**Factor affecting the adoption of information and
communication technology in the tourism sector of the
Maldives**

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Abstract

For many Small Island Developing States (SIDS) like the Maldives, tourism is a significant area of business. The increasing reliance on information and communication technology (ICT) in the tourism industry has become one of the major challenges facing developing countries, especially the SIDS. The success of the tourism industry in SIDS is closely associated with the use of ICT applications and e-business techniques.

This research studied the extent of utilisation of e-business and the issues that arise in its adoption and use in the organizations that make up the tourism industry of the Maldives. A theoretical framework was developed to identify the issues pertaining to use of ICT and e-business. The research was qualitative in nature and used a combination of grounded theory and multi-grounded theory approaches for data analysis in order to develop a new theoretical framework. This inductive process resulted in three emergent themes: representing three domains **Country**, **Sector**, and **Information Systems (IS)**. ICT or e-business adoption and integration in the tourism organizations is affected by **Sector**, which is by and large influenced by the **Country**, which in turn impacts on the **IS** domain. These three complementary themes formed a new theoretical framework, generating a set of factors and institutional forces affecting the adoption and integration of ICT or e-business in the tourism organisations of the Maldives. This study contributes to our understanding of e-business in developing countries, in particular to small island developing states with islandness, like the Maldives.

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Definition of terms (in alphabetical order)

Term	Meaning
Destination Management Organizations (DMO)	Destination Management Organizations (DMO) are organizations responsible for destination management, planning, marketing/branding, training and education, and are often engaged in the daily operations of the industry (Werthner & Klein, 1999).
Distribution Channels	A distribution channel provides “sufficient information to the right people at the right time and in the right place to allow a purchase decision to be made, and also allows the consumer to make a reservation and pay for the required product” (Go & Pine, 1995, p. 307).
E-business	Electronic business or e-business “is a broad definition of e-commerce that includes not just buying and selling of goods and services, but also servicing customers, collaborating with business partners, and conducting electronic transactions within an organization” (Turban, King, Viehland, & Lee, 2006, p. 4).
E-commerce	Electronic commerce or e-commerce is “the process of buying, selling, or exchanging products, services, or information via computer networks” (Turban, King, Viehland, & Lee, 2006, p. 4).
Marketing	“An organizational function and a set of processes for creating, communicating, and delivering value to customers and for managing customer relationships in ways that benefit the organization and its stakeholders” (Marketing News, as cited in Levy, 2006, p.62).
SIDS	Small Island Developing States (SIDS) are states where population size impacts negatively on the domestic market, the pattern of sectoral specialisation, comparative advantage, trade policy and macroeconomic policy. (Armstrong & Read, 1998)

CHAPTER 1: INTRODUCTION

1.1 Introduction

For many Small Island Developing States (SIDS), tourism has become a leading economic activity. The use of ICT to promote tourism and overcome geographical dispersion has become particularly important. The Maldives is no exception to this trend and its unique natural resources and natural beauty make the tourism industry the country's main economic driver.

In general, there is limited understanding of ICT usage in the tourism industries of SIDS. The current body of literature fails to address the complex nature of the problem. A large body of literature across various fields such as Information Systems (IS), Computer Science, Development Studies, research related to technology adoption in developing countries and ICT for development (ICT4D), has shown that a number of factors affect technology adoption at the organizational level. This research also reveals that factors external to the organization, such as the availability of resources, and local conditions affect the strategic use of ICT (See Avgerou, 1998, 2001; Gibbs & Kraemer, 2004; ILO, 2001; Molla & Licker, 2005; UNCTAD, 2005; UNCTAD, 2007, 2009; Zhu, 2009). Despite the limited research focusing on ICT and SIDS, the potential of ICT to overcome remoteness, smallness and isolation is clear (Commonwealth Secretariat, 1997; Read & Soopramanien, 2004). Studies focusing on ICT use in the tourism industry have shown that the use of ICT is not only a vital component of the tourism industry, but that ICT will continue to be crucial, especially for developing countries (Buhalis, 1998; Commonwealth Secretariat, 1997; UNCTAD, 2005). According to Minghetti and Buhalis (2010) the pervasive use of ICT provides communication and multimedia tools to empower both tourists and destination countries, bringing mutual benefits. In this way ICT use in the tourism sector has the potential to improve the socio-economic status of developing countries. Indeed, studies focusing on tourism and SIDS stress that tourism is the main economic contributor for many SIDS (Bardolet & Sheldon, 2008; Britton, 1982; Seetanah, 2011; UNCTAD, 2005). However, it is also clear that most SIDS experience major challenges in relation to ICT adoption and use.

In a study undertaken by the International Telecommunication Union (ITU) in the Maldives, Minges and Gray (2004) argue that the country's tourism industry needs to utilise and adapt modern ICT and innovative management strategies to address growing international competition and seize global opportunities in order to remain competitive in the world marketplace. They argue that if this could be achieved then the potential would be opened for the Maldives to leverage its large tourism industry and become a leader in e-tourism applications (p.48). Indeed, as the 21st century advances, ICT is already widely used by the tourism sector of the Maldives. Currently, all resorts provide the facility to send and receive email, and online booking is facilitated through tour operators. All resorts have information hosted on websites, either locally or internationally. However, Minges and Gray (2004) emphasise that in order to obtain the maximum benefits from ICT opportunities, tourism organizations in the Maldives need to be able to provide detailed information to consumers and to process reservation requests online.

The government also believes that tourism organizations could incorporate new technologies to take advantage of the global information network and increase the national and the international competitiveness of the sector (Minges & Gray, 2004; Ministry of Tourism and Civil Aviation, 2006b). Despite this vision, little appears to have been done, and there has been no recent research focusing on understanding ICT usage in the tourism sector of the Maldives. This thesis argues that due to the lack of research in this area, ICT adoption and integration in the tourism organizations of SIDS warrants deeper investigation. Thus, this study aims to understand ICT use in the tourism organizations in SIDS using the case of the Maldives, and seeks to develop a theoretical framework that could help identify factors affecting the adoption and integration of ICT and e-business in the tourism organizations of the Maldives.

1.2 Motivations for the research

The researcher's involvement (since 1993) in facilitating ICT usage by Maldivian businesses provided firsthand experience of their keenness to adopt ICT, but also recognition of their difficulties in moving to a stage where they could fully realize the benefits of ICT. Among these businesses were tourism industry organizations experiencing difficulties due to the unique characteristics of the tourism product, the sector and the country (detailed in Chapter 3 – Research Methodology, section 3.3.1 *Background of the Maldives (research site)*). The main engine of the country is tourism, contributing 92 percent of foreign exchange earnings, 30 percent of government revenue and 27 percent of GDP in 2006 (Maldives Monetary Authority, 2007). At the same time, the tourism industry relies heavily on ICT, not only as a means to reach target markets, and for interaction between businesses, visitors, and networks, but also as a means to manage the day-to-day activities of tourism organizations. These organizations need to embrace ICT in order to maintain a niche in the international tourism market in an increasingly globalized and networked world.

Five yearly Tourism Master Plans, formulated by the Ministry of Tourism, guide the Maldives tourism industry. The Third Tourism Master Plan 2007-2011, aimed at ensuring the sustainable development of tourism at internationally recognized standards, emphasizes that the industry must adopt electronic methods of doing business (Ministry of Tourism and Civil Aviation, 2006b). However there seems to be little understanding in the industry of these opportunities for development, and how this is to be achieved. As Minges and Gray (2004) recommend, a clear understanding of the potential and the challenges of adopting of ICT in the context of tourism is needed. Without such understanding technology enabled sustainable development of tourism is unlikely to occur.

1.3 Research problem

Prior research shows that hospitality and tourism industries across the world are increasingly relying on ICT, especially the World Wide Web (WWW). The www has revolutionized the tourism industry (Buhalis & Zoge, 2007; Sheldon, 1997), changing the entire value chain of tourism creation, marketing, distribution and consumption (Buhalis, 1998; Gretzel, Yuan, & Fesenmaier, 2000). In fact Gratzner, Winiwarter, and Werthner (2002) argue that ICT is now indispensable to the industry. The rapid development of ICT provides a wide range of tools, enabling tourism organizations to manage and market their businesses effectively and efficiently (Buhalis, 2003; Sheldon, 1997). The Internet has become a key success factor for hotel operations, affecting distribution, pricing, and consumer interactions (O'Connor & Murphy, 2004). Indeed, the rapid growth in the number of users and online transactions indicates high demand for the technology within the tourism sector (Law, Qi, & Buhalis, 2010).

Research aiming to measure or assess ICT in tourism has mainly focused on evaluating the success or performance of websites (Law & Bai, 2006), or the challenges faced by particular tourism sectors such as travel agencies or the accommodation sector. However, there is little research that attempts to understand the factors and processes affecting the adoption and integration of ICT or the adoption of e-business in the sector at the destination level (that is, a predefined geographical area that markets itself with a specific brand). Furthermore, Leung and Law (2006), analysing the authorship of IT publications in leading hospitality and tourism journals, noted that the majority of these research publications were by North American and British researchers, focusing on their own regions. They argue that given the rapid growth of the industry in other regions more research needs to be focused on investigating local needs in Asia. This research contributes to addressing this gap in the literature.

The ramifications of ICT use in developing countries are more nuanced than in developed countries. According to The United Nations Conference on Trade and Development (UNCTAD), ICT has stronger social and economic consequences in developing countries (UNCTAD, 2005). These consequences are influenced by a number of factors arising from both the macro and micro environment. For example, the International Labour Union argues that “an ‘*info-structure*’ which encompasses,

amongst other requirements, an appropriate legal and financial framework, a political and business environment conducive to [ICT] development and the human resource capacity to participate in it” is essential for ICT growth in developing countries (ILO, 2001, p.9). It is clear that in order to understand the level of ICT adoption and integration in critical areas of the macro and micro economic environment of a country, it is necessary to consider these issues.

Even though the Maldives stands out among developing countries in South Asia for having the highest Internet penetration rate (ITU, 2004), it nevertheless lacks efficiency in exploiting the potential of ICT. According to Minges and Gray’s (2004) study, most of the Maldives’ tourist resorts had at that time a website, email functionality or both. However, they note that there remained much to be done in the provision of information to clients, and in processing reservation requests, and commented that there seemed to be a lack of efficiency in utilising ICT in the tourism industry. Their study argued that the “Maldives could leverage its large tourism industry to become a leader in e-tourism applications” (p. 48). Such judgements assume that the Maldives has the means and potential to engage in advanced e-business and e-commerce activities. However, the Maldives, being a developing country, faces a number of challenges due to its limited population, tropical climate, location/geography, and also due to a lack of local understanding of tourism development. The limited population complicates issues of human resources and leads to diseconomies of scale and lack of critical mass. The salty humid atmosphere, coupled with excessive heat due to the tropical climate results in high costs incurred in both maintaining ICT equipment/accessories and also the physical environment conducive to ICT use. In addition to the specific topography of the Maldives, its physical location not only incurs high transportation costs but also favours the influx of cheap labour from neighbouring countries. Furthermore, the unique concept of one-island, one resort means the costs of establishing and managing a resort are high, especially with state-of -the-art ICT equipment.

Developing an understanding of ICT and e-business usage is important for businesses in the tourism sector in the Maldives in order to ensure effective use of ICT tools. However, there is a limited number of studies exploring the situation in the Maldives. In addition, there is little information addressing these issues from an Information Systems perspective. A review of IS research drawn from a thorough literature search across

several related disciplines suggests that studies exploring the use or adoption of ICT should incorporate the influence of system users, and of organizational and external environments, including potential national and international influences. Based on this theoretical understanding, it appears that the subject of this study is an unresearched area of Information Systems (IS) studies. Thus, this research focuses on examining e-business adoption and use in the Maldives as a tourism destination; and further, on identifying and developing a theoretical framework to understand the factors and processes in the sector that would help tourism organizations progress in utilising e-business applications. In addition, because the Maldives shares similar characteristics with other developing countries, it is hoped that findings will be pertinent to other Small Island Developing States (SIDS) - especially those characterised by “islandness”; that is, it is likely that findings from this research could be applied to similar tourism destinations.

1.4 Research objective and questions

The objective of this research is to explore and describe how organizations adopt and integrate ICT and e-business in tourism organizations in the context of SIDS. It is important to note that, as in any country, this is dependent on the local as well as international environment, in addition to the ‘organizational field’ of the industry (DiMaggio & Powell, 1983). Thus, the study also investigates organizations and government agencies engaged in supporting tourism services as well.

This leads to the following primary research questions (RQ) and sub-questions:

RQ1- What factors affect the adoption and integration of ICT and e-business in tourism organizations in the Maldives?

Sub-question 1: How do the conditions within the country affect adoption and integration of ICT and e-business in tourism organizations?

Sub-question 2: How do characteristics of the sector affect adoption and integration of ICT and e-business in tourism organizations?

Sub-question 3: How do the factors related to Information Systems (IS) affect adoption and integration of ICT and e-business in tourism organizations?

The exploratory nature of the research questions acknowledges the influences and effects of the environment and the context of the study. Thus, the second research question focuses on this aspect:

RQ2- How do existing organizational forces affect adoption and integration of ICT and e-business in tourism organizations in the Maldives?

1.5 Research methodology

The adoption and integration of ICT is a complex, ever-changing phenomenon which is challenging not only for practitioners, but also for academia. This research, focusing on the usage and development of e-business in the tourism sector in the Maldives, adopts an interpretive approach “to understand human thought and action in social and organizational contexts” (Klein & Myers, 1999, p.67). Furthermore, interpretive research within the Information Systems research domain is commonly “aimed at producing an understanding of the context of the information system and the process whereby the information system influences and is influenced by its context” (Walsham, 1993, p.4-5). Applying this definition to this study allows us to understand the issues, nature, and the level of ICT and e-business usage among e tourism sector organizations in the Maldives.

Qualitative research methods, complemented by grounded theory technique following the Glaserian school of thought (Glaser, 1992; Glaser & Strauss, 1967) were used for data analysis in order to address the research questions. Face-to-face interviews were used as the dominant form of data collection. A questionnaire, an examination of organizational documents, and observations were used to supplement that data. Interviews were conducted with tourism organizations, industry leaders, government authorities, and supporting industries in order to gain a broad understanding of the problems. As advocated by Strauss and Corbin (1994) the grounded theory technique of data analysis enabled the researcher to study the patterns of actions, and interactions among and between various organizations, and developments in the internal and external e-business environment.

1.6 Significance of the Study

This research contributes to the body of knowledge and literature dealing with ICT and tourism in developing countries, especially ‘SIDS with islandness’. The theory that emerged from the data helped explain the complex situation under study, and highlighted the critical role the institutional environment plays in the adoption and integration of ICT in this particular SIDS. The study shows the significance of institutional forces emanating from the institutional and national environment which helps shape tourism organizations in the Maldives, and confirms that understanding the institutional environment is critical to understanding the complex nature of the situation in SIDS in relation to ICT adoption and integration, and e-business. Thus, the theoretical framework which sought to bring together literature on institutional theory, ICT in developing countries, and ICT and tourism, provided a strong theoretical background to the study, enriching research on ICT in SIDS.

The study also serves as an example of using a combination of grounded and multi-grounded theory techniques for data analysis in order to build theory. Following the Glaserian school of thought for data analysis (Glaser, 1992; Glaser & Strauss, 1967), which trusts that theory will emerge from the data, the study shows how the data speaks for itself, revealing how existing theories help explain some phenomena, but not all those revealed in the data. Many aspects of the initial theoretical framework drawn from the literature review are reflected in the analysis of data; however, it was found that the data did not reflect the assumption that organizations would adopt ICT in stages (considered in Chapter 2 - Literature review, section 2.4.1 *Stage Theory*). Furthermore, the theoretical framework that emerged at the end of the study as providing the best explanation of the data includes an additional aspect, Institutional theory. While Institutional Theory was not included in original theoretical framework, its inclusion in the final theoretical framework highlights the significance of the institutional forces emanating from the institutional environment, which shapes tourism organizations in the Maldives.

On the practical level, this study provides a theoretical framework to help understand the adoption and integration of ICT usage and e-business in tourism organizations in small states with islandness, which is a critical factor for some SIDS. It also has the

potential to guide the direction of future tourism development in the Maldives and other SIDS with islandness.

1.7 Structure of the thesis

This thesis is organised into seven chapters. Following this introductory chapter, the next chapter analyses key literature relevant to this study and draw a preliminary theoretical framework based on the literature review to guide this research. Chapter 3: Research Methodology, justifies the research strategy, method and design chosen for this study and provides an overview of the data analysis, leading to the findings of the research detailed in Chapter 4: Research Findings. Chapter 5: Identifying Factors relates the factors identified in the findings to the existing literature. Similarly Chapter 6: Identifying Institutional Forces and Building a Revised Theoretical Framework, explains the institutional forces identified through the research and discusses them in relation to the relevant literature. In addition, this chapter builds upon the theoretical framework identified in the literature review, relates this to the findings, and outlines the emergent theoretical framework of the research. Chapter 7: Conclusion, the final chapter, begins with reflections on the research outlined in this thesis. It then discusses the limitations of the research, the contribution made by this research, and suggests directions for future research.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter provides a review of the literature conducted at both stages; before the data collection, and during the data collection. The initial literature review was performed to frame the research problem, to facilitate understanding of the academic debates, consider different perspectives, and to identify gaps in previous research. The initial review of literature, as proposed by Charmaz (2006) “serves as an opportunity to set the stage” for the investigation (p.166). As highlighted in Chapter 1 - Introduction (section 1.3 Research problem), research explaining the ramifications of adoption and integration of ICT and e-business in small island developing states (SIDS) and more specifically in the tourism industry of the Maldives is rather complex and is addressed among various fields of academia. Much of the literature reviewed during/after the data collection was sought to theorize emergent theory developed from the data using grounded theory analysis. Prior to the discussion of these literatures framed into various topics related to this research, a definition of the key concepts is given, e-commerce and e-business, followed by a discussion of Tourism in SIDS in order to facilitate a better understanding of phenomenon, the use of ICT in the tourism organizations of SIDS, which underpins the study.

Section 2.2 provides an understanding of the contextual environment for this study. Although the focus of the research is not on ICT for development (ICT4D) but on ICT in developing countries (as discussed in this section), issues of ICT4D are explored along with the discussions on ICT and e-business in developing countries. The focus is on issues of technological infrastructure, culture, national policy, and human capital in order to understand the major implications faced by developing countries. Furthermore, a more targeted discussion of ICT and e-business in small developing states (SIDS) is presented to highlight the salient characteristics of these states that affect ICT and e-business.

Section 2.3 examines key literature on e-business in tourism management and marketing to create a deeper understanding of the tourism industry and in particular to understand its ramification for Small Island developing states.

In order to understand the phenomenon, it is important to understand the dramatic changes in the tourism industry caused by ICT and e-business. The dynamism in the industry has not only affected the marketplace - as Edgell (2006) explains, “customers are demanding high-quality experiences, greater variety and more flexibility in their travel” (p.86) - but also how tourism is managed; Hales (2006) notes the pressure resulting from increased competition in the market place and from educated customers, employees, and stakeholders to create efficient and effective management. He also notes that these changes are largely influenced by the changes in technology developments affecting the way information is managed in the tourism industry. Tourism services and products are becoming more heterogeneous.

These changes in the industry dynamics and heterogeneity are also reflected in tourism literature. For instance, as Ben-Ameur et al. (2004) highlight, travel services are making a broad variety of services available, ranging from worldwide arrangements such as global distribution systems (GDS) to minor software applications designed by small hotels. This chapter discusses the significance of distribution channels to offer an understanding on its undeniable importance to tourism.

One of the major aspects of the tourism industry is pricing, which is also the key to successful online sales (O’Connor, 2003). Researchers urge tourism suppliers to implement consistent prices across all distribution channels (Murphy, Schegg, & Qui, 2006; O’Connor, 2003; Tso & Law, 2005) as inconsistent pricing leads to revenue losses (Enz, 2003), and is therefore discussed in this chapter to offer an understanding of its impact on the tourism industry.

Closely associated with online pricing is the understanding of customer needs. Technology has resulted in enhanced customer satisfaction (Siguaw & Enz, 1999). Addressing customer needs can in turn contribute to customer loyalty and retention of business (Minghetti, 2003). The literature review shows that access to ICT offers the industry the opportunity to strategically address customer needs and also identifies certain dimensions of websites which deliver to customer needs (cf. Buhalis, 1998; Law & Hsu, 2005; Wan, 2002).

The proliferation of visual images and electronic media such as websites, distribution channels, etc., has allowed the tourism industry to create sophisticated marketing tools offering their customers a variety of choices. Given that one of the most important online marketing tools for tourism businesses is their websites, researchers strongly suggest tourism organizations design their websites to meet customer expectations. The literature reviewed also argues that a web presence for Destination Management Organizations is vital for tourism.

Despite the popularity of ICT tools to promote tourism, the use of ICT in the tourism industry in most developing countries reveals a far more nuanced picture. Thus it necessitates analysing the relative importance of these issues since the study focus is on a small island developing state with the tourism sector as the major industry. Most developing countries are disadvantaged by the high costs involved in managing the tourism industry, which restricts their engagement in global distribution channels (UNCTAD, 2005). Developed countries dominate the tourism industry, and developing countries are pressurised into areas such as enclave tourism and mass tourism (Britton, 1981, 1982; Pearce, 1989; UNCTAD, 2005). Consequently, most developing countries are unable to benefit from the electronic network of tourism suppliers (such as CRS/GDSs) where the air transport sector has captured a fair share of the market (Diaz, 2001; Pearce, 1989).

The third sub-section, section 2.4 explores the relevance of Information Systems (IS) research literature to the IS environment of tourism organizations in the Maldives. Based on theoretical understandings gleaned from the IS literature, this section considers the relevance of well-known IS frameworks to the research problem. The section begins by considering two widely used models; Davis (1989), Technology Acceptance Model (TAM), and Rogers (1962) Diffusion of Innovations (DOI) theory. Though these models have been successfully used by many IS researchers they were felt to be unsuitable for this research as they assume that the adoption of innovation is a rationalistic and deterministic orientation driven by technical efficiency and precluding the possibility of influence from organizational and environmental factors.

Stage theory has been widely used by researchers looking at IS implementation in developing countries, and three different variants of stage models developed by Nolan

(1979), Burgess & Cooper (1998) and Martin & Matlay (2001) are considered. Though these models offer some insights, their applicability to this research was felt to be limited, as the sampled tourism organizations in this study did not necessarily follow a linear step-like progression when adopting technology. Organizational growth and changes tended to be multifaceted, complex and rather instantaneous, so that the approach to tourism development and marketing practised in the tourism sector in the Maldives was far more significant in determining the technological development in the organization.

Giddens' (1979, 1984) structuration theory offers a more nuanced view of technology adoption by taking into account the interrelationship between technology, social structure and human agents. Working with a number of collaborators, Orlikowski (1992b) applied structuration theory to the study of Information Systems. The roots of structuration theory lie in institutional theory, which was considered to offer the best insights for this research because it describes both internal and external organizational environments. It underlines mechanisms or forces, which increase the homogeneity of organizational structures in an institutional environment.

The last sub-section, section 2.5 presents a preliminary theoretical framework derived from the literature review, which was used as a guide when conducting the research for the previous sections of this chapter. The relationship between the theoretical framework and the research objective and questions is explained.

The chapter wraps up with a critical summary in section 2.6.

2.1.1 Defining e-commerce and e-business

Electronic Commerce (e-commerce) is a concept that has defied a commonly agreed definition. According to Turban, King, Viehland and Lee (2006), e-commerce describes the process of buying, selling, transferring, or exchanging products, services, and/or information through computer networks, principally the Internet. Advances in ICT and the Internet have both revolutionised business activities and created new ways to conduct business through electronic means (e-business). Electronic commerce encompasses all of this. Because this research focuses on understanding the

organization, sector, and institutional environments, it is necessary to consider a broad definition of e-commerce and e-business in order to reflect the new ways and changing processes in these areas. Thus, this research adopts the broad definitions developed by Turban et al. (2006) of e-commerce and e-business respectively as: *“the process of buying, selling, or exchanging products, services, or information via computer networks”* and *“a broad definition of e-commerce that includes not just buying and selling of goods and services, but also servicing customers, collaborating with business partners, and conducting electronic transactions within an organization”*(p.4).

The term e-business therefore provides a broader understanding than the term e-commerce¹, which refers to “buying, selling or exchanging”; it includes collaboration and intra-business activities within an organization and covers all online functions of business.

2.1.2 Tourism in SIDS

Because tourism is such a major industry in many SIDS, it is important to understand the significance of the tourism industry in Small Island Developing States (SIDS). Tourism is of prominent economic significance for a number of developing countries and tourism has become the leading economic activity for many SIDS (Telfer & Sharpley, 2008). Tourism generates employment opportunities and foreign exchange earnings (Craigwell, 2007), representing up to 45% of GDP in some SIDS (Figini & Vici, 2010).

Researchers have shown that a causal relationship exists between tourism and economic growth in SIDS (See Durbarry, 2004; H. J. Kim, Chen, & Jang, 2006; Seetanah, 2011). SIDS differ from other developing countries due to their special economic and institutional characteristics, particularly their overall vulnerability (defined in section 2.2.6 *Small island developing states*) Seetanah (2011). Many SIDS, such as the Maldives, have little economic alternative but to depend on tourism. However, researchers have shown that nearly half of the tourism revenue from developing

¹ Considering the broad definition of e-commerce used in this study, conducting an extensive literature review of this topic is beyond the scope of this research. Scheeper and Scheepers and Fisher (2009) provides a summary on the total number of e-Commerce in Information system papers published each year (from 2000 to 2005) in major IS journals.

countries pours back to the developed world (Wijk & Persoon, 2006), and this figure tends to be even greater in small island developing states (Mowforth & Munt, 2003). In the case of the Maldives eighty cents of every dollar spent on tourist inputs is accrued to foreign companies. Some of the major reasons for this leakage of tourism revenue are described by Kundur (2012); all major goods are imported, large number of foreigners work in the tourism industry, and foreign investors play a significant role in the ownership, management and operation of tour companies. The growth of mass tourism from Europe to the Maldives accounts for more than 76% of total tourists (Kundur, 2012). Necessary components of tourism, such as international marketing, procurement of customers, and international transportation require high initial investments in mass tourism which are often too high for developing countries, (as in the case of the Maldives,) to possess and therefore lead developing countries to dependency on foreign capital (Britton, 1982).

Britton (1982) describes such dependency using the “enclave model of tourism in developing countries”. This model shows two-tier dependency exists where developing countries depend upon demands from developed countries and within developing countries, rural areas depend on the urban centres and particularly the capital city. Pearce (1989), taking forward the seminal work of Britton (1981, 1982), also affirms that tourism in developing countries largely relies on major tourist flows and control emanates from developed countries, creating resort enclaves in destination countries. Enclave type tourism has been shown to promote few economic linkages and widens spatial inequalities (Britton, 1982; Freitag, 1994; Pearce, 1989). Enclave resorts manage and control the cultural and physical environment to meet the requirements of the tourists (Freitag, 1994).

2.2 ICT in developing countries

Although the importance of ICT in developing countries is increasingly being recognized, academic literature on the area of Information Systems (IS) in developing countries is relatively sparse (Walsham, Robey, & Sahay, 2007). However, researchers (See Hoffman, 2000; Kole, 2000), including those from international organizations (See Mansell & Wehn, 1998), acknowledge that the emergence of the Internet and the World Wide Web as essential parts of the development process have fundamentally

changed business, directly affecting national economies. These studies show that there is a significant level of variation in the use and growth of ICT and e-business in different countries, especially between developed and developing countries. For instance, the costs associated in building a sound telecommunication infrastructure are still high relative to national per capita incomes and foreign exchange availability in most developing countries (James, 2005). For example, as reported by the United Nations Statistical Division 2008, Gross National income (GNI) per capita (current US\$) for the United States was 45,835.5 while the Maldives had a GNI of 3,915.8 (United Nations Statistics Division, 2010). This reflects the fact that nearly one month's wage for the average American is equivalent to one year's wage for an average Maldivian. Data from ITU's 2010 ICT Price Basket shows that in United States a customer pays 0.5% of GNI per capita for an entry-level broadband connection, while a Maldivian pays 2.8% (ITU, 2011).

The "digital divide" commonly refers to these gaps between those with access to ICT and those without. Although the concept of the digital divide is challenged by World Bank researchers Fink and Kenny (2003), assigning per-income measures of access to a variety of ICT, argue that "developing countries already 'digitally leapfrog' the developed world" (p.1). James (2008) confronts this argument, highlighting the fact that ICT is a capital good as well as an item of consumption and that its diffusion is in urban areas among a minority of people (well-educated small groups with high-income) in developing countries. There exists a large percentage of the global population without access to major forms of ICT (James, 2007). More recently, a report by the ITU measuring the information society highlighted 2010 statistics to show that despite the buoyancy of mobile cellular telephone subscription which increased 20 percent compared to last year, nearly 80 percent of developing countries' populations were not yet using the Internet (ITU, 2011). They also show that the divide in Internet usage is significant between people living in rural and urban areas of developing countries (ITU, 2011). In the developed world, ICT has advanced in power and ubiquity to the point where writers debate whether IT is just another commodity or a fundamental factor for development. In an article published in the May 2003 edition of the *Harvard Business Review*, titled "IT doesn't matter", Carr (2003) argues that businesses have overestimated the strategic value of IT and advises them to treat it as a commodity because nearly everyone has access to the same resources. In other

words, hardware and software solutions are available in the market like any other commodity, which is necessary for organizations to run their business, but their mere possession is not enough to ensure competitive advantage. On the other hand, with regard to the developing world, until recently the debate had centered around whether ICT is appropriate for developing countries (See Avgerou, 1998; Walsham & Sahay, 2006). Much of the research has evolved under the assumption that there is a causal relationship between technology and development (Walsham, et al., 2007; Walsham & Sahay, 2006). However, Walsham and Sahay (2006), highlighting a number of IS research projects in developing countries, note that the answer to the debate of whether ICT is appropriate for developing countries is answered with a clear “yes”. Much ICT investment purports to support socioeconomic development. Walsham and Sahay (2006) affirm the question is “not whether, but how can ICT be beneficial” (p. 7).

