improve “information quality” (an aspect of IS success), but the former is an independent variable whereas the latter is part of the dependent variable. It is essential that IS researchers distinguish between the management control variables and the desired results in terms of quality, use satisfaction, and impacts” (2003, p. 17).

Considering DMS effectiveness influences for better knowledge and understanding:

This study follows the notion of researchers such as Guba and Lincoln (1994), Greene (2000) and Patton (2002) (in identifying effectiveness evaluation and the purpose of evaluating the system effectiveness), who asserted that IS effectiveness evaluation is a learning process, in which reasons for the system effectiveness or ineffectiveness need to be understood. This is in order for organizations to be able to improve the effectiveness of their systems (Patton 2002). Accordingly, the results of IS effectiveness evaluation should indicate the systems' strengths and weaknesses, and what positively or negatively influences the system effectiveness (Patton 2002; Cronholm and Goldkuhl 2003). However, the model of DeLone and MacLean (2003) does not specifically indicate when evaluating the system effectiveness what causes the system to be effective or ineffective, or what can be improved to enhance the effectiveness of a system.

Therefore, contrary to DeLone and MacLean's (2003) view, this study argues that in order to move towards a holistic DMS effectiveness evaluation that aims at producing *knowledge* and *understanding* about the extent of effectiveness (Guba and Lincoln 1989) and how effectiveness can be improved, the causes of effectiveness should be a part of the effectiveness evaluation. Therefore, this study argues for including organizational and contextual factors in the content of DMS effectiveness evaluation. Consequently, organizations should be able to understand what influences their system effectiveness and what needs to be improved.

To recapitulate, according to the above discussion and informed by the research findings, this study argues that DeLone and MacLean's IS effectiveness evaluation theory is not enough in itself to better understand and holistically evaluate the effectiveness of DMS. An extension is needed to include important effectiveness influences that have been referenced by the majority of the stakeholders as critical constructs of the Egyptian DMS effectiveness (e.g. organizational factors). This discussion is further developed in the next section.

The next section discusses the empirical findings, detailed in the Chapter 7, in the light of DeLone and MacLean's (2003) IS success theory and other prior theories in the IS and DMS literature. In particular, the following discussion confronts the empirical findings of the study with theories of DMS and IS about the influence of system, organizational, and environmental factors impacting on DMS effectiveness. This is in order to discuss confirming and disconfirming evidences in relation to the suggested model of DMS effectiveness evaluation (Eisenhardt 1989; Miles and Huberman 1994).

8.3. Building the DMS effectiveness evaluation model

This section justifies the suggested model of DMS effectiveness evaluation. This model extent the DeLone and MacLean's IS success/effectiveness model to approach a holistic DMS effectiveness evaluation. In the following, the suggested model is presented and its constructs are examined each in turn.

8.3.1. The model description

The study suggested that a number of organizational and external environmental factors, system quality issues, trust, use, user satisfaction and net benefits are factors that can singly and jointly influence the effectiveness of DMS (see Figure 30). These factors and the interactions among them need to be considered (and assessed) when approaching a holistic effectiveness evaluation.

The study argues that complementing these factors with each other can produce an effective quality DMS that has a higher chance to satisfying the needs of different stakeholders groups and achieving for them proper benefits (as each stakeholder would define them) which in turn influence effectiveness. In other words, factors of the DMS effectiveness evaluation model (see Figure 30) interact with each other and influence, either negatively or positively, DMS effectiveness. The model (Figure 30) refers to the organizational and environmental factors that affect the quality of DMS components and the provided services. Users and managers, then, experience the DMS by using it. The usage leads users and managers to be either satisfied and trust the system (e.g. service, system components and the management of the system), or dissatisfied and mistrust the system. Hence, trust, use, user's satisfactions are parts of users' reaction (attitude and behaviour) to the system services and components' quality. In other words, the qualities of system issues (components and services) affect, positively or negatively, trust, use, and user satisfaction. Furthermore the reaction of system users interacts with the gained benefits of using the system. The gained benefits, on the other hand, positively or negatively influence both user reaction towards the system, and organizational factors (such as top management support and deciding on proper funding for developing the system).

Also, the model (see Figure 33) refers to the existence of direct and indirect interactions among DMS effectiveness dimensions. For example, supportive organizational and environmental factors lead to the establishment of a high system quality components and services. Next, the high system quality components and services are expected to lead to high trust, use and satisfaction, leading to positive benefits to stakeholder groups - here, an example of an indirect relationship can be seen between organizational factors and user satisfaction, while a direct relationship

can be seen between quality system components and services and satisfaction. Positive benefits, on the other hand, contribute to positive user reaction towards the system and as a consequence increase the support of organizational and external factors that positively influence further improvements in the system components and services. The relationships among the model dimensions are detailed in Section 8.3.3.

The empirical findings suggested that evaluation of DMS effectiveness cannot be based on any of DMS effectiveness constructs alone to give a realistic and holistic perspective of the effectiveness of the system. The different factors in the DMS effectiveness model, in addition to multiple stakeholder groups' perspectives, need to be considered when evaluating the system effectiveness. For example, according to the Touregypt experience, Touregypt Management Company has evaluated the effectiveness of their DMS based on tourists' satisfaction and the system usage (interview with the Manager of Touregypt branch of Egypt). Their evaluation showed positive results. Upon these results Touregypt Company regarded their system as effective. According to the perspective of this study the way Touregypt has been evaluated seems to be deficient. This is because the evaluation was based upon one perspective (tourists' perspective) and assessed only two dimensions of DMS effectiveness factors (use and user satisfaction). Therefore, from the views of this study the way Touregypt has been assessed was unrealistic and deficient. This view has been confirmed as the system has completely failed a few years after this evaluation (see Section 6.1.2). The failure of Touregypt was for many reasons such as lack of top management support, inadequate benefits to some of the stakeholders, and lack of funding (which was attributed by Touregypt Company to the lack of financial revenues).

The management of Touregypt evaluated the system depending on two of the effectiveness influences, neglecting the evaluation of other effectiveness influences. In light of this example, it is important to shed light on which would have happened if the Touregypt company had used the model of DeLone and MacLean to guide the evaluation of the system effectiveness. The results, in this case, would highlight some deficiencies related to the benefits from the stakeholders, and the qualities of some of the system issues (e.g. system quality). However, other important influences that

have a significant share in Touregypt failure (such as lacking top management support and funding problems) would not be revealed, if Touregypt effectiveness was evaluated only according to the IS effectiveness theory of DeLone and MacLean. This is because the experience of Touregypt evident that (see Chapter 7) the most influential factors that drive the system to fail are not included in the DeLone and MacLean model (Figure 29). These factors are related to organizational factors such as vision and planned strategies, funding, top management support, and control and power. Therefore, according to the empirical findings, this study argues for extending the model of DeLone and Maclean to include factors that have been identified by the study findings and a number of DMS literature as significant influences on the effectiveness of DMS.

It worth mentioning here that, contrary to DeLone and MacLean's theory (1992, 2003, 2004), research in WBIOS effectiveness (e.g. Lai and Wong 2005; Lu et al. 2006) were found to be consistent with a number of DMS literature (e.g. Collins and Buhalis 2003) that highlighted the importance of including technological and organizational contextual factors (e.g. funding, management support, and stakeholder cooperation) besides the traditional technical and satisfaction measures (e.g. DeLone and MacLean 2003). This discussion is further developed in the following sections.

The next two sections will examine the proposed DMS effectiveness evaluation model constructs and its interactions in the light of DMS and IS effectiveness literature.

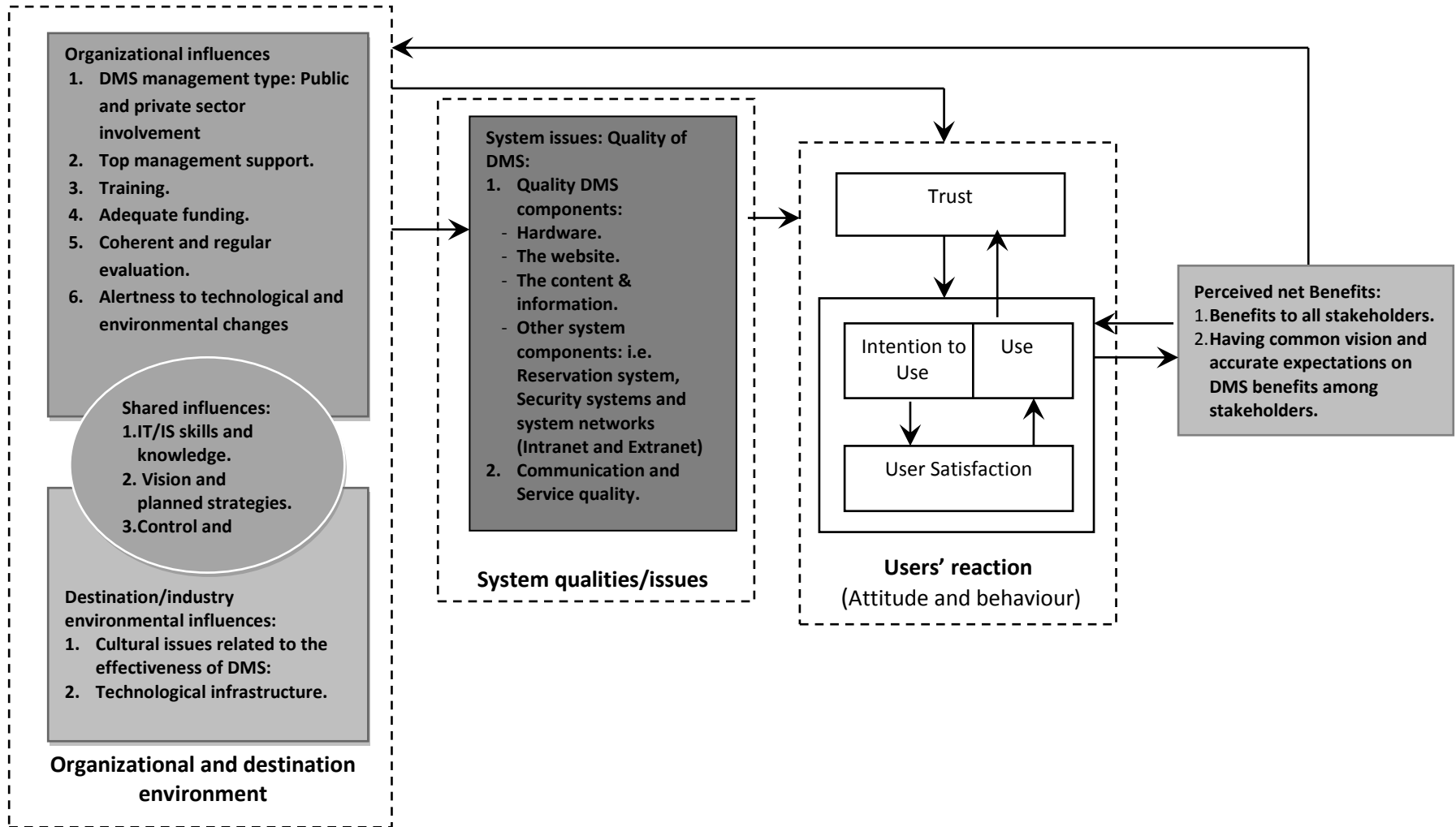


Figure 30: A model of DMS effectiveness evaluation, based on D&M IS effectiveness model

Note: The relationships presented in this figure are the interactions between the main factors (see Figure27 for the detailed relationships among the suggested sub-factors).

8.3.2. Justifying the constructs of the suggested model

The following discussion examines the constructs of the suggested DMS effectiveness evaluation model in the light of related DMS and IS effectiveness literatures. The discussion is organized according to the proposed model (Figure 30) from left to right.

8.3.2.1. Organizational influences

The empirical findings presented a number of organizational factors that have significantly influenced the effectiveness of Touregypt project. Results showed that the majority of stakeholders found the extent of top management support, the skills of managers and working staff, funding adequacy, vision and planned strategies, as well as control and power are among the most influential factors on the effectiveness of DMS. Also, the type of DMS management, securing professional support and the appropriate training for DMS staff - in both the management company and the local tourism business - in addition to regular and coherent ways to evaluation, monitoring the system performance and keeping up-to-date with the rapidly changing world of technology were found to be important considerations in DMS effectiveness (see Section 7.2).

The empirical findings demonstrate that organizational factors have a significant influence on the effectiveness of DMS, and that it is important to understand and asses these influences when evaluating the system effectiveness. Therefore, the study supports the notion of a number of DMS researchers and IS researchers who argued for the importance of considering organizational factors in IS effectiveness evaluation (e.g. Raymond and Bergeron 1996; Sheldon 1997; Myers et al. 1998; Olson and Williams 2001; Kelegai and Middleton 2004; Malik and Goyal 2003; Hussein et al. 2005; Ozkan 2008; Wang 2008a). For example, consistent with the research findings, DMS researchers stated that top management support and strong leadership (Chen and Sheldon 1997), training and adequate funding (Collins and Buhalis 2003) as well as monitoring and evaluation procedures (Rita 2000) influence the effectiveness of DMS.

The DMS organizational factors that emerged in this study are discussed in the following subsections. This is in addition to other organizational influences that will be

discussed, separately, in the following section (Section 8.3.2.2), as these factors are shared in the destination environmental factors of DMS effectiveness as well. These shared factors are; control and power, and vision and planned strategies to support DMS implementation.

8.3.2.1.1. DMS management type: public and private sector partnership

The findings contribute to the ongoing discussions of DMS literature on the influence of DMS management type on its effectiveness. The argument is about whether it is effective for DMS to be managed by only the public sector or if it is more effective for DMS to be a partnership between the public and the private sector (see Section 7.2.1). The findings demonstrated that effective DMS implementation needs the involvement of both public and private sectors (*“the public and private sector backing”* in the words of Brown 2004). According to the Egyptian DMS experience, the findings support the notion of a number of DMS researchers such as Brown (2004), Collins and Buhalis (2003), Chen and Sheldon (1997), and O’Connor (2002) who argued that efficient partnership and cooperation between the public and private sectors can positively influence the effectiveness of DMS and balance the different interests of the various stakeholders. Researchers argued that the public sector should be involved in formulating the appropriate policies to organize the relations among different stakeholders (Sheldon 1997; Daniel and Frew 2008); otherwise, the powerful private organization will take over and may not promote the destination in the best interest of the country (Rita 2000). At the same time, these studies encourage private sector partnership, as it can bring considerable levels of technological expertise, investment power, which is believed to be more responsive to market need (Daniel and Frew 2008). Adding to the body of literature, Touregypt stakeholders attributed the importance of the public sector involvement (the Tourism Ministry in the Egyptian context) to its positive influence in ways such as: financially supporting the system especially in the beginning of its development; working on increasing trust-building issues related to online transactions; and integrating DMS supportive strategies within the broader framework of national ICT policies. Also, The Egyptian DMS experience demonstrates that in such a developing context, in which local SMTE might lack the appropriate knowledge on the potential of DMS (and as a result the needed

enthusiastic to participate in DMS implementation), the role of the public sector can help encourage them to participate and increase their awareness and knowledge. However, the empirical findings asserted that the public sector needs to be involved in DMS implementation and should seek public sector partners that can contribute in aspects such as technical development, development of new products and services (e.g. niche tourism distributors), marketing actions, information technology and funding (UNCTAD 2005a). Accordingly, from a theoretical and empirical perspective, the efficient partnership and cooperation between the private and public sector have been identified as one of DMS effectiveness influences by DMS researchers (Collins and Buhalis 2003) and Touregypt stakeholders (e.g. UNCTAD and UNWTO).

However, it cannot be said that if DMS is under private sector management only that it will not be effective, as this suggestion needs further investigation (see Section 9.5). Although the Touregypt project experience showed that when the system was managed by a private IT company, the system effectiveness was negatively influenced (see Section 6.1.2.), another DMS in the Egyptian context that is managed completely by the private sector (i.e. Intoegypt project) seems to be working well in the views of some of the Egyptian local stakeholders (interview with the general and sales managers of two large tour companies in Egypt, 2009).

8.3.2.1.2. Top management support

The findings of this study underlined the significant influence of top management support and commitment on DMS effectiveness. According to stakeholders' views, in the beginning of Touregypt, the system worked effectively due to the support and commitment of the top management of the Tourism Ministry. Also, results demonstrated that withdrawal of the support and commitment of the Tourism Ministry top management, as well as the current Management Company of Touregypt project (it is a private IT company that managed the system after its abandonment by the Egyptian Tourism Ministry) has negatively influenced Touregypt effectiveness from the perspective of a number of stakeholders (see Section 7.2.2). The findings of this study concur with a variety of IS and DMS research (e.g. Sheldon 1997; Buhalis 2003). Sabherwal (2006) emphasised the role of top management support in

motivating *“greater user participation, and leads to greater IS success, in terms of perceived usefulness, user satisfaction and system use”* (2006, p. 23).

It is argued that top management support and commitment needs to be included in the evaluation of DMS effectiveness, following IS researchers such as Saunders and Jones (1992), Myers et al. (1998), and Hussein et al. (2005).

8.3.2.1.3. Training

The research findings revealed that training programmes have an important influence on DMS effectiveness. Creating awareness by providing training is essential for increasing IT/IS knowledge and skills for both top level managers and staff. In return, proper training programme can increase the support of top management for DMS applications, in both the private and public sector. A number of IS and DMS researchers have asserted the importance of training as an effectiveness factor. Collins and Buhalis (2003) and Richie and Richie (2002) for example have asserted that training is important to assure that information and services provided by DMS are effectively used to benefit tourism business. Moreover, Malik and Goyal (2003) argued that the *“lack of training and existing skills are general hindrances”* of IS effectiveness (2003, p. 72). He asserted that lack of frequent training contributes to IS failure. The empirical findings highlighted the proper training needs to be realized not only for DMO employees, but also for managers, users and staff of local tourist companies and the management company of DMS.

8.3.2.1.4. Adequate funding

Based on the empirical findings, this study argues that appropriate funding is a significant dimension of DMS effectiveness and need to be considered when evaluating the system effectiveness. This argument is supported by a number of IS and DMS researchers such as Collins and Buhalis (2003), Hussein et al. (2003), Kelegai and Middleton (2004), Rezaei et al. (2009), and Ozkan et al. (2010). For example, the results of Hussein et al.'s (2003) study suggested that adequate resources, including financial resources, are important criteria in determining IS success. They commented that *“organizations having sufficient funds and people tend to succeed in implementing their goals and objectives”* (2003, p. 11).

Also, the experience of Touregypt asserted that appropriate funding is crucial to DMS effectiveness in different stages of the system, e.g. planning, developing, training, further follow up (e.g. monitoring and evaluating), and for further system improvements. The results demonstrated that appropriate funding is a decision that is related to the support of top management and the level of benefits achieved from the system (see Chapter 7).

8.3.2.1.5. Regular and coherent ways to evaluate DMS effectiveness

The influence of coherent and frequent evaluation on the effectiveness of DMS has been recognized in the literature, supporting the findings of this study. Researchers (e.g. Rita 2000; Ritchie and Ritchie 2002; Buhalis 2003; Wang 2008a) have asserted the need of frequent effectiveness evaluation to ensure the system validity and to recognize and solve problems that may occur in the system's development. Furthermore, the evidence collected in this study confirms the argument of Ritchie and Ritchie (2002) who believe that many DMS failed applications did not conduct evaluation of their systems after implementation, and it may be that this contributed to the failure of these systems. Touregypt is a failed DMS experience which did not have a coherent and regular strategy to evaluate the system. Therefore this study argues for the need to assess the DMS evaluation approach as one dimension of DMS effectiveness. The results of this study show that a coherent strategy, which considers different views of stakeholders in the system, can improve the prospects of DMS effectiveness.