Various approaches have emerged in trying to optimise the application of ICT in developing countries. Walsham and Sahay (2006) and Avgerou (2008) both provide comprehensive reviews of existing literature on ICT in developing countries. Walsham and Sahay (2006) noted that mainstream ICT research still concentrates on applications in developed economies. Avgerou (2008) points out two focus areas of the literature on ICT in developing countries: ICT as a strategic resource for macroeconomic development; and the contribution of ICT to improving social services and institutions. Brown and Grant (2011) warn the academic community to be aware of the dichotomy between researching ICT “in developing countries” and ICT “for development” (p.107). This research investigates the use of ICT “in developing countries” rather than being a study of ICT “for development”. This study does not evaluate the impact of ICT on development. The focus is on understanding the factors that affect the adoption and integration of ICT in the tourism organizations in a developing country. In addition, this study is focused on exploring the availability of resources, as well as local conditions, that influence the strategic use of ICT in these organizations. However, there is a substantial amount of empirical evidence focusing on ICT for development (ICT4D). Literature on ICT4D will be discussed along with the literature on ICT in developing countries, since as Brown and Grant (2011) note, much of the work is associated with the “in developing” agenda.

2.2.1 ICT for development

Amid growing concerns as to how to mine the potential power of a developing country using ICT and the level of contribution of ICT to development, much of the literature on ICT4D has focused on provision of basic services such as education, health, governance, agro-economic activities and communication (See Bada & Madon, 2006; Barrett, Sahay, & Walsham, 2001; Braa, Monteiro, & Sahay, 2004; Krishna & Walsham, 2005; Kumar, 2001; Madon, Reinhard, Roode, & Walsham, 2009; Madon, Sahay, & Sudan, 2007; Walsham, 2010). Although many IS projects in developing countries have been reported as failures (See Dada, 2006; Heeks, 2001, 2010), there is growing evidence to suggest ICT acts as a driver for development (Cimoli, 2010; Grace, Kenny, Qiang, Liu, & Reynolds, 2004).

There is a common understanding among researchers that the characteristics of the local environment (social, economic, and political dimensions) play a significant role in enabling developing countries' ability to harness ICT. Despite the scarcity of academic literature on ICT in developing countries, Avgerou's work (2001, 2003, 2008) has consistently shown there is substantial evidence to support the importance of addressing the local contextual environment for the exploitation of the potential of ICT. In this regard, an international organization, UNCTAD, notes that:

ICTs cannot be used only as “plug and play” technologies. The legal and regulatory environment, the level and type of education of the people, the transparency of the political system and various cultural aspects can scale up ICTs' impact on trade. For that purpose, Governments have to ensure that the right ICT strategies are put in place, then evaluated and eventually redesigned to extend access to, and efficient use of, ICTs” (UNCTAD, 2006, p.28).

The objective of this research is therefore to explore how organizations adopt and integrate ICT and e-business in tourism organizations in the context of the Maldives. The effects of resources and local conditions such as technological infrastructure, culture, national policies, and human capital must be considered in order to understand the level of integration of ICT in a SIDS, the Maldives. These issues are discussed in the following sub-section, followed by closer look at further implications faced by

small island nations, in order to better illustrate the contextual environment of this research.

2.2.2 Technological infrastructure

As highlighted in the above discussion, ICT services and efficient ICT use rely heavily on a dependable technological infrastructure. Enablers of ICT and e-business include accessibility, and the quality and speed of Internet connectivity. Although little has been researched on issues affecting ICT and e-business usage and adoption from SIDS' perspective, literature does exist that shows the impact of technological infrastructure on economic development, the challenges faced by developing countries, and how developing countries have acquired dependable technological infrastructure.

This body of economic research demonstrates significant improvements in economies resulting from telecommunication infrastructure investments (Cronin, Colleran, Herbert, & Lewitzky, 1993; Cronin, Parker, Colleran, & Gold, 1993; Datta & Agarwal, 2004; See Hardy, 1980; Madden & Savage, 1998; Parker, 2000; Qiang, 2010; Riaz, 1997; Röller & Waverman, 2001; Sridhar & Sridhar, 2007; S. Straub & Terada-Hagiwara, 2010; H. G. Thompson & Garbacz, 2007). Most of these studies show a positive causal link between telecommunication infrastructure and economic returns. As Röller and Waverman (2001) have noted, the majority of studies indicate that as the ICT infrastructure improves the cost of doing business reduces and production increases for firms in various sectors of the economy. Thus, investment in ICT infrastructure contributes considerably to the economy. However, according to the World Bank, most developing countries are not equipped with an adequate information and communication infrastructure (Qiang, Pitt, & Ayers, 2004). In a similar vein, Walsham and Sahay (2006) also report that the quality of infrastructure in developing countries is still inadequate. In this regard, more recently Qiang (2010) advises developing countries to invest in broadband networks and notes that this should be a key part of development strategies in developing countries. The effectiveness of a sound technological infrastructure relies on a number of factors to pay off on investments. According to the World Bank (Qiang, 2010; Qiang, et al., 2004), the high costs associated with building a network (encouraging public private partnerships), the regulatory framework, and the market structure or market conditions need to be taken into account.

The lack of proper telecommunication infrastructure is further exacerbated by the regulatory framework or approach to managing the telecommunication sector. Competition in the telecommunications sector brings in substantial benefits to countries (See Corrocher & Ordanini, 2002; Fowler, Halprin, & Schlichting, 1986; Hargittai, 1999; Kauffman & Techatassanasoontorn, 2005; Li & Xu, 2004). However, in many countries the Government protects the state monopolistic position over telecommunications (See Bhatnagar, 1999; Bhuiyan, 2004; C. H. Davis, McMaster, & Nowak, 2002; Goodman, Kelly, Minges, & Press, 2000; Minges & Gray, 2004; Peha, 1999; Petrazzini & Kibati, 1999; Travica, 2002). For example in 2003, among the South Asian nations, the Maldives and Nepal were the only two countries with a single mobile service operator (Minges & Gray, 2004). According to Goodman et al. (2000), Nepal, as a late-comer to telecommunication, suffers under a state monopoly, which leads to high access costs, limited Internet access, and limited inter-regional infrastructure, which in turn conspires against ICT development in Nepal. The authors note that there are millions of potential telephone subscribers on the waiting list, as in many other developing countries. Likewise, in the Maldives, Dhiraagu² had a monopoly over telecommunication services from 1988 to 2002, which resulted in high costs in telecommunication services in the country. According to Minges and Gray (2004), the Maldives had the highest per-minute mobile call charges, connection charges, and short message service (SMS) prices in the South Asian region in 2003 (while Nepal has significantly lower mobile tariffs than the Maldives). Another developing country noteworthy is Morocco, with the performance of three operators sharing mobile broadband Internet market and one operator fixed-broadband operator which hold a monopoly (ITU, 2011). Morocco has record high mobile subscription, representing 76 percent of total broadband subscription recording 20 percent growth from 2008 to 2010, and one percent growth with fixed-broadband penetration (ITU, 2011).

2.2.3 Culture

The influence of culture in the adoption and use of ICT has attracted the attention of IS researchers. Several models have been used to examine culture in the context of IS.

²A joint venture Company between the government of Maldives and Cable and Wireless Plc. of the United Kingdom

Hofstede's (1991) cultural dimensions, Hall's (1973) classification of culture based on event perception, and Walsham's (2002) use of Giddens (1984) structuration theory to explain and understand cultural contradictions and conflict are three well known models (J. W. Kim, Meso, & Kim, 2005). Most IS researchers tend to rely on Hofstede's taxonomy (Ali, Tretiakov, & Crump, 2009; Leidner & Keyworth, 2006; Myers & Tan, 2002; D. Straub, 1994; Tan, Watson, & Wei, 1995) describing culture along the dimensions of *power distance* (which focuses on authority orientation), *collectivism* versus *individualism* (which focuses on self-orientation), *femininity* versus *masculinity* (which focuses on achievement orientation), and *uncertainty avoidance* (which focuses on risk orientation). Although this view has merit in highlighting the importance of culture, some authors have criticised the use of Hofstede's (1991) model in IS research (See Myers & Tan, 2002; Walsham, 2002). Hall's (1960, 1973; 1990) categorization of polychronic vs. monochronic time perception are also criticised for over-simplifying cultural influences (See Cardon, 2008; Kabiraj, 2010). (*Monochrons* - originally associated by Hall with the cultures of Northern Europe and North America prefer to organize their time in a linear, "one thing at a time" manner, in contrast with *polychrons* - originally associated with the cultures of Latin America and the Middle East as more relaxed about deadlines, etc).

Myers and Tan (2002) regard Hofstede's and Hall's cultural dimensions as being too simplistic and crude and suggest "adopt(ing) a more dynamic view of culture - one that sees culture as contested, temporal and emergent" and "as something that is interpreted and re-interpreted, and constantly produced and reproduced in social relations" (p. 29). Considering the contested, temporal and emergent attributes of culture, Walsham (2002) argues that the structuration theory developed by Giddens (1979, 1984) can provide a deeper examination of cross-cultural working in Information Systems studies. Jones and Karsten (2008) reviewing 331 IS articles (published between 1983 and 2004) using Giddens structuration theory, note that Giddens' work offers significant insights that can be effectively and fruitfully drawn into IS research. Giddens (1979, 1984) views cultural issues from three dimensions of action and structure; systems of meanings, forms of power relations, and sets of norms. Structuration theory supports the notion that culture as a social structure is created by on-going processes in the social environment in a society. This theory provides rich insights into how social interactions affect ICT usage mediated by the organizational and national culture.

Researchers have shown that social influence plays a significant role in technology use (Bandyopadhyay & Fraccastoro, 2007; Im, Hong, & Kang, 2011; Malhotra & Galletta, 1999; Venkatesh, Morris, Davis, & Davis, 2003). Other researchers have shown that social influence can be both positive and negative (See Hill, Loch, Straub, & El-Sheshai, 1998; Im, et al., 2011; Malhotra & Galletta, 1999; Thanasankit, 2003). For instance, Im et al's (2011) comparison between US and Korea revealed the cultural differences between these two countries –Koreans tend to adopt technology more quickly, are more susceptible to pressure from social factors such as trends and social groups. Such social behavioural characteristics or social structures would seemingly influence ICT usage in other contexts too. Thanasankit (2003) shows how organizational culture in Thailand affects use of ICT – the subordinates need to respect, believe, and obey their bosses. The study showed that it discourages system analysts from creative independent thinking and taking the initiative. Such authoritarian management style would hinder teamwork among members of organizations.

Some studies have highlighted how culture influences, and is, in turn, impacted by, the arrival of the Internet. In a theoretical analysis of the effect of Internet adoption on cultural convergence among countries, Martínez-López, and Sousa (2004) conclude that it may strongly foster cultural convergence. This convergence, they argue, take place by assimilation and transference of cultural values (acquired from the Internet) to the primary culture, but don't imply that cultural diversity will disappear. The Internet has also affected attitudes towards information sharing. Ang and Loh (1996) argue that in developing countries, user attitudes towards global information sharing remain oriented towards obtaining rather than providing information. Hafez (2006) argues that this can be attributed to the fact that most third world countries view information as a “source of power” (p. 39). Researchers have also shown that different countries have different cultural traits affecting e-business. For instance, cultural issues such as the “socializing effect of commerce”, “transactional and institutional trust”, and “attitudes toward debt” were determined to be the major impediments to e-commerce in China (Efendioglu & Yip, 2004), and in Costa Rica a study showed that the issues were largely driven by the social environment; the country lacked a culture of trust and largely relied on face-to-face communications, hindering e-commerce activities (Travica, 2002).

Therefore, culture is one of the factors affecting the adoption and implementation of ICT in developing countries and cultural differences have some impact on the usability and acceptance of e-business. A number of IS researchers have taken this broader perspective of culture. Understanding ICT in organizations requires an exploration of the dynamics of organizational and national culture. Culture is not static and cultural context is also generated and regenerated in tandem with the changes in ICT. Unlike the Hofstede-type studies, this study adopts the dynamic view of culture emergent, contested, constantly interpreted, and reproduced in social relations and people's reaction to dynamic contexts (Giddens, 1979; Myers & Tan, 2002; Walsham, 2002), in order to understand the effect of national cultural environment and its resilient features on e-business adoption and usage in the Maldives.

2.2.4 National policy

How the national policies affecting ICT usage in a country are framed is also relevant to e-business adoption and usage as the institutional and legal environment can enhance or hold back the opportunities offered by e-business, depending on the country's approach to the management, regulation, and promotion of ICT. In addition to international organizations such as the World Bank and UNCTAD, researchers have studied different aspects of policy that have had major effects on the adoption and diffusion of ICT. However, these studies reflect that there is no consensual approach to ICT policy. Avgerou (1998), indeed argues that there is no proven "best practice" nor best policy. She notes that lessons from industrialised countries may not contribute to economic development in the same way in developing countries, and that ICT strategies used in developed countries may not be as effective as for industrialised countries. She urges developing countries to define policies, which are locally meaningful in order to successfully exploit the new global information economy.

Adding to the debate on how governments should engage in regulating activities, researchers have focused on a number of aspects related to ICT usage. Moore (1996) suggests that information policies supporting ICT uptake need to function at three levels; industrial, organizational, and social. He explains that these need to cover four sets of issues; information technology, information markets, human resources, and legislative and regulatory issues. Focusing on the role of government in promoting the

Internet, Xue (2005) analyses the national policies of three countries China, Malaysia, and Singapore - all at different levels of development. She identifies two main issues in developing countries that require government intervention to promote the Internet, namely “the considerable costs of building, rather than upgrading basic infrastructure; and anti-government and obscene or otherwise objectionable information flow” (p .238). Xue concludes that governments need to integrate policies towards comprehensive IT development, based on their technological and economic development. Formulating policies in conformity with the national environment is critical.

Studies have shown that regulation and liberalisation of telecommunications are instrumental in developing the ICT sector. In an analysis of the impact of regulatory, political, and sociological variables on global Internet growth, Guillén & Suárez (2005) found that the privatization and deregulation of the telecommunications sector are policies that are highly effective in increasing narrowband Internet penetration. Very recently, Yates, Gulati and Weiss (2011) examining the broadband digital divide by analysing the impact of administrative culture and policy initiatives in 139 countries, reaffirm Guillén & Suárez’s findings. Yates, Gulati and Weiss (2011) found that in contrast to developed countries, developing countries without a national regulatory authority had over twice as many broadband subscriptions than countries with national regulatory authority. There exists a strong positive relationship between open competition to deliver telecommunication services and broadband diffusion; competition in the telecommunication sector had a strong positive impact on the level of broadband diffusion in technologically developing countries. They also showed that the level of wealth was the most important factor explaining the level of broadband access in developing countries. This supports the view that the liberalisation of telecommunications allows competition between international companies, and a convergence of costs, leading to higher quality products and services and lower prices. As discussed earlier (section 2.2.2 *Technological infrastructure*) the Maldives is a good example of a country experiencing the benefits of telecommunication liberalisation, with two companies providing services at a lower price than ever before in the country.

Additionally, researchers highlight the importance of interactions among a wide range of institutional actors including the role of government, industries, and international organizations, in providing access to ICT and e-business. Silva and Figueroa (2002)

discuss how to promote ICT in the context of a specific country, namely Chile. Drawing from institutional theory perspective, they note that sustainable social change depends on ICT policies that are grounded on the understanding, effort, and interplay among government authorities, private sector companies, and other agencies such as trade industry associations and education bodies. Similarly, Avgerou (2003) argues that effective action in bridging the dynamics of the link between ICT and development involves collaboration between industry, government, and international organizations. These studies also draw attention to the need to consider the context of the country being investigated.

2.2.5 Human capital

One of the major barriers to e-business in developing countries is the lack of human capital. The term “human capital” embraces “people’s innate abilities and talents plus their knowledge, skills, and experience that make them economically productive” (World Bank, 2007). UNCTAD notes that education and training are fundamental to the widespread and effective use of new technologies (UNCTAD, 2003). The extent of human capital required and the growing need for human capital in order to gain full potential from ICT has become one of the major challenges for developing countries.

The level of education in a country also appears to be related to IS adoption. According to Hargittai (1999), the level of human capital in a population may be relevant to Internet connectivity in two ways; English language proficiency, and level of education. Regarding the former, the prominence of English language on the Internet has been pointed out in many studies (Barnett & Choi, 1995; Forestier, Grace, & Kenny, 2002; Hafez, 2006; M. N. Kamel, 2006; Qiang, et al., 2004; Wunnava & Leiter, 2009), most of which suggest that since English language is the most pervasive language in the ICT environment, English proficiency influences Internet adoption. As for the latter, the level of education, most of the studies examining the education level of adopters of new technologies find that more educated people are quicker to adopt innovations than people with comparatively less education (Rogers, 2003). This suggests that countries with high levels of education tend to adopt new ICT faster than those with lower levels of education (Hargittai, 1999). However, Qiang et al (2004) argue that in developing countries the resources allocated to education are insufficient to create the level of

human capital required by ICT. Thus, Lee argues (2001) that investing in capacity building should be a key priority for developing countries to catch up with the technological advancement of developed countries.

Clearly a broad definition of human capital not only involves the level of formal education but also the knowledge, skills, and the capabilities or the absorptive capacity of the people. These forms of human capital are important abilities required to use ICT and e-commerce effectively. Raab, Ellis and Abdon (2002) and Volken (2002) argue that knowledge workers have become a fundamental requirement for technological development.

Another important aspect of human capital is skills in great demand to all sectors. Baum (2006) shows that skills required in the hospitality industry go beyond the technical aspect of product delivery and these skills include what he calls “generic skills” (including communication, problem solving, ICT, and language skills), as well as emotional and aesthetic skills. The emotional skills bring value drawn from culture and abilities that others without same the background cannot aspire to. As Poon (1993, p.262) notes, “technology cannot substitute for welcoming employees”. Similarly, researchers view aesthetic skills as important social competencies in the service sector (See Baum & Odgers, 2001; P. Thompson, Warhurst, & Callaghan, 2001; Witz, Warhurst, & Nickson, 2003). Witz et al. discuss aesthetic labour; skills required in order to converse and behave in a manner that meets job requirements and expectations of customers. Baum (2006) shows that aesthetic labour also underlies the cultural cache allowing the individual to interact with customers in accordance with the terms dictated by their culture.

Closely associated to the concepts of knowledge and skill is the absorptive capacity of workers. Cohen and Levinthal (1990) define absorptive capacity as a firm’s ability to identify, assimilate, and develop knowledge and shows that this can greatly depend on internal learning and diversity of background. They note that advanced technical training is required to increase absorptive capacity and that this often tends to be firm-specific in nature and “cannot be bought and quickly integrated into the firm simply by hiring new personnel” (1990, p.135). Although the operationalization of the concept varies widely among researchers, Zahra and George (2002) have shown that absorptive

capacity is a dynamic capability of organizational knowledge to gain and sustain competitive advantage. Lall (1992) asserts that absorptive capacity contributes to the capabilities of the firm, and notes that it is a function of the firm's skill base, its internal technological know-how, and its relationships with the external sources of knowledge. The ease of using technology and thus technology adoption is affected by the organization's prior level of knowledge, skills and experiences.

2.2.6 Small island developing states

There is no widely accepted definition of a Small Island Developing States (SIDS) and the reported salient characteristics of small states tend to vary between academic disciplines. Armstrong and Read (1998) outline the concept of small developing states as states where population size impacts negatively on the domestic market, the pattern of sectorial specialisation, comparative advantage, trade policy, and macroeconomic policy. More recently, Seetanah (2011) characterise these salient features of SIDS as vulnerabilities, in comparison with other developing countries, where vulnerability relates to problems arising from the interplay of special economic and institutional characteristics of SIDS due to "their smallness, remoteness, geographical dispersion, vulnerability to natural disasters, fragility of their ecosystems, constraints on transport and communication, isolation from markets, vulnerability to exogenous economic and financial shocks, small domestic market, lack of natural resources, limited fresh water supply, dependence on imports" (p.292-293). Furthermore, for Small Island Developing States (SIDS), with islandness (or for archipelagic SIDS, where the islands are remote and secluded), Armstrong and Read (2003) suggest that these negative factors are further compounded by transport costs, communication problems, and isolation. The islandness requires delivery of goods by sea or air transport. Poor internal communication in these highly fragmented islands causes difficulties and external links also incur high costs. Geographical dispersion of islands further fragments the domestic market, reinforcing the effects of small-scale economies. Such implications are also attributed to the word "vulnerability" beyond the disaster discourse (Lewis, 1999, p.93). Although the term "vulnerability" is usually attributed to disasters such as disease, tsunamis and climate change, the term also includes limitations in socio-economic opportunities due to factors such as geographical isolation (Hussain, 2008).

There is great optimism that ICT diffusion can alleviate the vulnerabilities faced by SIDS. According to the Commonwealth secretariat “for many SIDS (Small Island Developing States) remoteness, smallness and isolation can be overcome and the development of modern communications capacities could become the engine of growth, development, and diversification.” (Commonwealth Secretariat, 1997, p.8). It is believed that e-commerce offers the potential to eliminate geographical barriers for many remote and isolated states, allowing them to do business by reducing their distance from key markets and growth poles (Read & Soopramanien, 2004). More generally, the common perception that the ICT revolution would make geographical space unimportant has flourished over the past few decades. In 1995, Nicholas Negroponte (1995) wrote in his book *Being Digital* that the digital revolution will remove the limitations of geography. Recently, Thomas Friedman (2006) in his book *The World is Flat* argued that distance no longer matters, and that ICT allows more freedom of location. In a similar vein, Frances Cairncross (2001) predicting the future of technology usage in her often-cited book *The Death of Distance*, claims any action relying on a computer screen or a telephone can be performed from anywhere in the world irrespective of geographical boundaries. But she notes, “the death of distance loosens the grip of geography. It does not destroy it” (p.5).

In spite of such insightful predictions and the growing acceptance of role of ICT in development agendas, there is a paucity of academic research investigating the factors affecting IT usage in these developing states. Among the few studies, a paper delivered to the “Islands of the World VII International Conference”, Armstrong and Read’s (2004), analysis of the economic performance of small states and islands (based on economic performance (in terms of indicators such as GNP per capita and unemployment rates and in terms of their growth rates)), shows that the small size of the domestic market results in lack of economies of scale and competitiveness. At the same conference, Read and Soopramanien (2004) proposed a model in which the principle constraints in assimilation and effective utilisation of e-commerce are identified as (a) difficulties in creating a critical mass of domestic physical and technological infrastructure (i.e. not enough people to buy goods and services), (b) low levels of income, and (c) lack of human capital. They note that the first constraint is related to the limited investment capacity while the other two limit the ability of individuals, firms, and institutions to use ICT effectively. Thus, the adoption of e-commerce is constrained

for both supply and demand side reasons (Read & Soopramanien, 2004). The supply side fails to achieve critical mass of domestic economic activities such as investment in infrastructure, since domestic demand is insufficient for efficient output. The demand side is constrained by the magnitude of the domestic market for services, and for retailing and wholesaling. This constraint requires domestic firms to find ways of accessing global trade networks in order to reap the benefits of large-scale production (Read & Soopramanien, 2004). Thus, openness to trade is necessary for small developing states (Armstrong & Read, 2003, 2004; Read & Soopramanien, 2004). Additionally, alongside the large investment in infrastructure, small developing states experience a critical need for investment in human capital to overcome labour constraints (as discussed in section 2.2.5 *Human capital*). Therefore, these countries experience a double barrier to the adoption of e-commerce (Read & Soopramanien, 2004). Mohammed (2004), analysing the official national websites for small developing countries for content and function note that the challenges faced by small developing states include limitations in finance and resources, which affects their economic survival and competition in the international market. Size and development are two major factors that affect the accessibility and use of new ICT in small developing states. Molla and Taylor (2006) also had similar findings in their research in Barbados, and more recently Wresch and Fraser (2011), examining the barriers to e-commerce in the Caribbean region also affirm the salient characteristics of SIDS. They show that competition in the international market, limitations in expertise, legislation, and a number of services such as software, e-payment, and delivery hinder e-commerce use due to telecommunication and traffic (safe traffic routes) infrastructure. Furthermore they note that in addition to the vulnerabilities of being a SIDS, the geographical proximity to the United States has major influences on ICT usage. Additionally, location is a very important issue that remains influential in small states in relation to the economic growth of SIDS (Armstrong & Read, 2001; Biagini & Hoyle, 1999; Campling, 2006; Read, 2001). Biagini and Hoyle (1999) go on to argue that for some islands it might be claimed “location is everything” (p.360). This suggests that the regional position of SIDS may affect ICT usage.

Given these particularities, most of which are structural (beyond the control of the country) in nature, SIDS face a myriad of issues when using ICT and e-business. Although a strong emphasis is put on using ICT and e-business as tools to build

resilience in SIDS there is a dearth of literature investigating how ICT and e-business are used in SIDS. Specifically, little is known about the ICT usage in various sector organizations of SIDS in the Asia-Pacific region, especially the Maldives. A study done by the ITU (Minges & Gray, 2004), briefly outlines the situation in the Maldives to note the lack of information regarding use of ICT in the business sector. In order for it to be a practical tactical and strategic tool, a comprehensive investigation of how ICT and e-business is used in the context of the country should be undertaken. A study based on the Maldives context, identifying the factors affecting ICT and e-business usage and an understanding on the deeper underlying forces would be a significant contribution to academic literature as well as a guide to strategic action for SIDS.

2.2.7 Section Summary

Academic literature focusing on developing countries and especially on SIDS is sparse, limiting our understanding on particularities of SIDS. However, the existing literature spans various fields and the different classifications have helped to uncover a myriad of issues in understanding the research objective from an academic perspective.

The literature on ICT in developing countries, including those of ICT4D, has helped to identify technological infrastructure, culture, national policy, and human capital as major issues faced by developing countries. The review has shown that the existence of a dependable telecommunication infrastructure has profound positive effects on the development and use of e-business. However, most developing countries do not possess the infrastructure required to maximise the potential of ICT, and the Maldives seems no different. It is also observed that telecommunications monopolies impede e-business diffusion, and suggested that liberalisation of the telecommunication sector will have a positive effect on the e-business adoption. Researchers advise to view culture from a broad perspective – to take a dynamic view. Governments need to play a significant role in providing legal, policy, and regulatory frameworks and in promoting ICT as an important enabler for e-business. Governments need to engage in creating awareness of various aspects of ICT and e-business activities. Furthermore, developing countries need to create effective policies for human development; investing in human resource capital should be a key priority for developing countries if they are to achieve technological catch-up with more advanced nations. Human capabilities and skills have become

fundamental to the use of ICT in all sectors of the society, as human capital is the driving force behind technology.

Despite the scarcity of literature on ICT and SIDS, the targeted discussion of ICT and e-business in small developing states (SIDS) has highlighted the economic and environmental specificities of SIDS. The studies on SIDS have shown that difficulties faced by developing countries are further reinforced by geographical isolation. Furthermore, the islandness of some SIDS brings its own complications, such as getting Internet access to remote islands. However, it is believed that ICT offers new opportunities to build resilience and to overcome the limitations of islandness and remoteness.

2.3 ICT and tourism

Tourism is an information intensive product, and information is acknowledged as the “life-blood” of the industry (Buhalis, 1998). Werthner and Ricci (2004) note that tourism is a “confidence good” and consumer decisions are highly based on information. Information is at the core of the tourism product (Zhou & DeSantis, 2005). ICT allows information to be transported accurately and appropriately worldwide almost instantly, making it a universal feature of the tourism industry. The type of product, coupled with its dependence and information exchange between customers and the industry has made it particularly suitable for ICT and e-business adoption, and it has been observed that tourism can reap the benefits of ICT and e-business on a broader basis than industries which are less information-intensive. Today, tourism operates in a complicated electronic environment, where tourism organizations are required to understand and utilise ICT strategically in order to serve their customers, improve efficiency, maximize profits, enhance services, and maintain long-term profitability (Buhalis, 1998).

In order to understand the emerging ICT applications related to ICT and e-business in the tourism sector it is important to be clear about the difference between advertising and marketing. The term *advertising* used in the context of this study refers to the promotion of products or services, whereas the term *marketing* encompasses the complete process of advertising to sales, defined by the American Marketing

Association as “an organizational function and a set of processes for creating, communicating, and delivering value to customers and for managing customer relationships in ways that benefit the organization and its stakeholders” (Marketing News, as cited in Levy, 2006, p. 62).

Among the prime users of the Internet for advertising and marketing activities is the Destination Marketing Organizations (DMO). The DMOs are responsible for destination management, planning, marketing/branding, training, and education, and are often engaged in the daily operations of the industry (Werthner & Klein, 1999). Although DMOs are often government institutions, their structures differ from country to country. Irrespective of the type of structure, Buhalis (2000b) notes that they have power and resources to engage in activities towards achieving strategic objectives of the industry. The DMOs are capable of providing information and services to meet customers’ expectations across a range of activities. The DMOs play a vital role in promoting destinations under one umbrella brand in the global marketplace. The DMOs can operate with the local tourism organizations, regional tourism organizations, national tourism organizations, and provide information on both private and public facilities (Werthner & Klein, 1999).

Thus, ICT is having a major effect on the industry, although there are significant differences among various sectors of the industry. The marketing and distribution function contributes significantly towards earning profit in the tourism industry and is one of the key areas where ICT has been effectively used to gain competitive advantage. And although the airlines companies have been keen adopters of technology to pioneer the use of electronic distribution channels since the late 1950s, the hotel sector did not enter the electronic distribution channels arena until the late 1980’s. A number of scholars agree that the service sector and the hoteliers face a myriad of issues in using ICT and e-business; utilising electronic distribution channels, strategic management of online pricing, meeting customer needs, and having an effective web presence. These issues require investigation to ascertain their role in exploiting ICT and e-business in tourism organizations. The following sub-sections discuss and describe the way ICT and e-business can support or address these issues.