Consequently, DMO and local business managers can be afforded better insight into the system performance, e.g. strengths and weaknesses of DMS, and subsequently working on improving the system effectiveness. Results found that Touregypt Management Company and local tourism business' practices exhibit a narrow view about Touregypt effectiveness evaluation. Touregypt Company has never done a formal evaluation of its system's effectiveness; instead it relied on informal evaluation involving only the perspective of tourists, disregarding the views of other system stakeholders' groups. On the other hand, most local businesses rely only on financial profits as an effectiveness indicator. Tourist satisfaction, system usage, and financial

profits are important indicators of DMS effectiveness in stakeholders' view, although they are not enough to be the only indicators of DMS effectiveness (see Section 7.2.7).

8.3.2.1.6. Alertness to technological and environmental changes

Monitoring the system performance and keeping pace with the rapidly changing world of technology were found to have a critical influence on DMS effectiveness. The findings revealed that keeping DMS application up-to-date with the new e-tourism trends is significant to satisfy the continually changing characteristics and requirements of the online tourist. Thus, DMO needs to monitor the e-tourism changes and consider its implications for the development of their DMS. This is in order for DMS application to sustain the online tourism competition (UNCTAD, 2005). Similarly, Malik and Goyal (2003) argued that:

“unless an organization is keen on adoption of new technology and paradigms, the environment cannot be called fertile for growth of technology innovations and applications” (2003, p. 64).

Therefore, it is important to ensure an effective environment in the organization by being alert to and keeping abreast of changes and developments in the field of IT (Sheldon 1997; Rita 2001; Collins and Buhalis 2003; Lin 2006; Wang 2008). This is in order to ensure the implementation of an effective DMS that satisfies the changing needs of stakeholders.

8.3.2.2. Shared influences: DMS effectiveness influences shared between organizational and business contexts

The results found that there are a group of effectiveness influences from both the DMS and tourism organizational fields (see Figure 30). This group of factors have been found - separately and jointly – to influence the effectiveness of DMS in the Egyptian context. These factors are IS/IT skills and knowledge, having a vision and planned strategies, and control and power. The importance of these three effectiveness influences have been argued for by a number of IS and DMS researchers (e.g. Olson and Williams 2001; Collins and Buhalis 2003; Larsen 2003; Louillet 2008; Wang 2008a), as shown in the following discussion.

8.3.2.2.1. IT/IS knowledge and skills

In this study, the results found that shortage in the appropriate IT/IS knowledge and skills in the Egyptian DMS context (on both organizational and destination levels) constitute a key factor that negatively influences the effectiveness of Touregypt project. The experience of Touregypt has revealed that there is a need for managers and staff, who deal with the system, to have an adequate IT/IS knowledge and skills in order for an effective DMS to be developed. Malik and Goyal (2003), Myers (2003), Brown and Magill (1994), and Hussein et al. (2005) asserted that IT/IS knowledge and skills is an important determination of IS effectiveness, and that lacking them can hinder the effectiveness of IS applications.

On a destination level, the findings emphasised the critical influence of the availability of DMS professionals on securing professional guidance to effectively implement a DMS. Stakeholders asserted that the professionalism needed for developing DMS is not just concerned with the availability of quality IS technicians (creating a website and database for the system), but also the availability of different kind of professionals in different aspects of DMS development (e.g. e-marketing). For example, Touregypt local stakeholders suggested that lacking professionals in e-marketing can contribute to factors that negatively influence DMS effectiveness implementation. In contexts like the Egyptian context, in which it is difficult to find the required knowledge and skills to implement an effective DMS, it is important for DMO to help in securing proper expertise when designing, implementing and maintaining a DMS. UNCTAD (2005) asserted that expertise can be obtained externally if DMOs, especially in developing countries, found that the tourism destination cannot provide proper professionalism to effectively develop DMS.

The findings of this study revealed possible different interactions between IT/IS knowledge and skills and other DMS effectiveness dimensions such as system quality, adequate funding, top management support, training and usage.

8.3.2.2.2. Having a vision and planned strategies

Clear vision and planned strategies are the second shared factor on organizational and destination levels (see Figure 30). The findings of this study suggested that having a

clear vision and planned strategies on the development of destination e-tourism in general and the implementation of DMS in particular are important aspects for running an effective DMS.

This study supports IS and DMS researchers' views (e.g. Olson and Williams 2001; Kelegai and Middleton 2004; Lin 2006; Wang 2008a) on the importance of including adequate IS strategies as an effectiveness evaluation dimension. For example, Kelegai and Middleton (2004) argued that strategic issues such as IS policy and planning are significant guidelines for organizations' IS development. Thus policy and plans can influence the effectiveness of an information system. Similarly, Ozkan et al. (2010) argued that the *"policies and procedures which establish precedence for the allocation of IS resources and services between different organizational units and their requests"* (2010, p. 63) is an important aspect that needs to be considered when evaluating the effectiveness of an information system.

Evidence on the influence of having vision and planned strategies on DMS effectiveness has been emerged from evaluating the Egyptian DMS experience. Local stakeholders affirmed that the context in which the DMS can be implemented in Egypt is not suitable for DMS effective implementation. This is due to, the immature e-marketing and e-commerce strategies and shortage of having clear vision on the potentials of DMS implementation. The findings show that the general framework of tourism strategies in a country drives the country's web-based IS development strategies (UNCTAD 2005). This would suggest that it is important for tourism destinations to implicitly include their e-tourism strategies within the broader framework of the national ICT policies in order to be able to support the implementation of DMS on a national level (see Section 7.3.1).

Also, the findings asserted that stakeholder's perspectives need to be taken into account while formulating DMS strategies and their detailed plans, especially in the early stages of formulating the DMS strategies. Otherwise, the risk will be that what DMS offers may not meet with stakeholders needs. In that case, the effectiveness of a DMS application is negatively influenced.

8.3.2.2.3. Control and power

The results of this study revealed that having control over the tourism business in general and the DMS application in particular are important aspects of DMS effectiveness. A few IS and DMS researchers supported the argument of this study about the need to consider control and power when evaluating DMS effectiveness. Lin (2006) for example demonstrated that decision making power concentrated in the hands of few individuals (which he called organizational centralization) can negatively affect the effective implementation of IS. Likewise, Sigala (2009) and Collins and Buhalis (2003) found that partner's power can influence the effective adoption of DMS and that the relationships among stakeholders need to be well controlled for an effective DMS implementation.

The experience of Touregypt verified that the system's effectiveness is negatively influenced by lacking control and power over the system. Stakeholders attributed the deficient control of the Tourism Ministry to its lack of control over the tourism business in general. According to stakeholders, such deficiency in control may have been caused by a variety of possible reasons such as lack of strategies and procedures to guide the Ministry's decisions, which in turn left these decisions to be individualized. Examples of such decision are cutting the relation with Touregypt, and the decision of not developing a DMS in Egypt in the near future after the failure experience of Touregypt project. Additionally, deficient control has been attributed to lacking the IT/IS knowledge and the Tourism Ministry's ability to control. Also, the findings suggested that lacking adequate strategies and procedures, and thus personal preferences and lacking control are three aspects that resulted in a possible chance for some powdered bodies to negatively influence the Tourism Ministry decisions concerning DMS implementation in Egypt (see Section 7.4).

8.3.2.3. Environmental factors

The Touregypt experience showed that the environment in which DMS is implemented can influence the system effectiveness. Findings demonstrated that DMS effectiveness can be influenced by two types of environment; internal and external environment. Internal environment refers to the destination environment in which the DMS is employed, while the external environment refers to the outer

destination or international influences such as characteristics of online tourists, and IT development in general. In this regard, the following presents a discussion on the internal environmental influences on DMS effectiveness, while Section 7.2.6 entails a discussion on the influence of the external environment. It includes the importance of monitoring the changing and world e-tourism trends, as well as keeping the DMS application up-to-date and in-line with changing online tourist characteristics.

The findings of the study indicated that the context in which DMS is implemented needs to be a supportive context. In preceding section (8.3.2.2) a number of effectiveness influences that are shared in both organizational and destination (tourism business influences) environments were discussed (e.g. IT/IS skills and knowledge, vision and planned strategies, and control and power). The two sections discuss other DMS effectiveness influences as they emerged by investigating the Touregypt experience.

In support of the findings, Myers et al. (1998), Hwang et al. (2000), Kelegai and Middleton (2004), Zhang et al (2005), and Elpez and Fink (2006) argued that environmental factors affect IS implementation, and that these influences need to be considered when evaluating the effectiveness of the system. For example, Hwang et al. (2000) argued that the success/effectiveness of an IS project is directly related to environmental factors which are related to the organisation, users, IS operations, IS development, and external environment. The following discusses destination/business environmental factors of DMS effectiveness as emerged from investigating the Egyptian DMS experience.

8.3.2.3.1. Cultural issues related to the effectiveness of DMS

A DMS involves the population of tourism destination to be part of the system's stakeholders by either managing, working with, or using the system. The findings of this study affirmed that destination culture has an influence on the ability of the destination to accept and deal with a DMS application. Except few studies (e.g. Myers et al. 1998; Myers 2003; Kelegai and Middleton 2004; Kaweevisultrkul and Chun 2007), the influence of cultural issues on IS effectiveness has not been much referenced in literature.

However, the majority of the interviewees in the public and private sector asserted that DMS and other e-applications (e.g. e-business, e-marketing, e-tourism and e-commerce) are still new concepts in the Egyptian culture and are not yet well understood. Results showed that the feeling of the majority of Egyptians towards online deals is not certain; some tourism managers (either in small or large companies), in addition to local citizens, do not trust communicating and completing the buying process through the Internet. This in turn can affect the way people accept DMS applications and online business and effectively deal or employ online systems in their work. Local stakeholders deem that DMS and e-commerce are still two new concepts that need to be accepted in the Egyptian culture. This is in order to prepare the Egyptian environment to accept and effectively deal with DMS applications. Therefore, paving the way to DMS application can be done through:

- Increasing the awareness of the potentials of DMS and general e-applications
- Enhancing trust by working on increasing security issues related to online transactions; and
- Providing training programme on how to work with and benefit from online applications.

Accordingly, this study suggests the inclusion of the cultural influences in the evaluation of DMS effectiveness is necessary. It is suggested that this can be done by assessing the role of DMO in preparing the cultural environment according to the aforementioned points.

The literature indicates that culture influences technology transfer adoption, use and performance (Agourram 2009a and b). Researchers such as Myers (2003), Kelegai and Middleton (2004), Chadhar and Rahmati (2004) and Kaweevisultrkul and Chun (2007) asserted that national culture does impact the implementation success and effectiveness of an information system. Even that Myers et al. (1998) have included cultural influences in their IS effectiveness evaluation model (see Appendix 7). Chadhar and Rahmati (2004) studied an ERP systems implementation in both Australia and Saudi Arabia. The system was well-implemented in Australia and failed in Saudi Arabia. They attributed the differences in the system implementation success to the influences of national culture.

8.3.2.3.2. Technological infrastructure

Stakeholders agreed on the significance of having quality ICT infrastructure on the effectiveness of DMS. Views of local stakeholders differed on considering the Egyptian technological infrastructure as one of the obstacles that might face the development of an effective DMS in Egypt. However, they agreed on the importance of the quality Internet connection and the speed of downloads on the effectiveness of DMS in general (see Section 7.1.1).

Concurring with the findings of this study, the literature indicates that IT infrastructure provides a platform for the development of inter-organizational information systems, and can influence the effectiveness of its implementation (Lin 2008). Kelegai and Middleton (2004) also argued that telecommunication infrastructure and services is a factor that influences IS success/effectiveness. They said that organizations depend on the country's telecommunication infrastructure and services to effectively conduct their businesses. Therefore, the governments should play a leading role in setting the directions for improving the destination infrastructure to effectively contribute in effective IS implementations.

8.3.2.4. System issues: quality of DMS

In support of DeLone and Maclean IS success theory, the service and components quality of a DMS have been considered as critical aspects to DMS effectiveness, according to all Touregypt stakeholders perspective.

The findings of this study suggested a detailed set of DMS qualities which is quite different to DeLone and MacLean's model (1992, 2003). This is in order to suit the context of DMS and its characteristics. The proposed dimensions of system quality components include factors that emerged from investigating the stakeholders' perspectives on what they need to find from a DMS as a product. This study divides DMS qualities to DMS components and DMS services. DMS components interest in the technical issues of DMS and have been divided to sub-dimensions, i.e. hardware, website, system content and information, and other system components (e.g. security system, Intranet and Extranet). The factor 'service quality' implies improving social relations among users, service providers, and DMS organization.

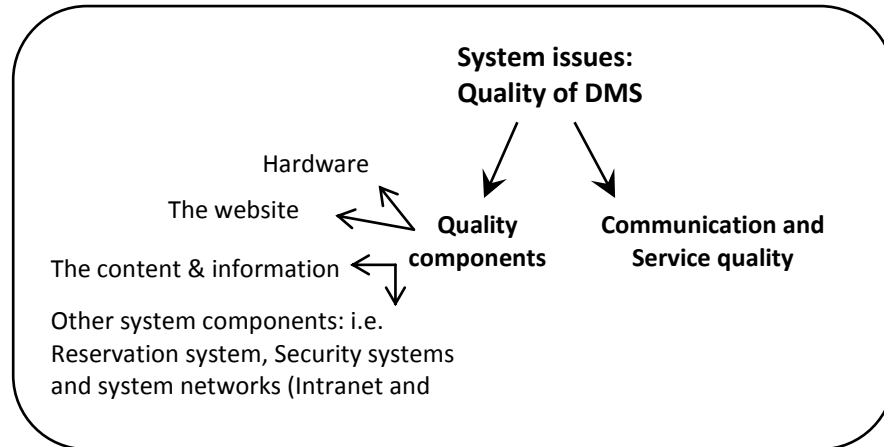


Figure 31: Part of Figure 30 demonstrating system issues that influence DMS effectiveness

8.3.2.4.1. Quality DMS components

Quality of DMS components, in this study, refers to DMS's software and hardware. The findings revealed that hardware quality (e.g. servers and networks) influence, positively or negatively, usage and user satisfaction, because the quality of hardware can contribute in creating users' impressions about the reliability of the system. Generally, the empirical findings presented that issues such as robustness, usability, availability, reliability and user-friendly are issues that need to be considered when developing each of DMS components. In more detail, the following discussion includes the research findings on website, system content and information, and other emergent components (e.g. security system, Intranet and Extranet, see Figure 31).

8.3.2.4.2. The website

Stakeholders regarded the quality of the DMS website as a significant aspect of DMS effectiveness. The website discussions of stakeholders included references to web interface and design quality, easy navigation, ease of use, visibility, 24-hour website availability and reliability of the website. The website is the window of the DMS on the Internet. Accordingly, if the website is reliable and well visualized, there will be a higher possibility that tourists will stay longer on the website and be encouraged to make purchasing decisions. Buhalis and Spada (2007), Wang and Russo (2007), and Wang (2008) articulated that the quality of DMS website interface has an important influence on the satisfaction of DMS users and can be regarded as one of DMS

effectiveness factors. Relatedly, the findings asserted that bad quality DMS website influence usage and user satisfaction. Egyptian tourism providers believe that a poor quality website can hamper tourists in making purchasing decisions, and this will adversely affect tourism provides in terms of the desired financial profits (see Section 7.1.1.2).

8.3.2.4.3. System content and information

Information and content quality emerged as a major factor of DMS effectiveness according to stakeholder groups' perspectives. The findings asserted that DMS website content and information should be comprehensive and present reliable, creditable, useable, up-to-date and unbiased information.

In support of the research findings, findings from Sheldon (1997), Rita (2000), Brown (2004), Hussein et al. (2007), and Wang and Russo (2007) emphasized that the quality of information and content as well as the extent to which that content meets the needs and expectations of customers (Molla and Licker 2001) affect the success/effectiveness of the organization and determine whether a customer will stay on the website or move to the next web site which is one click away. Also, this study argued that information and content quality interacted with other system effectiveness influences. For example, it influences system usage and satisfaction, while it is influenced by other DMS effectiveness dimensions such as organizational factors (see Section 8.3).

8.3.2.4.4. Other components of the DMS

Online reservation system

The importance of providing online booking and reservations has been previously established in the literature. Rita (2000), Buhalis and Spada (2000), Collins and Buhalis (2003), Buhalis (2003), and Wang and Russo (2007) found that online reservation systems is crucial for the effectiveness of DMS. Given the research findings, on line booking and reservations was found to be a significant factor for the effectiveness of DMS. Many Touregypt stakeholders (e.g. tourists, tourism providers, and international organizations such as UNCTAD and UNWTO) found direct online reservations to be

more effective than only the booking requests for the quality of DMS. It has been learned from the Egyptian experience that in an immature DMS context, some of the SMTEs may mishandle with off line booking requests (which is used as an alternative way of reservation to the direct online reservation system in some DMS). This is because, according to Touregypt stakeholders, many of the local SMTEs:

“try to win the customers by offering a very low rate tour and very much decrease the price to less than the minimum which affect the quality of the product and the services provided” (interview with a general manager of one of the large travel companies in Egypt, 2009).

In turn, this attribute of some of the local SMTEs negatively influenced the quality of Touregypt system from the view point of some of the stakeholders (see Section 7.6). Accordingly, this study argued that off line booking requests and price negotiations may cause instability of not only prices, but also the standardized quality services and the quality of DMS as a whole.

Security systems

According to the findings, providing a DMS with a multilevel quality security system was found to be a key principle for the effectiveness of DMS. Asserting the same viewpoint, researchers such as Buhalis and Spada (2000), Molla and Licker (2001), Hornby et al. (2008), and Whitworth et al. (2005) regarded the security system as one of the critical influences that affect IS effectiveness from the viewpoint of system stakeholders. This study found that an inadequate security system has a negative influence on user trust and, as a consequence, on usage and user satisfaction (see Sections 7.1.1.4 and 8.3.2.5).

System networks: Intranet and Extranet

The findings revealed that it is important for DMS effectiveness to be connected to an Intranet and Extranet systems; this is in order to improve stakeholders' communications and information exchange and updates. The system, then, will be more likely to be effective from different stakeholders' view points. For example, according to Touregypt experience, not having an Intranet was found to have a

negative influence on the satisfaction of Touregypt staff. Also, not having an Intranet was found to negatively impact customers' views about the system effectiveness, since Touregypt staff communicated through the online forum and customers could then view inadequate responses by the owner of the system (see Section 7.1.1.5). Through an Intranet the authorized staff can circulate or exchange organizational information with each other. At the same time, the Extranet is important to connect tourism providers and partners with the system and its management company. Authorized partners in this case are able to access specific data and change their product information on the system website which is reflected in improved content and information updates. The findings revealed that having an appropriate Intranet and Extranet influence information and content quality in addition to user satisfaction. However, this factor is not referred to in DMS literature as one of DMS effectiveness influences (see Section 9.5).

8.3.2.4.5. Communication and service quality

As revealed by Touregypt experience, quality was found to be one of the major DMS effectiveness influences. In support of the findings of this study, prior IS studies emphasised the critical influence of the quality of services on IS effectiveness and the necessity of including it as one of IS effectiveness evaluation dimensions (Myers et al. 1998; Wang 2001; DeLone and MacLean 2003, 2004; Cheung and Lee 2005; Wang and Russo 2007). Buhalis and Spada (2000) and DeLone and MacLean (2004) articulated that poor quality services will translate into lost customers and lost sales.

A DMS is an online system which connects online consumers with the local tourism service providers in a destination. This connection is managed by the DMS Management Company (IT service provider in the case of Touregypt). The experience of Touregypt demonstrates that the existence of constant quality communication among these three parties (tourists, service providers and DMS Management Company) is crucial for the effectiveness of DMS. Additionally, high quality communication between the DMS management organization and its staff was found to be essential for DMS effectiveness. Quality of communication (e.g. availability and timeliness responsiveness of services) and supportiveness to system users (tourists

and local tourism business) after purchasing are regarded as key aspects of the quality of services provided by a DMS (see Section 7.1.2).

It is worth mentioning here that DMS research has not yet explored aspects of DMS quality related to DMS staff. Also, little is argued about the quality of communication between the primary stakeholders of DMS (tourists, service providers and DMS Management Company; see Chapter 3). Therefore, this finding of this study contributes to research by adding insights for understanding the DMS service quality.