2.3.1 Electronic distribution

One of the new features arising from the introduction of e-business into the tourism sector is electronic distribution. A distribution channel is defined as a mechanism that provides “sufficient information to the right people at the right time and in the right place to allow a purchase decision to be made, and also allows the consumer to make a reservation and pay for the required product” (Go & Pine, 1995, p.307). Electronic distribution systems in tourism began with the advent of internal systems developed in the late 1950s by the airlines for inventory control (O’Connor & Frew, 2002). Electronic airline reservation systems used for managing flight and seat inventories for sales and operation purposes are termed Computerised Reservation Systems (CRS) (Werthner & Klein, 1999). Subsequently, travel agents were given access to these systems to make bookings, and consequently, hotels’ computerised systems and central reservation systems were linked to the airline reservations, which eventually led to the formation of Global Distributions Systems (GDSs). The term GDS describes a network of one or more CRS for distributing products and functionalities of the participating networks such as networks of travel agencies across the world (Werthner & Klein, 1999).

According to Buhalis (2000a), distribution has emerged as one of the most dynamic elements in the tourism industry brought about by IT. “The emergence of IT has transformed distribution to an electronic marketplace, where access to information and ubiquity is achieved, while interactivity between principals and consumers is empowered” (Buhalis, 1998, p.412). He describes IT in the industry in terms of three main waves of technological development; Reservation Systems in the 1970s, Global Distribution Systems in the 1980s, and the Internet in the 1990s. Further, he notes that these three technologies operate both separately and jointly, controlling different functions and target markets.

The expansion of airline reservation systems into GDS has revolutionised the distribution of tourism products. Buhalis (1998) asserts that “GDS has emerged as the ‘circulation system’ or the ‘back bone’ of the industry” (p. 412). Before the advent of the Internet, major GDSs, namely Sabre, Galileo, Amadeus, and Worldspan, allowed transaction processing, inventory management, and data repository (representing the largest existing repositories of travel stock information). Therefore, tourism suppliers

had to pay high fees and commissions to these eMediaries (GDS operators, such as travel agencies, tour operators, and handling agencies) in order to market their product (Buhalis, 2004). However, the emergence of the Internet and e-commerce in the late 1990s has changed the situation rapidly (Buhalis, 1998; O'Connor, 1999). The Internet has changed the way the tourism industry plans, controls, operates, and integrates many of its activities (Garcés, Gorgemans, Sánchez, & Pérez, 2002). It has introduced greater flexibility and convenience, decreased distribution costs, and allowed customisation and globalisation of products (Buhalis & Licata, 2002). With the fresh wave of disintermediation and the emergence of new intermediaries, these developments have brought new opportunities and challenges (Houghton, 2007). Thus, GDSs are repositioning themselves to become more marketing and service oriented companies by changing their focus from airlines to other travel-industry segments (Carroll & Siguaw, 2003). For example, Sabre represents itself on the Internet by establishing a new brand: Travelocity.com (Carroll & Siguaw, 2003; Houghton, 2007). Furthermore, the Internet has made GDSs more powerful and supplemented their services with a highly complex series of web-based channels (O'Connor & Piccoli, 2003). O'Connor and Piccoli (2003) stress that this network of online web-based channels provides an outstanding opportunity for those who take advantage of it, but can also be dangerous for those who fail to do so.

The strategic challenges faced by the industry from third-party intermediaries are also fully discussed in the literature. Some researchers advise that hoteliers should develop appropriate channel strategies, including logical pricing strategies, to provide customers with considerable information in order to regain ownership, and to attract customers to their own websites (Carroll & Siguaw, 2003; O'Connor & Piccoli, 2003). O'Connor and Piccoli (2003), revisiting the article *Marketing Hotels Using Global Distribution Systems* by Emmer, Tauck, and Moore (1993), on updating their hotel distribution landscape for the Internet environment, advise hoteliers to rethink their approach to distribution channels. No longer hotels can afford to sit back and wait for business to come to them; the key success factor in using electronic distribution is active management. The authors conclude that comprehensive, well-designed strategies will help operators regain control over their inventory and price and take advantage of direct sales over the web.

This complexity of electronic distribution is also reflected in the formation of strategic alliances. Using strategic network theory, Dale (2003) demonstrates how strategic networks have been used by tourism e-mediaries to gain a competitive advantage. He shows how by independently developing competencies and capabilities in a competitive business environment, companies can enter into stable inter-organizational ties (for example, strategic alliances, joint ventures, and long-term buyer-supplier relationships) to reciprocally and mutually benefit from the network. Dale argues that there are five categories of relationship:

- *Channel*, relationships which enable one company to access the distribution channels of another;
- *Collaborative*, relationships where competitors cooperate with each other to achieve goals difficult to achieve in isolation;
- *Complementary* relationships where companies cross sell products normally bought together;
- *Converse*, relationships where the partners distribute unrelated products; and
- *Communicative*, relationships where content from infomediaries enriches and add value to partner websites.

Dale illustrates how the tourism e-mediary is characterised by a strategic network approach. Furthermore, he speculates that competition in the future will be further directed by the network of partners as a whole rather than by a single intermediary. He concludes by advising companies to participate in such strategic alliances, and to use the network of relationships to gain strategic advantage and position themselves competitively in the market. Though participating in electronic distribution is a complex process, engaging in such networks is important for the success of tourism activities.

Prior research on electronic distribution reveals that hoteliers need to have a strategic approach to their distribution channels. The distribution literature identifies the need to develop a strong pricing strategy as a critical issue for the industry.

2.3.2 Online pricing

Price is therefore one of the key factors in successful marketing in the online environment. Consumers often search online expecting the cheapest prices. Studies have shown that they often compare multiple sites before purchasing (Varini, Engelmann, Claessen, & Schleusener, 2003). Santoma and O'Connor (2006) note that software tools and websites such as TravelAxe, Sidestep, cheapaccomodation.com, and Kayak.com offer automated search processes, allowing consumers to compare the same product across online retailers. In O'Connor's (2003) analysis of the room rates offered to customers over multiple electronic distribution channels, he gives three reasons why consumers search the Internet for hotel rooms expecting lower prices than those found in other distribution channels. Firstly, many well-known retailers compete online on price; secondly, "savvy" consumers know that web-based distribution costs are lower than those of other channels; and finally, many hotels sell their unsold inventories at the last minute for highly discounted rates. Surveying five business-to-consumer (B2C – activities of businesses serving consumers with their service or product) distribution channels, O'Connor found that hotels used multiple and simultaneous distribution channels, and advertised multiple rates across each channel. No channels consistently offered the cheapest prices, and there was no relationship between the cost of using the channel and the rates offered. Various market segment brands showed different pricing structures. Hotels at the lower end were more likely to offer consistent prices across all channels. On the contrary, luxury hotel companies tended to offer the cheapest rates through high cost distribution channels. O'Connor (2003) concludes that there are major implications in pricing for hotel companies, and urges them to offer consistent prices across all channels, or perhaps to offer the lowest rates over their own websites.

Some studies have shown that offering multiple pricing across various online channels is problematic and leads to loss of revenue and customer dissatisfaction. Enz (2003), for example, argues against the notion that multiple discounting of hotel prices offsets revenue loss, and that discounts do not necessarily bring more consumers into the market. She suggests that high occupancy is not always satisfactory, and may lead to revenue losses.

In a similar study focusing on online up-market hotels in Barcelona, Santoma and O'Connor (2006) point out that inconsistent and illogical pricing could be confusing and frustrating to customers, hence, lowering their satisfaction. They argue that there are two alternative ways to structure rates effectively; consistent pricing and pricing based on the transaction cost of using a channel. Consistent pricing can be implemented successfully with appropriate technology, policies, and partner agreements. However, pricing based on the cost of transactions should lead customers to direct channels, bringing additional benefits in marketing, such as branding and customisation (Santoma & O'Connor, 2006). Thus pricing can be used to create a competitive edge in attracting a greater market share. But the rates should be structured effectively. It seems hoteliers utilising direct channels will benefit from both marketing and financial perspectives.

2.3.3 Customer needs

The introduction of technology allows the industry to address customer needs more strategically (Kandampully, 2006; Minghetti, 2003). Organizations need to have an in-depth knowledge of consumer needs and need to "be aware of the ways in which the services delivered create value for the customers and then stimulate their retention and loyalty" (Minghetti, 2003, p.141). According to Minghetti (2003), past research has shown that meeting customer expectations stimulates their loyalty and retention and brings more value than pure economic assessments. In a similar vein, Siguaw and Enz (1999) focusing on IT best-practice champions- the vast majority of whom focus primarily on improving the efficiency of internal operations- note that, with the emergence of new services, technology has enhanced customer satisfaction.

Research identifies certain elements of a web site as important to conduct successful e-business in tourism. Buhalis (1998) shows that websites should offer communication features that enable consumers to interact with the tourism organization when purchasing a product. These features include travel advice, request features, confirmation of reservations, amendment of reservations, deposits and full settlement, specific inquiries, and feedback. Wan (2002) identifies some of the features of websites that increase customer satisfaction; these include a user friendly interface, provision of a variety of information, and an option for online reservations. Based on a survey of 304 international visitors to Hong Kong International Airport, Law and Hsu (2005) reports

indicate that reservation information is the most important dimension for customer satisfaction.

Several value-added services have also been found to be important to tourists. In one study, Nysveen, Methlie, and Pedersen (2003) report the findings of a survey of preferred value-added services on tourism websites undertaken among one thousand Norwegian consumers. The survey results show access to search engines such as Google to be significantly more important than any other value-added service including service aggregation, service integration, customer community, personalisation, pricing methods, and trust. Service integration ranked second, and personalisation was the third value-added service preferred by the customers. The authors emphasise that these services add convenience and offer control over the customer's decision to purchase. This then indicates the need for tourism service providers to focus on these aspects when providing services to their customers.

2.3.4 Web presence

Web presence is another area arising from the introduction of ICT and e-business in the tourism sector that has attracted the attention of researchers. Several researchers have focused on categorising and analysing websites.

The approach to analysing a website includes investigation of quality, features contents, usability, and a focus on customer expectations. Drawing from past research in the lodging industry, Jeong et al. (2003) build on six measures of web site quality, namely information accuracy, clarity, completeness, ease of use, navigational quality, and colour combinations. An electronic survey of 1743 US respondents suggests that website quality is an important antecedent of information satisfaction, and a powerful determinant of behavioural intentions. They recommend luxury-lodging operators pay attention to navigational functions that allow customers to move easily around the web page, turning web surfing to an actual reservation. A content analysis of tourism websites covering North America, Europe, Asia, Australia/New Zealand and Africa performed by Zhou and DeSantis (2005) reveals apparent differences among countries of different economic levels as well as cultures. Their findings show that none of the Australian, New Zealand, or African web sites examined offer interactive maps; Asian

and European websites tend to provide visa information more often than North American and Australian websites; Asian websites have a significantly higher occurrence of language translation, a larger percentage of sites with photo galleries, and tend to use more Flash animations; African websites were found to be weak in many aspects, such as utility functions, local information, and multilingual functions.

Analysing a website with the focus on customer expectations, Murphy et al. (2003) assessed e-mail responses and web site features of 200 Swiss hotels, and argued that hotels paying attention to email should also pay attention to websites. Hotels with an extra feature on their website-animation- responded to customer e-mails significantly less often than those with sites without animation. The hotels with the lowest response to emails tend to host websites similar to other hotels without giving much attention to managing it, reflecting a “bandwagon” approach (blindly following what other people do or believe) rather than added value. The authors also found that hotel characteristics such as size, category, linguistic region, and geographic location relate to the quality of email responses and the presence of appropriate web site features. Often this is the case in tourism organizations in developing countries; the Maldives is likely to be no different.

Researchers have also analysed websites of Destination Management Organizations (DMO), which have become a crucial element for the success of a destination irrespective of the development status of countries. The authors, Gretzel, Yuan, and Fesenmaier (2000), report the outcome of a workshop focusing on the use of the World Wide Web for DMO’s advertising and the need for organizations to be flexible and open to change in the new economy. They examine the organizational changes that can be expected as the World Wide Web becomes more predominant and the new economy takes hold. According to these authors, integration of information technology, including the Internet, into DMO operations, and marketing are the key to success. They concluded the change occurring in the new economy involves a rethinking of who the partners and competitors are, and how networks, with other organizations, can increase the capacity of organizations to learn. Thus, they argue that destination success in the knowledge economy is more about a change in approach than about the technology itself. Consumers’ perspectives of DMO websites are analysed by Choi, Lehto and O’leary (2007). Their study, based on the *Internet Travel Survey* conducted by the Canadian Tourism Commission, shows that DMO websites were visited equally often

throughout the course of a tourism experience (pre-trip, on-site destination, and post-trip). Respondents have different perceptions of different levels of DMOs (country, state/province, and city) according to their spatial or geographical presentation and expect destination-specific and activity-oriented information at the destination web site level from country to city. The authors note that consumers are likely to look for purchasing information on the lower levels of DMO sites, increasing the possibility for DMO websites to include commercial-oriented activities such as facilitation of direct online reservation. However, at the national level the focus needs to be directed at image projection (S. Choi, et al., 2007).

In a similar vein, in the UNCTAD's (2005) Information Economy report analysing the significance of DMOs (referring to them as Destination Management Systems - DMS), specifies their objectives as;

- to efficiently integrate and facilitate interaction among all stakeholders;
- to optimize the relationships with targeted groups;
- to collect, manage and distribute information on tourism products to a larger proportion of consumers and tourism distributors throughout the world;
- to develop an integrated tourism product and service offerings;
- to provide up-to-date and attractive tourism information and products according to the country's interests;
- to allow consumers to easily make a reservation and quickly receive a confirmation;
- to reduce marketing costs compared with traditional channels (such as printed material);
- to collect information on customers and to design marketing strategies for different market segments (UNCTAD, 2005, p.158).

The report notes that the degree of success of a DMS is mainly associated with its structure and the nature of the relationship between government and the private sector.

2.3.5 Tourism and information technology in developing countries

The *Information Economy Report 2005* (UNCTAD, 2005) reveals a number of issues that need to be considered when studying developing countries. The tourism industry

tends to be fragmented and heterogeneous, and includes a great number of small and medium enterprises (SMEs) that could be better organised and promoted (UNCTAD, 2005). The report emphasises that according to WTO, 85 per cent of accommodation enterprises in developing countries are small to medium sized. It notes that small businesses such as hotels have often been excluded from global distribution channels due to the high costs of entry, and that developing countries often depend on international and foreign tour operators in order to be included in the international tourist scene:

Before the advent of the Internet, local hotels often had no other option than to sell their room capacity at a low cost to well-known tour operators, ensuring a small but stable amount of revenue for them throughout the year. As a result, the destinations marketed to tour operators may have gained in popularity, increasingly in the form of low-price package vacations, encouraging the development of “mass tourism”, but earned very low returns. (UNCTAD, 2005, p.158)

However, the most lucrative elements of developing countries’ tourism, namely: “marketing and the procurement of customers, international transportation and food and lodging” are dominated by western-owned vertically integrated global networks (Brohman, 1996). For instance, in the electronic distribution channels, the most significant element of tourism marketing, some of the IT companies operating Internet based tourism technologies such as Galileo (Blackstone Group/Cendant, Avis and Budget Days Inn Hotels), and Amadeus (British Airways, Qantas, Lufthansa, Air France, and Iberia) have a great influence over tourism distribution (See also Robinson, Heitmann, & Dieke, 2011).

Researchers have shown that the tourism sector largely depends on the availability and conditions of air transport (Diaz, 2001). Pearce, Reid and Schott (2009) note that with the rapid technological change and an expanding range of available distribution channels, one of the most frequently purchased travel product online is air tickets. However, as noted by Brohman (1996), most developing countries are not in a position to take much advantage of the available distribution channels because of the way their air transport sector and tourism sectors are structured. In a paper presented at the symposium on tourism services, Diaz explains the situation of international air transport for developing countries. He highlights that, air transport, in particular international air

transport, is a means used by majority of tourists arriving in developing countries. However, as noted earlier, air transport and all segments of the tourism industry supply (notably CRS/GDS (discussed in section 2.3.1 Electronic distribution), tour operators, travel agencies, hotels etc.) are dominated by few integrated players in the developed economies (Britton, 1982; Diaz, 2001; Pearce, 1989). Consequently, tourism suppliers in developing countries are at a clear disadvantage. The travel agencies from tourism destinations in developing countries are almost entirely dependent in their linkages with the dominant suppliers. Often the air transport sector or the airlines in developing countries are not in a position to compete effectively, nor to invest heavily in ICT systems in order to gain a fair share in the market. For instance, the Maldives as a successful emerging tourism destination largely depends on European tour operators. A large portion of tourist arrivals (inbound tourists) depend on package tours arranged in one resort (one island) accommodation (Shareef & McAleer, 2008). The Maldives has not been able to strategically manage and sustain an independent fleet of an international airline and has not managed to establish functionalities of tour operators independent to the international dominant suppliers.

Telfer and Sharpley (2008) highlighting tourism domination by Western-owned global networks, argue that in-country tourism systems themselves are dominated by local elites hampering the equity benefits of tourism. Jamal and Lagiewski (2006) indicate that a similar situation exists in the Maldives whereby the country depends on international and foreign tour operators which encourage “mass tourism” into the country, and where domination by business elites restricts equitable distribution of tourism benefits within the country. Reimer (2007) describes the relationship between powerful government authorities and the business elites as the “one hand washing the other” (p. 372). According to Reimer, government authorities offer lucrative business opportunities, whilst the elites reward them with gifts. He also notes that using tourism association(s) as a means of formal grounds to establish them strengthens such a relationship. For instance, eStandardsForum (2009) makes accusations of cases of corruption in the Maldives, and notes that the former President was engaged in nepotism and siphoned off profits from the tourism sector.

2.3.6 Section Summary

ICT and e-business play a key role in promoting tourism products and services globally especially for DMO's and tourism suppliers in developing countries. The literature review indicates that, despite the heterogeneity and dynamism experienced by the tourism industry, ICT and e-business have enabled a smooth progress in the industry by transforming the business models and processes much more quickly and more substantially than those in most other B2C arenas (Werthner and Ricci 2004). However, a number of scholars agree that developing countries as tourism suppliers face a myriad of issues in using ICT and e-business given the rapid and substantial transformation of the various processes of the tourism industry.

Electronic distribution being one of the main processes of the tourism industry, research has shown the need for a strategic approach to distribution. The discussion emphasises the importance of developing a viable approach to electronic distribution by leveraging the opportunities offered by ICT to tap into the global tourism marketplace. Many researchers highlight how organizations engaged in tourism activities have developed web-based applications to complement the distribution of their products and services. They also urge tourism organizations to position themselves in the electronic marketplace in order to compete in the global marketplace and warn those who fail to do so.

Researchers emphasise that online pricing is one of the critical factors of electronic distribution and advice industry participants to have a consistent pricing strategy. They note that presenting online prices on participants' own websites is one of the most effective ways of attracting customers, leading to more profitability.

Research also emphasises the fact that ICT has allowed the industry to address customer needs more strategically, and shows that customer satisfaction has a positive effect on profitability. Researchers emphasise that customer satisfaction leads to loyalty and retention. Researchers identify that interaction between tourism organizations and customers is important to address customer needs, which are critical for customer satisfaction. Several researchers have focused on categorising and analysing websites and note that website quality is an important antecedent to satisfy customers. However,

they point out that some of the organizations host websites similar to other organizations paying less attention to managing it, reflecting a bandwagon approach.

Another critical approach to marketing using ICT and e-business is to develop the websites of the DMO. Researchers and especially international organizations like the UNCTAD conclude that DMOs play a central role in marketing a destination. According to the UNCTAD (2005), ICT also helps destinations to market their product worldwide. Further they note that the increase in the number of the Internet users wanting to obtain tourism-related information, coupled with the growing demand for new travel experience, opens a huge opportunity for developing countries.

In conclusion, despite the fact that the importance of ICT and e-business in the tourism organizations is widely acknowledged in the literature, little is known about ICT and e-business is used in tourism organizations. This study aims to fill this gap in the literature, taking into account the elements identified in the tourism literature. The dynamics of ICT and e-business presented in the literature highlight important areas that need to be addressed by the tourism organizations.

2.4 Relevant frameworks and theoretical models in Information Systems

The earlier sections of this chapter have provided a broad understanding of e-business and tourism from a developing country's perspective. Furthermore, there is also a substantial amount of work done among Information Systems (IS) researchers that could provide a deeper understanding of how organizations adopt and integrate ICT and e-business in the tourism organizations of the Maldives. This section reviews frameworks and models that might be relevant for this study, and explores and identifies significant issues in the existing IS literature.

Factors impacting on the integration of ICT and e-business are identified in several models in the IS literature designed to throw light on technology adoption. One of most widely used models that explains behaviour related to technology adoption in applied IS is the Technology Acceptance Model (TAM), introduced by Davis (1989) in his study of computer usage and behaviour. This model is based on the Theory of Reasoned Action (TRA) developed by Ajzen and Fishbein (1980). TAM proposes two key factors:

perceived usefulness (PU) and perceived ease of use (PEU) as the primary drivers of user intentions to accept new information technology. The former is “the degree to which a person believes that using a particular system would enhance his or her job performance” (F. D. Davis, 1989, p.320); while the latter is “the degree to which a person believes that using a particular system would be free of effort” (F. D. Davis, 1989, p.320). The robustness of TAM has been established through several applications and replications, which have all shown it to be a useful model (Gefen, Karahanna, & Straub, 2003; Gefen & Straub, 2000; Lederer, Maupin, Sena, & Zhuang, 2000; Lu, Yu, Liu, & Yao, 2003; Venkatesh, et al., 2003). However, the model has limitations (Bagozzi, 2007; Venkatesh, et al., 2003). For example, Bagozzi (2007) notes that not only TAM but also TRA and Theory of Planned Behaviour (TPB of Ajzen, 1985):

- have critical gaps;
- have no sound theory or method for identifying the determinants of PU and PEU;
- ignore group, social, and cultural aspects of decision making;
- rely on over-simplified notions of affect and emotions;
- overly depend on predictable processes that could be regulated (p. 245).

Another well-known model that identifies the factors driving technology adoption (See Chwelos, Benbasat, & Dexter, 2001; Premkumar, Ramamurthy, & Nilakanta, 1994; Teo, Wei, & Benbasat, 2003) is the Diffusion of Innovation (DOI) theory first developed by Rogers (1962). Rogers defines diffusion as “the process in which an innovation is communicated through certain channels over time among the members of the social system” (p. 5). Adoption takes place through social processes and through information flows. Although numerous studies adopt Rogers’ DOI theory, the theory is not without critics. Some researchers argue that the DOI model should include or blend with other factors/contexts to provide a more holistic adoption model (Iacovou, Benbasat, & Dexter, 1995; M. K. O. Lee & Cheung, 2004; Prescott & Conger, 1995; Thong, 1999). Lee & Cheung (2004), for instance, argue that a major weakness of Rogers’ model is that DOI theory does not include the possibility of influence from organizational and environmental factors. After reviewing seventy IS-related papers, Prescott and Conger (1995) conclude that Rogers’ (2003) DOI appears to be most applicable to innovations with an intra-organizational locus of impact. Despite its prominence, the DOI theory is often criticised for its “pro-innovation bias”, “individual

blame”, the “recall problem” leading to inaccuracies, and the “issue of equality,...as socio economic gaps among the members of the social system are widened” (Rogers, 2003, p.134-135).

2.4.1 Stage Theory

Relating to rationalistic assumptions on technology adoption, the stage theory proposed by Nolan (1973), has also attracted the attention of several IS researchers. Stage theory is premised on the idea that organizations pass through various stages in assimilating technology (Gibson & Nolan, 1974). This progression is in successive and identifiable stages, and is described as an “evolutionary journey” for most firms (Earl, 2000, p.33). Various stage models have been proposed to gauge the degree of maturity or evolution of an information system over time. According to King and Toe (1997), the models describe a wide variety of phenomena; organizational life cycle, product life cycle, biological life cycle, and so forth. Since stage theory was first introduced by Nolan (1973), the stage hypothesis has continued to draw attention from both practitioners and members of the academic community (Benbasat, Dexter, Drury, & Goldstein, 1984), and has been very influential in business and IS academic communities (A. Friedman, 1994; Galliers & Sutherland, 1994; J. L. King & Kraemer, 1984). Although the stage hypothesis is widely acknowledged, the stage model has also been criticised throughout this period for its simplicity (Benbasat, et al., 1984; J. L. King & Kraemer, 1984), its lack of empirical validation (J. L. King & Kraemer, 1984), and for having a lack of detail in different stages of growth (A. Friedman, 1994; J. L. King & Kraemer, 1984). However, the model continues to be used by organizations, enabling IS managers to manage ICT effectively (Benbasat & Zmud, 1999) and it is important to note that those authors who criticise the model have not totally rejected it. With the emergence of the Internet and e-business, the stage hypothesis has attracted even more attention, and several “stages of growth models” have appeared to describe and explain the phases of development in the use and management of ICT in the e-commerce arena (Prananto, Marshall, & McKay, 2003; Prananto, McKay, & Marshall, 2001). These stage models (also termed “adoption ladders”) postulate that organizations move step-by-step from basic uses of the Internet, such as e-mail, to a higher level of sophistication, integrating business systems and redesigning business processes through the use of ICT (Martin & Matlay, 2001). Each stage reflects a particular level of maturity in terms of the use and

management of ICT in an organization's business activities (Damsgaard & Scheepers, 2000; Mendo & Fitzgerald, 2005). Although the empirical validation of the concept of "stages" is limited, these models provide a basis for estimating the stages of growth or for understanding the hierarchical progression of e-business maturity in organizations. Thus in order to get an understanding of the stage theory, three models that might be relevant to this study is presented.

2.4.1.1 Nolan's model

Gibson and Nolan (1974) noted that organizations progress through a number of states when assimilating technology. They proposed that the growth of computing within an organization follows an S-shaped curve and can be divided into four stages; initiation, contagion, control, and integration (Gibson & Nolan, 1974; Nolan, 1973). Based on the analysis of ICT usage in a number of US firms Nolan (1979) proposed an evolutionary model by extending the four stage model to comprise six stages.

As illustrated in Figure 1, the categories of the six stages are; initiation, contagion, control, integration, data administration, and maturity. Nolan (1979) posited that growth phases can be identified primarily according to the level of data processing (DP) expenditure as a proportion of sales revenue. In addition to DP expenditure, he indicated four growth processes; application portfolio, data processing organization, data processing, planning and control and, user awareness. The growth progression will follow an S-curve over time. Each of these stages involves analysis of six benchmarks in addition to DP expenditure, namely; rate of ICT expenditure, technological configuration, application portfolio, ICT planning and control approaches, ICT management organization, and awareness of users.

Figure 1: Six stages of data processing growth (Nolan, 1979, p. 117).

2.4.1.2 Burgess and Cooper's model

Burgess and Cooper (1998) propose the Model of Internet Commerce Adoption (MICA) to explain the different stages of e-commerce that small businesses pass through in developing their websites. The MICA model was based on an analysis of the metal fabrication industry of Australia. The model suggests that in developing commercial websites, organizations typically start by having a "presence" on the web and build on functionality over time as their level of technical skills/expertise in the use of Internet technologies increases.

The MICA model, as illustrated in Figure 2, describes the relative maturity of a business in Internet commerce. It consists of three layered stages and incorporates three levels of business process, developed from Ho's(1997) Model that covers promotion, provision, and processing. At stage one, promotion; businesses are mainly using electronic channels to promote their products and service. Stage two, provision or consolidation,

focuses on the interaction between the business and its customers. At Stage three, processing or the level of maturity, the organization has a fully integrated site to communicate between parties involved in a buyer-supplier relationship. The addition of layers is synonymous with the business moving from a static Internet presence, progressing through increasing levels of interactivity to a dynamic site incorporating value chain integration and innovation application to add value through information management and rich functionality (Timmers, 2000).

Figure 2: Model of Internet Commerce Adoption (MICA)(Burgess & Cooper, 1998).

Further, the MICA model provides a roadmap (an alternative representation as illustrated in Figure 3), which indicates where a business or industry sector is in its development of Internet Commerce application. The graph represents time and complexity versus functionality. The organization's web site evolves from static to dynamic pages as it develops in functionality and complexity over time.

Figure 3: Internet Commerce (IC) roadmap (Burgess & Cooper, 1998)

2.4.1.3 Martin and Matlay's model

Similarly, Martin and Matlay (2001) show the adoption of e-commerce classified along steps of increasing complexity to full integration in an “adoption ladder”. This model is adapted from a Cisco-led Information Age-Partnership study on e-commerce in small businesses. This is depicted in Figure 4. The ladder shows that e-commerce adoption begins with the adoption of e-mail, progressing through the steps of adoption of a website, e-commerce, and e-business to a transformed organization.

Figure 4: Growth model adapted from Cisco led Information Age Partnership study on e-commerce in small business (cited in Martin & Matlay, 2001)

Subsequent to Nolan's model, Burgess and Cooper and Martin and Matlay have provided models to understand how an organization could place itself at a particular stage of ICT maturity. These models describe the elements within an organization. The Burgess and Cooper model and the stages of IC maturity in the McKay, Marshall and Prananto model could be used as a lens to understand the progression of web site maturity. The elements describing IT maturity in Martin and Matlay's Model, could be used as a guide to understanding how organizations progress in assimilating ICT technologies.

2.4.2 Structuration theory

Although various stage models have been widely used to capture and explain the phases involved in moving towards greater sophistication and use of ICT in the e-business environment, it is important to recognize that the effective use of technology does not depend solely on rational economic behaviour nor on the strategic interests of the organization but is also driven by influences from social structures, including pressures to conform from outside the organization (See Jones & Karsten, 2008; Teo, et al., 2003). As highlighted earlier (in section 2.2.3 *Culture*) structuration theory by Anthony Giddens (1979, 1984) is concerned with this interplay between social structures and human agents.

Anthony Giddens' (1979, 1984) structuration theory is one of the most influential theoretical paradigms in IS among the theories relating to technology adoption (Poole & DeSanctis, 2004). Jones and Kasten (2008) provide a critical review of this theory in IS research and conclude that IS researchers should consider a broader perspective to Giddens' (1979, 1984) theory in order to extend and challenge the work of social theorists, rather than directly applying them to IS context. Structuration theory considers relationships between social structures and human agents to be mutually dialectical. Giddens (1979, p.69-79) presents this theory as "the duality of structure: mutual dependence of structure and agency". According to Pozzebon and Pinsonneault (2001), Orlikowski and Robey (1991) and Orlikowski (1992b) were among the first to apply structuration theory to the field of IS, using the theory to study interaction between IT and organizations. Based on structuration theory, Orlikowski (1992b) proposed a model of the duality of technology. She notes that the relationship between the organization

and technology must be understood dialectically, with institutional context and human actions as mediators in the on-going interaction. Thus the institutional context and relationships among various actors within the organizational field play a significant role in shaping ICT usage.

Stemming from their work in understanding the relationship between technology and organizations, Gash and Orlikowski (1991) investigate organizational change in technological adoption and the relationship between intended and unintended organizational change. Gash and Orlikowski articulate a perspective centred on “technological frames” to identify the existing organizational frame subset related to “assumptions, meanings, and cognitions that people use to understand the nature and role of technology in organizations” (p. 189). They examine the differences in the frames over time to understand technological change based on Bartunek and Moch’s (1987) types of change; first order, second order, and third order changes. To understand the pace of change in organizations, Gallivan, Hoffman and Orlikowski (1994) explore the question of how radical changes are implemented in organizations. They argue that radical change can be implemented slowly and gradually, as a series of incremental changes. They also note that in contrast to incremental changes, where established norms, processes, and knowledge are augmented or streamlined, radical change replaces the status quo. Radical change requires a new order of things, fundamentally changing what already exists into different products, processes, relationships, knowledge, and norms and which, as a result, may create serious disruptions. In a similar vein, Orlikowski (1993b) has shown that software development innovations such as computer-aided software engineering (CASE) tools often lead to transformation or radical changes in the work, knowledge, and business processes of organizations. Although such transformations offer great benefits, they also bring equally great difficulties (Orlikowski, 1993b) and managing such disruptions becomes critical to the general experiences of the organization and its employees (Gash & Orlikowski, 1991). Changes in the organizational environment shape the behaviour of organizations or the institutionalisation of organization. Thus it is important to note that the roots of structuration theory lie in basic institutional theory (See Chatterjee, Grewal, & Sambamurthy, 2002).

2.4.3 Institutional theory

The study of institutions traverses through various disciplines. Recent leading contributors come from the economic, political science, and sociology disciplines (Scott, 2001). Despite its widespread use, there is no consensus on the definition of the term “institution” in the institutional school of thought (York University, 2005). Following one of the principle theorists, Scott (2001, p.49), this study defines institutions as “multi-faceted, durable social structures, made up of symbolic elements, social activities, and material resources.” This study draws on institutional theory to account for broader factors of e-business adoption and integration. Institutions can influence the laws, regulations, standards, and other supply-push and demand-pull forces (J. L. King et al., 1994; Montealegre, 1999). Such influences articulate the organizational norms, morally adopting socialisation practices and tradition (Orlikowski, 1992a). Institutions sometimes facilitate or hinder IT diffusion through certain strategies, namely; knowledge building, knowledge deployment, subsidy, innovation directive, mobilisation, and standard setting (J. L. King, et al., 1994). Although there is no agreed-upon single definition of institution, there are some commonalities among the researchers considering the institutional perspective.

2.4.3.1 The old and new institutionalism

In a review of institutionalism, DiMaggio and Powell (1991) describe two traditions; the old and the new institutionalism (Table 1). In 1949, Philip Selznick (1949) and his associates started to criticise what they referred to as an over-rationalised view of organizations and argued that organizations should be understood as delimited in their behaviour by external institutions. In the late 70s John Meyer (1977) pushed this argument further by arguing that organizations acted under the strain of what he called myths of rationality; institutional theorists arguably assign this as the birth of new institutionalism (DiMaggio & Powell, 1991). Two seminal papers by J.W. Meyer (Meyer, 1977; Meyer & Rowan, 1977), “The Effects of Education as an Institution” and “Institutionalized Organizations: Formal structures as Myth and Ceremony” respectively, are seen as the central components of what has subsequently become known as “neo-institutionalism” or “new institutionalism”. As shown in Table 1, in the old institutionalism patterns of influence, coalitions, competing values, power, and

informal structures were central (Selznick, 1949, 1957). In contrast, new institutionalism stresses legitimacy, the embeddedness of the organizational field, and focuses on routines, scripts, and schemas (DiMaggio & Powell, 1983, 1991; Meyer & Rowan, 1977). The new institutionalism recognizes the “old institutionalism” of Philip Selznick and his associates (DiMaggio & Powell, 1991). Even though institutional theory dates back decades, the theory is regarded as one of the most relevant theoretical framework for studying technological innovations (See Hua, Harta, & Cooke, 2007; Orlikowski & Barley, 2001; Scott, 2001; Teo, et al., 2003).

Table 1: The Old and the New Institutionalism

	Old	New
Conflicts of interest	Central	Peripheral
Source of inertia	Vested interests	Legitimacy imperative
Structural emphasis	Informal structure	Symbolic role of formal structure
Organizations embedded in	Local community	Field, sector, or society
Nature of embeddedness	Co-optation	Constitutive
Locus of institutionalization	Organization	Field or society
Organizational dynamics	Change	Persistence
Basic of critique of utilitarianism	Theory of interest aggregation	Theory of action
Evidence of critique of utilitarianism	Unanticipated consequences	Unreflective activity
Key forms of cognition	Values, norms, attitudes	Classifications, routines, scripts schema
Social psychology	Socialization theory	Attribution theory
Cognitive basis of order	Commitment	Habit, practical action
Goals	Displaced	Ambiguous
Agenda	Policy relevance	Disciplinary

Source: (DiMaggio & Powell, 1991, p.13)

2.4.3.2 The broad perspective of Institutionalism

Institutional theory is based on the premise that organizations are embedded in an institutional environment. Although the old and new types of institutionalism have different institutional perspectives, according to DiMaggio and Powell (1991), they “both emphasize the relationship between organizations and their environments, and both promise to reveal aspects of reality that are inconsistent with organization’s formal accounts. Each approach stresses the role of culture in shaping organizational reality” (p.12). Despite the divergence in institutional perspective, Selznick (1996) argues that “institutional theory should encompass them all” (p. 276). According to Greenwood and Hinings (1996), in 1994 W. Richard Scott converged multiple themes to form what is

now labelled as *neo-institutionalism*. More recently Scott (2001) attempted to integrate different institutional perspectives into analytical frameworks (Table 2). The Table shows that “it is through these three pillars that institutions are replicated, transmitted, nested in multiple systems” while experiencing pressure to change (Kury, 2007, p.p372).

Table 2: Three pillars of Institutions

	Pillars		
	Regulative	Normative	Cognitive
Basis of compliance	Expedience	Social Obligation	Taken for granted
Mechanisms	Coercive	Normative	Mimetic
Logic	Instrumentality	Appropriateness	Orthodoxy
Indicators	Rules, laws, sanctions	Certification, accreditation	Common beliefs shared logics of action
Basis of legitimacy	Legally sanctioned	Morally governed	Comprehensible Recognizable Culturally supported

Source: (Scott, 2001, p.52)

In order to understand the institutional influences affecting the integration and use of ICT in the tourism organizations of the Maldives, this study also considers Scott’s convergence, as described in a seminal work, the first edition of, *Institutions and Organizations* (Scott, 1994) - a broad perspective of institutional theory-, which involves all the elements of the old and new institutional theories.

Generally, institutional theorists (DiMaggio & Powell, 1983; Meyer & Rowan, 1977; Scott, 1987; Zucker, 1987) have focused on how the institutionalisation of organizations is a product of the pressure from internal and/or external organizational environments. As Miranda and Kim (2006) describe, the internal or the internal-to-organization environment perspective considers organizations to be shaped by socially constructed, persisting patterns of activities among organizational members. Chatterjee et al. (2002) have applied institutional theory to behaviours and cognition of individuals within organizations, focusing on three aspects; structures of significance, structures of legitimating, and structures of domination, all of which influence individual behaviour. Internally, institutionalisation arises from the structures and processes among organizational members and/or groups. The external or external-to-organization environment perspective considers organizations to be shaped by forces from the external environment that alter patterns of organizational activities (Miranda & Kim,

2006). Forces in the external environment include those related to the government, professional, and other related organizations, especially those relating to the same sector. A study by Gibbs and Kreamer (2004), identified external pressure in the form of government promotion and legislation to be key determinants of the scope of e-commerce use; this supports institutional theory. More recently, grounding her analysis in institutional theory, Zhu (2009) provided an understanding of the external environment and more specifically the legal and policy issues of e-commerce adoption in different countries. The quantitative data used in her analysis, based on secondary data, concluded that the legal and policy-making environment exerted a substantial, positive impact on e-commerce adoption, especially at the early stages.

Institutional theory also highlights the importance of the institutional environment in shaping organizational structure and actions (Scott, 2001). Organizational norms are likely to be based on powerful environmental forces. Institutional theory posits that isomorphic pressure (the pressure that forces one unit in a population to become similar to other units in the same environmental conditions) and the pressure for legitimacy makes organizations more similar to one another, or homogenised (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). DiMaggio and Powell (1983) argue that the homogenisation emerges out of structuration (Giddens, 1979). Structuration theory posits that human agents create social structures, and these creative actions produce and reproduce these structures. Regardless of the source of institutional pressure, institutional theory specifies three mechanisms or forces which increase the homogeneity or organizational structures in an institutional environment; mimetic pressure, coercive pressure, and normative pressure (DiMaggio & Powell, 1983).

Mimetic pressure causes organizations to imitate the actions of other organizations in order to avoid being perceived as less technologically advanced (Teo, et al., 2003). Researchers have shown that organizations tend to imitate structurally equivalent organizations because they share similar economic network positions in the industry, similar goals, commodities, customers, and suppliers, and also because they experience similar constraints (Burt, 1987). Imitation is more likely to arise when conditions are uncertain (DiMaggio & Powell, 1983). It is argued that organizations tend to imitate the structurally equivalent organizations which are perceived to be successful (Haveman, 1993; Selznick, 1996). Organizations also experience social pressure to join the institutional bandwagon, or to mimic other organizations simply in order to avoid

appearing different (DiMaggio & Powell, 1983) and sometimes they need legitimacy within the social structure (Abrahamson, 1991).

Coercive pressures are those exerted by resource-dominant traders and parent corporations (Gibbs & Kraemer, 2004), upon whom organizations are dependent (DiMaggio & Powell, 1983). According to DiMaggio and Powell (1983), coercive pressure mainly stems from the resource-dependence perspective. Dominant actors who have control over certain scarce resources may demand other, dependant organizations to adopt certain structures or programmes that serve their own interests, and these resource-dependent organizations often comply with such demands in order to secure their own survival (Pfeffer & Salancik, 1978). Coercive pressure also stems from political influence and the need for legitimacy. The pressures from authoritative bodies such as the government enforce certain regulations or mandates for organizations to adopt certain organizational structures perceived to be legitimate. Complying with these regulations enables the organization to benefit from rewards and avoid negative sanctions (DiMaggio & Powell, 1983). Institutional researchers have shown that coercive pressure, for instance from regulations, is vital to create a conducive environment for e-commerce adoption (Gibbs & Kraemer, 2004; Zhu, 2009).

Normative pressure results from frequent contact with other suppliers, customers, or trade organizations (Gibbs & Kraemer, 2004). The normative pressure manifested through dyadic inter-organizational channels of firm–supplier and firm–customer relationships enables organizations to learn about innovations along with their associated benefits and costs (Burt, 1987). Much of this type of pressure stems from increasing professionalization. Resulting from concern about the level of education and the professional training those organizations receive. According to DiMaggio and Powell (1983), the training of professionals creates “a pool of interchangeable individuals who occupy similar positions across a range of organizations and possess a similarity of orientation” (p. 152).

Organizational decisions are not necessarily driven simply by rational goals of efficiency but also by social, cultural, and legal factors (Gibbs & Kraemer, 2004). According to Orlikowski and Barley (2001), this perspective offers a vantage point for researchers to conceptualise “the digital economy as an emergent, evolving, embedded,

fragmented, and provisional social production that is shaped as much by cultural and structural forces as by technical and economic ones” (p. 154). The pressure from these institutional forces also encourages the organizations to adopt innovations. The institutional activities in regard to technical innovations are also described in terms of networks (J. L. King, et al., 1994). According to Nooteboom (2000), some researchers argue that the locus of innovation and adoption is no longer the individual or the firm, but to a large extent the network, the inter-firm relationship, and the coordination and conditions of institutions in which a firm is embedded. Inter-organizational environments and the coordination or collaboration among these institutions plays a significant role in shaping the environment. Philips, Lawrence, and Hardy (2000) argue that collaboration is an important aspect of institutional theory. They argue that institutionalisation and collaboration are inter-reliant and that the rules and resources within the institutional field shape the level of collaboration. They note that collaboration provides the basis for the processes required for institutionalisation and an opportunity for interested parties to participate. They also note that power plays a significant role in shaping the relationships between collaboration and the dynamics of the institutional field. The firm is likely to be provoked to adopt and use e-commerce by external isomorphic pressure from other businesses or other institutions (Gibbs & Kraemer, 2004).

Furthermore, Avegerou (2001) argues that institutional theory presents a similar perspective to that of resource dependency theory by showing that the competitive pressure faced by organizations is also driven by concerns about efficiency. In other words, institutional theory does not refute resource dependency theory (Pfeffer & Salancik, 1978), which argues that organizational relationships with other actors or organizations within the field are driven by resource scarcities, while institutional theory argues that organizations are compelled to imitate other organizations in the field. According to Avegerou (2001), it could be argued that resource dependency theory explains the impact of relationships with other actors in the transitional field, but differs in its explanatory power of “why”. Institutional theory posits that organizations compete not just for resources but also for institutional legitimacy and economic fitness (DiMaggio & Powell, 1983). Zucker (1987) noted that many studies use the level of government control via resource flow, laws, and regulation as a measure of institutionalisation. He argues that organizations’ success lies in their adaption to

institutional pressure. Organizations can acquire competitive positions by strategically managing the institutional context within which the resource lies (Oliver, 1997). De Gregori (1987) further claims that “resources are not; they become” (p. 1241). He argues that resources are the results of knowledge and capabilities of human beings, which “define a functional relationship that we call resources” (p. 1243).

According to Chaisson and Davidson (2005), institutional theory also offers levels of analysis for industry studies. An industry can be an organizational population operating to produce similar products or services (Scott, 2001) and it takes actions influenced by shared structures (Chaisson & Davidson, 2005). As with the concept of industry, the concept of the organizational field is also appropriate to analyse institutional processes (Scott, 2001). DiMaggio & Powell, (1983) defined organizational fields as “those organizations that, in the aggregate, constitute a recognized area of institutional life” (p.148) and acknowledged the organizational actors and institutional norms in the field. The organizational field allows the development of the macro perspective of the industry. According to Molla, Taylor and Licker (2006), institutional theory allows a macro level analysis of interventions and their impact on the behaviour of organizations.

Institutional theory provides a theoretical understanding of how effective use of ICT could be influenced by the internal and external organizational environments. Furthermore, institutional theory describes how powerful forces within the environment shape the institutionalization of organizations. Thus, institutional principles could be applied to explore the institutional arrangements affecting ICT and e-business integration and usage in tourism industry organizations in the Maldives. This study also takes the institutional field into consideration in order to focus more broadly on the institutional environment of the tourism industry.

2.4.4 Section summary

Some of the well-known models and theoretical perspectives help bring a deeper understanding of the behaviours and challenges experienced by organizations in attempting to apply ICT and e-business effectively. Although there exists seminal work on understanding ICT and e-business using models such as TAM, TRA, TPB and DOI theory, these works fail to address the complex behaviour of an organization. Their

focus on the individual level fails to address the dynamic, ongoing, and inherently social contextual factors affecting an organization. Additionally, theories based on technical efficiency have been given a great deal of attention by IS researchers investigating ICT adoption and usage. Among them, the stage theory is considered to explain the degree different technologies are used.

However, this study argues that that reality is subjective and socially constructed, involving numerous interrelated activities, which may reflect organizational interest or political struggles more than the characteristics of individuals or the need for technical efficiency. Thus, institutional theory applied with a theoretical understanding of the structuration process or structuration theory helps in understanding how institutions are formed, produced and reproduced through the interplay of actions and structures. This study investigates how interactions among organizations in the field affect and is affected by actions. How institutional norms create structural similarities, or isomorphism, across organizations through coercive, mimetic and normative mechanisms. Institutional theory also explains the relationships or collaborations among organizations in the field. Institutionalisation and collaboration are therefore interdependent and influenced by the rules and resources available within the institutional field. Therefore the broader perspective of institutional theory has been selected for this study.

2.5 The preliminary theoretical framework and research questions

Owing to its complexity, the literature provides no clear answer to the research problem. Based on the above discussion this section sets out the theoretical framework, research objective, and research questions of this thesis. The concepts are defined based on the literature review as symbolic concepts investigating what Charmaz (2006, p.169) calls the “world-view” of the researcher. The theoretical framework outlines the direction of this research based on the research problem

This thesis argues that ICT and e-business usage among tourism organizations cannot be studied without giving more emphasis to the dynamics of the internal as well as external environment of the organizations. Moreover, attention should be paid to the specifics of

the sector, the sophistication of ICT and e-business usage, and the institutional environment of the phenomena under investigation.

In the Literature Review, literature on the contextual environment, the use of ICT and e-business in tourism management, and Stage Theory and Institutional Theory within the IS research literature, have been used to highlight relevant research and develop an understanding of the key issues under investigation. These theories inform the study, adding depth and credibility. The preliminary theoretical framework has been used to critically evaluate relevant research and uncover the assumptions underpinning this study. It should be noted, however, that these assumptions were preliminary and changed as the research progressed.

Due to the paucity of previous research on the issue under investigation, this study aims to build theory through an iterative process by moving between theoretical concepts and empirical findings (cf. Eisenhardt, 1989; Walsham, 1995), resembling a multi-grounded theory approach (Goldkuhl & Cronholm, 2010) for the purpose of analysing and describing the use of ICT and e-business among the tourism organizations in the Maldives. A multi-grounded theory (MGT) approach differs from the grounded theory approach in that the emerging concepts are not solely empirically grounded, but also contrasted with existing theory (Goldkuhl & Cronholm, 2010). (Grounded theory and multi-grounded theory is further explained in Chapter 3 – Research Methodology). Thus, as Goldkuhl and Cronholm (2010) advocate, these theories are used as a source of inspiration and to challenge the abstractions made during the analysis process.

2.5.1 The preliminary theoretical framework

According to Creswell (2003) and Miles and Huberman (1994), qualitative researchers use a theoretical lens or perspective to conduct their studies. Following Creswell (2003), the preliminary theoretical framework outlined in this section helps the researcher to identify the issues that need to be examined. The framework presents the main themes and concepts and shows their presumed relationships (Creswell, 2003; Miles & Huberman, 1994). Thus, this theoretical framework identifies a set of phenomena in order to guide this research.

The preliminary theoretical framework provides a structure for the investigation of this research. There is a notable agreement in the literature that a set of external environmental as well as internal organizational factors plays a crucial role for tourism organizations when adopting and integrating ICT and e-business in SIDS. The framework explicitly highlights the theoretical propositions concerning a set of factors influencing the usage and development of ICT and e-business among tourism organizations.

The external environmental factors (shown in Figure 5) that can be assumed to affect ICT and e-business use among tourism organizations are those that stem from the contextual environment of the tourism industry. The literature shows that these external environmental factors, namely technological infrastructure, culture, policy, and human capital, are closely related to organizational factors. For example, the technological infrastructure strongly influences the level of e-business adoption in organizations. Indjikian and Siegel (2005) note it is the interaction among the facilitating conditions of the external environment that determines whether organizations could effectively and efficiently participate in the global e-marketplaces.

Figure 5: The preliminary theoretical framework of adoption and integration of ICT and e-business in tourism organizations in the Maldives

Both of these sets of factors are interrelated. Neither the internal environment factors nor the external environment factors alone explain how organizations adopt and integrate ICT and e-business in the tourism organizations in the Maldives. The internal factors arise from and affect the external factors (*and vice-versa*) and the interactions between them influence each other in a circular fashion.

As noted in the literature review, the most robust explanation of ICT usage and integration appears to be the influence of the institutional environment in which the tourism sector is situated (as discussed in section 2.4.3 *Institutional Theory*). Therefore Institutional Theory will be adopted as the theoretical lens to obtain an understanding of ICT and e-business usage in the tourism sector of a SIDS.

As highlighted earlier, there exists minimal literature from the perspective of developing countries, which describes the use of ICT and e-business in their tourism sectors. This gap is particularly apparent in the context of SIDS, whose vulnerability warrants a specific research focus. There is a notable gap in the literature regarding the understanding of how the tourism sector (as a major industry for economic development) of SIDs uses ICT and e-business (an indispensable tool) to develop the sector.

2.5.2 The research objective and questions

The framework highlights that ICT and e-business adoption and use is a phenomenon influenced by the contextual environment as well as by the dynamics of the organizational environment. This underlies the importance of the research objective and questions under investigation.

The objective of this research is to explore and describe how organizations adopt and integrate ICT and e-business in tourism organizations in the Maldives.

The issues concerning the use of ICT and e-business in tourism organizations in SIDS have been identified above. This research, following the preliminary theoretical framework outlined, encompassing both external environmental factors and internal organizational factors, will attempt to fill the gap identified in the literature review. This leads to the following research questions.

RQ1- What factors impact the adoption and integration of ICT and e-business in the tourism organizations of the Maldives?

This resulted in the development of two main research questions and three sub-questions as follows:

RQ1- What factors affect the adoption and integration of ICT and e-business in the tourism organizations of the Maldives?

Sub-question 1: How do the conditions within the country affect adoption and integration of ICT and e-business in the tourism organizations?

Sub-question 2: How do the characteristics of the sector affect adoption and integration of ICT and e-business in the tourism organizations?

Sub-question 3: How do the factors related to IS affect adoption and integration of ICT and e-business in the tourism organizations?

RQ2- How do existing organizational forces affect adoption and integration of ICT and e-business in the tourism organizations of the Maldives?

The nature of tourism or the approach to tourism development in the Maldives played a substantial role in shaping the ICT environment. This research not only investigates issues relating to ICT and e-business but has taken a wider perspective of ICT usage to include the effect of ICT application in the tourism sector organizations of the Maldives. Furthermore, this research shows that the institutional environment or the organizational field of the tourism industry plays a significant role in shaping the adoption and integration of ICT among tourism organizations of the Maldives.

2.6 Chapter summary

This chapter has provided a review of key research topics and identified the issues related to the research problem. Due to the multifaceted nature of the research objective, the chapter has focused on the literature from a number of areas in order to set the current study within the context of past research.

The review of contextual environmental literature gives a general understanding of the research setting in developing countries with an emphasis on SIDS. It has shown that technological infrastructure, culture, policy, and human capital play a significant role in

influencing developing countries to harness ICT for development. It also shows these factors are exacerbated in SIDS, especially those with islandness due to geographical isolation.

The focus on ICT and tourism provides a deeper understanding of how ICT and e-business has transformed the business models and processes of the tourism industry more rapidly and more substantially than those in most other B2C arenas. It also highlights some of the socio-economic challenges faced by the industry in developing countries.

IS research provides a theoretical perspective of the behaviours and situations experienced by organizations integrating ICT and e-business effectively. While some IS researchers have strongly emphasised that organizations tend to adopt ICT and e-business in a number of stages, others highlight that interactions between human action and the institutional environment also play a significant role in shaping ICT usage.

The theoretical framework based on the literature review not only guides the theoretical inquiry of this research but also directs the researcher to recognize and identify the unique characteristics of the Maldives and the tourism industry (described in the following Chapter 3: Research Methodology) in order to understand ICT and e-business use among them.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology used in this study. A brief discussion of different research paradigms helps justify the philosophical stance — an interpretive perspective— taken in this research. The research lent itself to this particular approach as the topic domain represents a relatively new area of academic research. Beginning the discussion of the research context with an overview of the tourism industry of the Maldives provides a clear understanding of the research site. Research design defines the unit of analysis and briefs on the sample population used in this study to explain how the respective organizations are coping with the situation. The data collection techniques section explains the different types of data sources the study depended on and how data was systematically collected in two phases. The primary source of data was interviews with tourism industry organizations and the data analysis section provides an explanation of how a combination of the Glaserian form of grounded theory and the use of multi-grounded theory were used for data analysis. This mixed method approach for data analysis was important to yield a broader and richer outcome from the complex situation under investigation. Issues of trustworthiness are discussed with reference to the authenticity of the investigation. The themes, a set of factors, and institutional forces generated from the data analysis process are outlined in order to give a general idea of the findings detailed in the following chapter, Chapter 4, as noted in the conclusion.

3.2 Philosophical background

All research is concerned with what constitutes 'valid' research and which research methods are appropriate, given the underlying assumptions (Myers, 2006, p.13). According to Myers (2006), “the most pertinent philosophical assumptions are those which relate to the underlying epistemology which guides the research” (p.13). Epistemology refers to the theory of knowledge, in particular how we acquire ‘valid’ knowledge (Hirschheim, 1992). Research methods are the basis of the production of knowledge in any given field (Pinsonneault & Kraemer, 1992). The most common

classifications of research methods are quantitative and qualitative (Myers, 2006). Quantitative research is about quantifying the relationship between the variables of a proposed theory, whereas qualitative research employs naturalistic inquiry to understand phenomena in natural settings.

Studies based on qualitative data aim to understand the human and social contexts of a situation by constructing a holistic picture from the point of view of the participants. Qualitative research is concerned with ‘understanding’ social phenomena and applies the inductive method, which involves subjective elements and is used to generate theory. Patton (1990) states that qualitative methods permit the researcher to study selected issues in depth and detail, and do not constrain data collection with the use of predetermined categories.

3.2.1 Philosophical stance of this research

This research is concerned with exploring the level of ICT and e-business in the tourism sector of the Maldives. This study seeks to explore and reach an understanding of the factors and interactions of contextual conditions affecting adoption and integration of ICT and e-business in the context of a developing country, the Maldives. Therefore it requires a holistic approach and calls for in-depth interviewing for data analysis. Hence, a qualitative study appears most suitable to address the research questions because the focus is on “naturally occurring, ordinary events in natural settings” (Miles & Huberman, 1994, p.10). Rich qualitative data has the potential to reveal the complexity of the situation in a real-life setting. Thus, the research philosophy of this study is based on an interpretive qualitative approach. The interpretive approach is considered to be the most suitable philosophical stance, due to its assumption that “reality, as well as our knowledge thereof, are social products and hence incapable of being understood independent of the social actors (including the researchers) that construct and make sense of that reality” (Orlikowski & Baroudi, 1991, p.13). Klein and Myers (1999) assert that the interpretive approach has the ability to produce deep insights into the IS phenomena and therefore, this approach was selected because such insights are needed to understand how and why particular situations have emerged in the usage of ICT and e-business in the tourism industry in the Maldives.

The interpretive qualitative approach is used to generate theory. Given that there is no substantial theory in the existing literature focusing on understanding the contextual environment influencing the level of ICT and e-business in SIDS, this study is concerned with building a new theory using principles of grounded theory and multi-grounded theory for data analysis (explained in section 3.6 Data Analysis using Grounded theory and multi-grounded theory technique). Thus, this philosophical stance is appropriate to this research.

3.3 Research Context

The significance of context in IS research has been pointed out by a number of researchers (See Avgerou, 2001; Avgerou & Walsham, 2001; Stockdale & Standing, 2006). According to Stockdale and Standing (2006), in addition to the research context, “trends and developments in the wider business environment also need to be considered since they are powerful legitimate forces” (p.1093). Thus Background of the Maldives (research site) and an overview of the tourism industry are provided in order to understand the context of the study.

3.3.1 Background of the Maldives (research site)

The Republic of the Maldives is an island nation that lies in the Indian Ocean, 417 miles south-west of Sri-Lanka and 300 miles south-west of southern tip of India. The islands stretch from north to south for about 764 kilometres, and 128 kilometres east (73 degrees east equator) to west at the widest point, comprising a total area of 118,000 square kilometres. The climate is tropical. The archipelago consists of 26 natural atolls, comprising about 1,190 islands, making a land area of about 298 square kilometres. These islands are no more than six feet above sea level (The Maldives is the lowest lying country in the world with the highest point at approximately eight feet above sea level). Only 199 islands are inhabited, and the natural atolls are divided into 20 administrative units (See Figure 6). The population of the Maldives is 100 exclusively Muslim.

Figure 6: Map of the Maldives (Source: (MPND, 2007c)

The population of the country stood at 298,842 persons in the year 2006 (MPND, 2007b). The capital, Male', has about 27% of the total population. Other than the capital city, fifteen islands have more than 2000 people each, which approximates to 19% of

the population. The Maldives has a young population, with 72% aged between six and 45.

With this young population, a great emphasis is given to education. Primary and secondary education is available throughout the country, with primary education being compulsory. Table 3 shows the population statistics for six years of age and over by educational attainment. Access to higher education is limited since most of the courses are conducted in Male'. The statistics reported from the Ministry of Education reflect such limitations even at higher secondary level (11-12 or advanced level); in the year 2008, 976 students were enrolled in the atolls at higher secondary level while 1688 student were enrolled in Male' (DNP, 2009b).

Table 3: Population six years of age and over by educational attainment Census 2006

Attainment	Total number of students
No grade	4,515.00
Grade 1-10	144,579.00
Grade 11	806.00
Grade 12	211.00
Ordinary level	37,438.00
Advanced level	3,909.00
Diploma	4,174.00
First Degree	1,546.00
Masters degree and above	826.00
Certificate	19,643.00
Basic literacy certificate	5,832.00
Literate (no standard)	35,248.00
Not stated	8,538.00
Grand Total	267,283.00

Source: (DNP, 2009b)

More generally, the adult literacy rate is 98%, the highest in South Asia. The Maldives is the fastest-growing economy in South East Asia, with an annual growth rate of 6% during the past decade. English is the medium of education in a large number of schools and the Maldivian native language 'Dhivehi' is taught as a language. Maldives schools follow the British system of Education (Minges & Gray, 2004). Higher education is provided through both public and private institutions. A public higher education institution, Maldives College of Higher Education (MCHE), is the public degree-granting institution (MCHE, 2009). MCHE was established on January 1st, 1999, as part

of restructuring of the government institutions (Cambridge Education, 2005; Wikimedia Foundation, 2009). The college has faculties in Arts, Engineering Technology, Health Sciences, Hospitality and Tourism Studies, Management and Computing, and Shari'ah and Law. Most of these courses are also conducted in the capital city Male'. According to MCHE (2009), there is currently no university as such in the Maldives, but a Bill to establish a university is before parliament. Bachelor's degree courses are the highest level of education offered by MCHE, and they are offered in limited fields only. There is one Master's degree in Hospitality and Tourism Management.