8.3.2.5. Trust

The experience of Touregypt highlighted the significant influence of building mutual trust among DMS stakeholders on the effectiveness of DMS. While DeLone and MacLean (1992, 2003, 2004) did not include trust in their model as an effectiveness dimension, the findings of the study confirm a number of e-commerce, and inter-organizational systems studies which supported the inclusion of trust as an effectiveness evaluation factor (e.g. Molla and Licker 2001; Allen et al. 2000).

Two facets of trust have emerged from stakeholders' interviews; customers trust in the system security and privacy, and the trust of tourism providers that the system can work fairly for their benefits. According to stakeholders' perspectives, the findings indicated that lack of trust in the system is a result of various aspects related to system issues and organizational factors, such as inadequate security system and privacy; shortage in DMS strategies and regulations; inadequate control over the system; and dominating powers. And finally - as stressed by Hornby et al. (2008) - trust was found to be positively or negatively influenced by the quality of communication between stakeholders. Furthermore, trust was found to interact with other factor of DMS effectiveness (see Section 7.8).

Trust is a factor that has been discussed in e-commerce and inter-organizational system research (e.g. Allen et al. 2000; Molla and Licker 2001; Kumar 2004; Brown and Jayakody 2008). DMS researchers (i.e. Hornby et al. 2008; Sigala 2009) highlighted the influence of trust between tourism providers and DMO, on DMS adoption and participation, see Chapter 3. However, it has not been referenced in DMS research as

one of the system effectiveness influences. Hence, this factor is a contribution to DMS effectiveness literature and it is worthy further investigation (see 9.5).

Furthermore, Williamson's (2007) research findings asserted that trust, cooperation and management commitment are among factors that affect the development of inter-organizational systems (see Williamson (2007) for more information on how the strength of these influences varies according to level of IOS sophistication). The findings of this study concur with this research. Trust has been argued here as an important effectiveness influence, while the influences of stakeholder cooperation and management commitment have been discussed in previous sections (see Section 8.3.2.1). Accordingly, based on the Touregypt experience, what can be inferred from the above results is that inter-organizational factors certainly do play a role in determining the effectiveness of DMS.

8.3.2.6. Use

System usage is a widely accepted factor of IS effectiveness in the literature (Molla and Licker 2001; McGill et al. 2003; Peter et al. 2008; Ozkan et al. 2010). For example, Molla and Licker (2001) considered the usage of the system as an initial indicator of success/effectiveness, especially given that attracting customers is a primary challenge of ecommerce systems. DeLone and MacLean (2003) articulated that when assessing the use of the system it is important to capture the richness of use:

"The nature, level, and appropriateness of use, and should not simply measure the frequency of use" (2003, p. 28).

Supporting the same view, the findings of this study found usage to be an important indication of DMS effectiveness and that the way usage is assessed needs to be considered carefully. This is because Touregypt experience revealed that the way usage is assessed may not give a realistic view on the level of effectiveness. Touregypt Management Company assessed customers' usage based on the hits and visits of the web site. According to their evaluation, Touregypt Company found usage of their system to be high (interview with the Touregypt Egypt Branch Manager, 2009). However, this study argued that the evaluation of Touregypt Company was not enough to give a realistic view of the actual system usage; this is because, apart from

ignoring assessing the use of other stakeholders such as tourism providers, the nature and appropriateness of use were not considered. The findings revealed that tourists use the system basically as a source of information; hence, this could be the reason why hits and visits were found to be high, although the actual tours reservations were found to be low. The findings asserted that the actual reservations completed by the system were not included by the Touregypt Company when assessing the system usage. This can imply a gap between the actual usage of the system and what the system is meant to be used for, since the main functions of the system are providing information as well as buying the tourism products of the destination.

Therefore, supporting DeLone and MacLean's theory (2003), this study emphasised the importance of assessing system usage as one factor of DMS effectiveness in addition to assessing the way the system is used by different stakeholders. Also, the consistency between the purpose of the actual usage and the sketched out purpose about how the system should be used is important to be considered to acquire a realistic view on DMS effectiveness.

In addition, results revealed that usage is influenced by organizational factors and system factors. For example, IT/IS knowledge and skills, in addition to the provided training, may affect the interest of staff and managers to use the system (see Section 7.2.3). Also, previous experience with the system (the website and customer support) might affect future use of DMS.

8.3.2.7. User satisfaction

Based on the Egyptian DMS experience, user satisfaction is an important effectiveness factor that can help in indicating the extent to which a DMS is effective. However, the findings of this study disagree with researchers who depend on user satisfaction alone to measure the effectiveness of IS. This is because, as evidenced by the Touregypt experience, assessing user satisfaction cannot give a realistic long-term assessment. The tourists and local companies were satisfied at the beginning of Touregypt project, however the system was suffering from problems that users could not see at that time, such as funding problems and lacking appropriate strategies and IT/IS skills. These problems and others have contributed to the Touregypt system to becoming

ineffective from its users' perspective and then driving the system to completely fail (see the full story of the system on Section 6.1.2.).

However, the findings of this study concur with IS researchers who have regarded user satisfaction as a critical factor of IS effectiveness evaluation (e.g. Myers et al. 1998; Seddon et al. 1999; Molla and Licker 2001; DeLone and MacLean 2003; Myers 2003; Saberwal et al. 2004). As discussed by DeLone and McLean (1992, 2003, 2004), user satisfaction is probably the most widely used measure for IS effectiveness in literature. They added that assessing user satisfaction should consider covering the entire user experience cycle from information retrieval through purchase, payment, receipt, and service.

Additionally, the findings support the arguments of Saunders and Jones (1992), Myers et al. (1998) and Myers (2003) about the importance of considering the relationship influence between organizational factors and user satisfaction when evaluating the effectiveness of an IS as discussed in the following paragraph.

User satisfaction is directly affected by DMS qualities (components and services), usage, trust and net benefits. And it is indirectly influenced by organizational and contextual factors. For example, Section 7.3.4 the findings revealed that lacking the appropriate marketing strategies affected the satisfaction of some stakeholder groups (i.e. local tourism providers, especially the medium and large tour companies). Some local tourism providers were found to be unsatisfied by the net benefits they gain from the Touregypt project as it lacked B2B marketing strategies. Therefore, net benefit is regarded as a direct influence to user satisfaction, whereas, organizational and contextual factors can be regarded as indirect influences on the satisfaction of system users. Therefore, this study suggests that user satisfaction should capture how users (e.g. tourists, staff and tourism providers) feel about the whole experience of using a DMS starting from organizational and contextual factors support, moving to the system itself (the system as a product and services) and finally including the benefits they gain from using the system.

Also, the findings highlight that different stakeholders' perspective need to be considered when evaluating satisfaction; otherwise the results of the evaluation will

be deficient. According to the Touregypt experience, depending on specify effectiveness by considering part of the stakeholder perspective can be deficient (see to 7.3.4).

8.3.2.8. Perceived net benefits

According to the Touregypt stakeholders' perspective, achieving benefits is a major DMS effectiveness influence. Emerged from the findings, the need to achieve appropriate benefits for all stakeholders groups as well as having common visions and accurate expectations on DMS benefits, among stakeholders, are two important facets that need to be considered when evaluating the DMS effectiveness. In other words, the evaluation should consider the actual benefits achieved in comparison to stakeholders expectations from the viewpoint of all system users.

In support of the findings, researchers regarded the net benefits as a crucial effectiveness factor that need to be considered when evaluating IS (DeLone and MacLean 2003; Ozkan et al. 2007; Peter et al. 2008), according to how it is perceived by system users (Staples et al. 2002; Wu and Wang 2006). This is because different stakeholder groups are expected to have different set of benefits of the same IS (DeLone and MacLean 2003). Regarding to 'from whom perspective? And which benefits? Should be measured', DeLone and Maclean (2003, 2004) argued that the choice will depend on the system being evaluated and its purpose or context. Reflecting on this study, all stakeholder groups' perspectives on the perceived benefits of using the DMS need to be considered when evaluating the system effectiveness (see Section 6.1.3, in which DMS stakeholder groups are identified, and Section 3.3.1 for a review on stakeholders' possible benefits according to Buhalis and Spada 2000).

Also, in line with the findings, the importance of having shared visions on the potential DMS benefits among stakeholder groups has been highlighted as significant by Sigala (2009). The Touregypt experience has revealed that having a shared vision of DMS benefits can reduce the mismatch between stakeholders' expectations and the actual realized benefits. Therefore, it is found important that DMO should have a discussion with the involved stakeholders about DMS targets and the potential

benefits that can be achieved to each of the members. This conversation about DMS benefits needs to be held in the beginning of DMS planning and development, this is to be able to reach a consensus on objectives and system targets among stakeholders (see Section 7.3.4).

8.3.3. Relationships among dimensions and sub-dimension of the suggested DMS effectiveness evaluation model

The research findings identified multiple and complicated relationships (influences and interactions) among DMS effectiveness influences. Supported by the preceding discussions, there are existences of direct and indirect relationships among dimensions and sub dimensions of the suggested DMS effectiveness evaluation model (Figure 30). This study argues that considering these relationships in evaluation is important in order to understand the effectiveness of the system under investigation (see Section 8.3.1). In the same vein, Wang (2008a) argued that:

“When implementing a DMS, focusing on the factors identified in the conceptual framework is important, but perhaps a more important issue is the level of integration and co-ordination between these factors” (2008a, 68).

The following discussion gives examples of the relationships emergent from analysis of the dimensions and sub dimensions of the suggested model. The model (see Figure 30) is divided into three parts to facilitate the discussion of the interactions of each of them as demonstrated in the three subheadings below.

8.3.3.1. Interactions of organizational and environmental influences within the model

The Touregypt experience asserted that organizational and environmental factors, jointly and singly, affect, either positively or negatively, the quality of DMS components and services as well as user reactions (trust, use, and satisfaction). The net benefits, on the other hand, influence organizational factors. Some of the emergent relationships have been previously referenced in literature, while others

can be considered as a contribution of this study that needs further investigation (see Section 9.5), for instance:

1. Within the organizational environment, an interacting relationship has been found among adequate funding, top management support, IT/IS knowledge and skills, appropriate strategies, and training. For example, top managers who have appropriate IT/IS knowledge are likely to support plans and strategies of enhancing qualities of DMS components and services through adequately deciding on funding and training programme. Training programme on the other hand help increasing the IT knowledge and skills of managers and system users. In support of the findings of this study, IS researchers asserted the interactions between numbers of organizational factors. For example, in their research, Kelegai and Middleton (2004) argued for a relationship influence between IT/IS knowledge and skills and adequate funding. Malik and Goyal (2003) found an interaction relationship between training and collaborative environment (e.g. top management support and appropriate strategies). Additionally, Byrd et al. (1995) showed a positive association between top management support and the quality of IS plans developed by the organization.

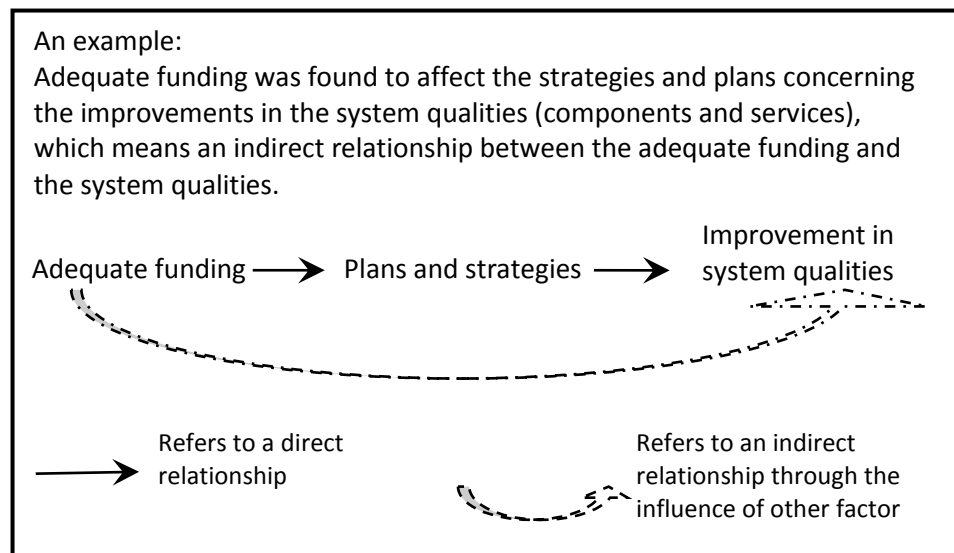


Figure 32: An example of direct and indirect relationships between DMS effectiveness factors

2. Sub-factors of organizational and environmental factors interact together and influence the effectiveness of DMS. The findings revealed that for the

destination management organization (DMO) to be able to adequately control the system, it needs to create a framework of appropriate strategies, plans, and procedures to help in verifying, organizing and directing the activities and processes, and relationships of DMS application (see Section 7.3). Also, both organizational and destination influences were found to interact together and influence the quality of DMS. For example, having a clear vision and planned strategies for the development of e-tourism in the destination can positively affect DMO to have a clear vision and formulate adequate strategies for DMS development. Furthermore, clear vision and planned strategies were found to affect directly (and indirectly through funding and other supporting strategies; (see Figure 32) implementation and improvements in DMS quality components. Therefore, there are indirect influences between destination factors and system qualities through organizational factors. Also, a direct influence has emerged through the influence of IT infrastructure of the destination on system qualities, Internet connections and strategies to protect online transactions (see Sections 7.7.1.3 and 7.8 and Figure 33). Many examples have emerged in the findings that assert the influence of organizational factors on DMS qualities (components and service quality). For example, according to the Egyptian branch Touregypt Manager (interviewed in 2009), the inadequate IT knowledge and skills of many of the local tourism businesses, as well as funding problems, negatively influenced Touregypt Management Company decision not to employ an Extranet, which negatively affected information updates (see Section 7.8).

3. Results revealed that usage of the system is influenced by organizational and contextual factors and system factors. For example, IT/IS knowledge and skills, in addition to the provided training, may affect the interest of staff and managers to use the system (return to Section 7.2.3). In support of the findings, Hwang et al.'s (2000) research results highlighted the influence relationship of organizational and environmental factors on use and satisfaction. For example, top management support was found to have an influence on use (King and Teo 1996; Hussein et al. 2005) and satisfaction (Sabherwal 2006). Literature emphasised the role of top management support in motivating *“greater user participation, and leads to greater IS success, in terms of perceived usefulness,*

user satisfaction and system use" (Sabherwal 2006, p. 23). Boynton et al. (1994) also found that managerial IT/IS knowledge (as an organizational and environmental factor) has an impact on IT use. Their findings showed that managerial IT knowledge is important in promoting high levels of IT use within the business units. Commenting on the influence relationship of IT knowledge and skills with other effectiveness influences, Zhu et al. (2004) revealed that importance of organizational IT skills and readiness are reflected in the intensity of the system use. This is in addition to effective IS/IT infrastructure (Premkumar 1995; Lu et al. 2006).

4. On the relationship between the environmental and user's reactions (usage and satisfaction) factors, the findings suggested a direct relationship influence between culture factors and usage of the system as well as a relationship between the quality infrastructure and the positive users satisfaction (see Section 8.3.2.3.1, and see Figure 33). The findings of Agourram (2009a) and Chadhar and Rahmati (2004) suggested an influence of culture factors on system usage that can positively or negatively have an effect on IS effectiveness.
5. Organizational and contextual factors such as control, top management support and having adequate strategies and rules for DMS implementation were found to have an influence on the trust of local business in the system. Customers' trust, on the other hand, can negatively be influenced by poor quality of system components such as poor system security as discussed in the following subsection.

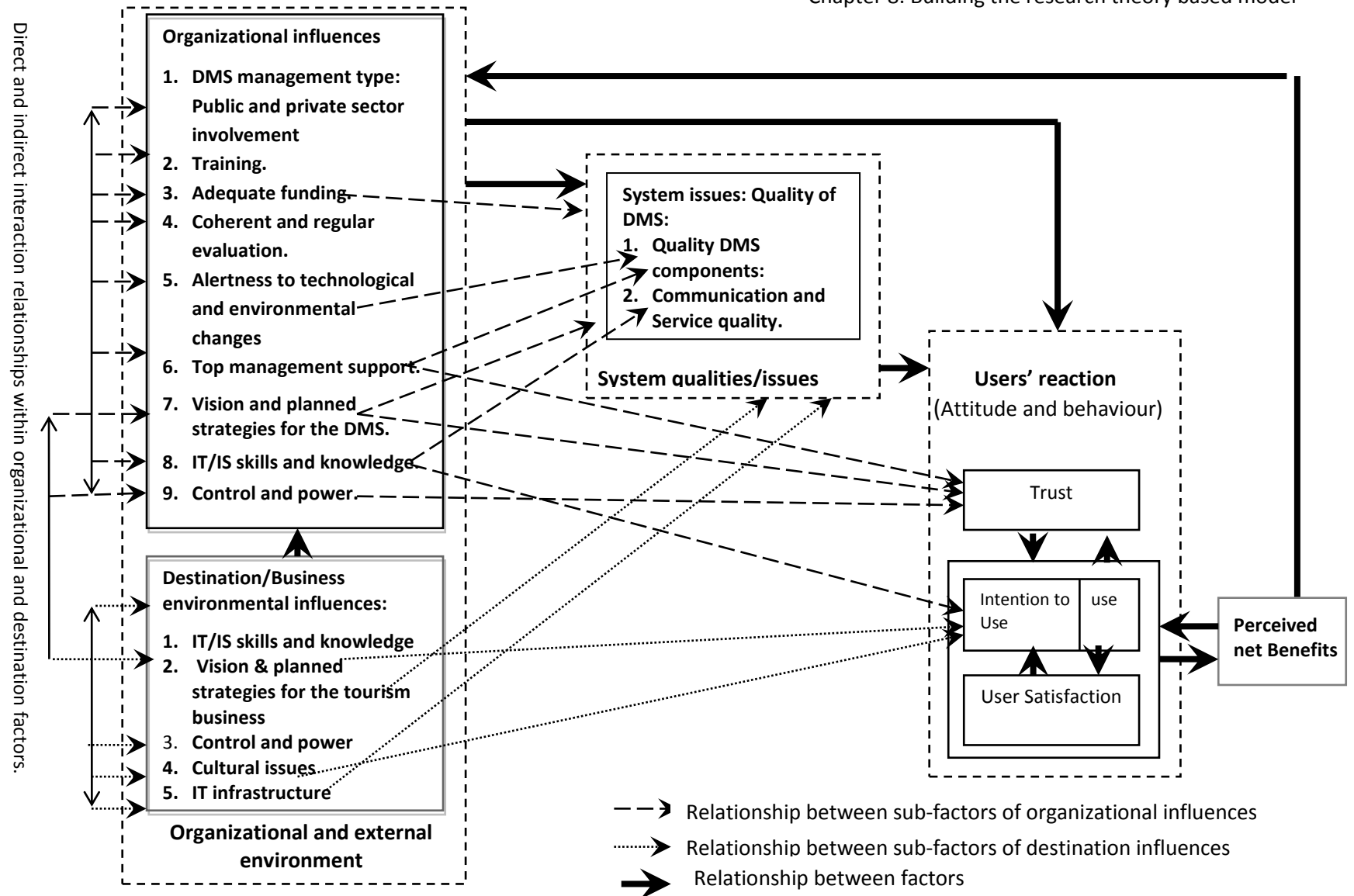


Figure 33: Examples of the organizational and environmental factors relationships among dimensions – the left hand side is part of the suggested model (see section 7.3.3.1)

8.3.3.2. Interactions of the system qualities and user reactions within the suggested model

In support of DeLone and Maclean (1992, 2003), the findings demonstrated that system qualities influence user's reaction concerning use, user satisfaction as well as trust (see Figure 34). Also sub-dimensions of DMS qualities (components and services) and users' reactions interacted with each other, within and between the dimensions, as shown in the following:

1. The findings demonstrate internal influences among factors of DMS qualities (components and services). For example, DMS quality service has been affected by the quality of the system components. Delays in updating the system information and the poor relationship between Touregypt online moderators and the managers of the Management Company were attributed by the stakeholders to the lack of employing important sub systems such as an intra and an Extranet.
2. The Touregypt project use and user satisfaction were positively influenced by the good quality services presented by the system online moderators. Also, tourists attributed the high rate of Touregypt usage, especially in the beginning of launching the system, to the quality information and content of Touregypt. However, Touregypt perceived poor user satisfaction concerning the poor quality of its servers.
3. The findings support DeLone and Maclean's (1992, 2003) model about the existing interrelationship between use and user satisfaction. DeLone and Maclean differentiated between process and causal relations. In a process sense use should precede user satisfaction, but in a causal sense a positive experience with the use of the system should increase the satisfaction of the users. Furthermore, an increased user satisfaction will increase the intention to use which eventually will increase use (DeLone and McLean 2003), and hence effectiveness. It is worth mentioning here that, in their updated model, DeLone and MacLean (2003) added intention to use to use as a measure of IS

effectiveness. This is in order, as they said, to avoid the process/casual concern brought up by Seddon (1997). Therefore, they included intent to use, as an attitude, instead of, only, use, as behaviour.

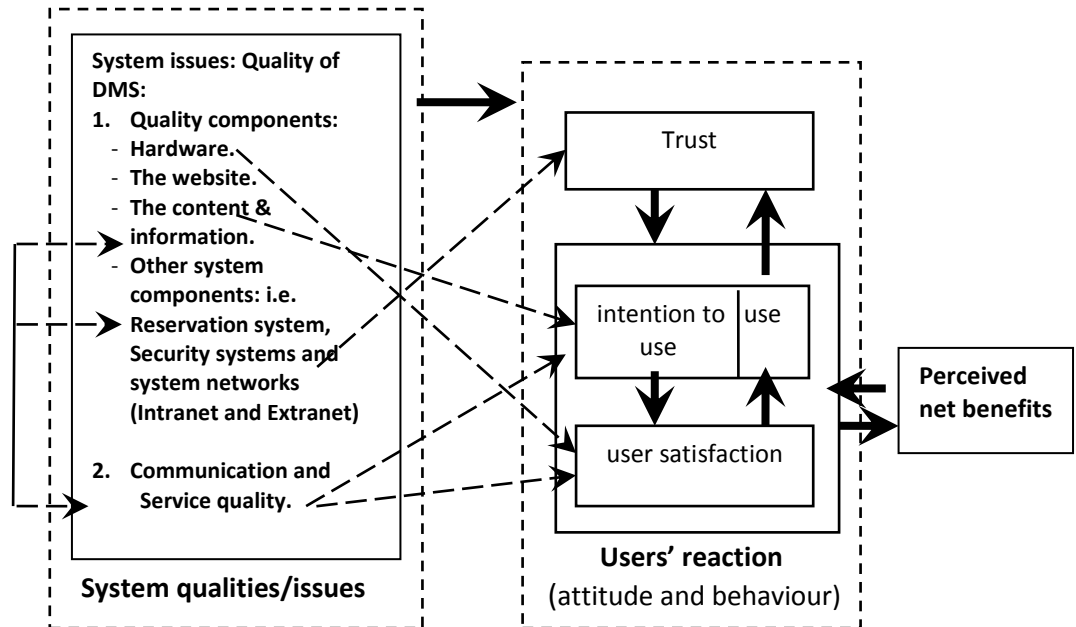


Figure 34: Examples of system qualities and user’s reaction relationships among dimensions and sub-dimensions – the mid part of the suggested model (Figure 30).

The findings demonstrated that users’ trust can negatively or positively influence the usage of the system, as does user satisfaction (Allen et al. 2000; Molla and Licker 2001). In this regard, some tourists and a number of the local tourist businesses of Touregypt attributed the lack of trust to either the poor quality system that Touregypt employed or to the lack of power and control of the DMO over the system (see Section7.4). As a consequence of the lack of trust, according to stakeholders’ views, Touregypt usage and satisfaction have been negatively affected. Therefore, the level of trust can affect the amount of use and the degree of user satisfaction. Although trust comes first in the suggested model (Figure 30), it does not mean that trust is an antecedent to use as a factor, since users need to use the system first to experience the feeling of trust and satisfaction.

8.3.3.3. Interactions of net benefits within the suggested model

According to the Touregypt experience, organizational and environmental factors have an indirect influence on the benefits achieved. For example, inadequate benefits (especially financial revenues) influenced the decision of Touregypt Company to adequately fund the system development and further improvements which lead the system qualities (product and services) to be poor. Achieving benefits was found to critically influence the extent of stakeholders' usage and satisfaction. The findings attested that lack of the positive benefits leads to decrease of user satisfaction and in turn the use of the system; and conversely, if benefits were found to be positive, usage and user satisfaction will be increased (Torkadeh and Doll 1999; DeLone and Maclean 2003; McGill et al. 2003; Halawi et al. 2007). Additionally, realizing positive benefits directly and indirectly positively increases the support of organizational and external factors, such as increasing DMO interest, top management support, and facilitating adequate funding and improving the system technological infrastructure in return (Figure 30). Here, the loop of the model starts again, organizational and external factors affect system qualities which positively or negatively influence trust, use, and user satisfaction that lead to achieving benefits and so on (Figure 35).

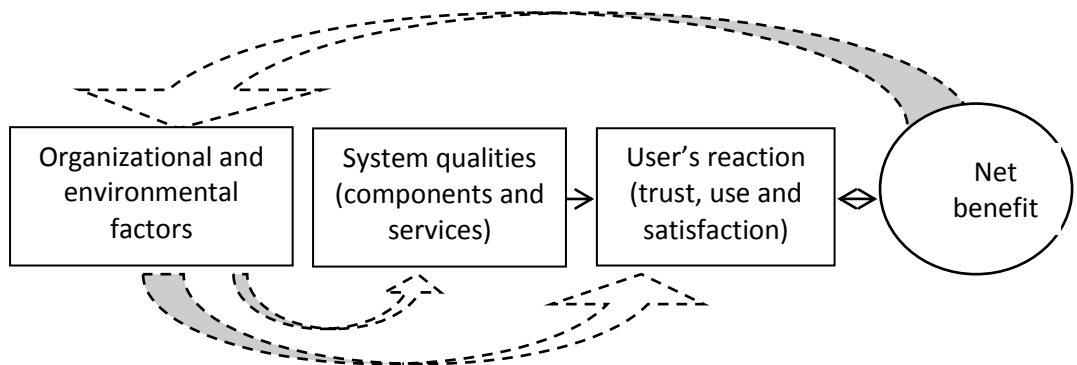


Figure 35: The relationship between the main constructs of the suggested DMS effectiveness evaluation model

8.4. Chapter summary

This chapter is dedicated to discuss the findings of this study (Chapter 6) in the light of prior theories of IS and DMS. The DeLone and MacLean model of IS success/effectiveness has been used as a lens to interpret the research findings. The relevance of DeLone and MacLean's theory (1992, 2003) to this research has been presented in Sections 8.1.2 and 8.2 and the suggested extension to DeLone and MacLean's (1992, 2003) IS effectiveness evaluation model has been argued. The extension includes organizational and environmental factors as well as trust as a significant factor relating to users' reaction in order to move towards a holistic DMS effectiveness evaluation. In this chapter, the suggested model and its constructs were presented – and their relationships (influences or interaction) were examined in Sections 8.3.2 and 8.3.3.

Chapter 9: Conclusion and implications

Introduction

This chapter brings the study to a conclusion. It summarizes and reflects upon the findings of the study. In particular, it starts with a discussion on whether the study has been able to achieve the aims and answer the questions that were identified in the first chapter. Here, the contribution of this thesis to theory is presented. Also, the way in which the emergent findings contribute to IS and DMS effectiveness research is highlighted, and the possible contribution to practice is indicated. Finally, limitations of the study are considered and areas for future research are suggested.

9.1. Summary of the research

Reviewing the literature of DMS has highlighted that there are many unsolved issues in DMS effectiveness and its evaluation. This, in turn, negatively reflects on the appropriate understanding of DMS effectiveness evaluation in research (see Sections 1.2 and 3.4). Therefore, this study has been dedicated to taking a further step in the current research towards the holistic understanding of the effectiveness and evaluation of DMS. Particularly, this study investigates what constitutes effectiveness and what should be considered to approach a holistic evaluation. Informed by an interpretive paradigm, a qualitative evaluation case study approach was adopted for answering the questions and realizing the outlined aims of the study. Prompted by the research approach, this study tried to explore DMS effectiveness based on the perspectives, attitudes and experiences of DMS stakeholder groups. For identifying the stakeholders, a broad view that includes multiple perspectives of stakeholder groups, from the primary and secondary groups, has been adopted. Also, the strategy for carrying out the research was detailed in Section 5.5, justifying the process of generating the research theory. This strategy has included four stages for collecting and analyzing the evidence, and reflected upon the emergent findings. Evidence was collected from a variety of primary and secondary sources, particularly interviews, observation, forum archival document analysis, and website analysis (see Section 6.2). Data were then analyzed and informed by discourse

analysis, and Gee's (2005) approach was combined/integrated with Miles and Huberman's (1994) approach. Additionally, Nvivo 8 and Microsoft Office OneNote were used as complementary software to organize and manage the data of the study. The raw data were analysed and classified into categories and sub categories (see Table 10 for a complete list of categories). The findings outlined in Chapter 7 provided a picture of the factors that significantly influence Touregypt project effectiveness (the Egyptian DMS) according to the multiple stakeholders' perspectives. These findings were further interpreted in the light of prior theories of DMS and information systems, particularly the DeLone and MacLean IS effectiveness theory (see Chapter 8). This was in order to discuss the suggested theory based model of DMS effectiveness evaluation (the constructs and the relationships among them) in relation to confirming and disconfirming evidences from the relevant literature (see Section 8.3.2).

9.2. The research results in relation to the research questions and objectives

The following discussion describes the research outcomes in the light of the questions and objectives of the study.

9.2.1. Answering the main question

The main question is what aspects need to be considered when holistically evaluating DMS effectiveness?

The term 'aspect' implies the factors of effectiveness and the possible relationships between them. In relation to this question, the study found that DMS effectiveness influences evolve from four types of environments; systemic, organizational, internal destination and external destination contexts (see Figure 36). The embedded nature of DMS effectiveness within the different system environments has been highlighted; (see Section 8.3.1, and for more detail, Section 7.2). It has been suggested that, In order to understand and holistically evaluate DMS effectiveness, the factors that emerged from these four environments need to be considered, and the relationships between them should be addressed. Figure 36 presents a simplified model for the reality of the four environments of DMS effectiveness influences and gives examples

for each of them. These examples and the relationship between them are detailed in Section 8.3.2 and Figure 30.

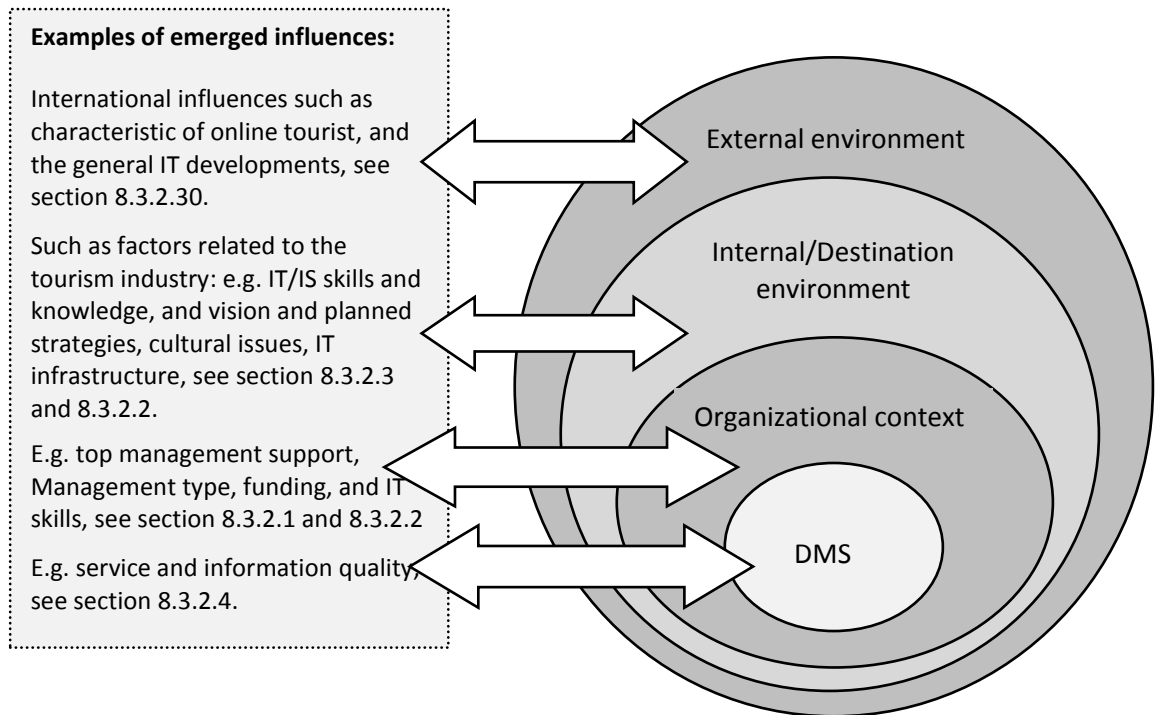


Figure 36: different environments that influence the effectiveness of DMS, from which the findings of this study have emerged

9.2.2. Answering the minor questions

The main question was divided into other two minor questions in order to unpack the term ‘aspects’ and provide detailed answers on the factors of effectiveness and the relationships among them as follows:

1. According to stakeholders, what are the factors that influence DMS effectiveness?
2. What are the relationships between factors affecting DMS effectiveness?

Answers to the above first and second minor questions take the shape of a theory based model that includes the factors and sub-factors of DMS effectiveness, as well as the possible relationships between them (see Figure 30). The following lists the main

concepts of the suggested model as emerged by the findings of this study (for more details on the research findings, see Chapter 8):

- This study argues that when holistically understanding and evaluating the effectiveness of DMS, considering the factors identified in the suggested model (Figure 30) is important, and the level of integration and co-ordination among these factors are equally important (see Section 8.3.3). As suggested by the findings, complementing effectiveness factors with each other can produce an effective quality DMS that has a higher chance to satisfy the needs of different stakeholders groups and achieve for them proper benefits (as defined by each stakeholder).
- Depending on only one or more of the suggested effectiveness dimensions, such as net benefits or user satisfaction, to measure the effectiveness does not give a realistic and coherent view for a long-term effectiveness assessment. The study suggested that in order approaching a holistic understanding and evaluation of DMS effectiveness, effectiveness factors cannot be considered a part of one another. Therefore, the evaluation should consider effectiveness constructs and the relationships (interactions and influences) between them in order to provide better understanding for the evaluation results, the extent of the system effectiveness and the causes of these results.
- In more detail, for a holistic DMS effectiveness evaluation that facilitates a learning process on how DMS performance can be improved, the results of the evaluation need to point out what leads to a particular negative or positive results regarding one of the dimensions or sub dimension of the system. This is in order for organizations to work on eliminating phases of weakness and supporting those of strength. For example adequate funding can be influenced by the financial benefits of the system, the top management support, the existence of supportive vision and planned strategies, or all these combined. Considering the factors influencing effectiveness in the suggested model can answer which of these influences contribute to the adequate or inadequate funding.

9.2.2.1. The first minor question

In relation to the first minor question about the factors of DMS effectiveness, see Section 9.2.2, the proposed model of DMS effectiveness evaluation suggests that organizational and external environmental factors, system quality issues, user's reaction (trust, use, user satisfaction) and net benefits can singly and jointly influence the effectiveness of DMS (Figure 30). These factors are divided into other sub factors as explored by the study of the Egyptian DMS experience. These factors have been previously detailed in Section 8.3, and listed in the following bullet points:

1. Organizational influences
 - DMS management type: Public and private sector involvement
 - Top management support
 - Training
 - Adequate funding
 - Coherent and regular evaluation
 - Alertness to technological and environmental changes
2. Shared influences (between organizational and destination influences)
 - IT/IS skills and knowledge
 - Vision and planned strategies
 - Control and power
3. Destination/Business environmental influences
 - Cultural issues related to the effectiveness of DMS
 - Technological infrastructure
4. System issues: Quality of DMS
 - Quality DMS components, e.g. hardware, the website, the content & information, and other system components (i.e. online reservation system, Security systems, and system networks, Intranet and Extranet)
 - Communication and Service quality
5. Users' reaction
 - Trust

- Use and intension to use
 - User satisfaction
6. Perceived net Benefits
- Benefits to all stakeholders
 - Having common vision and accurate expectations on DMS benefits among stakeholders

9.2.2.2. The second minor question

As for the second minor question, see Section 9.2.2, the findings address the possible relationships (influences and interactions) that have emerged among DMS effectiveness influences, according to the evaluation of the Egyptian DMS experience (the Touregypt project). The findings indicated that the relationships between the effectiveness influences (the dimensions and sub-dimensions) are multiple and complicated, and include many direct and indirect influences (see Section 8.3.3) as described below.

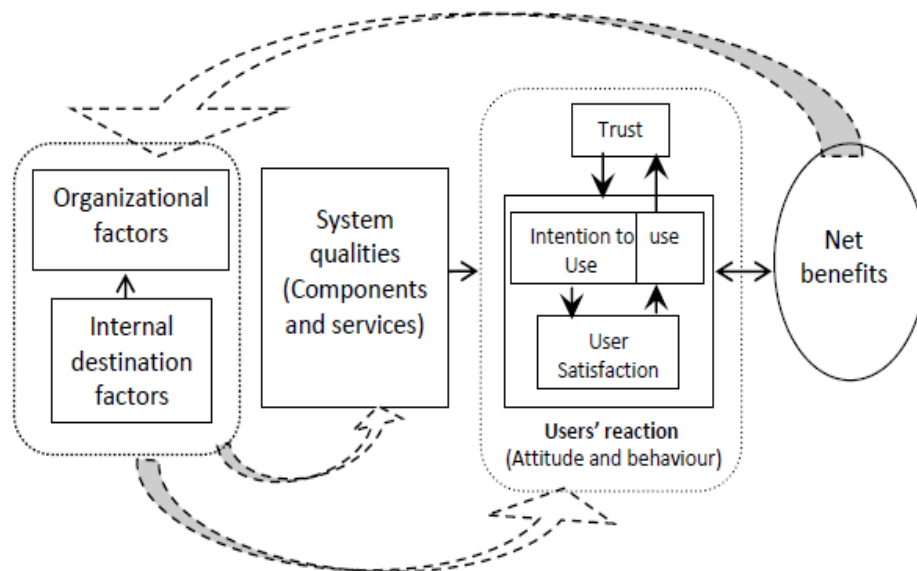


Figure 37: Summary of the main emergent relationships within the suggested DMS effectiveness evaluation model

The findings suggested that factors of the DMS effectiveness evaluation model interact with each other and influence, either negatively or positively, the

effectiveness of DMS (see Section 8.3.3). Figure 37 shows the emerging interactive relationship among the main dimensions of the suggested DMS effectiveness evaluation model. It reveals that organizational and destination factors affect the quality of DMS components and the services provided. Users and managers, then, experience the DMS by using it. The usage leads users and managers to be either satisfied and trust the system, or dissatisfied and mistrust it. Hence, the qualities of the system components and services affect, positively or negatively, trust, use, and user's satisfaction. The findings showed that, in addition to the system qualities, organizational and environmental factors can directly influence user's reactions. For example, culture and IT/IS knowledge and skills of the local community were found to have an influence on the use of the system (for more examples see Section 8.3.3). Furthermore, the reaction of system users interacts with the gained benefits of using the system. The gained benefits, on the other hand, positively or negatively influence both user reactions towards the system, and organizational and environmental factors (such as top management support and appropriate funding for developing the system). For example, realizing positive benefits directly and indirectly increases the support of organizational and external factors, such as increasing DMO interest, top management support, and the acquisition of adequate funding and, consequently, enhancement of the system technological infrastructure (see Section 8.3.2.8). Then, the suggested interaction (the loop) of the model constructs start again; organizational and external factors affect system qualities which positively or negatively influence trust, use, and user satisfaction, and which consecutively lead to achieving benefits and so on. The relationships between the constructs of DMS effectiveness, as the theory-based model suggests, are detailed in Section 8.3.