Maldivians perceive education to be an important aspect of life and a number seek advanced studies abroad (Kinaanath, 2009). However, the country experiences shortages of human resources with an increase in demand in the country. According to a 2007 report by the Ministry of Planning and National Development, the active work force comprised 145,457 Maldivians and 46,058 foreigners (MPND, 2007a). An earlier National Development Report from the Ministry indicated about a 50% increase in the foreign worker force from 2000 to 2006 (MPND, 2007c). The report further emphasised that, according to the 2006 Census, the youth unemployment rate was 16.2%, which is a critical challenge for the country. In 2006, 30.5% of foreigners were engaged in the construction sector and 20.6% in Tourism (MPND, 2007c). The Ministry also reports that most of the foreign labour force is from neighbouring countries such as Sri Lanka, India, and Bangladesh (MNDP, 2008).

Tourism and Fishing industries are the major source of foreign income earnings and government revenue in the Maldives. The country's GDP per capital has steadily increased (with the exception of the year 2005 due to the impact of the Asian Tsunami on 26 December, 2004) from about US\$400 in 1977 to US\$700 in 1997, to US\$2,912 in 2008 (GDP at Current Market Prices in million US\$) (DNP, 2009a). Tourism stands out as the major contributor to the GDP and government revenue. Tourism contributed more than 27 percent (2008) of the total GDP, and more than 29 percent of the government revenue in 2008 (DNP, 2009b). The country is highly dependent on imports to meet most of its necessities, such as food requirements, energy needs, and construction materials (MPND, 2007c). The Maldives economy is therefore affected by the high cost involved in the transportation of goods and services. Furthermore, the Maldives is

extremely vulnerable to external shocks and natural disasters which challenge the development of the country (Hussain, 2008).

Telecommunication plays a key role in bringing together the widely dispersed population of the Maldives and contributes to the country's economic development (MPND, 2007c). A sound telecommunication system is currently in place, covering the entire archipelago. Until recently Dhivehi RaajjeygeGulhun (Dhiraagu) Pvt. Ltd, a joint venture between the Government of Maldives and Cable and Wireless of the United Kingdom, enjoyed a monopoly, operating the fixed-line telephone service, mobile service, and the Internet Service Provider (ISP) from 1988 until 2002. This resulted in high prices for all telecommunication services (also discussed in section 2.2.2 *Technological infrastructure*). In 2002, a second ISP, Focus InfoCom Private Ltd, was licensed after a reform of the telecommunication policy. Focus InfoCom Private Ltd offered standard dial-up services and WiFi. In 2004, Wataniya Telecom Maldives Pvt. Ltd (Wataniya) was licensed as a second mobile service provider. As a result, the prices of the Internet services and mobile phone charges have gone down, the number of users has increased (See Figure 7), and the network has significantly improved.

Figure7: Telecommunication statistics (Source:(CAM, 2009))

3.3.2 Overview of the Maldives tourism industry

Tourism began with less than one thousand visitors in 1972, but has grown to be the most dominant sector in the economy, marking a new epoch in the economic history of the Maldives. Tourism accounted for 27.2 percent of GDP and 51.5 percent of foreign currency earnings to the country in 2008 (Ministry of Tourism Arts and Culture, 2009).

The Maldives tourism product is based on a unique concept of one-island, one resort. This is a classic example of enclave tourism, where the island is entirely closed and socially, physically and economically self-contained. Each tourist resort is situated on a previously uninhabited island with modern facilities. In other words, each resort is an autonomous self-sustaining unit which generates its own resources such as power, water supply, telecommunication, sewerage, etc. The secluded feature of the product limit reduces contact with locals to the staff. However, excursions to local islands are encouraged. The Maldivian tourist product is primarily based on sea, sand, and sun. A large portion of tourist arrivals depend on package tours arranged in one resort (one island) accommodation (Shareef & McAleer, 2008). Tourists arriving to safari boats are also arranged in a similar manner to spend their entire vacation in one boat engaged mainly on scuba diving and water sports.

According to the Ministry of Tourism and Civil Aviation, there were 89 resorts (as of August 2007), 10 hotels (as of April 2007), 26 guest houses (as of November 2006), and 286 travel agencies (as of May 2007) (Ministry of Tourism and Civil Aviation, n.d). According to the data from the Ministry of Tourism, Arts and Culture, a high concentration of the tourism bed capacity is available in the capital or in nearby islands, where Kaafu atoll and Alif atoll have a share of 71.3 percent. A major development in the tourism sector is the government's decision to expand and strengthen tourism in the Maldives as an instrument of economic and social development. This decision was reflected in the Third Tourism Master Plan 2007-2011's vision to expand the industry (Ministry of Tourism and Civil Aviation, 2006b). As shown in Table 4, by the end of 2008, there was a major increase in bed capacity in the country. The Ministry of Tourism, Arts and Culture expects that by the end of 2009, there will be at least one tourist resort in every atoll (Ministry of Tourism Arts and Culture, 2009).

Table 4: Number of Accommodation establishments and their Bed Capacity 2004-2008

Type of establishment	2004		2005		2006		2007		2008	
	No.	Beds	No.	Beds	No.	Beds	No.	Beds	No.	Beds
Resorts	87	16,858	88	17,348	89	17,802	92	19,028	94	19,860
Hotels	2	636	8	636	8	713	11	836	13	1,110
Guest Houses	28	425	28	425	21	391	24	400	24	400
Safari Vessels	113	1676	121	1789	116	1599	133	1923	143	2,094
Total	236	19,595	245	20,198	235	20,505	260	22,187	274	23,464

Source: (Ministry of Tourism Arts and Culture, 2009)

The Ministry of Tourism, Arts and Culture, reports that locals operate 52.0 percent of the total bed capacity of the Maldives (See Table 5). Resorts operated by foreign companies hold 28.7 percent of the total bed capacity in 2008 with an increase of three resorts since 2006. Although the number of resorts operated by joint venture companies remains constant, their bed capacity increased to occupy a 19.3 percent share of the total in 2008.

According to the Ministry of Tourism, Arts and Culture, 2007 ended with the highest record of 675,889 visitors in a year. Table 6 shows the tourist arrivals to the Maldives by year from 2004 to 2008. The high total for the year 2008 reflects the steady increase in tourist arrivals at the beginning of the year. But the year ended with a decline,

reflecting high oil prices and a slowdown in the global economy (Ministry of Tourism Arts and Culture, 2009).

Table 5: Tourist resorts by type of Operators 2006-2008

Type of operator	2006				2007				2008			
	No.	% share	Beds	% Share	No.	% share	Beds	% share	No.	% share	Beds	% share
Local	42	47.2	9442	53	44	47.8	10146	53.3	44	46.8	10322	52
Foreign	30	33.7	4924	27.7	31	33.7	5340	28.1	33	35.1	5706	28.7
Joint Venture	17	19.1	3436	19.3	17	18.5	3542	18.6	17	18.1	3832	19.3
Total	89	100	17802	100	92	100	19028	100	94	100	19860	100

Source: (Ministry of Tourism Arts and Culture, 2009)

Table 6: Tourist arrival to the Maldives by month 2004-2008

Year	J a n	F e b	M a r	A p r	M a y	J u n	J u l	A u g	S e p	O c t	N o v	D e c	T o t a l
2004	61,861	59,692	63,855	55,396	42,197	33,835	43,527	55,843	46,838	52,511	56,656	44,505	616,716
2005	18,747	29,391	35,742	29,714	25,309	22,590	29,860	38,366	33,748	40,543	44,461	46,849	395,320*
2006	58,332	54,741	54,596	55,983	40,961	33,037	42,776	49,968	44,593	54,721	53,594	58,621	601,923
2007	64,570	65,224	64,491	63,171	46,602	38,457	51,025	53,168	48,468	58,706	56,797	65,210	675,889
2008	64,621	67,963	71,623	62,670	48,764	40,283	47,675	51,824	50,687	56,363	57,961	62,578	683,012

Source: (Ministry of Tourism Arts and Culture, 2009)

** The drop in 2005 reflects the impact of the Asian tsunami in Dec 2004*

Europe continues to be the major market for the Maldives, contributing an average of more than 75 percent to the total arrivals during 2004-2008 (Ministry of Tourism Arts and Culture, 2009). However, according to the ministry there has been a decline in the European market while the Asian market has been steadily increasing. As shown in Table 7, the United Kingdom continued to be the major market, while Russia was the fastest growing market moving to be in 4th place ranking, and Japan dropped to the 7th position (Ministry of Tourism Arts and Culture, 2009).

According to the Ministry one of the major factors contributing to the increase in Russian arrivals was the implementation of chartered flights from Moscow to Male'. As reflected in Figure 8, both scheduled and charter flight passengers have been increasing with exception of 2005.

Table 7: Tourist arrivals and Market share of Top 10 markets to the Maldives in 2007 & 2008

Country	2008			2007		
	Rank	Arrivals	Market share (%)	Rank	Arrivals	Market share (%)
United Kingdom	1	116,821	17.1	1	125,158	18.5
Italy	2	103,824	15.2	2	117,246	17.3
Germany	3	69,240	10.1	3	72,269	10.7
Russia	4	48,978	7.2	7	31,845	4.7
France	5	48,100	7.0	4	45,301	6.7
China	6	41,511	6.1	6	35,976	5.3
Japan	7	38,193	5.6	5	41,121	6.1
Switzerland	8	26,983	4.0	8	26,183	3.9
Korea	9	20,934	3.1	9	20,976	3.1
India	10	16,663	2.4	10	17,327	2.6

Source: (Ministry of Tourism Arts and Culture, 2009)

Figure 8: Passenger arrivals by type of Carrier (2004-2008) (Data source: (Ministry of Tourism Arts and Culture, 2009))

* The drop in 2005 reflects the impact of the Asian tsunami in Dec 2004

Tourism, being the largest contributor to the Gross Domestic Product, employed 16 percent of the total expatriate workforce in the country in 2008 (DNP, 2009b). Tourism is estimated to provide about 10% of employment (Buckley, 2003, p.199) and the Ministry of Tourism and Civil Aviation (2006b) estimates that in 2006 the tourism industry provided about 20,000 jobs.

There are limited opportunities for education and training. According to the Ministry of Tourism (2006b), employment in professional categories such as cheffing and accountancy are dominated by expatriates. The Faculty of Hospitality and Tourism

studies under MCHE offers courses and training for the tourism industry but the total number of graduate figures shows a decline at the time when the need is increasing, as shown in Table 8.

Table 8: Enrolment and Graduates at FHTS

	2003	2004	2005	2006
Enrolment	814	899	654	392
Graduates	391	564	332	196

Source: (FHTS 2006 as cited in Ministry of Tourism and Civil Aviation, 2006b)

The existing technological infrastructure and the level of ICT usage in the tourism sector is not documented in any of the publications available from the Ministry of Tourism. However, their Master Plans highlight the need for it. For instance, the Maldives Second Tourism Master Plan 1996-2005, acknowledges the “marketing plans should embrace the latest technologies available to a destination” (Ministry of Tourism and Civil Aviation, 2006a), while the Maldives Third Tourism Master Plan emphasises the need for the “industry to resort to e-methods of doing business and must encourage resort managements to train staff in e-methods of business” (Ministry of Tourism and Civil Aviation, 2006b, p.69). The Third Tourism Master Plan also notes that all tourist resorts have fixed telephone line services and Internet services. The government’s intentions to facilitate high-speed Internet access to tourism facilities and to areas where live-aboard (cruising) activities are conducted are also highlighted in this plan.

3.4 Research design

The “research design [describes] the logic that links the data to be collected (and the conclusions to be drawn) to the initial questions of a study” (Yin, 2003, p.19). A thorough research design not only improves the data analysis but also contributes to the overall feasibility of the study (Miles & Huberman, 1994). The following sections describe the research design for this study, including the unit of analysis, the sample population with a brief description of the organizations investigated in this study.

3.4.1 Unit of analysis

The unit of analysis can be at the level of individual, event, or entity (Yin, 2003). According to Benbasat et al (1987), the researcher should closely examine the research questions to identify an appropriate unit of analysis. Taking into account the complex nature of ICT and e-business, this study identifies two units of analysis.

The primary unit of analysis in this research is the organization, specifically organizations embedded within the secondary unit of analysis which is the organizational field (organizations supporting the tourism industry). Nominating the organization as a unit of analysis allows the researcher to analyse the issues pertinent to ICT and e-business maturity within a whole organization. In turn this helps build an understanding of different types of tourism sector organizations.

This study's next level of analysis is the related organizational field of the tourism sector. DiMaggio and Powell (1983) define an organizational field as "those organizations that, in the aggregate, constitute a recognized area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services or products. The virtue of this unit of analysis is that it directs our attention not simply to competing firms ... or to networks of organizations that actually interact ..., but to the totality of relevant actors" (DiMaggio & Powell, 1983, p.148). They suggest an organizational field must be identified in an on-going manner on the basis of empirical investigation, i.e. it cannot be identified *ex ante*. Following this suggestion, the initial selection of organizations was based on theoretical sampling to identify a set of organizations. Additional organizations were included later as needed.

3.4.2 Sample population

Researchers (See for example Miles & Huberman, 1999; Yin, 2003) suggest theoretical sampling or selection should be focused on theoretically useful samples. The goal is to choose cases or organizations likely to replicate or extend the emergent theory or to fill theoretical categories and provide examples of polar opposites (Eisenhardt, 1989). Two generic sampling strategies; literal replication logic (selection of cases to provide similar

results) and theoretical replication logic (selection of cases to provide dissimilar results for predictable reasons) are proposed by Yin (2003). Since both strategies have specific drawbacks and benefits, using them concurrently to combine their strengths and lessen the effect of their weaknesses is recommended (Miles & Huberman, 1994). These strategies were used to select the organizations for this research.

The research followed the mixed replication logic by selecting organizations with similarities and dissimilarities in their level of ICT and e-business usage. These differences were identified through information provided from initial discussions with the respective organizations.

In order to address the issues of reliability and generalizability, and replication logic, organizations of similar size and structure were also selected. The sample included local as well as international organizations. The international organizations had some different approaches to ICT and/or e-business usage and development. Comparison between these two types of organizations creates the opportunity to investigate potential impacts of national characteristics and also allows the development of theory based on international data.

Sampling for this research was done using the list of tourism organizations in the Maldives, published on the Ministry of Tourism and Civil Aviation of the Maldives website. There were 89 resorts, 10 hotels, 26 guest houses, and 286 travel agencies in the Maldives (Ministry of Tourism and Civil Aviation, n.d) during the time of data collection. These include both local and multinational organizations. Some large organizations have chains of resorts. A representative sample of the whole industry using different types of organizations was selected. Data was collected in two phases. The number of organizations used in the study was identified in an ongoing manner on the basis of empirical investigation using theoretical sampling. Seventeen organizations were considered for the first phase of data collection and six organizations (including two organizations included in the first phase) were selected for the second phase (more detail on the data collection phases is provided in section 3.5 - *Data collection Techniques: Phase I and Phase II*). The tourism sector organizations used for the two phases of this study included the following types:

- Large local organizations, which consist of three or more resorts,

- Resorts operated by multinational organizations (foreign companies),
- Small local resorts,
- Hotels/guest houses,
- Safari vessel operators,
- Travel agencies.

In addition to the tourism organizations themselves, this research investigates the organizational field in order to capture the issues affecting usage of ICT and/or e-business at sector level. The industry leaders, government authorities, and supporting industries were regarded as actors apparently having a strong influence on the usage of e-business in the tourism sector. A sample of these organizations was selected for this research to address the research investigation. The types of government authorities and supporting industry organizations include the following;

- Government authorities (e.g. Tourism Ministry),
- Technical service providers (e.g. Telecommunication service provider),
- Industry leaders (e.g. Tourism association) .

In accordance with the Human Ethics Application approved by the Victoria University of Wellington (VUW) School of information Management's Human Ethics Committee (HEC) before entering the field, a letter was sent to each short-listed organization to check their willingness to participate in the research. The letter included information explaining the nature of the research and a request to identify key person(s) to be contacted. Once permission was granted, the identified key people were approached to arrange the interviews. An information sheet and consent form was provided to the interviewees prior to the interview (See Appendix 3 for Sample Letter, Information Sheet, and Consent Form).

The interviews with tourism sector organizations were focused on identifying issues relating to levels of ICT and e-business usage. Informants' views on e-business use, development, and implementation in the tourism sector and in their organizations were collected.

During the same data collection period, semi-structured interviews (See Appendix 1 – Interview outline for an example of some interview questions in phase I & II) were

conducted with the government and supporting organizations to elicit the organizations' views on e-business activities among the tourism sector organizations and their role in promoting e-business.

3.4.2.1 The organizations

The numerous organizations in the tourism industry included not only different segments of the industry but also comprised numerous types of businesses within the industry. Furthermore, it was important to include supporting organizations having an effect on ICT and e-business adoption and integration in the industry. Thus a total of twenty one organizations were studied in this research. Table 9 represents the types of organizations investigated.

Table 9: Types of organizations

Types of organizations	
Locally owned and managed chain resorts	Organization A - Organization with local resort chain
	Organization B - Organization with local resort chain
	Organization C - Organization with local resort chain
International chain resorts	Organization D - International chain resort
	Organization E - International chain resort
Locally owned and managed individual resorts	Organization F - Locally owned single resort
	Organization G - Locally owned single resort
	Organization H - Locally owned single resort
Hotel(s)/guest house(s)	Organization I - Hotel
	Organization J – Hotel
	Organization K - Hotel
	Organization L - Guest House
Safari vessel operators	Organization M - Safari vessel operator
	Organization N - Safari vessel operator
Travel Agencies	Organization O - Travel Agency
	Organization P - Travel Agency
Supporting organizations	Organization Q - Government authorities
	Organization R - Application service provider
	Organization S - Industry association
	Organization T - Telecommunication service provider
	Organization U - Technical service provider

Overview of ICT within sector organizations

It has been shown that travel and tourism is an inter-organizational business (Werthner & Klein, 1999). The interviews revealed that the inter-organizational processes of ICT are basically referred to as the front office and back office operations. The front office represents not only the “front desk” but also includes marketing and front office management; whereas the back office represents the management of housekeeping operations. The front office operations also include reservations, guest stay information, guest departure and payment, accounting, and financial summaries. The back office, or management of housekeeping operation, entails scheduling staff, deliveries, services and maintenance, budget analysis, cost-controls, and compliance with regulations.

The level of ICT used in the various sector organizations differs substantially. However, this level differs relatively little between the organizations within a single type of organization (listed in Table 9). ICT components apparent in the sector include Global Distribution Systems (GDS), Property Management Systems (PMS), and a diverse range of international and local front office and back office software/hardware solutions. Furthermore, sector organizations, international chain resorts, and one of the travel agencies are linked to GDS such as Amadeus and Galileo. A number of PMS were/are in use among the sector organizations. The majority of sector organizations use/used PMS applications marketed by MICROS Systems, Inc. such as Fidelio Xpress and more recently, Opera Xpress. The second most widely used PMS among the organizations was/is software called Andromeda, distributed by a local company but developed and serviced by an Indian Company. Other PMS include/d locally developed and serviced software, as well as software developed and serviced by Indian companies. Generally, the high-tech international software, Opera Xpress, was/is deemed as an exemplary PMS, whilst the others were/are less popular. A range of applications were/are used for accounting purposes. Most of the sector organizations did/do not use a software application to handle human resources and procurement. A summary of the level of ICT integration in relation to each organization is provided in the following sub-sections, along with a brief description of the organizations.

Description of organizations

This section provides a description of each of the 21 organizations grouped into seven categories as tabulated in Table 9. Included in the description is a summary of the main areas of business and the level of ICT usage employed by each organization at the time of the study.

Organizations with local resorts chain

Three organizations, each owning three or more resorts, were selected. While all the organizations own self-contained, three-five star resorts, they differ in the number of years in which they have operated as resort chain operators.

Organization A is one of the longest standing, best-known resort operators in the Maldives. The company owns and operates five resorts, and at the time of the study, was in the process of establishing three new properties with the intention of selling to large international counterparts. The total bed capacity of all the resorts was allocated to either local or international tour operators or travel agencies.

Regarding the level of ICT usage, the organization had experience in using both international and locally developed and distributed PMS. All of their resorts used a client-server-based PMS for both front office and back-office operations. During the time of interviewing, most of the resort operations ran independently. However, the company intended to integrate its back office and front office systems at some stage.

Organization B was initially established as a travel agent and had expanded its business to include resorts. However, at the time of interviewing, the company had split their management to operate the travel agency and the resorts independently of each other. The resort management division had three resorts; at the time of interviewing, two were in operation and the third one was in the process of opening. The total bed capacity was not fully allocated to international and local tour operators/travel agencies, and was to a certain extent dependant on bookings.

In relation to the level of ICT usage, during the time of interviewing, the company was reorganising its ICT processes, had a new IT manager, and was in the process of adapting Opera Xpress to one of the properties. At the time all the company's resorts used a client-server based on locally/internally distributed PMS for their operations. Independent software applications were used for most of their back office operations at different locations.

Organization C had recently been expanded and re-branded. It had five resorts, three of which were under a new brand name, with two others soon to be joined to the new brand. The newly branded, upmarket product and the other two resorts were three-four star resorts. Although locally owned and managed, its total bed capacity was sold to international partners such as tour operators.

The upmarket, newly branded three resorts used international PMS whereas the other two had a locally distributed client-server based PMS. During the time of interviewing, the resorts had little interaction with their partners. Most of their back office operations had independent applications at various locations.

International chain resorts

Two organizations belonging to large international chain hotels/resorts were selected. Both organizations are upmarket resorts, one of which has a single resort in the Maldives, the other of which has more than one property.

Organization D is an internationally renowned, high-end operator with eight luxury properties in the Asia Pacific region. The resort is managed as a joint venture partnership and the marketing function is managed by the regional office.

In relation to the level of ICT usage, the resort used Fidelio as their PMS system. At the time of interviewing, the organization was using extensive and sophisticated ICT (such as software applications managing customer requests with mobile phones) within their operations, in addition to their PMS. Its main server was located at its head-office in another country and ICT applications were being re-engineered.

Organization E belongs to one of the leading brands in the industry. Although the organization has more than one property, its interactions are modest and subtle. At the time of interviewing the organization had a new project underway to build an ICT network among its partners.

Like many other international chain resorts in the Maldives, the chain also had Fidelio as its PMS system. Similarly, several software applications supported the front office

and back office operations. During the time of interviewing, it was contemplating bridging the front office and back office operations.

Locally owned and managed organizations with single resort

Three locally managed resorts are included. Their approaches to management are significantly different.

Organization F is one of the oldest and best-known resorts in the Maldives and had been operating under the same management for a long period. The resort is owned and operated by a single owner. The resort is fully allocated to international/local tour operators/travel agencies. Being located very close to the capital, the resort tends to be mostly frequented by businesspeople and offers all business facilities including conferences and seminar facilities.

Considering the level of ICT integration, the resort used limited functions of a front office package and back-office was managed with very limited software application support. ICT services were also insufficient. Although the resort has a significant number of business clients, Internet access was confined to certain areas; however, a project was underway to allow Internet access to every room.

Organization G is also one of the oldest resorts in the Maldives, but its management has changed occasionally. At the time of data collection, the resort was owned by a single owner who was in the process of selling it to a company. The resort was managed by locals and was 100% allocated to a single tour operator in the charter market. However, whenever there were vacancies, the local management filled the bed capacity through other means such as free independent travellers (FITs).

The level of ICT usage was very limited, both at front office and back-office. The resort had a basic ICT setup to serve its clients. Although the Internet was connected and made available to clients, it was rarely used for management purposes.

Organization H is closely associated with another organization which runs a different resort. The resort was previously rented to a foreign party but has been managed and

operated by locals for the past 12 years. It has 150 rooms of about four star to four star plus standard, including 12 sea villas. It's occupancy rate is 80%, of whom about 40% are repeat visitors. The resort is almost entirely marketed by a number of tour operators and is rarely filled by FITs or via direct bookings or reservations.

This organization was managed by a custom-designed software package. The software had been in place for more than 12 years with regular upgrades. The package contains information regarding reservations, registrations, billing, and accounts. At the time of the study, the organization was in the process of upgrading to another software package to be used for human resource management. The resort had a separate Wi-Fi zone but did not provide the Internet to guest rooms.

Hotel/Guest house

The organizations include two city hotels and one guest house. Although they are all located in Male', they differ considerably in terms of the years of operation and in their approaches to ICT.

Organization I is a newly opened business hotel (single building) situated on a main road in the city centre. It has 42 rooms and six serviced apartments and is classified as a four star hotel. During the time of interviewing, the hotel had been operating for only eight months and had had an occupancy rate of 80%. One of the owners/partners of the hotel was well-versed in the hospitality industry and the other was from an IT background.

In relation to ICT, this organization used Opera Xpress as a PMS but staff were not acquainted with most of the functions of the software. The building had high speed Wi-Fi (Internet) access and fully equipped conference facilities. Most of the back office operations were performed using less sophisticated software applications.

Organization J is a three star hotel located in the city centre. This hotel (single building), often classified as three-four stars, had been in operation for eight years and had an average occupancy rate of 90%. It has 42 rooms including serviced apartments. At the time the interviews were conducted, a project was underway to expand the hotel.

The use of ICT was focused on providing services to clients. Wireless Internet and printing facilities were available for customers, with in-house operations managed by locally developed customised software.

Organization K is an exclusive hotel, marketed as four stars plus, belonging to a group of three city hotels but run independently. The hotel allows the clientele to use the facilities freely in all their three hotels. The hotel has 48 guest rooms/suites and caters for business clientele and transit passengers to the resorts.

The hotel was well equipped with the latest technology such as Wi-Fi (Internet) access to all rooms/suites. The in-house operations were managed by a locally developed software application.

Organization L is a small guest house with six rooms, located in the centre of the capital city. This guest house had been in operation for 11 years and had an average occupancy rate of 90%.

The use of ICT in this sole proprietor business was adequate. It had customised, locally designed software to handle front office operations. However, the marketing function and other software used to support back office were less sophisticated. High speed wireless (Wi-Fi) Internet was accessible throughout the two-storey building.

Safari vessel operator

Two safari cruise operators were selected. Both the safari operators were experienced in the field, but their approach to management and marketing was different.

Organization M was founded in 1997 as a sole proprietorship. Personal referrals by frequent repeat clients led to steady growth. At the time of interviewing, this organization owned two live-aboard motor vessels which were operated on a 100% lease contract. One vessel catered predominantly to the Japanese market, and the other to the Italian market.

With respect to ICT use, the organization's intention was to provide modern ICT services to its clients. However levels of ICT use in the vessels were limited in relation to institutional conditions/environment. The organization employed some level of ICT to support administrative functions.

Organization N was established in 1994 as an inbound tour operator in the country. With the support of their satisfied clients, the organization gradually expanded to own and operate one of the latest live-aboard cruisers catering to upmarket scuba diving and surfing clients.

ICT was perceived as an asset to broaden services to the clientele. ICT used for administrative purposes was unsophisticated given that clients were repeat visitors and the organization's greatest marketing asset.

Travel Agencies

Two travel agencies were included. In order to minimise variation, two organizations with similar background were chosen. However, these organizations had different organizational objectives which provided diverse perspectives in their approach to e-business technologies.

Organization O is a diversified service company providing travel and related services. It is a locally owned business established in 1998, which has over 80 full-time employees. This travel agency acts as a general/passenger/cargo sales agent for five airlines (groups) and serves both inbound and outbound markets. Its partnerships include two international airlines and two major Global Distribution Systems (GDS) - Amadeus and Galileo. The business also provides money transfer services, medical packages, credit card services, and was planning to introduce other financial services.

With respect to technology integration, the company relied on Internet services providers for daily business operations but had only a limited level of technology to support their administrative functions. It outsourced ICT functions for both business and administrative purposes to a joint venture between local and foreign companies.

Organization P was established in 1990 as a small business and at the time of interviewing was one of the top ranking inbound tour operators in the Maldives. Its international tour operators are appointed as exclusive travel agents for the European, Chinese, and Taiwanese markets. It offered resort, hotel, and cruise bookings. This travel agency has sister companies who operate resorts and cruise boats in the Maldives.

In relation to technology use, although the company relied on the Internet for daily business operations, it also had basic applications for business operations and to support administrative functions. The organization managed and maintained its own ICT and used customised local software for business operations.

Supporting organizations

Five diverse organizations were selected as supporting organizations. This assortment of organizations offers an in-depth insight into the tourism industry.

Organization Q is a **Government authority** working towards sustainable development of the tourism industry to maximise benefits to the Maldives. Consistent with a national vision for the Maldives to become an exemplary nation with sustainable tourism development, the organization was determined to optimise the benefits of tourism to create a favourable socio-economic environment. The key functions of the organization include devising policies, governing laws and regulations, monitoring quality assurance, and coordinating with concerned authorities to develop sustainable tourism.

Organization R, an **Application service provider**, is an organization which manages a branch of the East Asia regional office of a well-known enterprise information solution provider for the hospitality industry. Its PMS, point of sale software, hardware consulting, and support are prominent in the tourism industry. Its key area is to provide software-based solutions for the resort industry.

Organization S is one of the oldest tourism industry associations in the country (established since 1972). The association is actively involved in presenting their members' voice to government. At the time of the study, the association was headed by some of the most prominent tourism business leaders in the country.

Organization T is one a telecommunication service provider. This company began its operation as a joint venture with the government in 1988. It provides fixed, mobile, Internet, and data services and has a countrywide presence.

Organization U - is one of the companies that provide technical services, especially to the resort sector. The main objective of this business of about 10 employees was to build network installations in the resorts.

3.5 Data collection techniques

Adhering to a combination of grounded theory and multi-grounded theory principles, a number of distinct yet complementary qualitative data collection techniques were used to gain information from participants within the selected industry. Data was collected through semi-structured interviews, informal discussions, documents, a questionnaire, and observations. As described below, interviews and informal discussions were used as the dominant method of data collection and the questionnaire, documents, and observations were used to supplement that data. This triangulation, using multiple methods of data collection, is particularly beneficial in generating theory because it provides multiple types of evidence on an issue either to support or negate, supplies more information on the emerging concepts, and allows cross-checking and substantiation of constructs (Eisenhardt, 1989; Glaser & Strauss, 1967; Orlikowski, 1993a).

In the absence of a detailed theoretical framework an open ended, semi-structured interview technique is advocated as an appropriate mechanism for eliciting information directly relevant to the research topic (Denzin & Lincoln, 2000; Glaser & Strauss, 1967; Miles & Huberman, 1994; Yin, 2003). Eisenhardt (1989) notes that making adjustments to the data collection method is a key feature of theory building research. Thus interview guides varied for each interview, leading into an open discussion that gave the interviewee the opportunity to add comments or questions during the interview. In addition to interviews, relevant documents were used as the secondary source of data. As strongly advised by Glaser (1978) and Strauss and Corbin (1990) memos were written throughout the data collection and analysis process including field notes, diagrams and guide the research.

Additionally, documents such as electronic sources, letters, memoranda, diaries, receipts, maps, journals, newspapers, regulations, and laws were used as secondary data. Although such documents were often lengthy, and demanded much of the researcher's time on clarifying, explaining, analysing, and summarizing, they provided meaningful information that supported the purpose of the research. For instance, the websites of the organizations were examined to evaluate their web presence. Paré (2004) notes that the selection of the documents might be biased, the reporting might reflect the bias of

author and the organization might deliberately block access to certain information. Thus, such biases were avoided by cross-referencing and using replication logic.

The sampling strategy used for selecting the informants for this research was generally criterion sampling. Following Sarkar and Lee (2002), this research sought to interview the owner/manager as well as the ICT personnel or a technical staff member involved in performing activities pertaining to ICT and/or e-business activities. The interviewees were identified with the help of key informants identified from each organization. However, as some interviewees recommended other informants, chain sampling was also used.

As indicated earlier, diversity in the selection of organizations was employed to capture the issues relevant to ICT and e-business usage in the tourism organizations. Data collection was conducted in two phases to build theory and in each phase was carried out by conducting interviews and informal discussions with tourism sector organizations, government authorities and supporting industry organizations (highlighted in section 3.4.2 *Sample population*). Participants were drawn from tourism organizations, government ministries, and supporting industry bodies. Tourism sector organizations included resorts, hotels, travel agencies, and safari vessel operators. Individuals in the roles of manager and ICT technical staff were interviewed.

Semi-structured interviews were carried out with owners or managers of all tourism sector organizations, and with representatives from government and supporting industry organizations. Interviews were conducted with one ICT technical staff member from each of the five groups of tourism sector organizations. This round of interviews was used as the initial data to understand the informants' views on issues relating to ICT and e-business activities in their organization. A questionnaire (See Appendix 2 – Questionnaire) was sent to each of these organizations to gather information on their ICT facilities.

The data collection process involved a number of activities. Site visits and key observations made during interviews were recorded with a logbook. Local participants were given the opportunity to speak in the native language *Dhivehi*. All interviews carried out in Dhivehi were translated into English by the researcher before coding (See

section 3.7.1 *Credibility*). Data collection strictly followed the security and privacy concerns specified in the HEC application. All interviews were digitally recorded with the consent of the interviewee and transcribed verbatim to facilitate the analysis process. Following transcription the interviewees were given an opportunity to verify their transcript. Throughout the first phase of the data collection process data was analysed to build theory through an iterative process. This emerging theory based on empirical data was further analysed in relation to existing theories, which were used as a companion to support the theory, following multi-grounded theory (discussed in detail in section 3.6 Data Analysis using Grounded theory and multi-grounded theory technique). This deductive approach using existing knowledge was not totally exclusive of the inductive process or in other words the induction includes elements of deduction and *vice versa*. This highly iterative process requires theoretical sampling. Glaser and Strauss (1967) define theoretical sampling as “the process of data collection for generating theory whereby the analyst jointly collects, codes and analyses his data and then decides what data to collect next and where to find them, in order to develop his theory as it emerges” (p. 45). Applying this principle to the ongoing process of coding, the categories led back to the literature. This new literature led the researcher back to the empirical field with new perspective and questions. Thus, a second phase of data collection was conducted to validate the emerging theory through the continuous process of theoretical sampling until the categories were saturated.

In other words, data collection was conducted in two phases (as described below – Data collection *phase I* and *phase II*.) The second phase was used for further theoretical sampling, leading to saturation. Theoretical sampling was used to develop and elaborate concepts/categories, and to delineate the relationships between concepts/open codes. For example, the data related to the low level category ***Sector harmony*** was poorly developed and not theoretically sufficient at the end of the first phase of data collection. This led to further examination of the concept/low level category: ***Sector harmony***. Using theoretical sampling, during a second phase of data collection more interviews were collected from tourism sector organizations. It was found that lack of unity not only existed among government and tourism sector support industry organizations, but also among small and large organizations and among the tourism sector organizations. This discovery resulted in the formation of a new concept/open code *lack of*

relationships among competitors providing more depth to the low level category ***Sector harmony***.

Data collection – Phase I

A pilot interview was conducted with one of the tourism organizations to align the research questions more closely with the line of inquiry. Initially, purposive sampling was employed; one organization from each type of tourism organization and one organization from each type of government and supporting industry organization was selected. Following the framework subsequent organizations were selected based on theoretical sampling. During the first phase of data collection seventeen organizations were chosen. These included both the tourism sector organizations as well as government and supporting industry organizations. The first phase of data collection was conducted from the last week of November 2007 until the end of February 2008.

Data collection – Phase II

The purpose of the second phase of data collection was to achieve saturation for the existing categories from the first phase. As Glaser and Strauss (1967) articulate, in verification the researcher must “check it out” (p.40). Although during the first phase data was collected until no new information was obtained, enfolding the literature and relating theories with the initial categories required what Charmaz (2006) called *focused coding* in order to synthesise and integrate the data and form a substantive theory. The second phase of data collection also followed multi-grounded theory by matching the empirical data with existing theories in the literature. The emerging theory was interrogated through rigorous matching of theory with data. This process involved interplay between empirical data and existing theories validating the empirical data.

The second phase included some of the organizations from the first phase of data collection, i.e.: an organization with local chain resorts (organization B) and an international chain resort (organization E) and an additional four organizations (organizations: H, K, N and P). Brown, Steven and Troiano (2002) recommend this tactic to obtain new data, verify the categories, and discover whether relationships between categories were delineated adequately. The second phase of data collection was

conducted between the last week of March 2009 and third week of June 2009. This second phase allowed the generation of substantive theory to understand the factors and institutional forces affecting the adoption and integration of ICT and e-business in the tourism organizations of the Maldives.

3.6 Data Analysis using Grounded theory and multi-grounded theory technique

Data analysis entails classifying, comparing, weighing, and combining original material to extract its meaning and implications, to reveal patterns, or to stitch together descriptions of events and processes into a coherent narrative (Rubin & Rubin, 2005). The research aim is to develop theory using an empirical approach directly relevant to this particular setting. Thus, a combination of the principles of grounded theory and multi-grounded theory approach are used to build theory.

This study followed a combination of the grounded theory methodology and multi-grounded theory (Goldkuhl & Cronholm, 2003, 2010) approach which used both empirical grounding and theoretical grounding to analyse data. It is an extended and alternative approach to data analysis and theory development based on both inductive analysis and theory-informed analysis of data. The multi-grounded theory has been put forward by Goldkhul (1993, 2004) as an alternative approach that involves both an inductive and a deductive approach to theory building in order to address the criticism of grounded theory for its pure inductive analysis (Goldkuhl & Cronholm, 2003, 2010; Goldkuhl & Lind, 2006). The working structure of multi-grounded theory approach as prescribed by Goldkhul and Cronholm (2003) is shown in Figure 9. They describe this theory as one that goes beyond the pure inductive approach of grounded theory to add explicit use of external theories. This method has been used to generate a theoretical framework to guide this research and was also used in the data analysis and theory building process of this study. The use of multi-grounded theory is discussed in the relevant sections of this study in order to avoid repetition.

Figure 9: Working structure of the MGT approach (from Goldkuhl & Cronholm, 2003)

Urquhart (2001) identifies two features that form the fundamental building blocks of grounded theory and differentiate it from other qualitative data analysis approaches. They are “the researcher has to set aside theoretical ideas” and “constant comparison” (p.107).

Urquhart (2001) notes that “setting aside of theoretical ideas” implies the researcher does not look at existing literature or precede analysis with theoretical development. This builds on Glaser’s (1978) argument that the researcher should be open and receptive to data, rather than struggling to fit the data into existing theoretical categories. Urquhart (2001) admits that advice on grounded theory is conflicting and argues that there is no correct application of the method and that it is acceptable to review existing literature before data analysis begins. In a similar vein, Charmaz (2006) notes that writing a literature review requires the researcher to engage and evaluate the area in order to frame, integrate, assess and position the study and to refine the researcher’s contribution. Goldkhul and Cronholm (2003) argue that it was important to relate an evolving theory to relevant research during the generation process, since science evolves through cumulative knowledge development.

“Constant comparison” is a heuristic that assists the researcher in analysis (Urquhart, 2001). Constant comparison is the continuous process of coding, analysing and collecting data until the main categories identified reach what Glaser and Strauss (1967) call “theoretical saturation”. According to Glaser and Strauss (1967), the constant comparative method facilitates the generation of complex “theories of process, sequence, and change pertaining to organizations, positions, and social interaction [that] correspond closely to the data since the constant comparison forces the analyst to consider much diversity in the data” (p.113-14). However, Eisenhardt (1989) argues that concurrent collection, coding and analysis is often unachievable, although most researchers achieve some overlap. She suggests the use of field notes, in the form of a running commentary, to accomplish this overlap. Thus, this study followed both grounded theory and multi-grounded theory which warns that initial coding or open coding should be done inductively and free as possible from the researcher’s preconceptions. For example, the initial preconception was that the data would represent how organizations adopt technology in a progressive manner (stage theory) but when the data was left to “speak” for itself, what emerged was that the organizations’ decision to adopt a technology were not necessarily driven only by rational goals of efficiency but also influenced by institutional or contextual environment factors such as social, cultural and legal factors.

As evidenced by the above example, this research adopts the Glaserian (Glaser, 1992; Glaser & Strauss, 1967) school of thought for data analysis. This is preferred because Strauss and Corbin’s (1990) approach is significantly prescriptive in generating theory. The detailed operational guidelines proposed by Strauss and Corbin (2008), tend to impose concepts rather than allowing conceptual themes to emerge legitimately (Glaser, 1992). The aim in this study is to seek broader concepts and relationships in order to capture the complexity of the subject. The Glaserian idea of less specification offers greater potential to ground the data more accurately and coherently. The Glaserian school of thought rooted in Glaser and Strauss (1967) and also in Glaser’s earlier work “The Constant Comparative Method of Qualitative Analysis” (Glaser, 1965) addresses the issue of the influence of existing theories and constant comparative method; Glaser and Strauss (1967), state that “Our position, we hasten to add, does not at all imply that the generation of new theory should proceed in isolation from existing grounded theory” (p. 6). Glaser (1965) explains that “with reduction of terminology and consequent

generalizing which are forced by constant comparisons-some of which can now be based on incidents found in the literature of other professional area” (p.441) and Glaser (1965) offers further guidance in “writing theory” stating that “the level of generality of a substantive theory can be raised to a formal theory this requires additional analysis of one's substantive theory, and the analyst should include material from other studies with the same formal theoretical import, however diverse the substantive content” (p.443). Thus, the Glaserian approach is this study's choice for the purpose of analysing data.

3.6.1 The research process using Grounded theory and Multi-grounded theory

The process of coding and analysing data was very time-consuming. The systematic approach of purposive sampling at the initial stage largely facilitated the initial data collection process. The open coding process of these interviews and supporting documents (such as memos, diagrams, information on electronic sources, etc.) provided a sound foundation for the subsequent stages of developing categories and themes as prescribed by Glaser and Strauss (1967).

As the interviews proceeded, it was observed that the open codes or the initial theoretical propositions which guided the theoretical sampling process, did not clearly reflect the initial literature review.

Thus, the theoretical perspective changed during the research process. As experienced by Miscoine (2007)³, the initial review of the literature reflected a systematic perspective (such as stage theory) and the research objective was to contribute to theory and practice by proposing ideas to promote development in compliance with local specificities. During the data collection process, it was assumed the organizations might follow stage theory. Examples of stage theory are provided by Burgess and Cooper (2000), Earl (2000), Gibson and Nolan (1974), Martin and Matlay (2001), and McKay, Marshall, and Prananto (2000) (See section 2.4.1 *Stage Theory*). It was anticipated that these perspectives would describe the issues of concern for effective ICT usage in the tourism sector in the Maldives. However, it was realised these models do not give

³The central analytical focus of this article by Miscoine(2007)was “on the interplay between the public health care system, which used the telemedicine system, and local health care practices”. This study was conducted by using ethnomethodology.

insight into the complex organizational environment settings, the organizations do not engender a linear process of organizational change, and that many of the activities were governed by institutional arrangements internal and external to the sector organizations. As in Miscoine's ethnographic study, owing to the complexity of the situation, the approach shifted to an independent and descriptive stance based on deeper understanding of the empirical context (Miscione, 2007). The semi-structured interview guide was adjusted accordingly (as advised by Eisenhardt, 1989: as a key feature of theory building). By following the principles of constant comparative analysis through theoretical sampling, interviews continued during the first phase until no new information was obtained. Data examination yielded a set of broad categories and associated low level categories. The emerging initial codes or open codes reflected the institutional theory (which was not included in the initial literature review). Some of the open codes were grouped to form the low level categories, representing what was described in the literature as a set of factors describing the salient conditions and consequences associated with the level of ICT or e-business adoption among the sector organizations. The broad categories reflected the institutional forces described in the institutional theory.

However, the process of data collection did not stop here. The cumulative process of shaping preliminary theory, enfolding the literature, and reaching conclusions required a cyclic process. This iterative process of moving between empirical data and theoretical concepts reflected a multi-grounded theory approach. It also helped "to make a distinction between what is usable and what should be refuted in the literature review" (Goldkuhl & Cronholm, 2010, p.200-201). However, the overall analytical approach was based on Urquhart's (2001) method of dealing with the bulk of relevant literature after the substantive theory was formed. The emergent theory determined the relevant literature and engaged the literature review in a critical manner as discussed by Urquhart and Fernandez (2006). As Goldkuhl and Cronholm (2010) advocate, the preliminary theoretical framework was used as a source of inspiration to challenge the abstractions made during this process. The literature was used as additional or secondary data to generate the substantive theory. Thus, a second phase of data collection was conducted, based on the initial major and low level categories, making the sampling process more targeted (See section 3.5 *Data Collection Techniques: Data collection – Phase II*).

Although multi-grounded theory was used to analyse the data, the analysis process used in this research contrasts with its procedure in which the theory condensation process (corresponding to selective coding in grounded theory) which is required to precede “explicit grounding processes” (See Goldkuhl & Cronholm, 2003, 2010). The explicit grounding processes prescribed by Goldkuhl and Cronholm (2003, 2010) are theoretical matching (evolving theory being confronted with other existing theories), explicit empirical validation (changing primary focus towards control and test of validity), and evaluation of theoretical cohesion (systematic investigation of the conceptual structure of the evolving theory) as shown in the Figure 9. At the explicit grounding stage, the theory was rather subtle and theoretically sensitive to conceptualization based on other theories in the literature. Thus, the theory condensation process and explicit grounding process were conducted cumulatively in a cyclic manner while developing empirical theory. Following the constant comparative analysis method (Glaser & Strauss, 1967), the sampling process of the second phase of data collection facilitated the exploration of the situation under investigation. The analysis of the second phase of data involved three explicit grounding processes (theoretical matching, explicit empirical validation and evaluation of theoretical cohesion). Theoretical matching of the emerging theoretical framework with existing theories in the literature, for instance; institutional arrangements, internal and external to the tourism organizations in the Maldives, indicated the three mechanisms or forces prescribed by DiMaggio and Powell (1983); mimetic pressure, coercive pressure, and normative pressure, which increase the homogeneity or organizational structures in an institutional environment. To confirm explicit empirical validation and to evaluate theoretical cohesion, new categories were formed (for example: *sector harmony*) and relationships between the two categories were described (See Chapter 7 : Conclusion, section 6.8.1 Inter-relationships among the themes) Furthermore, data was collected until the research reached what Glaser and Strauss (1967) refer to as “theoretical saturation”.

The qualitative analysis software QSR’s NVivo (Version 8.0) was extensively used to create a database and analyse data for this research. The database not only included audio and interview transcripts but memos, diagrams, notes, related documents, photographs, and information from electronic sources. Most of the information related to the research was collected during the fieldwork and the analysis process.

Consolidating the information in one database helped the physical management of the data and grounded the substantive theory to generate a formal theory.

3.6.1.1 Coding procedure

Open coding is the first step of the process of grounded theory analysis (Urquhart, 2001). The open coding process involves reading the data and categorising it in every possible way (Glaser, 1978). This technique is painstaking and time-consuming but generates rich data, and the continuous process of open coding leads to theoretical coverage thoroughly grounded in the empirical data (Glaser, 1978; Urquhart, 2001).

The coding process was evolutionary and iterative. Each piece of the data (a word, a phrase, or a sentence), from every interview transcribed (and translated where applicable), was assigned to an initial code. Additionally, initial open codes were generated from the interviews based on purposive sampling. Often, a piece of data was allocated to a number of different codes, allowing multiple interpretations of the text. New codes were formed from the data with the research focus in mind, irrespective of the code being relevant at a later stage. As coding progressed, interviews were based on theoretical sampling and in general the coding process was inductive. Table 10 shows an example of codes generated from the interview transcripts. All the interviews were subject to multiple runs through the coding. As data collection and analysis progressed, the coding process became more iterative.

Table 10: Example of initial open codes generated from the interview transcripts

Sentence from transcript	Example of initial open codes
Industry is running on such a slow pace, people are not really bothered about actually spending the additional money to get enhanced services.	Social-cultural influences, weak management, inertia, work culture/environment, reluctance to change

Throughout the coding process secondary data sources were also incorporated and theoretical memos generated. The codes that emerged from the data were grouped, adjusted, and organised to form low level and major categories. The codes that indicated the causes or influences affecting the problem under investigation or what Glaser and Strauss (1967) called the “conceptual elements in the theory” (p.37) were grouped to

form the low level categories to represent factors affecting adoption and integration of ICT and e-business in the tourism organizations. Also, the low level categories represent what Glaser (1978) refer to as selective codes. The selective coding process limits the coding process to core or significant variables “to guide further data collection and theoretical sampling” (Glaser, 1978, p.61). This process produces a parsimonious theory (Glaser & Strauss, 1967). Moreover, the low level categories of selective coding reflected the factors affecting adoption and integration of ICT and e-business in the organizations. Following Goldkuhl and Lind (2006) the empirical theory generated was matched with existing literature to strengthen the explanatory power of concepts/categories in order to arrive at a conceptual cohesion of the evolving theory. This theory-informed analysis of data was also used to further analyse the evolving theory using the technique of “theoretical coding” as described by Glaser (1978), to understand relationships between the created categories. Following Glaser and Strauss (1967), relationships were also noted in analytical memos. This process of theoretical coding resulted in the formation of major categories. These major categories, representing structural relationships among the low level categories or factors, indicated a new perspective reflecting what the literature revealed about the forces or pressure coming from the institutional environment of the tourism sector organizations. It was a creative iterative process between categorisation and validation.

As the study progressed, the iterative process of data collection and analysis led to a higher level of grouping to exhibit themes. The three themes are; the **Country** representing the local context, **Sector** representing the tourism sector context, and the **Information Systems (IS)** domain representing the information system context of tourism organizations. These three themes emerge from the open codes grouped to form low level categories, which in turn represent the major categories. More precisely, the analysis process resulted in three theoretical codes (themes), six major categories (institutional influences), and eighteen low level categories (factors) shown in Table 11.

Table 11: Themes, factors, and institutional influences affecting adoption and integration of ICT and e-business in the tourism organizations of the Maldives.

Theoretical code (Theme)	Major categories (institutional influences)	Low-level categories (Factors)
Country (Local Context)	Resource limitations	<i>technological infrastructure</i> <i>human capital</i>
	Local conditions	<i>social and cultural influences</i> <i>vulnerability</i> <i>policy</i>
Sector (Sector Context)	Collaboration	<i>governance issues</i> <i>sector harmony</i> <i>work culture/environment</i>
	Sector practices	<i>customer expectations</i> <i>marketing management</i> <i>marketing strategies</i> <i>pricing strategies</i>
Information Systems (IS Context)	Perception of ICT	<i>technology experience (effect)</i> <i>technology dependency</i> <i>technology knowledge</i>
	Exploitation of ICT	<i>software experience</i> <i>web presence</i> <i>e-distribution</i>

A detailed example of the above grouping is shown in Table 12, which shows the analytical process leading to the development of key themes representing the local context the **Country**. Open codes (Column A) were grouped under low level categories (Column B). This led to the formation of the major categories (Column C) which builds towards the final theoretical concept or theme (Column D) **Country**. This cumulative coding procedure resulted in the development of a theory both empirically and theoretically grounded.

Table 12: analytic process leading to development of key theme: Country

Column A (open codes)	Column B (low level categories)	Column C (Major categories)	Column D (Theme)
<i>Increasing demand, opinions of service providers, network accessibility, network speed/quality, influences from international competitors, technological infrastructure costs.</i>	<i>technological infrastructure</i>	Resource limitations	Country
<i>Lack of trained personnel, educational level, basic computer skills, lack of industry-related skills, on-the-job training, remuneration and benefits, investment in human capital.</i>	<i>human capital</i>		
<i>Antagonism towards tourism, gender sensitiveness in the sector, protected youth, outlook on work, pride, bad habits, innate qualities, impetuuousness of Maldivians, reluctance to change, social network, latest technologies</i>	<i>social and cultural influences</i>	Local conditions	
<i>Critical mass, economies of scale, logistic distribution costs, climatic uniqueness, disaster prone- Tsunami</i>	<i>vulnerability</i>		
<i>Absence of regulations, lack of consumer protection, security, e-merchant accounts, e-government , education and training, awareness</i>	<i>policy</i>		

3.7 Issues of trustworthiness

This research is designed to increase trustworthiness. According to Lincoln and Guba (1985), the key question trustworthiness addresses is: "How can an inquirer persuade his or her audiences that the research findings of an inquiry are worth paying attention to?" (p. 290). They propose a set of four criteria for addressing trustworthiness; the credibility of their findings, the transferability/generalizability of their findings or how well their working hypotheses would "fit" in another context, the dependability of the research or how well it would stand up to testing for consistency by a second evaluator, and the conformability of the data.

3.7.1 Credibility

Credibility is related to internal validity and refers to whether the findings actually make sense to the research participants and wider audience. A number of factors increased the credibility of this study. To begin with credibility was enhanced by the approval of Victoria University of Wellington (VUW), Human Ethics Committee. As discussed above, the major strength of using grounded theory is that building theory from data automatically grounds the theory empirically, which implies data can be traced between theory and categories. Using multi-grounded theory further enhances credibility by validating the theory in relation to grounding of knowledge, in accordance with other theoretical abstractions (Goldkuhl & Cronholm, 2010). Additionally, the design of the research has considered the issue of inference by the analytical tactic of pattern-matching during the data analysis process using grounded theory method. Pattern-matching is one of the tactics conducive to ensuring internal validity (Yin, 2003). Credibility was further supported by data triangulation and member-checks.

Data triangulation refers to the gathering of several independent data sources to reach a conclusion from different directions (Creswell, 2003). Triangulation is a means of using the strengths of one method to offset the weaknesses of another (Denzin, 1989) to establish the credibility of the findings (Lincoln & Guba, 1985). For the purpose of this research, data was collected from different sources, for instance interviews, informal discussions, and documents, and duplicated through multiple interviews. These multiple sources constitute an element of triangulation as verification of factual information and

often lead to an enrichment of the description through several perspectives on the same issue.

This research also used member-checking as a validation strategy. According to Guba and Lincoln (1998) member checking is “the single most critical technique for establishing credibility” (p. 239). This validation strategy involves handing over descriptions and findings to participants for them to review and correct (Creswell, 2003). Member-checking was performed at various points in the study. First, transcribed interviews were sent to the respective people upon request for verification. Second, a second phase of data collection was conducted to verify the existing categories from the first phase of data collection to form the substantive theory of this research. Third, a language translation check was required.

Some of the interviews were conducted in *Dhivehi*, or in a mixture of *Dhivehi* and English in order to allow the interviewee to speak freely. Rossman and Rallis (2003) note the best translator would be the researcher if the researcher’s first language is the source language. Thus, the interviews and parts of documents were translated and verified by the researcher. Firstly, the researcher translated the interviews into English and segments of the transcription were chosen to be used verbatim. Secondly, this bilingual translator verified these segments. The researcher worked with the translator to check the English version with respect to vocabulary, idioms, and syntax. Finally, the researcher consulted the (native English speaking) thesis supervisors for appropriate usage of the translations. However, some cultural contexts might not be accurately interpreted, which could also affect coding, where biases or misinterpretations are possible.

3.7.2 Transferability

This type of trustworthiness is related to the *generalizability* of the findings. Walsham's (1995), four types of generalizability; "the development of concepts, the generation of theory, the drawing of specific implications, and the contribution of rich insight" are adopted in this research (discussed in detail in Chapter 7 – Conclusion, section 7.4 Contribution of this research). Generalizability is also addressed through replication logic and through data analysis strategies. This encourages an extensive discussion of phenomena and considers the contextual conditions of the study. It is further supported by the use of similar organizations among different types of organizations. The collection of similar and dissimilar organizations provides an insight into the effect of core characteristics of the organizations. Rich descriptions of the context, events, and findings of this research are provided so readers can relate them to their own settings and apply the emerged theory.

3.7.3 Dependability

Dependability or reliability is concerned with "whether the process of study is consistent, reasonably stable over time and across researchers and methods" (Miles & Huberman, 1994, p.278). The research strategy used a number of prescribed steps, including the documentation of sampling decision, communication with the research participants, and following an interview protocol at the data collection phases all of which increase the research dependability. The constant comparison and data triangulation methods lead the researcher to ensure that the data is compared and validated when drawing conclusions. The use of theoretical memos and a research database (using the software NVivo 8.0) further enhanced the dependability of this study.

3.7.4 Confirmability

Confirmability refers to the degree which the results can be confirmed by others. Lincoln and Guba (1985) propose that confirmability is achieved through an audit trail consisting of raw data, analysis notes, reconstruction, and synthesis products, process notes, personal notes, and preliminary developmental information. A comprehensive audit trail was established by creating a project library of interview recordings and other

elements of the research database. Furthermore, a second phase of data collection was conducted in order to confirm the emerging theory based on the first phase and the related literature.

3.8 Chapter Summary

The overall approach to research methodology is important in answering the research questions, which required a comprehensive and critical analysis of the data. The choice of interpretive research using qualitative methodology met the particular purpose of this research. The descriptions of the context/research site help to build understanding of the unique features of the context, which is essential for appreciating the meaning of this research. The research design, including the unit of analysis with descriptions of the sample population, deepens the understanding of the context. The approach to data collection and analysis provides a reasonably systematic approach to analysing the complex problem. Data analysis using Glaser and Strauss's(1967) grounded theory technique and aspects of Goldkuhl's (1993, 2004) multi-grounded theory fit well with the underlying strategies of this research, and are of particular relevance when trying to understand the underlying context. Combining Glaser's approach to data analysis, with the theory-informed analysis of multi-grounded theory approach proved to be an appropriate way of generating a set of factors (low level categories) and of identifying institutional forces (major categories) affecting ICT usage in the tourism industry of the Maldives. These categories, encompassing three major themes; **Country, Sector, and Information Systems (IS)** domains, led to a theory which addresses the research problem. These themes; along with the categories, need to be explored in detail in order to get a clear understanding of the substantive theory. Thus these themes, a set of factors, and institutional forces affecting adoption and integration of ICT and e-business in the tourism organizations of the Maldives (represented in Table 11 above) will be discussed in the following chapter (Chapter 4).

CHAPTER 4: RESEARCH FINDINGS

4.1 Introduction

Through the data analysis process of constant comparison, three key themes emerged: **Country**, which represents the local context; **Sector**, which represents the tourism sector; and **Information Systems (IS)** domain, which represents the IS Context. These three themes are described in detail to demonstrate major and low level categories emerging from the open codes generated from the text. Each theme is described by providing tables explaining the construction of the key themes, organizations' response to each theme, and showing the components of each major category, reflecting its relationships with low level categories and open codes. To illuminate issues and demonstrate the application of the codes to support the findings, the low level categories are also described by providing sample quotations from the text. In compliance with the two principles - abstraction and generalization- described by Klein and Myers (1999), sample quotations are extensively used to facilitate readers' understanding of this research's theoretical insights.

More generally, this chapter addresses the overall research problem identified in Chapter 1. It explores and describes how ICT is used in the tourism industry, and why the industry seems to lack efficiency in utilising ICT. Each section shows that not only do the factors (low-level categories) existing within context affect the adoption and integration of e-business in the tourism organizations of the Maldives, but also that the effect is largely driven by institutional influences specific to each domain. A summary of each sub-section highlights factors relating to institutional influences and each section ends with a brief summary of the theme.

4.2 Theme One: Country

The first theme, the **Country**, representing conditions in the local context, is derived from findings related to local factors influencing effective ICT use and development. It particularly focuses on the availability of resources and those basic issues which had a strong effect on ICT usage. Table 13 shows both the major and the low level categories

in this theme. Two major categories emerge from low level categories. (The low level categories are *italicised* for easy reference.)

Table 13: Constructions of the key research theme: Country

Major categories in the theme: Country	Low level categories
Resource limitations	<i>technological infrastructure</i>
	<i>human capital</i>
Local conditions	<i>social and cultural influences</i>
	<i>vulnerability</i>
	<i>policy</i>

This theme relates to systemic issues within the local contextual environment underpinning effective use of ICT as identified by the interviewees. The two major categories, **Resource limitations** and **Local conditions**, have been created from field data, as is reflected in the interview responses and as listed in the Table 14 (summarised in Appendix 4), which represents clustering of the issue among the organizations interviewed.