9.2.3. Realizing the objectives of the study

The above discussion summarized the findings with respect to the research questions. Furthermore, this thesis has realized, as demonstrated in the following table, the objectives that were outlined in Section 1.3.

Table 13: Summary of the objectives and how and where they were realized in the study

Objectives	Degree of fulfilment
<p>Enhance the understanding of DMS effectiveness by exploring what constitutes DMS effectiveness and how the effectiveness constructs are related to each other.</p>	<p>The first objective has been realized as evident by the answers of the research minor questions (see Section 9.2). In which DMS effectiveness constructs and the emergent relationships among them have been identified.</p> <p>In relation to DMS effectiveness understanding, this study is one step on the road. Although it is believed that this study takes the research of DMS effectiveness a step forward to holistically understand DMS effectiveness constructs, DMS effectiveness has not been fully understood by this study and further research is still needed (see Section 9.5). The findings revealed that the relationships between DMS influences are multiple and complicated and cannot be covered by just one study. Further research studying DMS effectiveness from other research perspectives (e.g. positivism) and considering the limitations of this study is needed (see Section 9.5).</p>
<p>Approaching a holistic perspective that considers the multiple DMS stakeholders' views on effectiveness as well as being open to any emerging internal and environmental effectiveness influences.</p>	<p>Prompted by the adopted research strategy, this study has fulfilled this objective. An interpretive qualitative investigation informed the research choices regarding a broad perspective in identifying the stakeholders and the factors that influence DMS effectiveness. Primary and secondary stakeholders perspectives (e.g. international tourism organizations and local tourism providers) on effectiveness are explored according to a comprehensive stakeholders map as outlined in Chapter 6. Also, the study was open to explore any possible emergent influences as expressed by stakeholders' experiences. Accordingly, the proposed DMS effectiveness influences varied from internal organizational and system influences to external environmental influences (see Chapter 7 for more details).</p>
<p>Qualitatively evaluating a DMS experience in one of the developing countries; the Egyptian DMS effectiveness (Touregypt project).</p>	<p>This study has explored the Touregypt project effectiveness by qualitatively evaluating the experiences and attitudes of stakeholders on the system effectiveness. Section 5.2.2.2 has presented how this evaluation is done. Exploring the Egyptian experience has benefited the investigation of DMS effectiveness and its evaluation. This is because the study of this system involved many areas that have not been explored before in literature, such as studying a failure experience (the system completely failed during the conduction of this study), studying DMS in a developing country, and a DMS failure in a</p>

	public and private sector partnership (see Sections 6.10).
DMS is a tourism distribution system and a web-based inter-organizational information system (Chen and Sheldon, 1997). Accordingly, this thesis aims to bring both sides of DMS - the tourism and the information systems fields-together by reviewing how IS effectiveness and its evaluation is conceptualized in IS as well as in DMS (tourism) research.	This study has intensively reviewed DMS and IS literatures (especially general IS effectiveness studies and WBIOS studies; see chapters 2, 3, and 4. As has been indicated in the research contribution (Section 9.3), no DMS study on effectiveness has combined research of DMS and IS. Chapters 3 and 4 of this study investigated what has been studied on system effectiveness and its evaluation, and what has been learned to serve the aim of this research.

After presenting a summary of the findings in relation to the research questions and objectives, the contributions, limitations, and implications of the study are examined in the next sections.

9.3. Contribution of the study

The main contribution of this study to the body of knowledge is a theory-based model that takes the research of DMS a step forward, to holistically understand and evaluate the effectiveness of DMS on both theoretical and practical levels (for the definition of holistic see Appendix 1). Informed by an interpretive approach, this model identifies the emergent effectiveness factors and the relationships among them. The study contributes to the theories of DMS and IS research as well as the practice of DMS as demonstrated below:

9.3.1. Theoretical level

Chapter one (Section 1.3), shed light on the possible contribution of this study to the body of knowledge. The following gives the details of such contribution in relation to DMS, general IS, and web-based interorganizational systems' effectiveness and evaluation research.

9.3.1.1. In relation to DMS research

Reflecting on the DMS literature gaps that have been mentioned in Chapter 1 (Section 1.2) and detailed in Chapter 3, this study helps advance knowledge of DMS effectiveness and its evaluation beyond the prior DMS research in four areas:

- Incorporating theories from other disciplines which have not been used before in DMS research (IS theories, particularly the IS effectiveness evaluation theory of DeLone and MacLean (1992, 2003)).
- Mapping DMS stakeholders from a comprehensive perspective and identifying stakeholder groups of DMS, and interpreting their multiple perspectives on effectiveness (see Chapter 6).
- Enhancing the understanding of DMS effectiveness and its multiple influences; (system, organizational, and external organizational factors), as well as exploring a number of stakeholders' perspectives that have not been explored before, such as DMS staff (e.g. DMS website moderators).
- Identifying aspects (factors and relationships) that need to be considered when evaluating the effectiveness of DMS from a wide perspective.

The following discusses the contribution of the above four items to DMS theory.

9.3.1.1.1. Providing a new theoretical lens

DMS research has been criticized for lacking theoretical grounding. Hornby (2004) articulated that much of DMS research has not made use of prior theories, thus little theoretical development has been made (see Section 1.2). Conversely, this study incorporates theories of IS literature that have not been used before in DMS effectiveness studies to enrich insights of how IS researchers perceive system effectiveness and carry out its evaluation (see Chapter 4). This study argues that integrating the findings of DMS studies with IS literature adds a new dimension regarding the understanding of DMS effectiveness and its evaluation. This is because DMS is a tourism information system. Therefore, this thesis aims to bring both sides of DMS - the tourism and the information systems fields – together, to add a new theoretical lens to the conceptualization of DMS effectiveness.

9.3.1.1.2. Research contribution to mapping DMS stakeholders

Identifying a comprehensive view of DMS stakeholders is regarded as a contribution to the general DMS research. The only study that investigates stakeholders of DMS is that by Buhalis and Spada (2000). They applied a narrow view in identifying stakeholder groups of DMS. The present study, on the other hand, adopts a broader perspective. Section 6.1.3 justified and presented the inclusion of both the secondary and the primary groups in the suggested DMS stakeholders map (Figure 10).

9.3.1.1.3. Research contribution to what constitutes DMS effectiveness

Based on insights from the empirical study and an extensive review of DMS and IS literature, this study gathered and discussed the possible internal and external factors that critically influence the effectiveness of DMS. This study contributes to knowledge in several ways:

- The exploration of new DMS effectiveness influences that have not been referred to before in the theory of DMS effectiveness, such as the influence of trust and cultural issues on DMS effectiveness. This study also provides insights on factors already existent in the literature, such as DMS service quality which has been investigated in ways such as: (i) the quality of communication between DMS management company and their working staff (the online moderators in the case of Touregypt experience); and (ii) the quality of communication between the three primary stakeholders of DMS (tourists, service providers and DMS management company; see Sections 8.3.2.3.1, 8.3.2.4.5 and 8.3.2.5).
- The proposed theory not only highlights possible DMS effectiveness influences but also sheds light on the type of environment from which these influences evolved (see Figure 36).
- The exploration of many relationships (influence and interaction) between DMS effectiveness factors which have not been researched in relevant literature (e.g. the relationships among the sub-factors of organizational and environmental factors, the interaction between trust, use, user satisfaction, as

well as the influence of organizational factors on both system qualities and users' reactions (for more detail, see Section 8.3.3).

- The three unique attributes of this study, as listed below, give, new insights into DMS research on the understanding of DMS effectiveness and its evaluation: first, this study explores DMS effectiveness in the context of a developing country (Egypt), while the great majority of prior studies explore DMS in the context of developed countries; second, this study investigates a failed DMS experience (Touregypt project), whilst all prior studies, to the knowledge of the researcher, investigated successful DMS application (e.g. Proll et al. 1998b; Richie and Richie 2002; Collins and Buhalis 2003); and third, this study investigates multiple stakeholder groups' perspectives (including the members and the non-members of the Touregypt project), whereas DMS studies on effectiveness have previously only examined the perceptions of tourism providers that are already DMS members, excluding other non-participating enterprises perceptions on DMS effectiveness (Sigala 2009). For more details on this discussion see Chapter 1.

9.3.1.1.4. Research contribution to the evaluation of DMS effectiveness

The proposed model takes the current research a step forward to understand not only DMS effectiveness, but also its evaluation. This study identifies the aspects that need to be considered when approaching a holistic DMS effectiveness evaluation. In the area of DMS effectiveness evaluation research, reviewing the relevant literature has revealed that the models of DMS effectiveness in literature (Buhalis and Spada 2000; Wang 2008a) cannot be considered as comprehensive models for understanding or evaluating the effectiveness of DMS. These studies either lacked some stakeholders' perspectives on effectiveness or focused only on the function of DMS for understanding DMS effectiveness, thereby ignoring crucial factors that have been mentioned in prior research (e.g. Sigala 2009; for more detail, see Section 3.3). Therefore, this study contributes to DMS research by proposing a more holistic model for evaluating DMS effectiveness. This model integrates multiple stakeholder groups' perspectives as well as the different internal and external influences on effectiveness.

9.3.1.2. In relation to IS research

This study contributes to the debate of the general information system effectiveness theory:

First, the findings confirm the constructs of DeLone and MacLean model of IS success/effectiveness evaluation in a new context - DMS context - in which it has not been examined before.

Second, although the findings of this study asserted the important influence of DeLone and MacLean's model, it argues that it is not enough to understand and holistically evaluate the effectiveness of DMS. Hence, an extension is proposed to their model in Chapter 8 to include critical effectiveness influences that were mentioned by the majority of stakeholders, as well as a number of DMS researchers (see Chapter 8).

Third, the study contributes to the ongoing debate of IS effectiveness evaluation research. The findings support the notion, already argued by IS research, that it is important to consider organizational and external organizational factors to the evaluation of IS effectiveness (e.g. Raymond and Bergeron 1996; Sheldon 1997; Myers et al. 1998; Olson and Williams 2001; Kelegai and Middleton 2004; Malik and Goyal 2003; Hussein et al. 2003; Ozkan 2008; Wang 2008a).

As for other research, this study contributes to the continuous debate on web-based interorganizational systems effectiveness evaluation literature. The findings stress the importance of a number of factors that have been argued for in web-based interorganizational systems research to DMS effectiveness evaluation e.g. trust, top management support, and stakeholders' co-operation. The emergent findings affirmed that these factors related to the characteristic of DMS as a web-based inter-organizational system (see Section 8.3.2).

Also, the findings of this study can inform other similar research settings (e.g. Web-based inter-organizational information systems' effectiveness evaluation, especially in the developing country context). This is because it incorporated prior theories of general IS effectiveness and web-based interorganizational systems in order to

interpret and examine the findings of the study in the light of the theories of prior research in these disciplines (Maxwell 2005; Punch 2005; see Section 5.6.3).

9.3.2. Practical level

The findings of this study carry implications for the practice of DMS effectiveness, in relation to planning, implementation, and evaluation of DMS. Managers can benefit from many of the outcomes in order to improve their DMS effectiveness. The results provide guidelines that can help managers to identify what may constitute effectiveness, as well as what needs to be considered so as to evaluate the extent of effectiveness.

The failure experience of Touregypt (see Section 6.1.3) is critically analyzed and interpreted, combining all the perspectives and experiences of stakeholder groups. Also, the barriers, weaknesses and strengths of the Touregypt project are discussed. Therefore, the managers of Tourism Ministry can benefit from the results of the qualitative evaluation carried out by this study on the Touregypt project effectiveness. The results of this study will be proposed to the Ministry of Tourism in order to learn from the Touregypt experience and overcome the barriers that may confront any future DMS implementation, The following bullet points are some examples of implications of the results to practice (for the details see Chapter 7 and Section 8.3.1)

The study highlights that the quality of the DMS components is not enough for achieving effectiveness. There are other important influences, which if missing from the system, can inhibit its effectiveness. These include organizational and destination influences, such as the support and commitment of top management and the attainment of appropriate funding, as well as appropriate strategies and procedures (see Sections 7.2.2, 7.2.5, 7.3). This is in addition to monitoring the changing and the world e-tourism trends, as well as keeping the DMS application up-to-date and in-line with changing online tourist characteristics.

The current study draws attention to the fact that coordination and cooperation between stakeholders needs to be realized to effectively implement long-term effective DMS. The results underscore the need to identify stakeholder groups' expectations and needs in the beginning of the system development, to have common

views on the benefit, and to evaluate the perspectives of all the stakeholders, not only tourists, as happened in the Touregypt experience, which negatively influenced the effectiveness of the system from the perspective of its stakeholders (see Sections 7.3.4 and 7.6.1).

9.4. Updating of literature

When the researcher started this research four years ago, there was not much attention in the literature of DMS to the influence of organizational factors to the implementation, adoption and effectiveness of DMS. The main researchers who first studied DMS were: Frew and O'Connor (1999), Buhalis and Spada (2000), Richie and Richie (2002), Buhalis (2003), Hornby (2004). Nowadays few researchers appear to express their interest in investigating the influence of organization and social factors on DMS adoption, participation, sophistication and web marketing success (e.g. Sigala 2009; Wang 2008b). Still, more insights to DMS actual applications in both developed and developing countries are needed to enrich our understanding on DMS implementation and development. The general literature of IS, web-based and IOS as well as literature of DMS were updated. This means that we might find some references released in 2000 or 2001 and yet still the latest to deal with a certain subject (for example, see Section 3.3.1.)

9.5. Limitations and implications for further studies

Having presented the contribution for theory and practice, this section reveals limitations of the study and puts forward suggestions for further research.

It is believed that holistic understanding is an issue that may be realized by studying effectiveness from a multi-paradigmatic stance (see Appendix 1). This study, informed by only an interpretive perspective, presents itself as a step towards such a holistic understanding. It is suggested that further research can look into DMS effectiveness evaluation from different perspectives (e.g. critical realism and positivism), and may be from the perspective of different disciplines. It is worth mentioning here that the findings of this study have been interpreted through the lens of IS theories of effectiveness, particularly DeLone and Maclean's IS success/effectiveness theory (1992, 2003, 2004, 2009). Future studies can use other theories from different

disciplines, or different methodology, and compare their outcomes with the findings of this study.

Although this study has moved forwards to probe a holistic list of DMS effectiveness influences from an interpretivist perspective, further steps need to follow. The objective of this research was an in-depth investigation of a single, rich case study, which was the Egyptian DMS experience (6.1). Thus, more in-depth case studies from an interpretive perspective still need to be researched. The proposed model of this study might then be modified to enhance the holistic understanding and evaluation of DMS effectiveness. In the same context, it is suggested that a wide variety of DMS cases, both in developing and developed countries, and which study successful and failed experiences can be investigated.

The study argues that all the factors of the suggested model which are presented in Figure 30 need to be integrated into a holistic effectiveness evaluation process (see Section 8.3.1). It is suggested that potential future research should investigate the possible use of the model to explore the extent which DMS effectiveness has been reached. Being beyond the scope of the current research, this study did not deal with the extent of the system effectiveness in relation to the fulfilment of the factors and sub-factors of the suggested model. This is seen as an appropriate subject for further research on the evaluation of DMS effectiveness.

The findings of this research were derived from a single experience (the Egyptian DMS). This raises question of the generalizability of the research results to different cultures or contexts. The answer which has been briefly presented in Section 5.6.3 is that the findings of this study are applicable particularly to the Egyptian context where the case is studied (internal generalizability), but may also provide insights to DMS in other countries, or other similar research (e.g. WBIOS - external generalizability). The aim of this study is not to generalize the findings, but rather to have insights into a real DMS experience. However, the study of the Touregypt project involves multiple groups of stakeholders based on the external context of Egypt (like international organizations and online tourists), which have views that are related to general DMS applications. Therefore, the views of external stakeholders such as

online tourists and international organizations can inform further studies on DMS effectiveness (for more details see Section 5.6.3).

The suggested DMS effectiveness evaluation model still needs further investigation to have more insights into the influence of constructs and the relationships between them. For example, the findings shed light on possible interactions between organizational and destination influences of DMS effectiveness. Although the research has investigated the emergent relationships (e.g. the interactive relationship between the vision and planned strategies for e-tourism businesses in a destination and the control and power of the DMO over the system), it is believed that if the time and resources permit, more insight can be gained by discovering more relationships between the organizational and environmental factors as well as the influence of these interactions on the effectiveness of the system. Hence, this could be an appropriate scope for further research on DMS effectiveness. However, deeper investigation of these factors still needs to be achieved, and the influence of other constructs on them needs to be investigated. Furthermore, trust has emerged as an important factor of DMS effectiveness. This factor has not been adequately considered in the literature. Further research can throw more light on trust among the multiple stakeholder groups, its attributes and influences. Likewise, as the problem of pricing restrictions has emerged in the Egyptian context, the influence of control and power on the stability of pricing in the tourism destination in general is another area for further research.

One of the objectives of this study is to collect all the identified stakeholder groups' perspectives on DMS effectiveness, according to the proposed comprehensive stakeholders map. Here, primary data from all the primary stakeholder groups were collected, while secondary data were used to collect some views from the secondary stakeholder groups' perspectives (see Chapter 6). Although this study explored as many views as possible - as the time and sources permitted - collecting some secondary stakeholders' views using secondary data may be considered as a limitation. To overcome such a limitation, it is suggested that further research investigate secondary stakeholders' views (e.g. international countries experiences, and the

general population or the local community of Egypt's views; see Section 6.1.3.), using primary sources.

The preceding discussion on the research limitations highlights directions for further research, which can address these limitations and build on the findings of this study. Other suggested areas for further study have emerged while conducting this research. DMS is a huge system that works in a worldwide context with multiple stakeholder groups. The research on DMS effectiveness is still in the outset, and there are many points for further research still to be covered as follows.

Chapter 1 outlined the aim of this study, and what is beyond the scope of the aim (see Section 1.3.). According to Walsham (1993) and Stockdale and Standing (2006), it is important to answer questions of what, why, who, how and when for an effective evaluation process. Stockdale and Standing (2006, p. 1096) advocated:

“Placed within an interpretive paradigm as advocated by many IS evaluation researchers, the CCP concepts [abbreviation of Content, Context, and Process] allow for the recognition of a wide scope of factors that need to be taken into account in an effective evaluation. These factors are interlinked and cannot be considered in isolation. For example, how the evaluation is to be carried out and when, (the process) is closely informed by what is being evaluated (the content). These factors are affected by the different perceptions of the stakeholders involved, the who, and the reason for the evaluation (the context). Informing the entire evaluation are the internal and external contexts of the organisation in which the evaluation is being carried out” (2006, p. 1096).

While this study has addressed the question of what needs to be evaluated, more research still needs to be carried out to answer questions such as why, who, how and when with regard to DMS effectiveness evaluation in the light of content, context, and process (CCP) perspective (see Walsham 1993; Stockdale and Standing 2006).

This study supports DMS and IS researchers' views on the important influence of stakeholders' cooperation on the effectiveness of the system. Further research can investigate how DMO in developing and developed countries invest in the

development of stakeholders' cooperation, and outline possible ways for effective relationships.

Also, this thesis has studied a public and private partnership management DMS (which later turned out to be a private sector ownership and management; see Section 6.1.2.) further research can deal with the DMS experiences of other DMSs that are owned and managed only by the private sector, in both developing and developed countries. Further research can also compare the performance of the private DMS managements to that of the public DMS managements (e.g. DMO) in relation to their influence on the development of the tourism business in the destination.

9.6. Final conclusion

In adopting an interpretivist perspective, this research contributes towards a more holistic understanding to the evaluation of DMS effectiveness. This chapter summarized the way this study has sought to fulfil its objectives and answer its outlined questions. Also, consideration of the contribution and limitations of the research provided a platform for the suggestion of how the research might be taken forwards. In conclusion, research on the understanding of DMS effectiveness and its evaluation is still in its infancy and this research has made a contribution to knowledge in this area by generating a theory based model of DMS effectiveness evaluation.

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Appendixes

Appendix 1: Glossary of research terms

The following are a number of definitions that set the key concepts used in this study and differentiate between the usages of some - apparently similar - terms.

Activity model: “Map of the activities that make up a process and showing their interconnections and interactions, inputs and outputs, types of resources assigned, and the nature and extent of constraints and controls. An as-is model maps the current process without the suggested improvements, and a to-be model maps the process with the improvements implemented” (Business dictionary 2011). This term is used throughout the thesis to refer to the activities emerged prior to the fieldwork study (see Section 5.5.1). Such activities were the initial review to the relevant literature, the preliminary analysis to the Touregypt website, and the exploratory study to the Egyptian context through interviews (see Section 5.5). The output of the activity model of activities is a set of general themes on DMS effectiveness that has been further explored during the field study, see Section 6.2.

Case study protocol is a formal and detailed master plan that specifies full particulars of the research, a summary of the questions to be asked during interviews, field procedures for the researcher, details of all types of evidence required, as well as the structure of the final report (Remenyi et al. 1998, p. 171).

Destination management: is “the strategic, organizational and operative decisions taken to manage the process of definition, promotion and commercialization of the tourism product, to generate manageable flows of incoming tourists that are balanced, sustainable and sufficient to meet the economic needs of the local actors involved in the destination” (Presenza et al. 2005, p. 3). The most critical issues for a successful destination management are as follow (UNWTO 2004): 1) Knowledge and understanding the needs of the new tourist (image, branding, positioning). 2) Improvement of collecting reliable data and competent analysis of this data. 3) Increased competitiveness of the destination. 4) Management of new technologies,

Innovation and tourism product management Greater professionalism in human resource management. 5) Synergy between all the stakeholders in creating the destination vision. 6) Public – private partnership in the key areas of management and marketing.

Destination: It is recognized as ‘a physical space’ (UNWTO 2004) or ‘a geographical area’ (Buhalis and Flouri 2004) offers amalgams of products, facilities and services that comprise the total tourism product or the travel experience (Buhalis 2003).

Developing countries: “A broad range of countries that generally lack a high degree of industrialization, infrastructure, and other capital investment, sophisticated technology, widespread literacy, and advanced living standards among their populations as a whole. [...] All of the countries of Africa (except South Africa), Asia (except Hong Kong, Singapore, South Korea, and Taiwan), and Oceania (except Australia, Japan, and New Zealand), Latin America, and the Middle East are generally considered developing countries, as are a few European countries (Cyprus, Malta, Turkey, Poland, and Hungary, for example)” (AGOA 2011).

Developed countries: these are the “highly industrialized nations such as Australia, Austria, Canada, France, Germany, Italy, Japan, Russia, the UK, and the US. Collectively Called the 'North'”(Business Dictionary 2011)

Holistic and comprehensive: Holistic is “characterized by the belief that the parts of something are intimately interconnected and explicable only by reference to the whole Medicine characterized by the treatment of the whole person, taking into account mental and social factors, rather than just the symptoms of a disease” (Oxford English Dictionary 2011, also see Lacey (1996) and Bennett (1997)). In contrast, the term ‘comprehensive’ has been defined as “Including or dealing with all or nearly all elements or aspects of something: a comprehensive list of sources, [or] of large content or scope; wide-ranging: a comprehensive collection of photographs” (Oxford English Dictionary 2011). Hence, holistic is a term that refers to the whole or all the parts, whilst comprehensive refers to wideness e.g. wide perspective, wide range. Therefore, this study aspires to being not only being comprehensive but also ‘holistic’ in its approach to the evaluation of effectiveness, while at the same

time recognizing that this is an ideal and the practical impossibility of achieving a holistic evaluation:

“We [...] admit that there will always be one 'final' or absolute whole which is the ultimate of which none are greater. We cannot presumably get a perfect and full conception of the ultimate Whole, nor can we free ourselves of the conception itself, for it is at the very root of our rational human faculty” (Priddy 1999).

Similarly, Priddy (1999) articulated that:

“Reason insists that, to conceive of existence or reality as a whole, it must include both the 'objective' world as known via the senses and the 'subjective' world as known to consciousness” (1999).

Therefore, this study recognizes that a holistic effectiveness evaluation process requires a multi-paradigmatic stance and this study seeks to contribute to its satisfaction by developing an interpretivist understanding to complement other approaches of research (see Section 9.5).

IS effectiveness and IS success: definitions of the term ‘IS effectiveness’ has been varied among IS community (see Section 4.1 for more details). Generally, the majority of IS research has been used the term ‘IS effectiveness’ interchangeably with ‘IS success’. The Oxford online Dictionary (2010) defines effectiveness as *“the degree to which something is successful in producing a desired result”*, while success is defined as *“the accomplishment of an aim or purpose”*. Therefore based on the Oxford English Dictionary definitions, IS effectiveness can be related to quality system performance and success is related to the net benefits of the system. Given the above Oxford Dictionary definitions and the multiple way effectiveness is conceptualized in IS research (see Chapter 4), it can be said that that effectiveness is related to the value or the quality of a system to deliver a desirable effect which very likely leads to success if the system is described as effective. Therefore, implicitly success can refer to effectiveness as effectiveness is a must that leads to success. This may be the reason why both terms are used interchangeably in IS literature. In this study, the term IS success might be used in circumstances where the literature being cited used

the term IS success synonymously with IS effectiveness (e.g. DeLone and Maclean 1992, 2003).

Goal-free evaluation: “in the pure form of this type of evaluation, the evaluator is not told the purpose of the program but does the evaluation with the purpose of finding out what the program is actually doing without being cued as to what it is trying to do. If the program is achieving its stated goals and objectives, then these achievements should show up (in observation of process and interviews with customers [...])” (Scriven 1991, p. 180, for more details see pages 180 - 182)

Local tourist enterprises or suppliers: are divided into tourism providers or producers (such as hotels, airline, restaurants and bars) as well as intermediaries including travel agencies and tour operators (Buhalis 2003).

Model: a simplified picture of a part of the real world (Lave and March 1975, cited by Maxwell 2005).

Organization, Management Company, and Local enterprises: The term ‘organization’ is used in some places in this study to refer to the private IT Company that currently owns and manages the Egyptian DMS (i.e. Touregypt project). Also, the terms ‘local tourism providers’ and ‘local tourism enterprises or companies’ are used interchangeably to refer to Egyptian local tourism companies whether members or non-members of the Touregypt project, see the definition of DMO and local tourism suppliers.

Probability and non-probability samples: The probability sample draws randomly from the wider population. Each of the population of the study has the chance to be chosen. It is, therefore, useful in making generalizations (Cohen et al. 2007). However, the non-probability sampling provides a range of alternatives techniques to chose samples based on subjective judgement. Saunders et al (2009) referred to that some research questions, objectives and the choice of research strategy may dictate non probability sampling, at which an in-depth study that focuses on a small or perhaps one case study selected for a particular purpose. The non probability samples provide researchers with information-rich case study in which researchers can explore their research questions and gain theoretical insights.

Tourism Destination Competitiveness: the competitiveness of a destination refers to the ability to compete effectively and profitably in the international marketplace (Goeldner and Ritchie 2009). Buhalis (2000) adds that the definition of the competitiveness should understand the *“sustainability of local resources for ensuring the maintenance of long term success as well as the achievement of equitable returns-on-resources utilised to satisfy all stakeholders”* (2000, p. 106).

Tourism stakeholders: Freeman (1984) defined stakeholders as *“any group or individual who can affect, or is affected by, the achievement of a corporation’s purpose”* (1984, p. 46). Reflecting on the tourism destination, Sheehan (2005) said that any individuals, group, or organisation with an interest in or who can affect or is affected by the development of tourism. Accordingly, a stakeholder is a broad term and can go beyond those that have purely official ties with a DMS e.g. local and international tourism businesses, tourists and the general population or the local community.

Appendix 2: Research complementary tool 1 - using Nvivo

Nvivo 8 software is used in this study as a complementary tool to research. Chapter 6 indicate how Nvivo has been integrated with in the data analysis process. The following are groups of snapshots to the work done. It includes examples on creating cases for the evidence collected, the coding process, as well as examples of memos and annotations taken.

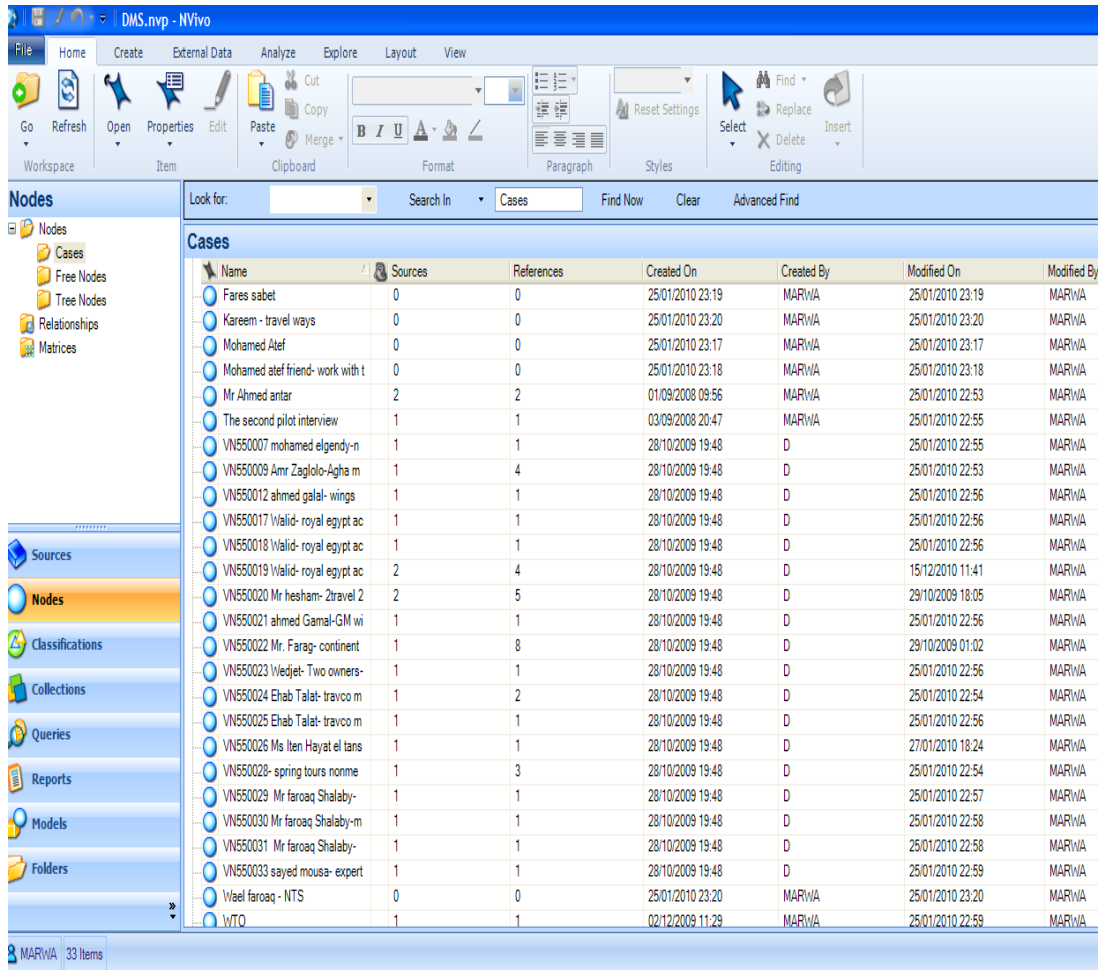


Figure 38: An overview to the cases created in Nvivo - including audio and text file

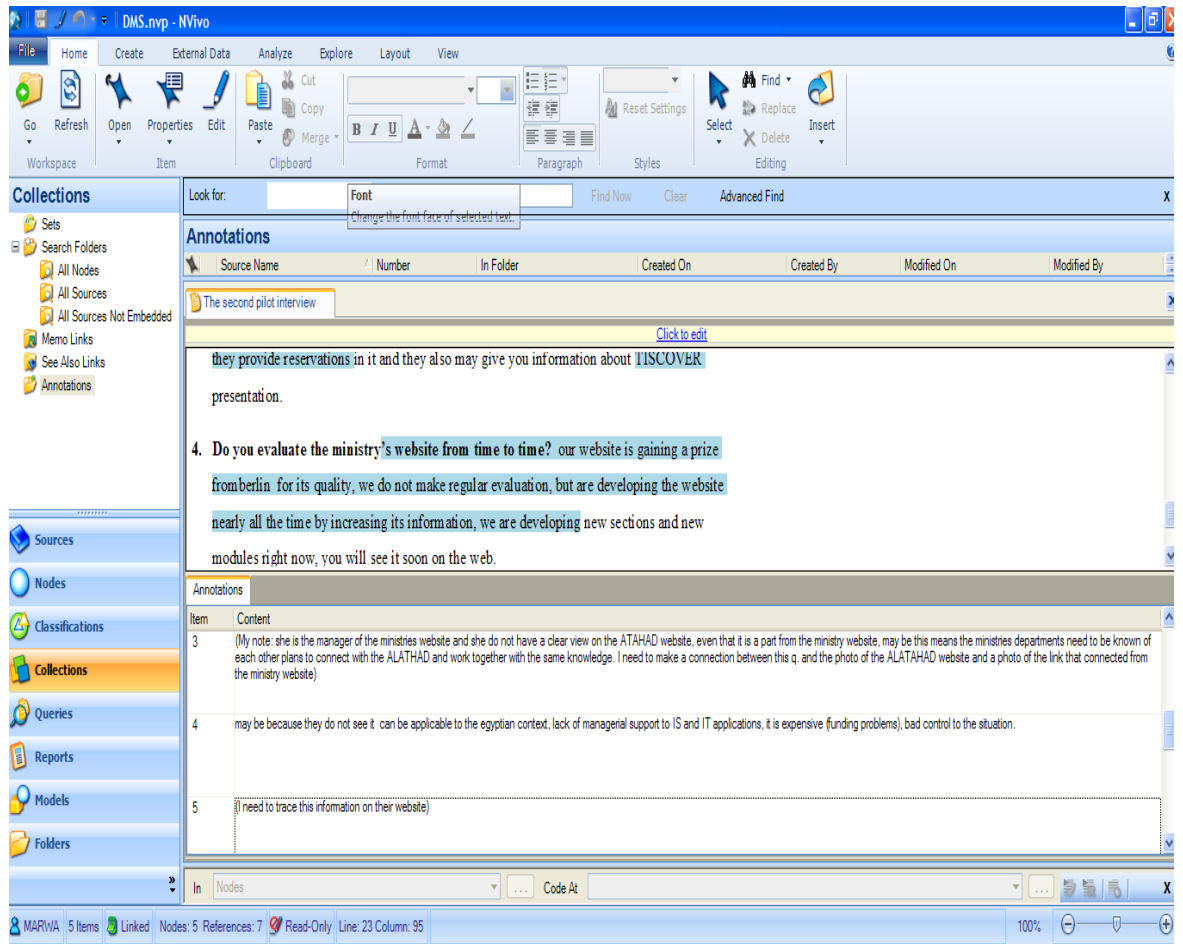


Figure 39: An example of using the annotation tool of Nvivo 8.

Note: annotations were used in this study to allow the researcher to add notes and ideas and within the same text file. The above highlighted text is part of the interview which is annotated; it is hyperlinked within the same window as shown above.

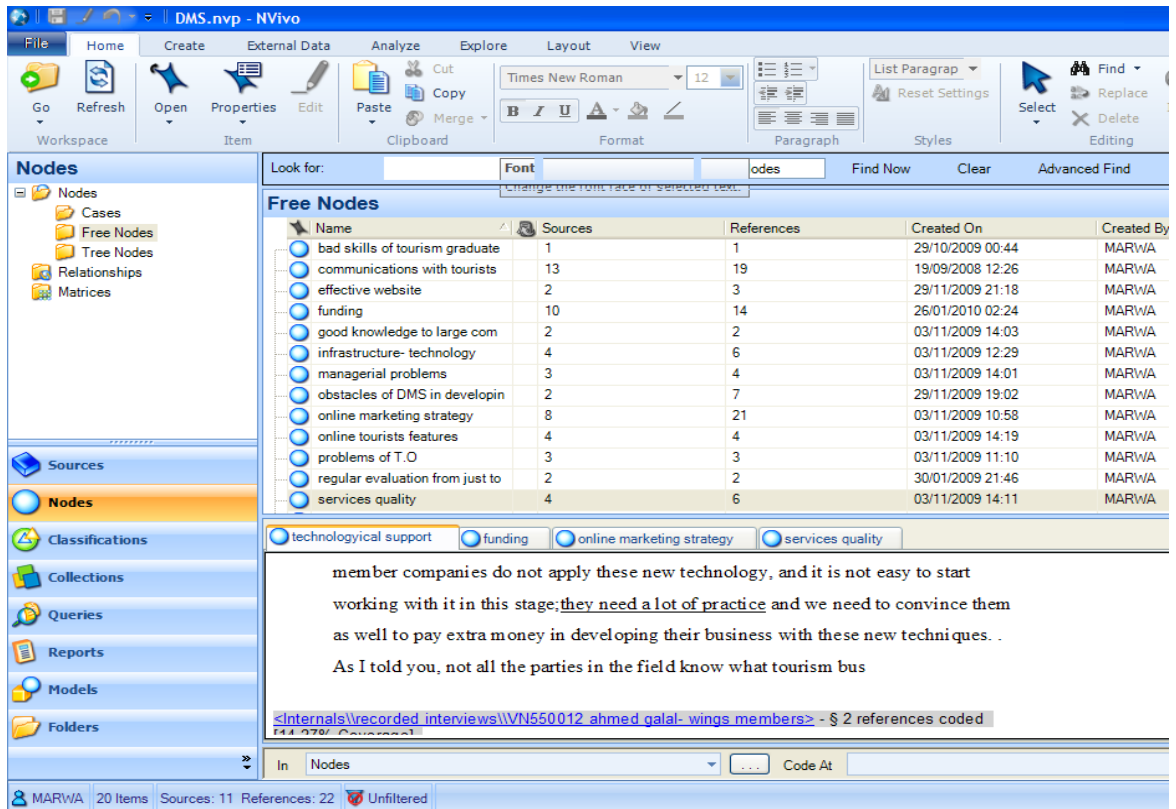


Figure 40: Creating initial or early level codes in Nvivo

Note: initial codes are named as free nodes in Nvivo project. The figure shows how the coded text is hyperlinked to its source to be able to easily retrieve the whole interview

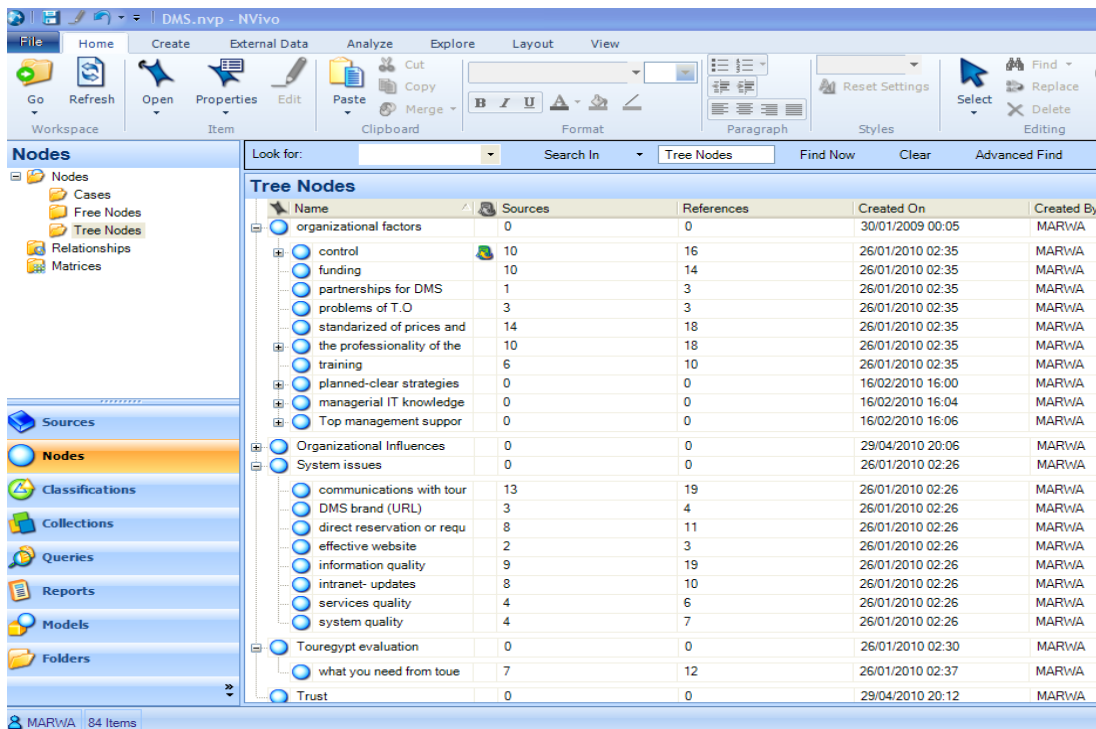


Figure 41: Creating abstract codes or categories in Nvivo (the tree codes as named in Nvivo project) – an example of the organizational and system influences