Table 14: Organizations response to Theme One: Country

Major Categories	Low level Categories	Organizations
Resource limitations	<i>technological infrastructure</i>	A, B,C, D, E, F, G, H, I, J, M, N, O, Q, R, T, U
	<i>human capital</i>	A, B,C, D, E, F, G, J, K, L, M, O, Q, S, U
Local conditions	<i>Social and cultural influences</i>	A, B, C, D, E, G, H, I, J, L, M, N, O, Q, R, S, U
	<i>vulnerability</i>	A, B, C, D, E, H, M, N, O, P, Q, R, S, T, U
	<i>policy</i>	A, B, C, F, G, L, M, N, Q, S, T

The first major category, **Resource limitations**, indicates that accessing adequate resources was a major concern. The second major category, **Local conditions**, indicates that respondents perceived the existence of adverse factors which influence effective ICT usage within the local environment in the sector. Many low level categories and

open codes support these major categories. Major categories, along with the low level categories, are discussed in subsequent sections.

4.2.1 Resource limitations

This major category relates largely to the concerns and hindrances in obtaining the appropriate resources as perceived by participants. More specifically, the category describes the *technological infrastructure* and *human capital* needed to maximise the potential of ICT. These low level categories emerged from the open codes during the comparative analysis process. The open codes were created from the data relating to scarce resources. The codes are listed in Table 15. (The open codes are *italicised* in the text for easy reference in subsequent discussions.)

Table 15: Components of category Resource limitations

Major category	Low level categories	Open codes
Resource limitations	<i>technological infrastructure</i>	<i>Increasing demand, opinions of service providers, network accessibility, network speed/quality, influences from international competitors, technological infrastructure costs.</i>
	<i>human capital</i>	<i>Lack of trained personnel, educational level, basic computer skills, lack of industry-related skills, on-the-job training, remuneration and benefits, investment in human capital.</i>

4.2.1.1 Technological infrastructure

One of the pressing issues stemming from **Resource limitations** is the need for expansion and enhancement of *technological infrastructure*. Technological development in the industry is inevitable. It has become imperative that a variety of good quality, high speed telecommunication services are provided across the Maldives.

The *increasing demand* for a stable, perpetually improving technological infrastructure in the Maldives is augmented by the expansion and change in the direction of tourism. Describing such a demand, one of the telecommunication service providers noted that:

Nearly all the new resorts that are coming up are five star plus ..., because they are five star plus they want, what to say, all technological activities to be present.

Another interviewee who emphasised the need backs this perception;

To improve the existing technology, to improve the one we are using to better technology, to provide an easier, faster service. For that, we have got about 3 or 4 projects for the next 6 months.

It seems service providers in the Maldives recognize that to gain competitiveness in the tourism industry, sustainable technological infrastructure developments are essential. Such intentions directly relate to the wishes of tourism sector organizations, who noted that telecommunication liberalisation in 2002 has resulted in healthy competition between service providers (*opinion of service providers*). Despite rapid technological development, a number of interviewees noted that the issue of poor communication coverage (mobile/Internet) within the atolls of the Maldives is still unresolved (*network accessibility*). For example, one of the safari vessel operators confirmed:

Even now the problem we face is all of a sudden we cannot hear what we are talking....
I would say still our network is not good.

It was unanimously agreed by the interviewees that the geography of the Maldives poses major challenges to providing technological infrastructure. In comparison to other countries, the Maldives needs to take bandwidth across the sea while simultaneously assuring quality conformance (*network quality/speed*). It is difficult for the Maldives to obtain the required bandwidth. According to a telecommunications service provider in the country, the options are either to install submarine cables (submarine fibre optic communications cables laid by special *cable*-laying ships) or to use microwave radio links (a beam of radio waves in a microwave frequency ideally suited to transmit audio, video, or data between two locations). The submarine cable is not feasible, as it is too expensive to cover the entire country. The following quotes from two interviewees among technical service providers illustrate this issue:

For example microwave - they may say we also use the microwave and it is not that expensive, if we look at that, the only difference is that, they [foreign technical experts] are talking about mountain to mountain communications, which is 100s of kilometres. We have our islands on flat beds; if you look at the earth curvature, the maximum distance that could be carried is 50 kilometres. If that is the case multiple radios has to come in.

For example IP TV, if we are to give the service in Male', we can have one head end equipment, billing and streaming in one head end, and distribute the set-top-box. ...in

a city hotel this is the case. .. Most of the time the city hotel owners have to invest on to set-top-box and for the TV heads, but in this environment, because we are not able to get the bandwidth, they have to invest in the stream servers, encoders, plus on all the additional stuff that comes along with that.

Furthermore, the sector experienced major *influences from international competitors*. Their existence has changed the institutional conditions by affecting the quality of services available. Such influences are evident by the statements made by an Internet service provider who noted:

Now that there are international chains coming in we need to give the service levels. Define our service level...that is the biggest reason for the high price.

Although costly, high quality, Internet services are necessary to manage time-intensive applications, such demand requires spatial expansion of the technological infrastructure in the country. This underlies the service providers' rationale for the high cost of telecommunication services (*technological infrastructure costs*). Furthermore, high cost is exacerbated by the Maldives' vulnerability (a low level category to be described under **Local conditions**).

4.2.1.2 Human capital

In addition to *technological infrastructure*, one of the critical resources in the Maldives is *human capital*. Many of the organizations are challenged by inadequate numbers of skilled personnel (*lack of trained personnel*).

A large portion of the work force is school leavers, who have completed basic schooling - the largest job-seeking population in the country (MPND, 2008) (*educational level*). It was a common understanding among the interviewees that the majority of school leavers were only acquainted with *basic computer skills*. For example, one of the IT managers among service providers noted:

on average all new comers [school leavers] know basic computing.

However, lack of awareness or expertise about the industry was often attributed to a *lack of industry related skills* required. Referring to the local workforce required for the tourism industry, one of the managers of an international chain resort stated:

There is definitely lack of awareness or expertise in the industry.

Additionally, interviewees noted the quality and content of education is questionable with respect to the tourism industry. Many of the interviewees expressed that this is the case even among new employees who had completed basic schooling. One of the managers of an international chain resort noted:

they don't know what the job is all about.

Moreover, current training opportunities were perceived as insufficient. One of the IT managers of a local chain resort noted:

Whatever it is new student coming out of school requires certain training for a job. There is no training centre for jobs.

As interviewees pointed out, the situation had worsened for organizations which sought to employ locals; there are not enough trained locals. Various interviewees emphasised the growing demand for trained personnel, making comments such as:

The most difficult task is to get good staff (*Resort manager of an international chain*).
and

It is hard to get a trained Maldivian (*resort Manager of a local chain*)

Subsequently, the majority of the organizations were engaged in *on-the-job training* as an alternative to securing adequately skilled staff. The approaches to this varied between organizations. For instance, one of the IT managers of a locally managed resort reported:

The department heads trained them.

Whereas a manager of an international resort chain explained:

We are also running this apprenticeship programme; I think it's going into its eighth year.

Various interviewees noted that difficulties in finding trained personnel were exacerbated by locals being reluctant to work in menial jobs. For example:

Maldivians don't want to start from the bottom and go to the top (*Technical service provider*).

And:

They don't want to be categorised as labourers and things like that (*interviewee among government authorities*).

As a result, locals were only sporadically engaged in menial work such as clerical work.

Consequently, financial resources were directed to foreign employment. Fifty percent of the total workforce in the tourism industry were expatriate workers (MPND, 2008). This phenomenon of mounting foreign employment has caused anxiety about lack of opportunities for local employment. One of the industry association members confirmed:

tourism industry come into a very severe criticism on a daily basis for not hiring Maldivians, for not giving them the facilities what we accord ah! foreign workers, expatriate workers.

Employment of expatriate labour seems more convenient (discussed under social cultural influences) for resort owners, even though the total costs associated with expatriate labour seem to be slightly more compared to those of local labour.

Some interviewees argued that if locals were offered the same *remuneration and benefits* as foreigners, they would take up jobs in the industry. The manager of a Safari vessel explained:

we give his salary, we give him food, we give him accommodation, we settle his visas and also provide medical services when he is sick. After that one year, according to the contract we have to send him [away] by giving him ticket. This is what the services we do for foreigners. If we do these things even to Maldivians, they will stay [be willing to work in the tourism sector].

While the logic of this argument seems irrefutable, the inconvenience of dealing with local employees seems to override the financial burden incurred by foreign labour. However, some sector organizations expressed a willingness to employ local people:

If we can get local people we don't need to get foreigners (*Manager of an international chain resort*).

Despite such sentiments, there seems to be unintended rejection of local employment. This makes the expenditure/investment on human resources less effective for the economy (*Investment in human capital*). Describing these predicaments, one of the heads of the industry association advocated:

We can employ more Maldivians; we feel better, they feel better. We feel that we are doing something for the community and for the country's economy and to the livelihoods in the islands.

4.2.2 Summary of Resource limitations

Irrespective of the type of organization, the majority of the interviewees felt that limitations in *technological infrastructure* and *human capital* are amongst critical issues inhibiting effective ICT use. Certainly, the literature on ICT and developing countries substantiates this view; although *technological infrastructure* and *human capital* are important requirements in developing countries, they remain scarce as resources. According to Mansell & Wehn (1998), there are two keys to any country's ability to exploit the development potential of ICT. The first is the availability of a network infrastructure, which is essential for the provision of information content. The second is the capacity to create, manage, and utilise infrastructure in ways consistent with the needs of the local environment (See also Nelson & Pack, 1999; Sambamurthy, Bharadwaj, & Grover, 2003).

This research has found the demand for robust *technological infrastructure* across the country is aggravated by the demand from tourism sector activities, irrespective of the existing high costs/tariffs of such services. However, the demand for nationwide coverage of *technological infrastructure* is somewhat limited. Within the tourism sector, it is generally the small businesses engaged in mobile tourism activities, such as cruising, that need nationwide coverage. Although these businesses contribute about 10% of the country's tourism bed capacity, they do not amount to a sufficient number to meet economies of scale in building such high quality infrastructure nationwide. Moreover, limitations associated with being a SIDS affect the economic feasibility of implementing high quality, nationwide *technological infrastructure* coverage.

The findings showed there are limitations in meeting the demands for employment opportunities. In its attempt to seek employees with the knowledge, skills and capabilities required for the industry, the tourism sector was challenged by the limited population of the Maldives. The largest job-seeking population group had rudimentary knowledge of ICT, but this was inadequate to meet the tourism sector's requirements. Training opportunities available in the country were insufficient. Furthermore, lack of long-term strategies in the approach to employment, coupled with the seemingly

unintended rejection of local employees, made the expenditure on human resources uneconomical.

4.2.3 Local conditions

The second major category within theme one: **Country**, is **Local conditions**. Some of the low level categories associated with **Local conditions** illustrate the conundrum the sector faces, not only when dealing with socio-cultural consequences, but also with the adoptability and favourability of the technology to overcome geographical challenges. The low level issues arising from **Local conditions** can be sub-divided into *social and cultural influences* in society, the *vulnerability* of the Maldives, and *policy*. A set of open codes was created from the interviews to further illustrate the low level categories listed in Table 16. (For easy reference the open codes are *italicised* in subsequent discussions.)

Table 16: Components of the category Local conditions

Major category	Low level categories	Open codes
Local conditions	<i>social and cultural influences</i>	<i>Antagonism towards tourism, gender sensitiveness in the sector, protected youth, outlook on work, pride, bad habits, innate qualities, impetuosity of Maldivians, reluctance to change, social network, latest technologies</i>
	<i>vulnerability</i>	<i>Critical mass, economies of scale, logistic distribution costs, climatic uniqueness, disaster prone-Tsunami</i>
	<i>policy</i>	<i>Absence of regulations, lack of consumer protection, security, e-merchant accounts, e-government, education and training, awareness</i>

4.2.3.1 Social and cultural influences

One of the **Local conditions** profoundly shaping ICT adoption and effectiveness is the impact of *social and cultural influences*. The data shows that social and cultural values are critical elements for technological development in the tourism sector. Constrained by a small population, one of the major challenges facing the sector is attracting people to an industry where staff are crucial.

The data shows that Maldivians have intrinsic values (*innate qualities*) vital for the service industry. For example, Maldivians' attractive smile is considered inherent to their culture. Often, Maldivians are complimented for their warmth. One of the resort managers noted:

Maldivian is very easy to train in the service field, yeah! They have it inbuilt; that is their heritage giving a smile, talking nicely. I have been working last month with one of the trainer. She is from U.K basically from a training company. She is a trainer in this outsourced company. During the training she was really surprised everyone smiles. We need that kind of people in service industry.

And one of the safari vessel managers went even further, saying that:

Maldivians are with an attractive smile and ... people who take care of people who come abroad - foreigners, people who do cordially invite.

Furthermore, employers express frustration at the apparent under-utilisation of local talent and intelligence. One of the marketing managers of a large chain resort has the perception that:

There is a lot of talent, but there aren't any people to harness it.

Similarly, when describing the web designing work of some Maldivians, an experienced marketing manager noted:

Young peoplevery intelligent and knows the work well, but ...

Such positive expressions were often followed by reservations about the *impetuosity of Maldivians*. For example, a technical service provider noted:

Their minds just change too quickly.

Such a way of thinking presents barriers to becoming professionals; as one technical person described:

For instance, we have a very capable person; very good with PABXs [Private Automated Branch Exchange]. After a year of working he might start working with graphics. Or he might start developing software. That's how it happens. People who want to specialise are very rare.

Despite the information provided by interviews as well as from document analysis, there are lots of opportunities available for skilled personnel, including IT personnel, in the

Maldives. For instance, an IT person working in a resort is required to take full responsibility for all IT functions and to be available to attend any technical problems at all times, irrespective of formal working hours. The same expectations do not exist in most non-resort environments.

Many local people feel that working in low level jobs in resort environments would limit their opportunities. Maldivians take *pride* in having an abundance of opportunities. The government expressed apprehensiveness about this attitude and indicated an intention to take action accordingly.

I wouldn't say that is bad, but have a psychological feeling that they need some white collar job or blue collar job, things like that. Definitely, they don't want to be categorised as a labourers and things like that. So, what have told is that, we will try to bring them up to a managerial level, for instance, not the labourers, but the level higher than that (*Government Authority*)

Above all, some people are reluctant to accept the type of tourism that has developed in the Maldives (*Antagonism towards tourism*). This could be partly because the Maldives is a Muslim country and the population perhaps has reservations about being exposed to the drinking and less modest clothing present in many non-Muslim societies. One of the interviewees explained their concern:

some parents, the older generation, still view tourism as a, you know, being something illegal, foreigners hang around, come and hang around, drink, and they hang around in bikinis and you know half naked on the beach and things like this.

Such attitudes create a hesitancy to work in the tourism sector, especially for women (*gender sensitiveness in the sector*).

Parents didn't want them to go and work there in the resorts. Because it is in the Maldivian culture.

A hotel manager illustrated this issue by describing an incident he came across:

I remember in an interview to recruit a girl, when I asked them, her mother asked me questions that she wanted to ask. Where will she sleep? She will be sleeping with how many people? She will be eating with how many people, as such a number of questions like this, for a girl, her mother questioned me, and they have the right to question. The mother was not satisfied for her daughter to go and work in a resort.

These quotes reveal another issue; working in resorts is to be away from family and the workers' social environment. Additionally, their upbringing (*protected youth*) also makes them reluctant to take up responsibilities, and work independently.

I think that it is the environment that we are brought up, what happens to our parents is that they don't allow their children to work at home out of love. Especially when they are in school they would not let them do any work. They wouldn't know what life is and what they would face when they come up in life that is not taught I feel.

The situation is worsened by problems of illegal drug use by young people (*adoption of bad habits*). Indeed, the situation is becoming more apparent as the manager (a foreigner) of a joint venture resort and also a manager from a small local resort attempted to express:

Yes, I can see, because I came in Male' about one years and half ago. When I arrive, people were much more easy. In year and a half it seems that unfortunately most of this young man. Maldivian man, know? They took the worst thing from Europe. I hope you understand what I mean. Because I'm talking about 20 ... old guys. Know! They took the worse thing in about everything they wanted faster and about top what ever

Furthermore, Maldivians have a different *outlook on work*. A member of the sector describes the situation thus:

We do not have enough young people, coming to tourism industry, because there are other opportunities, and also because...our outlook on work is very different, the work ethic and ... what you call the dignity of the labour. It does, it does...matter what you do; really it's a question of how society views work. Unfortunately we do not appreciate...anything that we do with our hands or what you call manual labour. Manual labour is seen as menial work.

These negative attitudes towards manual work and the resultant disenchantment with working in resorts have serious implications for the tourism sector.

Another issue influencing the sector was the owners' or managers' reluctance to bring about change (*reluctant to change*). The conventional way of managing the market has been a reliance on tour operators. As expressed by one of the software application service providers, people are hesitant to use software solutions for marketing purposes:

Do not want to use it for business enhancement. Do not want to yield, what happens to Maldivians is because they have relied so much on the tour operators, they, there is a general belief that as long as tour operators don't send tourist this country is not going to operate, that kind of a scenario which Maldivians believe.

Thus, many operators are reluctant to change their approach, because they see business relationships as crucial elements in their success (*social network*). When questioned about his status among their competitors, one of the managers of service providers explained the situation as:

What happens in The Maldives is different. Everyone needs the relationship. This is a small place, therefore all the resorts want to have a relationship with us and [list similar service providers]. Everyone keeps the relationship with all of them.

As indicated by one hotel manager, Maldivian businessmen rely highly on social relationships:

Here market is in a quite a different manner, then again directly our operators see to the customers, totally through other parties, either through operator or from a co-operate office then we have a very high percentage of business customers and from word of mouth. We have a very good relationship with our customers, and then we have a huge validity on relationships.

Reliance on social relationships is so strong some people question the latest strategic approaches to marketing, such as web hosting:

Website, I think there will be anything to do with the website, I don't know how the website is, who will come looking at it?

Later he admits:

Future it will be Internet marketing, future growth will be, definitely that will be so. Now we have not yet planned to do so.

Although some do not think that technological marketing tools such as websites are as helpful as social networks, nearly all tourism sector organizations are listed on the Internet in some form, and all interviewed organizations have/had websites. Interestingly, it was observed that while Maldivians in general are very keen to adopt the *latest technologies*, they nevertheless lack efficiency in using them. As one of the heads of the tourism association described:

you know technology, not for technology, say in the senses, using the latest gimmicks or the latest tool, or, or gadget, more in the sense in the production of, you will find that the resorts are very quick to adopt technology we realise that it's a question of efficiency.

This seems to indicate the desire to adopt technology is the result of aspiration for reputation from the social environment and the sector. Despite high levels of aspiration, the tourism sector is faced with major challenges from the national environment.

4.2.3.2 Vulnerability

Among **Local conditions**, one of the distinctive characteristics of SIDS atoll countries like the Maldives is geography. Within the scope of this study, **vulnerability** relates to the geographical vulnerability of the archipelago, the small population, dependency on imports, frequency of natural disasters, and the salty, humid, tropical environment. The data indicates that adaptation and application of environmentally sound technologies is essential to combat the adverse effects of vulnerability.

One of the most important issues was the heavy dependence of the Maldives on telecommunication. One of the telecommunication service providers indicated that the use of some of the telecommunication devices can be critical:

Internet, telecom mobile is a life saving equipment too.

Such ICT tools have become vital for geographically isolated countries like the Maldives. However, the country's small population means there is an insufficient *critical mass* of users to justify the costs or to optimise the investment in telecommunications. As highlighted under **Technological infrastructure**, the cost of providing quality services to the outer atolls cannot be justified given the limited number of service users. Furthermore, the Maldives, being an archipelago, is unable to attain *economies of scale* and each island is compelled to develop its own facilities. One of the resort managers noted that:

All our resources need to be generated internally.

Transportation costs (*logistic distribution costs*) and the imbalance in supply and demand are aggravated by the Maldives' geographical dispersion. Each island is compelled to build its own communication infrastructure in order to have access to ICT. Explaining the case for hotel/resort chain managements in the Maldives, one telecommunication service provider noted that:

So, each property needs to have the same infrastructure, the cost becomes highly significant. ... Individual each island requires a standalone [telecommunication] infrastructure.

Another issue of vulnerability is that of natural catastrophes, which are inevitable and inescapable. A number of interviewees noted that although it incurs a high cost, disaster management is part of their management plans, especially after the Asian Tsunami (*disaster prone - Tsunami*) on December 26, 2004,. Thus, as one of the telecommunication service providers noted, precautionary measures are included in the set-up process. For instance, he explained that:

Now, especially now post-tsunami, we are now lifting it to 3 feet. Expecting nothing more than that will come.

The salty-humid-tropical environment also poses considerable setbacks in maintaining robust infrastructure. A number of technical/IT managers mentioned that the *climatic uniqueness* of the Maldives presents challenges in making suitable equipment or apparatus practical for long term use. One of the technical people described a situation where it is necessary to keep equipment outside in a closed air-conditioned room:

We mostly make outdoor racks [for technical equipment]. The powder coating is better on them, otherwise they will get rusted. If it's made from aluminium they will start dissolving. For all external [not in an air-conditioned room] things we use plastic things or fibre glass. We don't use steel. Steel gets rusted very easily.

Thus, for countries like the Maldives, such vulnerabilities are inextricably bound with building and maintaining the robust technological infrastructure necessary to propel the economy.

4.2.3.3 Policy

Another issue among the **Local conditions** hindering effective deployment of ICT relates to *policy*. Effective e-business adoption and usage are fundamentally shaped by national policy and regulations. These policy and regulations govern the licensing access and use of infrastructure, the provision of services, education, training, and awareness in the country.

Although the basis for effective use of ICT is a sound technological infrastructure, the existing regulations for maximising infrastructure are inadequate. A number of

interviewees noted the results of telecommunication liberalisation were positive. However, one of the issues was that *absence of regulations* for managing the competition between the two services providers was hindering the development of nationwide coverage. The lack of regulatory guidelines exacerbated this problem. For instance, restricting interference in antenna (spectrum) bands was inhibiting mobile phone coverage. As one of the government authorities explained:

The problem in the north atolls, difficulty in getting the range...is because of the antenna competition.

Furthermore, *lack of consumer protection* had a negative impact on the trustworthiness of ICT services. The absence of a legal framework or legislation for issues such as protecting users engaged in cyberspace or computer related activities was impeding tourism sector organizations in using online services/facilities. While talking about credit card transactions (*security*), one of the safari vessel operators summed up the resulting problem:

Every business can be done only in a secure environment

Another related issue was the provision of services. For instance, at the time of the interviews, one urgent issue was the provision of *e-merchant accounts*. This was one of the most in-demand services of the tourism sector. Such a demand has existed for the past few years. One of the local resort chain marketing managers commented:

Actually we have been trying for about 3 to 4 years now to organize Internet booking and we have talked to the banks.

One of the service providers described the magnitude of such demand:

In reality this is one of the reasons why we want to provide this service. That is because the tourism sector or resort sector demands so.

Although the interviewees explained that the cost of purchasing such services internationally was not feasible for businesses, they anticipated that such a service would be available shortly. Thus, one local resort chain marketing manager said optimistically:

We have talked to the banks, and [a bank] said they will introduce accounts very soon.

Such optimism was also expressed towards online services that were expected from the current *e-government* project. This project, which intended to connect government agencies electronically to provide information and services for the public, was also one of the expectations of the tourism sector. One of the industry association members expressed their anticipation:

That would make things very, very easy for the resorts.

The sector seemed to be calling for a sound legal infrastructure in order to participate in the ICT environment.

Education and training was a major issue requiring strong policies. Clearly, the Maldives needs to educate people based upon job market demands. As mentioned earlier, a number of interviewees expressed concern about the direction of basic schooling and education and their relevance to job markets.

In this vein, many interviewees believed that local people were capable, but not guided (*education and training*). One of the resort managers of an international chain articulated:

Because nobody is interested to show, to show for them, you know because there are in my opinion a lot of good Maldivian boys or ladies that can do this job.

One of the most frequently raised matters were the lack of basic skills required for the industry, and people's attitude towards the tourism sector. This shows lack of *awareness* in the Maldives in relation to the tourism environment. This was strongly reflected in excerpts from the interviews such as:

The entire country needs an awareness programme that tourism is important.

And:

Awareness has to create among the public, not only the hotel school students, but the general public.

4.2.4 Summary of Local conditions

A number of studies reveal that ICT or e-business deployment and appropriation do not occur in a vacuum, but are influenced by social and economic forces beyond organizational intent (Orlikowski, 1992b, 1993b). For a number of interviewees, basic issues impeding ICT usage were related to Local conditions, both physical and institutional. More specifically, **Local conditions** comprise *socio-cultural influences*, *vulnerability*, and the *policy* of the country.

The findings show that how ICT is viewed and used in the tourism sector is largely affected by socio-cultural factors. The findings substantiate that people are keen to adopt ICT. They show that the local people have some innate qualities and basic computer skills that could potentially be developed to facilitate the service industry. This research also shows that some *social and cultural influences* have negative implications for ICT usage in the tourism sector. The negative attitude towards engaging tourism sector activities, coupled with the impetuosity of the people resulted in difficulties in managing local employment in the sector. Furthermore, the sector is driven by the social environment. Organizations tend to follow the activities of similar organizations which they perceive as successful. Unfortunately, however, they give little thought to efficiency. The findings also show that some organizations depend on social networks for their business.

Findings show that the *vulnerability* of the Maldives becomes a major hurdle for the development of ICT, especially for the tourism sector, which largely relies on self-contained islands as its main product. The Maldives has to overcome barriers of critical mass and economies of scale. The high investments required and logistic distribution costs due to ecological uniqueness are compounded by susceptibility to natural disasters. The effect of the salty-humid environment is a considerable issue in using electronic equipment in the islands.

This research shows that the Maldives needs to formulate policies and regulations focusing on education, training, and awareness programmes in line with development. The Maldives still lacks policies and regulations to govern development of the ICT industry. Consequently, the tourism sector is reluctant to fully exploit the opportunities

offered by ICT, although it is used to some degree. Due to the absence of a regulatory framework, the provision of services facilitating electronic business activities is at its adolescence stage, and those services that do exist are rather complex and incur a high cost. Furthermore, activities to create awareness and encourage the use of ICT among the people and the tourism sector require further development.

4.3 Country summary

Figure 10: Relationship between the theme one and its major categories

With the theme **Country**, the categories **Resource limitations** and **Local conditions** formed the basis of issues underlying ICT usage. As shown in Figure 10, these categories complement each other. The limitations of *technological infrastructure* and *human capital* are strongly affected by the *social and cultural influences*, *vulnerability* and *policy* dimensions of the **Country**, and vice-versa. The difference between these two categories is that the *Local conditions* are more “sticky” and embedded. These conditions are inescapable and bounded by local context. They are harder to measure than either *technological infrastructure* or *human capital*.

The issues addressed under **Resource limitations** and **Local conditions** were seen as indirect but inevitable problems related to ICT usage. This theme only describes components relating to the **Country**, which influences ICT usage and efficiency. As one of the managers of an international resort commented:

Most of the problems are indirect problems.

Most of the interviewees raised such indirect issues as part of their situation when dealing with problems they faced in handling ICT activities. Their issues were mostly focused on local conditions. These conditions were the result of organizations having to rely on existing infrastructure and human resources which influence and are influenced

by socio-cultural issues, vulnerability, and existing policies. The literature also shows that such local contextual inevitabilities shape the environment for ICT or e-business usage. These inescapable matters also involve normative obligations (pressure to be among other similar organizations) beyond the discretion of any individual or organization, that must be taken into account (Meyer & Rowan, 1977).

The categories described in this theme confirm that effective use of ICT or e-business in the tourism sector is influenced by the conditions in the Maldives. In other words, ICT or e-business efficiency cannot be understood without taking into account the local contextual environment. This theme is closely associated with the categories in themes two and three.

4.4 Theme Two: Sector

The second theme, **Sector**, representing the tourism sector, is derived from findings related to tourism sector factors influencing effective ICT use and development. It particularly focuses on the relationships among and across organizations related to sector behaviour. Table 17 shows the major categories in the theme and the low level categories from which they emerged. (The low level categories are *italicised* in the text for easy reference.)

Table 17: Constructions of the key research theme Sector

Major categories in the theme: Sector	Low level categories
Collaboration	<i>governance issues</i>
	<i>sector harmony</i>
	<i>work culture/environment</i>
Sector practices	<i>customer expectations</i>
	<i>marketing management</i>
	<i>marketing strategies</i>
	<i>pricing strategies</i>

This second theme relates more specifically to tourism sector issues and dynamics underpinning the effective use of ICT, identified by interview responses, as briefly highlighted in the Table 18 (summarised in Appendix 5).

Table 18: Organizations response to Theme Two: Sector

Major categories	Low level categories	Organizations
Collaboration	governance issues	A, D, F, G, M, Q, S
	sector harmony	A, B, C, D, E, F, G, H, I, J, K, M, N, O, Q, R, S, T
	work culture/environment	A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, Q, R, S, T, U
Sector practices	customer expectations	A, B, C, D, E, F, H, K, L, M, N, O, P, T
	marketing management	A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S
	marketing strategies	A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, U
	pricing strategies	A, B, C, F, G, H, I, J, K, M, N, O, P, Q, R, S

The two major categories, **Collaboration** and **Sector practices**, have been created from field data. The first major category, **Collaboration**, covers issues relating to sector structure along with subsequent trends anticipated by the sector. The second major category, **Sector practices**, covers the expectations and management strategies which

affect ICT usage in the sector. These major categories, along with the low level categories are discussed in subsequent sections.

4.4.1 Collaboration

This major category relates to issues hindering strategic cooperation and effective use of resources within the industry's organizational field. More specifically, it refers to the disconnection within the industry in relation to ***governance issues***, ***sector harmony***, and ***work culture/environment***. These low level categories emerged from the open codes during the comparative analysis process. The open codes created from data relating to these categories are listed in Table 19. (The open codes are *italicised* in the text for easy reference in subsequent discussions.)