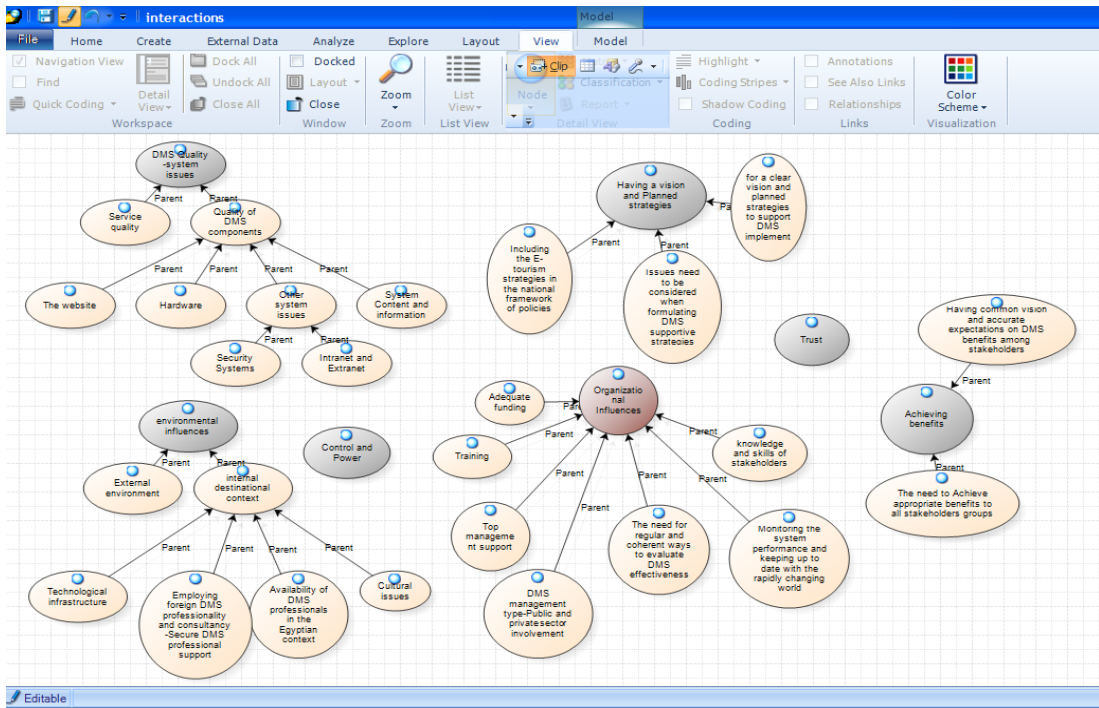


Figure 42: Creating a model of the tree nodes (categories and sub categories) in Nvivo

The following is an example on creating memos using Nvivo and relate them to the texts or audios of the recorded interviews. The first figure refers to the folder of Memos created in Nvivo, while the second figure refers to how memos attached to the interviews where they have been taken:

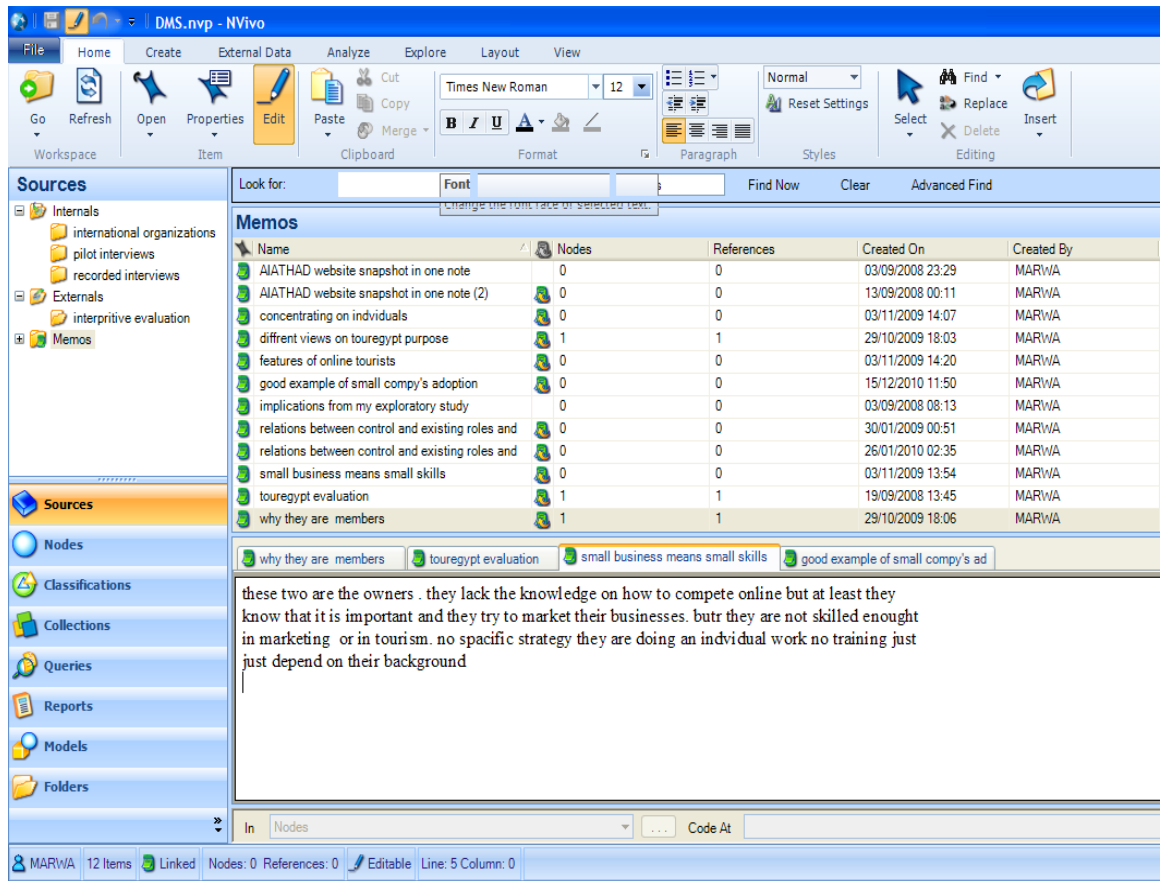


Figure 43: Creating memos using Nvivo

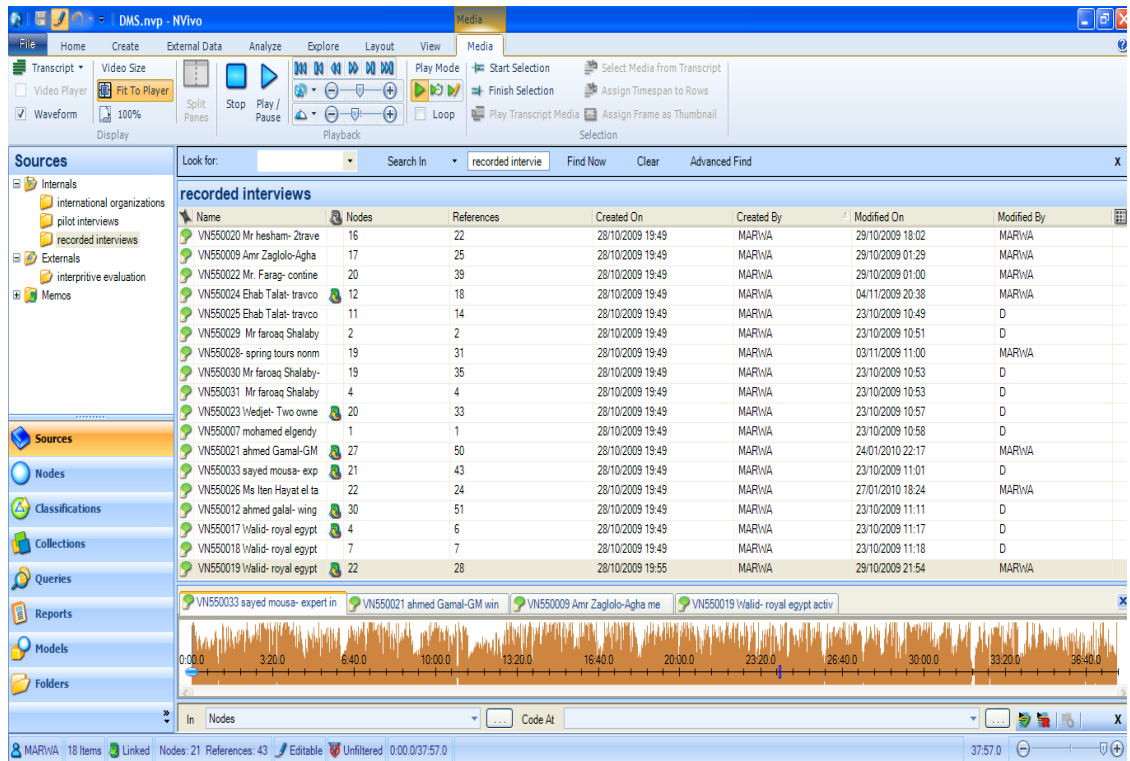


Figure 44: Creating memos attached to where they have been taken in the audio files

Appendix 3: Research complementary tool 2 - using Microsoft OneNote

Microsoft OneNote is a software package for making notes and gathering material. It has been used in this study for collecting, organizing unpolished materials. The software allows for data indexing like a notebook and provides this study with tools that facilitate the research (e.g. annotations, clips, tags, web hyperlinks and audio and video applications). The following pictures show snapshots from the OneNote project of this study.

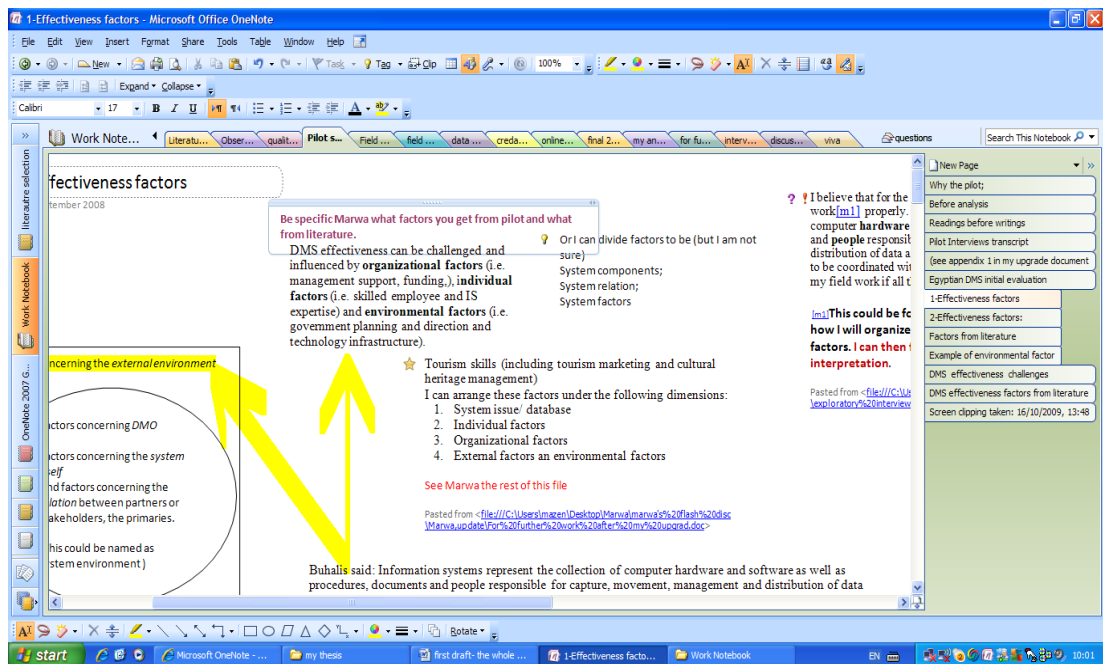


Figure 45: Using Microsoft OneNote – example 1

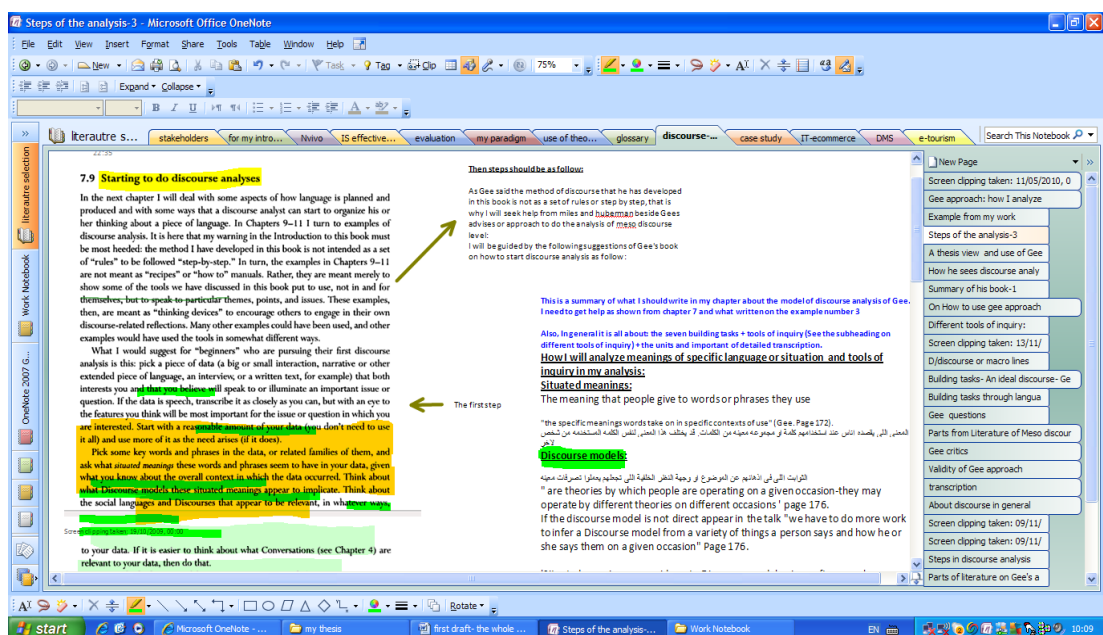


Figure 46: Using Microsoft OneNote – example 2

Appendix 4: The researcher own experience with Touregypt.net tour inquiry

The following are screenshots from the researcher’s personal e-mail. They represent the researcher’s own experience when dealing with Touregypt. In particular, these are samples of the website replies to the researcher’s request for a tour in Egypt. Like most users of Touregypt, the researcher has received replies from tour companies which are not members of the system, e.g. numbers 9, 12, 13, 25, 26, and 34 (for more details see Section 7.1.1.4).

Quota status: 96.62MB / 100.00MB (96.62%)

Touregypt (24) 1 to 20 of 35 Messages Page 1 of 2

Select: [v] Mark as: [v] Move | Copy Messages to [v] [1] [v]

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#	Date	From	Subject [Thread]	Size
1	05/09/2008	info Egypt & You	Egypt & You : 07 Days Tour in Cairo & Hurghada 25 Nov 08	143 KB
2	05/09/2008	Egypt & You	Egypt & You : 07 Days Tour in Cairo & Hurghada 25 Nov 08	124 KB
3	05/09/2008	EOL Tours	Solmain-Tour Egypt	14 KB
4	05/09/2008	Travel EG	Accommodation in Cairo and Hurghada	9 KB
5	05/09/2008	Office	Re: AETBI Request - 09/04/2008 (England)	5 KB
6	05/09/2008	M El Aswany	Your trip to Egypt	230 KB
7	05/09/2008	sun city	tour	4 KB
8	05/09/2008	Dina (GAT Tours)	Your Requested Hotels Accommodation in Cairo and Sharm El Sheikh in November	42 KB
9	05/09/2008	Info Egypt	Best Price For your Trip to Egypt 03 Nights Cairo - 3 Nights Hurghada	517 KB
10	05/09/2008	Nile Melody Travel	Cairo & Hurghada program for Mr. Solmain	147 KB
11	05/09/2008	Jane Akshar	RE: AETBI Request - 09/04/2008 (England)	207 KB
12	06/09/2008	Cairo	Hotel Accommodation	12 KB
13	06/09/2008	Ereny	Solmain 25 Nov 2008	29 KB
14	05/09/2008	Abc Egypt Tours	Welcome to Egypt with ABC Egypt tours!	4 KB
15	05/09/2008	Anjana Das	Out of Office	3 KB
16	05/09/2008	2traveltour	Re: AETBI Request - 09/04/2008 (England)	24 KB
17	05/09/2008	King Tut Tours,Inc USA	King Tut Tours,Thank you for your request	7 KB
18	05/09/2008	Stuart / One World Tours	Re: AETBI Request - 09/04/2008 (England)	10 KB
19	05/09/2008	Vacation Safaris	Re:Luxury Egypt Tour by VacationSafaris	28 KB
20	05/09/2008	Vacation Safaris	Re:Luxury Egypt Tour by VacationSafaris	28 KB

Unseen Answered Important Deleted Draft Personal High Priority Low Priority Attachment Signed Encrypted

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Touregypt (22) 21 to 35 of 35 Messages Page 2 of 2

Select: [v] Mark as: [v] Move | Copy Messages to [v] [2] [v]

Delete | Undelete | Whitelist | Forward | View Messages Show Deleted | Purge Deleted

#	Date	From	Subject [Thread]	Size
21	05/09/2008	Ahmed Omar (GAT Tours)	Re: AETBI Request - 09/04/2008 (England)	35 KB
22	07/09/2008	Info	RE: AETBI Request - 09/04/2008 (England)	17 KB
23	06/09/2008	Touregypt.net	RE: AETBI Request - 09/04/2008 (England)	30 KB
24	07/09/2008	Ola - AlNada Travel	Re: Don't Miss Our Offers to visit Egypt !!!	171 KB
25	06/09/2008	Aiman Elias	????? ?????	6 KB
26	08/09/2008	Ereny	Solmain 25 Nov 2008	37 KB
27	08/09/2008	sara	Warm greeting from the land of the Pharaohs	3 KB
28	09/09/2008	Seagull Travel	Re: AETBI Request - 09/04/2008 (England)	94 KB
29	09/09/2008	Dina (GAT Tours)	FW: Your Requested Hotels Accommodation in Cairo and Sharm El Sheikh in November	76 KB
30	15/09/2008	Pharaoh Egypt Hotel - Cairo - Egypt	Offering Promotion Rates For Summer - Winter 2008 - 2009	5 KB
31	15/09/2008	Pharaoh Egypt Hotel - Cairo - Egypt	Offering Promotion Rates For Summer - Winter 2008 - 2009	5 KB
34	24/09/2008	Ereny	Solmain 25 Nov 2008	36 KB
35	27/09/2008	Pharaoh Egypt Hotel - Cairo - Egypt	Offering Promotion Rates For Summer - Winter 2008 - 2009	5 KB
36	27/09/2008	Pharaoh Egypt Hotel - Cairo - Egypt	Offering Promotion Rates For Summer - Winter 2008 - 2009	5 KB
37	28/09/2008	Champion Tours Egypt	Our Program Is Flexible To Accommodate Changes.	119 KB

Unseen Answered Important Deleted Draft Personal High Priority Low Priority Attachment Signed Encrypted

Delete | Undelete | Whitelist | Forward | View Messages Show Deleted | Purge Deleted

Select: [v] Mark as: [v] Move | Copy Messages to [v] [2] [v]

Appendix 5.4.3.4 5: Examples of e-mail interviews

The following are examples of e-mails sent to the researcher from tourists and members of Touregypt regarding their views on Touregypt effectiveness (for more details see Section 5.4.3.2).

Example one:

Hi Marwa:

Thank you for your e-mail. I am sorry for the delay in responding, however I have been extremely busy lately and working very long hours! I appreciate your wanting to include me in your study, however since you said "tourists' views about the system effectiveness are very important." I want to clarify that I am not a tourist..... I live here in Egypt and have done so for ten years! Also I work in tourism as a private travel consultant, so my perspective is not one of an end user (a tourist or temporary visitor) but rather at the opposite end of the spectrum as a service provider. In any case, I am happy to provide answers to your questions.

1. Why did you participate in Touregypt?

I found the site when I was getting ready to move to Egypt and found it to be a great community, plus a good way to stay connected with what was going on in Egypt.

2. How do you find your experience with the system?

Good and bad. Four or more years ago, under the old system, the simple one, and things worked better and more smoothly. Then the owners started to mess with it and "upgrade" it (their words), and simply made it MORE complicated and LESS reliable. The system was down for periods of time, and several of the "bells and whistles" caused problems. They basically took a perfectly fine, simple, popular working model and tried to make it more "high tech" and feature-rich, which resulted in a lot of problems/down time; with the owner/management's apparent unwillingness to fix the old while focusing on "the next great project", it seems it was left to some long-term and loyal members (Jeorg included) to pick up the pieces and keep things running as best they could. This unfortunately resulted in a driving away many old/long-term members. Myself included.

3. Based on your experience:

3.1. What would you say are the strengths and weaknesses of the system?

Strengths: The community - i.e. members who contribute and keep it running

Weaknesses: *Bad management*

3.2. What things did you think you will get but you did not?

We were promised a bigger, better web site and forum - it didn't happen.

4. If you have the power to change or add things to the system what would you make different. *I don't use the site often enough anymore to really know how it's working now and therefore can't really make suggestions.*

Example two:

Why did you participate in Touregypt?
 To promote my business and increase my online visibility

.How do you find your experience with the system?
 OK

Based on your experience:
 What would you say are the strengths and weaknesses of the system?
 Strengths: Well moderated
Weaknesses: Low participation

What things did you think you will get but you did not? None
 f you have the power to change or add things to the system what would you make different.
More management involvement, sadly the owner has opted out

Jane Akshar

Example three:

Hello Marwa,

I do appreciate the introduction you gave, and that you asked the admin before you send to the members--many people don't do that.
 I'm Egyptian and I live in Egypt; so I'm not sure if my answers will be of interest to you, but I'm going to answer anyway!

1. Why did you participate in Touregypt?
I have been a member there isnce 1999 or so. Exchanging information and different point of views with other cultures was one thng. The other thnig is helping giving a good picture about Egypt to those who are interested.

2. How do you find your experience with the system?
I was more active in the past. i'm now not active enough to say whats going on. But I can tell I found it successful in the time I was there, and I think it's still useful.

3.1. What would you say are the strengths and weaknesses of the system?
It's friendly, people know each other, and the admin is taking good care of the system keeping it tidy. You feel like home. On the other side, I think the board needs to be advertised more. New ideas of cooprating with other bodies is needed.

3.2. What things did you think you will get but you did not? Can't think of anything for now.

4. If you have the power to change or add things to the system what would you make different.
 Again, working with other bodies, and addkin new features to make the boad more popular.

I hope this was of any good. Nice meeting you.
 Best Regards,
 Muhammad Hegab

Appendix 6: Effectiveness factors in DMS literature

DMS Success factors	The term used	Author/year	Case study
<ul style="list-style-type: none"> - Comprehensive information input from diverse data sources. - Interface with global EM systems. - Extensive cooperation by competing tourism product suppliers and destination promoters in both the public and private sector. - Top management support and strong leadership. 	Destination Information Systems	Chen and Sheldon (1997)	---
<ul style="list-style-type: none"> - Database issues (comprehensive, quality, controlled, cost effective). - Distribution issues (availability of booking function, Web front end). - Management issues (project management structure, resource provision, and public and private sector migration strategy). - Operational issues (e.g. can suppliers automatically upgrade inventory, training programs for operators). 	Destination Management Systems	Frew and O'Connor (1999)	Austria, England, Ireland and Scotland
<ul style="list-style-type: none"> - A comprehensive product database of attractions, accommodation, and other travel information, with explicit data quality control and cost-effective data maintenance procedures - Statistics gathered to inform the overall tourism impact - An official destination Web site with full accommodation and tourism supplier data, automated availability update as well as online booking and reservation. - Monitoring and evaluation procedures in place for systems and assessing impact. - A link between the DMS and any Global Distribution System (GDS). 	Destination Marketing Systems	Rita (2000)	Analyzing 10 European DMOs websites; namely Austria, Belgium, Britain, Denmark, France, Germany, Holland, Ireland, Norway and Switzerland.
<ul style="list-style-type: none"> - The needs of the tourism suppliers are considered in the early planning of DMS. - Effectively delivery of information and providing training for managers on how to use it. - Frequent evaluations of the DMS framework to ensure its validity. 	Destination Marketing Systems	Ritchie and Ritchie (2002)	Alberta, Canada
<ul style="list-style-type: none"> - Adequate Funding. - Technological expertise and network integration of all the local and regional DMS. - Efficient partnership and cooperation between the public and private - Dynamic reservation systems. - Training the DMO employees on how to effectively use DMS. 	Destination Management Systems	Collins and Buhalis (2003)	DMOs in England
<ul style="list-style-type: none"> - Public and private sector backing. - Comprehensive data collection from a reliable source. - Development for a sustainable model and income generation to ensure the ongoing success of the DMS. 	Destination Management Systems	Brown (2004)	Marketing Manchester.com, England

<ul style="list-style-type: none"> - Local, regional and national promotion of tourism products to maximize marketing and selling potentials. - Marketing and sales through a variety of convenient and comprehensive channels. 			
<ul style="list-style-type: none"> - Information quality: reliable, relevant, accurate and timely content. - The maintenance and improvement. - Establishment of public and private partnerships. - A well defined e-marketing strategy, i.e. website promotion on an international level; the use of e-mail and monthly newsletters; and advertising campaigns on the Internet. 	Destination Management Systems	UNCTAD (2005)	Based on views of experts
<ul style="list-style-type: none"> - Virtual information space. - Virtual communication space. - Virtual transaction space. - Virtual relationship space. 	Destination Marketing Systems	Wang and Russo (2007)	DMS of the USA's Convention and Visitors Bureaus
<ul style="list-style-type: none"> - Website function design. - Website promotion. - Website performance management. - Marketing impact assessment. - Organizational technology environment. 	Destination Marketing Systems	Wang (2008a)	DMS of the USA's Convention and Visitors Bureaus
<ul style="list-style-type: none"> - Organizational and managerial inefficiency of publicly operated DMO. - Lack of plans aiming at (collaborative) destination management activities. - Firm's IT infrastructure, skills and attitude. - DMS features and characteristics. 	Destination Management Systems	Sigala (2009)	The Greek DMS

Appendix 7: Effectiveness factors in IS literature

IS and WBIOS effectiveness factors	Sources
<ul style="list-style-type: none"> - Organizational context: training, upper management involvement, implementation planning, estimation and impact evaluation. - Diversity of commercial partners. 	Bergeron and Raymond (1992)
<ul style="list-style-type: none"> - Partners who are willing, able and ready to cooperate. - A key role for standards (e.g. data communications protocols, company policies), - The work must be coordinated among partners. - Technical aspects are less important than the new electronic relationships involved. - Efforts cannot be secretive, i.e. IOS require more openness, especially when industry standards are adopted. 	Sprague and McNulin (1993)
<p>Organizational support (e.g. training, structure), implementation processes (e.g. planning, testing). Control procedures for data integrity and security.</p>	Raymond and Bergeron (1996)
<ul style="list-style-type: none"> - Collaboration: combine economic, strategic, social elements (value sharing and trust). - Organizational factors: Factors related to the organization (size and resources), the individual (involvement, tasks, time) and leadership style. - Technological factors: systems integration, security, standardization. 	Kumar and Crook (1999)
<p>Six objectives: predicting future trends, improving decision making, avoiding problem areas, increasing user satisfaction, improving systems integration, improving resource allocation</p>	Kanungo et al. (1999)
<ul style="list-style-type: none"> - Dimension 1: Type of the system, An aspect of IT use, a single IT application, a type of IT or IT application, All IT applications, An aspect of a System development methodology, the IT function of an organization or sub-organization - Dimension 2: Stakeholder, the independent, Observer, the individual, the group, the managers or, owners and the country. 	Seddon et al. (1999)
<ul style="list-style-type: none"> - Effective communications. - Trust. - Operational uncertainty. - Different objectives. - Changes in business processes. - Information, data standards and protocol. - Power relations and politics. - Cross-cultural issues. - Disparate expectation levels. - Relationship management. 	Allen et al. (2000)
<ul style="list-style-type: none"> - A clearly articulated business objective. - A dedicated cross-functional team with the appropriate skills and executive support. - Adequate attention to technology integration, systems testing and performance measurement. - A detailed project plan and effective communication. 	Olson and Williams (2001)
<ul style="list-style-type: none"> - IS success dimensions: System quality, Information quality, Information use, User satisfaction, Individual impact, Organizational Impact, Service Quality, and Workgroup Impact. 	Myers et al. (1998) and Myers (2003)

- External environmental factors and organizational factors.	
<ul style="list-style-type: none"> - Systems quality: adaptability, availability, reliability, response time and usability. - Information quality: completeness, ease of understanding, personalization, relevance, security, service quality, assurance, empathy and responsiveness. - Use: nature of use, navigation patterns, number of site visits, number of transactions executed. - User satisfaction: repeat purchases, repeat visits, user surveys - Net benefits: cost savings, expanded markets, incremental additional sales, reduced search costs, and time savings. 	DeLone and MacLean (2003)
<ul style="list-style-type: none"> - Constructs related to technologies, such as support and artifact quality. - Concepts related to IS expertise, such as the organization's maturity in IS. - Organizational dimensions: such as structure, environment complexity and inter organizational relationships. - Communication about tasks. - Individual and job related dimensions. 	Larsen (2003) cited by Bedard et al. (2008)
<ul style="list-style-type: none"> - Individual level: e.g. management IS knowledge, IS staff skill, training, information availability and system availability, flexibility and integrity. - Organizational factors: prioritizing IS strategic tool, organizational IS policy and IS planning, management support, funding. - External factors: e.g. IT infrastructure, government planning and direction, national culture issues, and law and order. 	Kelegai and Middleton (2004)
<ul style="list-style-type: none"> - User satisfaction: task support satisfaction, decision support satisfaction, and interface satisfaction. - System use: in terms of behavioural intention to use. 	Garrity et al. (2005)
<ul style="list-style-type: none"> - Decision motivation: - Strong internal and external commitment. - Shared motivation and vision. - Implementation process: - Cross-organizational implementation team. - High integration with internal information systems. - Inter-organizational business process re-engineering. - Infrastructure condition: - Advanced legacy information system and infrastructure. - Shared industry standards. 	Lu et al. (2006)
<ul style="list-style-type: none"> - Contextual factors: - Top management support, IS facilitating conditions, quality of ISD team. - User-related factors: - User IS experience, user attitude, user participation. - System Success: - System quality, perceived usefulness, user satisfaction, system usage. 	Saberwal et al. (2006)
Stakeholders' perceptions: meeting user requirements, system usability, performance, information quality, use, user acceptance, IS ownership, interaction with IT infrastructure, expenditure control, accountability, long-term perspective.	Elpez et al. (2006)
<ul style="list-style-type: none"> - User training. - System quality. - Management support. - Employee co-relation in the implementation project. - Careful work flow rearrangement. 	Aasheim (2007)

<ul style="list-style-type: none">- Organizational factors: decision-making structure, top management support, goal alignment, managerial IT knowledge, management style and resources allocation.- Information quality.- System quality.- Perceived usefulness.- User satisfaction.	Hussein et al. (2007)
Trust, service quality, system quality, information quality, perceived usefulness, user satisfaction, loyalty incentives, continuance intention.	Brown and Jayakody (2008)

Appendix 8: An Example of using Gee's approach (2005) in the data analysis

Chapter 6 justifies the adoption of Gee's approach (Gee 2005) as a type of Meso discourse analysis. The following discussion gives example of how Gee's approach has been used in the analysis of a particular text. The following discussion reveals part of the researcher interpretation of the Tourism international organizations (i.e. UNCTAD) perspectives on DMS effectiveness. Applying the seven building tasks of Gee's approach (2005), which are used to identify codes in data, permits the researcher to focus on what is important to the individuals of stakeholders as well as the group to which they belong. For more information on the Gee's seven building tasks and tools of inquiry, see Table 9.

Note: The underlined words and phrases are the keywords I have used to reach my interpretation to the *discourse models* that the UNCTAD have on DMS. This is in addition to the overall *situated meanings* and discourses that can be understood from the careful reading of the documents. Also, the reader might find some paragraphs in the text where the researcher asks herself some questions or put some notes for herself so as to link the ideas of this report together with one another or with other texts. An important point to stress is that this analysis does not by itself give a mature picture of the researcher's understanding of the perspectives of the international organization.

Part of the researcher's analysis of the reports of the UNCTAD (2005 a, b, c):

1. **Significance:** Reports of the UNCTAD give *significance* to the role of DMS as a strategic ICT tool. From the viewpoint of UNCTAD, the DMS can be used to improve the tourism practices in the developing countries and also to enhance the competitiveness of the destination, as a whole, in the e-marketplace. In addition, they give importance to the role of the public sector in the management of the DMS. Further, the UNCTAD regards the DMS as an opportunity for the cooperation between the public and private sectors in the tourism destination. Also, the UNCTAD considers the DMS as a way for the DMO to support the local SMTE. The following extract from the UNCTAD economy reports holds up for these ideas. [The

above discussion refers to the discourse models of the UNCTAD. In other words, how and why the UNCTAD perceives the importance of the DMS].

“DMS are strategic ICT tools that can help DMOs and tourism enterprises in developing countries integrate, promote and distribute tourism products and services. The two primary functions of a DMS are to provide consumers with comprehensive and accurate information for the preparation of their vacations, and with booking facilities for tourism services and products. It also provides tourism enterprises with the means to be better integrated into the tourism supply chain by organizing and promoting personalized and enriched tourism experiences” (UNCTAD 2005a, p. 11).

Also, the second document of The UNCTAD conference report (UNCTAD 2005b) gives *significance* to the public sector involvement in the management of the DMS by defining the DMS as only being ruled or managed by the DMO. However, this is not the case in all DMSs in an international base, e.g. the Egyptian DMS (the Touregypt project).

“DMSs are the IT infrastructure used by DMOs for the collection, storage, management and distribution of information and for the transaction of reservations and other commercial activities” (UNCTAD 2005b, p. 8).

As such the UNCTAD information economy report (2005a) views the importance of DMS (as a way to support the tourism practices by DMO and local tourism enterprises). Also, the UNCTAD report views the DMS as a way to *“provide solutions for business-to-business (B2B) and business-to-consumer (B2C) e-commerce”* (UNCTAD 2005b, p. 158).

2. **Activities:** what do these documents aim at or try to introduce? They try to provide a guide for the implementation of DMS that holds advice and key issues concerning how developing countries can build up a DMS. The UNCTAD gives their views and instructions to the developing countries to be more competitive in the international online tourism market. The UNCTAD conference report states:

“A large majority of developing countries have developed e-tourism websites over the past years using simple or more complex destination management systems (DMSs) to organize and promote their tourism resources on the Internet” (UNCTAD 2005b, p.8).

The UNCTAD then tries to give general directions to the developing countries on how to be *successful* in their plans of organizing and promoting their own tourism recourses through their online tourism websites by the following general directions:

“To be successful, [1]destinations and tourism enterprises in developing countries should combine public policy and private initiatives and [2] foster the development of e-business practices in the local economy, including the adoption of e-business tools such as DMSs. Furthermore, to satisfy ever-demanding consumers, [3] they should develop new tourism products and services, including dynamic packaging, and [4] ensure relevant marketing to gain a strong position on the global tourism market” (UNCTAD 2005b, p.8).

Also, to prove their commitment to their ideas and in order to promote e-tourism development, the UNCTAD *“has developed a DMS applications as part of the E-Tourism Initiative (ETI), which is a technical assistance package aimed at promoting the application of ICTs in tourism so as to enable developing countries to exploit their tourism resources and benefit from greater autonomy in developing and promoting their own brand” (UNCTAD, 2005a, p. 159).*

3. **Identities:** What roles and identities do the WTO and the UNCTAD play and that can be seen through their documents? In their two documents, the UNCTAD play a technical consultant and advisory role that undertake research, data collection and policy analysis in different developing countries. Meanwhile, the WTO and UNCTAD try to give a technical and advisory support on the developing of a DMS (through applications such as E-tourism initiative) in such countries. Like the UNCTAD, the WTO is trying to play an advisory role in guiding, especially the tourism destination of developing countries, to the way of enhancing the e-marketing competitiveness.

This is to be achieved by helping DMS understand their problems and find solutions for them.

4. **Building Relationship:** The UNCTAD tries to establish a partnership and cooperative relationship with the public and private sectors that are responsible for the implementation of the DMS in the country.
5. **Politics:** what are the words or phrases that give implications about a particular perspective on the others or on what the others do? [Applying this approach to my further work; I will need to collect the views of UNCTAD on DMS effectiveness. Clues for the answer: only a small share of the DMS applications in the developing countries are able to offer fully-fledged services in the form of a sophisticated DMS (see page 149 in UNCTAD report (2005a)). Second; SMTEs are not qualified to compete online and might need the help of their DMO].
6. **Connections:** UNCTAD connect the success of the DMS by the involvement of the public sector when they mention 'necessarily':

"The involvement of the public sector is necessary for the development of a brand image, the integration of tourism enterprises into the DMS and the contribution of initial funds." (UNCTAD 2005a, p. 158).

The UNCTAD connect the online knowledge needed for competitiveness of the DMS to the involvement of the private sector. The UNCTAD said that the private sector is *"the best interlocutor to coordinate the various interests of the stakeholders and to strategically support local tourism enterprises, while the private sector is better prepared to exploit the system in a commercial way"* (UNCTAD 2005a, p. 158).

7. Sign systems and knowledge

- 7.1. **Conversations:** The UNCTAD reports deals with the shortage in the abilities of the SMTEs in the tourism business, especially in developing countries, and the need for the support of the public sector. Conversations are mainly focused on the enhancement of the online competitiveness of the developing countries and the

support of the public sector as well as the importance to include the knowledge and experience of the private sector in the development of DMS.

7.2. Intertextuality: Intertextuality has an implication in the UNCTAD reports (this is answering the question No.26 (in Gee's book (2005))). It seems that the perspective of the Tourism International Organization has no much difference than what the DMS literature shows. It worth mentioning that the UNCTAD has consulted well-known articles in the DMS literature and cited some of their work. Reviewing the reports of the WTO and UNCTAD, I cannot see different views between the two organizations; both have the same views on DMS and its effectiveness. The World Tourism Organization (WTO) and United Nation World Tourism Organization (UNWTO), refer to the same specialized agency that works under the authority of the United Nation. This may imply that both organization (WTO and UNCTAD) seem to have the same views on the IT and DMS implementation. [in a further work, this should be confirmed by completing the analyses of the fourth report of WTO].