Table 19: Components of category Collaboration

Major category	Low level categories	Open codes
Collaboration	<i>governance issues</i>	<i>Political influence, power of the elites, perceived disparity in power, small players overlooked, cooperation with other industries, cooperation within the agency, effective strategic planning, lack of sector knowledge.</i>
	<i>sector harmony</i>	<i>Domination, relationship with government authorities, lack of involvement of small players, disparity in influence, need for unity, relationship with contenders, competitive price setting.</i>
	<i>work culture/environment</i>	<i>Weak management, availability of cheap labour, lack of commitment, high staff turnover, opportunities to fulfil potential, age/experience, inertia, lack of awareness of top management, resistance to change, standard employment conditions.</i>

4.4.1.1 Governance issues

Within the major category of **Collaboration**, elements of the low level category, ***governance issues***, are shown to be affecting not only the objectives of the Maldives Tourism Master Plan, but also the overall strategic objectives of the industry. ***Governance issues*** include the influence of sector business executives or elites, and coordination among various tourism sectors such as travel agencies, safari vessel operators, and government authorities. Government institutions were seen by

participants to be key players responsible for harnessing relationships within the institutional field for the benefit of the industry.

However, some of the interviewees from government agencies admitted that the government is influenced by powerful, vested interests (*political influence*). In fact, one of the government authority interviewees explained how such elite-interests affect the prerogative of the government to enact certain regulations:

What happens is for it [regulations] to be discussed it goes to the stakeholders [represented by the elites], right! They are not positive to that because they lose in the end, right! ...So they are not taking it positively.

Further, an interviewee from the government authority confessed their helplessness towards the elites' influence (*power of the elite*) to forestall regulations:

We cannot impose anything on them without discussing it. At the discussion stage they would want to reject it.

In this regard, some of the members of the less powerful sector organizations asserted the need to change the system of government that perpetuates elite interests (*perceived disparity in power*). For instance, when talking about protecting the safari cruising business, one of the safari vessel operators emphasised:

This is something that cannot be done without having pressure on the people who have an influential factor.

Additionally, less influential interviewees explained that the contributions of some of the segments of the industry were understated (*small players overlooked*) by the relevant government authorities. For instance, while addressing issues in the Tourism Master Plan, one of the safari vessel operators noted that although safari vessel operators contribute above 10% of the total bed occupancy of the country, little attention was given to promoting their activities. Such underrating of this part of the sector, especially at the strategic planning stage, appears to be the result of negotiations between the government authorities and the existing stakeholder groups which often comprised the elite. Statements by government authorities suggested infrequent encounters with groups from different segments in the sector. The lack of an inclusive approach is shown in a

government authority interviewee's remark regarding formulation of the marketing plan. He commented:

That is our first meeting of that sort, this year before we did our marketing plan that is only one meeting we had with them.

Although the sector is highly dependent on other sectors, there appears to be a distinct lack of collaboration between and among them (*cooperation with other industries*). For instance, in the Maldives training professionals for the sector is a mandate of the Ministry of Education. The employment of at least 50% local staff in any organization is a decree of the Ministry of Employment and Labour. But these *policy* issues do not seem to be taken into account under the new strategies from other government authorities. While discussing issues pertinent to tourism expansion, one of the government authority interviewees commented that:

To tell you the truth, we don't know what their [other government agencies] plans are.

Furthermore, a similar situation appears to exist among various sections even within a single government organization. This lack of efficient *cooperation within the agency* was reflected in comments by government authority interviewees, such as:

The promotion board [section responsible for tourism promotion] is a different place and this is a different place;
and:

Here, there isn't much of a relation to IT [Information technology section].

Such outright expressions show a lack of cooperation resulting in deficiency in sharing and utilising available resources, which in turn impedes the effectiveness of the government's strategic planning (*effective strategic planning*) and execution process. According to the interviewees, government authorities often pass the onus of implementing the strategic goal outlined in their Strategic Plan to others. The confusion about who is responsible was reflected in responses to questions on attainment of strategic objectives. For instance an interviewee from the marketing department of the Ministry responded thus to a query regarding the marketing plan:

I think that [marketing plan] is not from [their department name], it might be the ministry, who will run it. But that area would fall within [their department name].

Furthermore, the organizations engaged in implementing these strategies were not fully equipped with knowledge of the sector (*lack of sector knowledge*). For instance, one of the managers among application service providers working in providing merchandised accounts had the impression that:

I don't think we will have a [high rate of requests for merchandise accounts]. I don't think [person in-charge] wishes to give [opportunities to open merchandise accounts] to a large number of people.

4.4.1.2 Sector harmony

Closely associated with *governance issues* is the issue of *sector harmony*. The organizations do not appear to embrace unity, harmony, and integration. One reason for this was that the sector appears to be largely dominated by the major business elites, who have a substantial degree of power (*power of the elite*). More precisely, as the head of the longest serving association in the country asserted:

Chairman of the [public-private corporation] is our vice chairman, The Finance Minister is our Chairman, and [he is also the] Chairman of [a government Aviation Company] is our chairman, so you know in this sense. And ...the people they advise is to the president and to the government.

Apparently, the sector is compliant to these elites' interests and influence over tourism development. Thus, most of the large organizations described their *relationship with government authorities* as commendable.

That is an office, anytime, to any person working in the tourism sector, who welcomes us

Conversely, some of the less powerful organizations (especially small organizations) had developed a sense of cynicism towards government authorities:

What can they do? (*Manager of a Hotel*)

Consequently some of the less powerful members were reluctant to participate in activities organised or arranged by government authorities to enhance competitiveness of the sector (*lack of involvement of small players*):

Don't want to go to a fair in relation with them (*Safari vessel operator*).

Likewise, although industry associations claim to represent the entire sector, they were perceived by members of sector organizations as being indifferent towards them (*relationship with stakeholders*). For example, when sharing expectations of an industry association, a manager from an organization with a single resort noted:

[Association name] is not doing enough to regulate some of the things that we see.

Another reason was that the existing sector organizations fail to serve the needs of the entire sector. However, until very recently, the different segments of the industry were not able to lobby new industry associations to address their needs (*need for unity*). For example, while explaining problems related to unregulated inbound safari boats, one of the safari vessel operators noted:

We have been requesting the government since 1996. We have been talking individually and as a body; we hope that will make a difference. That is one of the reasons why there should be an association.

The protracted task of finding a tactic to address the pressing need of their segments was also impeded by the *lack of relationship with competitors*. Although most of the interviewees from large sector organizations engaged in resort business described such relationships as good, this was rare among small businesses or organizations belonging to other segments of the industry. For instance, one of the managers of a travel agency admitted:

We don't have much of a relation with other people.

This lack of collaboration results in a corresponding lack of the efficiency that working alliances can bring, affecting the entire sector. For example, lack of cooperation leads to financial competition such as *competitive price setting*, as reflected in the comments of interviewees such as:

We are not actually competitors in the sense. We are competitors in the sense when it comes to giving rates.

And:

Relationship is ok with other places, and then the problem is the price.

4.4.1.3 Work culture/environment

Within the major category of **Collaboration**, features of the low level category, **work/culture and environment** were crucial to hampering the strategic use of available resources for the industry. Levels of understanding and poorly developed relationships between, among, and within organization members affected organizational knowledge and efficiency, thus hindering effective use of ICT in the industry.

Many of the interviewees addressed conditions associated with the work environment and embraced the shared values and orientations among its people. Closely connected with *social-cultural influences* is the attitude of the workers in the sector. As indicated earlier, most of the industry organizations have a relaxed work environment (*weak management*). One application service provider reports that while the industry has a relaxed approach to management, there is hope for improvement. He further described these issues:

Industry is running on such a slow pace, people are not really bothered about actually spending the additional money to get enhanced services.

This complacency in management is compounded by the *availability of cheap labour* from neighbouring countries, which is perceived as an alternative to investment in IT to enhance service. As one respondent explains:

What happens now is, most of the resorts owners, for them it is much easier to keep a [Sri Lankan] just to do that work, for 80 dollars a month rather than spending that additional money. So, 3 years down the line, the total spending is much lesser, so it makes more sense for them. What happened in one of the resorts is that, because they had a far away restaurant and they needed to lay the cable up to that, we told them the best solution would be to have a fibre optic cable there. To connect it through a fibre optic cable. Then resort GM [general manager] said that, it makes more sense for me to have a person and to give him a bicycle so that he can ride up and down. So, that he can post the bill immediately here. So, still in other words things like that, people are actually moving towards a better solution. So, when we look at the cost effectiveness, they don't need such fast pace solutions, most of the time it doesn't make sense for them to specially invest as well. That's the main reason.

Another reason for the employment of foreign expatriates is the tourism sector's belief that the local work force has *lack of commitment*. Indeed this belief was substantiated by the view of one of the heads of the industry association:

Young people do not want to work in those jobs available in with these industries.

Seemingly, one of the reasons for this lack of commitment is the lack of *standard employment conditions*. There are currently no statutory provisions or generally accepted standards for employers to take action. If any, such codes of conduct or regulations are set by a contract between employer and employee which is often disregarded, especially when dealing with the local workforce.

When you look at HR none of the companies in the Maldives run on a particular standard ... According to the system in the Maldives, boss decides who will have the rights. Actually there isn't a standard in any of the companies in the Maldives, whether it's a ministry or a government body, there isn't.

Consequently, like many other labour-intensive industries, the tourism sector is struggling with *high staff turnover*. (Discussed under the theme: **Country, low level category: Human capital**). It was observed that most of the IT personnel were new to their jobs and that most of the IT personnel in resorts were foreign expatriates.

Additionally, in an environment with demand for skilled workers soaring, especially IT, the skilled personnel who are young and enthusiastic and are seeking ways to utilise their potential (*opportunities to fulfil potential*) are often frustrated in dealing with the top management. Their frustration reflects the lack of trust and *awareness in top management* to engage or use the potential of available skilled staff. Amidst much frustration, an IT manager of a large local chain of resorts argued:

Actually the top management in all the companies in the Maldives needs to be totally educated in e-commerce. So, actually very many people don't want to switch over.... Public awareness, management need to be made aware.

Furthermore, he noted that although people were assets, they had also become a liability to their organization. Imbued with old management styles, the older generation is reluctant to change. He described his experience:

Very often, there comes to a stage of fighting with the management. Having to go through such frustrations, I am a person who has resigned twice, ... For example on-line reservation, on line reservation is also something which took over a period of 2 years to convince them.

Amongst the young talented and enthusiastic people in the IT field, those deprived of formal education are challenged by their capabilities in finding a niche among IT

professionals. As one of the local IT staff in an international resort chain noted, they are often judged by their *age/experience*. He shared his experience:

The problems was I am their youngest IT guy in [name of the international chain of resorts] so they don't believe me...I did a small proposal and I send to head office to get approval so they said the proposal was really nice but they are not sure about me that I can do it. Because normally the [IT personal in the international chain of resorts] are pretty old guys, they are about forty. I met couple of guys who really understands php but...those people they don't have an idea of changing - they always want to hook up with what they have as long as it works fine - but me and this Chinese guy [his name], we both fight. We said we are going to do something, so we need to develop, but I mean convincing them is like a big issues you know those people are really, one side we have to hold money and next side we have to release it one by one they always think about profit side. Convincing them it's a big deal, so I spend like two months to do it. So what I did was I said 'I am going to develop a sample application, I am gonna send it to you then you will know how it works and after this you can approve'. So I started doing it and a small demonstration. I send it to head office and there our director approved; basically which was really nice.

As reflected in this excerpt, even in large organizations, both local and international, local IT personnel have to contend with *inertia* and prejudice against change (*resistance to change*). Ironically, it was observed that it was less challenging for “new” expatriate workers who join the organization on a short-term contract.

As a result, one of the technical managers noted one of the most common problems facing the industry is high turnover of technical personnel:

The common problem is the IT person of the resort leaving and the new IT person coming and doing something to the network which causes some problem. Normally there are foreign IT managers in the resorts.

However, it was observed that most of the organizations in the sector do not perceive turnover as incurring a higher risk in the sense of losing experienced people.

4.4.2 Summary of Collaboration

The findings show that *governance issues*, *sector harmony* and *work culture/environment* experienced by the organizations and institutions within the organizational field seems to be less driven by the need for efficiency than social/industry actors believe.

The tourism sector appears to be driven by political influence from the business elites. In particular, government institutions seem to rely strongly on powerful elites who claim to facilitate the goals of their development while smaller players in the industry lobby strenuously for the protection of their privileges. Furthermore, this research has shown that not only does the delay in the execution of strategic plans within institutional environment/organizations such as government authorities hinder effective ICT usage, but also that coordination within and among these members and supporting institutions affects effective ICT use.

Sector harmony is also influenced by the dominance of the elites. The relationships among various segments of the industry are rather weak. The lack of unity and harmony within this varied sector has led to lack of involvement of small players and the possibility of detrimental competition. Moreover, the mandate of institutions such as government authorities and associations was questioned.

This lack of a collaborative culture could be observed even within the work environment. Because of the availability of cheap labour from neighbouring countries top management are able to continue with their “relaxed” approach to management. On the other hand, IT personnel, especially talented local ICT staff, tend to resent the indifference and prejudice with which others treat them. This lack of **Collaboration** tends to result in loss of organizational knowledge and efficiency.

4.4.3 Sector practices

Within the theme of **Sector**, some of the low level categories associated with the major category of **Sector practices** were created largely because these activities were closely associated with the effectiveness of ICT usage in the organizations. These issues – *customer expectations, marketing management, marketing strategies, and pricing strategies* – were described by the interviewees as areas largely technology dependent and closely related to the sector activities critical to enhance their businesses. A set of open codes was created from the interviews to illustrate the low level categories listed in Table 20. (The open codes are *italicised* in the text for easy reference in subsequent discussions.)

Table 20: Components of category Sector practices

Major category	Low level categories	Open codes
Sector practices	<i>Customer expectations</i>	<i>approach to bookings, ICT demand, personalised customer services, customer loyalty, local staff, customer retention, second home</i>
	<i>Marketing management</i>	<i>Allotments in marketing, international tour operators, relationship with tour operators, charter market, contracting out marketing, overbooking, existing IT tools in marketing, up-market, lack of finances, foreign investment</i>
	<i>Marketing strategies</i>	<i>Branding, trust, customer loyalty, product promotion, consumer focus in marketing, language, market segments, occupancy rate</i>
	<i>Pricing strategies</i>	<i>Inflation, component in pricing, lower pricing, approach to pricing, room rates, fixed rate, Free Independent Travellers (FITs), Preferential rates for locals, inconsistency in pricing</i>

4.4.3.1 Customer expectations

Within the major theme **Sector practices**, ***customer expectations*** were a crucial aspect of tourism as a service offering. It seems customers are becoming increasingly more knowledgeable and complex. This dramatic change of pace requires the sector to rethink its approach to customers' needs.

The development of the Internet has provided convenient access to information, making the Internet a basic tool for customers in the tourism industry. The dramatic increase in demand for customer service and the need for instant answers was also crucial in customers' *approach to booking*. One of the interviewees from a travel agency expressed:

Some clients want to get the service of people who response to them at the earliest.

Additionally, with the ubiquity of the Internet, customers stipulated the Internet services they required (*ICT demand*). In this regard, one of the managers of an organization with a single resort acknowledged:

Sometimes guests complain because we don't provide Internet to their rooms.

Even though the existing services do not meet the desired level of customer expectation, a number of interviewees recognized that consumers' needs are met by the Internet and telecommunication. For instance, one of the safari vessel operators stated:

Safaris to have the Internet are important. The guests want that service.

One telecommunication service provider also commented:

Person coming to Maldives from any part of the world would want to roam even when they are on the beach.

Thus, with demand for availability of ICT services, some of the sector organizations - especially the international chain resort managers - acknowledged that increasing demand for services is one of the key components to competing in the market. They deem "customer service reigns" and offer *personalised customer services*. One international chain resort manager pointed out:

The natural beauty plus our services are the main attraction. We really take care of them, we give a personalised service for them.

Consequently, as purveyors of services, addressing these needs was of paramount importance. The international chain resorts included in this research had software applications to manage customer services, which played a critical role in providing services. One of the managers of a renowned international chain resort explained that such exceptional services had fostered *customer loyalty*:

We try and adapt and deliver it according to what the guest needs,

And:

It's the service that really differentiates what they want to come back to.

Similarly, an commitment to enduring relationships was also shown by close bonds between customers and staff. Interviewees acknowledged that staff (*local staff*) are critical assets for *customer retention*. Customers seek and value the services they provide:

Most of them come back because of the staff and not because of the bungalows,

And:

Repeaters doesn't necessarily come for the island, they come for the staff.

Furthermore, there was a special affection toward Maldivian staff:

They look forward to interact with the local Maldivian staff.

According to some interviewees, customers expect the resorts to have the ambience of a *second home*.

For a lot of people this is a second home.

4.4.3.2 Marketing Management

Marketing management was a major activity of **Sector practices**. The approach to marketing management lies at the very hub of tourism. This research showed a huge chunk of bed capacity in the Maldives tourism industry is filled by large *international tour operators*. A number of resorts allocated 100% (*allotments in marketing*) to these tour operators and shared a close *relationship with tour operators*. Furthermore, the marketing management seems to move into up-market and increasing foreign investments.

The majority of interviewees from the resort sector noted that the conventional approach to managing the market, that is, selling a large amount of bed capacity to the tour operators, although reliable, generates less revenue. For example, one manager from a local chain resort explained:

Our major, the chunk is coming from the tour operators...our FIT and [an online website name] rates are obviously very high compared to tour operator... we try to strike a balance that profit also, because they give continue business.

Although many of the organizations depended largely on the tour operator market, different types of organizations had diverse approaches to managing them.

Some of the resorts and safari vessels have sold their marketing to a single *International tour operator* and thus, solely depend on them (*charter market*). This was the conventional method and is practised in locally managed resorts. For instance, a manager of one locally managed resort explained:

We don't do any marketing job. Very easy way to do, we are having the island. .. We choose this tour operator as the one who is going to give a service. These people are giving us a service, we are paying them. The service is to provide us the guests

Contracting out marketing is another approach taken by some resorts marketed by international tour operators. The manager of a locally managed resort said:

Here they look after the reservations; there they look after marketing.

Other resorts take a slightly different approach, such as selling 100% or more of their bed capacity to a number of tour operators (*overbooking*). Some experienced people, such as large chain resort operators, noted that:

Although 100% was allocated from our own experience, we know that about 30% they won't be able to sell it. Then that 30%, will be handled by our team people.

The tour operator business, the advantage is if we allocate 10 rooms and we expect them to perform at least 5 rooms...we hope that we can fill about 70% of the rooms by tour operators.

This approach often results in overbooking bed capacity or even going to the extent of allocating above 100%. Thus, these resorts have to find ways to manage any inconvenience that may arise (*managing overbooking*). As emphasised by a large chain hotel manager:

Every resort will overbook, because there will be last minute cancellation, there will be rooms available. In the worst case scenario we will try to reallocate the room, to a similar property, probably within our group, or may be a comparable property in the Maldives.

Individual resort managers find ways to tackle such situations slightly differently, such as moving the clients to safari boats or, as explained by the manager of a small resort:

We move them out...to some other resort...a nearby [resort] island.

On the other hand, international hotel chain operators manage their marketing function in a different manner and view overbooking negatively. According to an International hotel chain IT manager:

Actually there is a link between the online software and the Fidelio software, ok! That is the reason why it keeps checking the availability of the rooms, daily. The availability should tally in Fidelio as well as in the Internet. Because it is the availability doesn't tally if it shows wrong sequence than it will lead to a big chaos.

One of the reasons why local resort operators hesitate to use some of the *existing tools in marketing* in their organizations is because they feel that it acts as a barrier to their performance. According to a local chain resorts IT manager:

Overbooking cannot be done in a central reservation. Impossible. That will be very hard, overbooking. That is why most people in the Maldives they won't agree, most people do not want to go for a central reservation. The main reason is that [where that refers to the above explanation]

Interestingly, there is a general consensus that the organizational objective is to use *existing IT tools in marketing*, such as online reservation and information sharing through the Internet, because it is for the profitability and high yield of the company (*Marketing Manager of small local resort*). IT has proven to be one of the tools used to reduce costs in marketing (*using the system reduces costs*) as shown by the following quotes from diverse sources:

Now we don't post any CDs now, so we are saving a lot of money and a lot of time is saved because they can instantly download anything (*Marketing manager of small local resort*).

We distribute our information through our website, and especially photographs we keep it in the Internet, keeping that, we tell people to download photos from a particular site. This is actually one of the progresses that we get from IT. Otherwise we have to do it physically, either a CD or slide need to be sent. But now that era is gone. Now basically we tell them to download from one of our sites. Then that is one reason for that. Then another thing is because the bookings are increasing and their activities are going ahead in this direction and we do get request to make agreements with Internet based tour operators (*Manager of a large international chain resort*).

While the usefulness of IT is seemingly obvious, there is still hesitancy towards using IT solutions in managing markets. According to a software application service provider:

But now website marketing is introduced, the solution is available, but people in the Maldives do not want to use those solutions, yet. That is how it is. At the moment, that is one thing that we are working hard. But, so far (shrug his shoulders)!

Furthermore, the sector seems to be targeted towards *up-market tourism*. Following this trend, a number of interviewees noted that existing resorts are up-marketing their product and new resorts are being established in response to tourism expansion in the country.

During last year especially, when the new resorts started to come in, we very much noticed that most of the resort-operated companies also bring foreign managements, develop standard templates, and make standard marketing strategies.

Despite these changes, some of the local contenders felt they could pursue and sustain their competitive advantage by positioning their products in the market. One interviewee from a large chain resort commented:

We really position ourselves when we look at the market.

Consequently, the existing tour operators are compelled to reposition these Maldivian tourism products accordingly. One of the marketing managers of a local large chain commented:

And operators who had been operating four star resorts now have to change their packages and programme to fit the trends in Maldives.

Additionally, the ensuing expenses required to manage and market the newly developing resorts, coupled with a rise in inflation, are becoming a major concern for the sector. The rise in inflation and the *lack of finances* available are forcing the tourism sector to sell out to foreign investors (*foreign investments*). As one head of a tourism association described:

The way it is structured at the moment, the volume of finance, that is required is very high, so it is difficult for people to obtain that kind of finance here. And also because of that, it is people even Maldivians who win these, what they called bids, sell these off to foreign concerns or people from overseas who have the money.

4.4.3.3 Marketing Strategies

Within the **Sector practices**, closely associated to **marketing management** is **marketing strategies**. In other words, the control and organization of marketing is driven by the approach (or plan) used to achieve success. The findings show that across the sector, tourism is gratified by performance in marketing.

For the Maldives, the demand is higher than the supply. We don't feel the difficulty because we are getting people from the level we want, the standard of operators that we require (*Manager of large chain resort*).

We have less worries about that selling ... [tourists come] so long as it is the Maldives, people say it's a common image promotion or the Maldives (*Marketing manager of small local resort*).

Such openly proud statements from contenders in the industry support the claim that the approach to marketing has been effective. The Maldives Tourism Promotion Board (MTPB), and Ministry of Tourism have been acclaimed for their effective strategy of advertising the Maldives under the brand name “*the sunny side of life*” (*Branding*).

Thus, branding is seen as an effective strategy. Local hotel chains are also trying to promote their products under brand names. Branding products is believed to be of the most effective ways to build *trust* in customers.

It is much better. The budget itself is also lower. And when a brand is created, since the service at our resorts is at the same level it is very easy for us to convince a customer coming to one resort to go to the other one. We have that now; we weren't able to do that before.

In addition, building trust may also engender *consumer loyalty* to the brand. According to the manager of an international chain resort:

The brandings speaks for itself and there are people who really come for the name itself. They look familiar and they know the level of service.

Building consumer loyalty increases the likelihood of promotion by spreading positive word-of-mouth recommendations (*product promotion*), as acknowledged by various interviewees across the sector:

Apart from this Internet, and campaigning whatever we do, its word of mouth, you know that reaches the most. The neighbours or whoever, when they want to ask a destination, they will simply recommend the Maldives, they would simply recommend [resort name], because based on their experience (*Manager of a local chain resort*).

Many people stay here and they recommend the place to others (*Manager of a Hotel*).

I know they will send their friends too, because they can trust (*Safari vessel operator*).

It becomes apparent that marketing or promotion is largely affected by trust in branding and consumer loyalty to the product. Often such reliance on loyal customers has become the main source of consumer attraction, especially for small businesses such as safari vessel operators and hotel managers. These businesses feel promotional activities such as *advertising* in magazines and on the Internet has little effect on business.

Online marketing, even now we do and advertise on magazines but its return is very limited (*Safari vessel operator*)

We did publish in the Hello Maldives [Maldives tourism magazine] for some time and we didn't see a difference because of that, we did not see people coming because they have seen [the hotel] from it. (*Manager of a Hotel*)

Analogous to the government's approach to marketing, large and more strategically oriented organizations within the industry recognize marketing on the Internet, magazines, and media such as television to be robust.

Basically we did a research with our sales team on how people know about the Maldives what are the main sources and how, mostly from Internet Google search next thing is email. I would say ninety seven percent of market depends on our travel agents and magazines. So we always have some sort of magazines so many people around the world are coming to see the place (*Manager of international chain resort*).

What we do is, using the media and travel writers and in addition we do especially use TV media, we do use it. Then advertise on newspapers and magazines. Then when we market our products we try to focus on certain segments, some kind of islands, this island to this particular segment, like that wedding and honeymoon that is the market we target this particular island (*Manager of local large chain resort*)

Large industry organizations, especially resorts, give strong emphasis to the type of consumers (*consumer focus in marketing*) and also consider individual elements such as *language*.

Operators who had been operating four star resorts now have to change their packages and programme to fit the trends in the Maldives. So a lot of the mainstream operators now have an upmarket brand, and when our resorts become upmarket, they automatically fit into their upmarket brand (*Manager of local large chain resort*).

I ensure that [organization] name and [organization name] rates are published in maximum number of brochures that read by the spectrum of consumers. We ensure that we have our brochures published in multiple languages, because we have people coming from all of 50 nationalities a year. (*Manager of local individual resort*)

Publishing information in multiple languages helps capture various *market segments*. This is critical for sustaining a high *occupancy rate* throughout the year. The Maldives has two tourist seasons; high season and low season. Conventionally, the high season corresponds to the European winter and the low season to the European summer. However, a strategic approach to tourism, coupled with the increasing demand for the Maldives as a popular tourism destination has increased demand for the low season. These findings are substantiated in interviews:

High season is from December, November to end of April. Europeans often travel during this period. Large part of our market is covered by Europeans; we have most

arrivals also from Europe. Then we have low season, April. May, June July, we have a number of Japanese, and Koreans. April, May, June is the Honeymoon period in Japan. During this period a number of them visit. We have a major share with Japanese and Koreans. There is quite a number of Koreans in September and October. *(Manager of local large chain resort)*

We don't depend on one market; we have quite a lot of markets. The Mediterranean and Spanish and Portugal market is very much a summer market and Italians and Germans don't come during the summer so that side is covered for us. On the Asian side, Korean honeymoon season is May June July, and also September October, which is our summer season and when we need bookings. So the seasonal fluctuations are minimised. Previously in the Maldives we were very much dependent totally on European market, so during the summer we might as well close the resort. But now that has changed. *(Manager of local large chain resort)*

The ultimate objective of these marketing strategies is to improve the overall performance of the industry, which is often attributed to major indicators such as tourist arrivals, occupancy rate, and etcetera. Figures published (as shown in Table 21) on the Third Master Plan of the Ministry of Tourism and Civil Aviation reflects a steady expansion.

Table 21: Tourist Bed nights, Occupancy rate and Average Duration of stay, 2001-2006

Year	Tourist arrivals	Tourist Bed Nights	Bednight growth (%)	Occupancy Rate (%)	Average Duration of Stay (days)
2001	460,984	3,932,748	-0.1	65.6	8.5
2002	484,680	4,066,640	3.4	69.0	8.4
2003	563,593	4,704,601	15.7	77.2	8.3
2004	616,716	5,110,587	8.6	83.9	8.3
2005*	395,320	3,300,125	-35.4	64.4	8.3
2006	601,923	4,826,162	46.2	81.4	8.0

* The figures of 2005 figures reflect the adverse effect of the Asian Tsunami in December 2004
(Source: Ministry of Tourism and Civil Aviation, 2006b)

4.4.3.4 Pricing strategies

Pricing was found to be one of the important attributes influencing **Sector practices** to achieve competitive advantage. Pricing was not only affected by economic measures and product components but also by the changes in the sector in terms of market, product, and approach to marketing.

Foremost, the industry was largely affected by currency fluctuations (*inflation*). This could be attributed to the foreign exchange policy. Even though the main market for

tourism was Europe, the local currency (Rufiyya) is pegged to the United State (US) dollar. As one manager noted:

Our prices are done in US dollar. We lose quite a lot of money because of the negative fluctuations.

Additionally, during the time of the interviews, most of the interviewees lamented soaring fuel prices in the international market (*components in pricing*). This comment from one interviewee highlighted how significantly it affected them:

Large portion of [managing a resort] is affected by fuel...but with our agreement with tour operators regarding room rate, those prices cannot be changed within the agreement time period .

Such arrangements were often made, especially among sector organizations managed locally. Often, local tourism products were offered at a *lower price* to tour operators/charter market. A member of a supporting organization remarked:

Let's say for example 600 dollars rec rate things [rooms/package], they give it to 250 dollars.

Regardless of the influence of currency and fuel prices, a major transformation in terms of products and marketing is evident. Many of the interviewees described how their *approach to pricing* had changed. For instance, a manager of an organization with local chain resorts explained:

Tour operators has also changed their packaging style and for example they have include spa package, diving they might include, water sports activities they might include, then again, using a concept called all inclusive, they might want to include the all inclusive prices in it.

This situation was compounded by the variety of products offered to the sector organizations. Most resorts were targeting their products as up-market (See 5.4.3.2 *Marketing Management*). Thus, as one of the interviewees noted, there was a sharp escalation in *room rates*, especially among the up-market resorts:

What I am saying is the product has changed. It has moved from \$1000 plus to some above \$2000.

Such a trend tends to complicate the existing relationships with tour operators, leading to tough negotiations in pricing:

We have to haggle over rates quite a lot. (*Marketing manager from an organization with local resort chain*)

Interestingly, most of the international chain resorts among the sector organization have a different approach to pricing. They tend to have a *fixed rate* which is often displayed on their website or available online. According to interviewees, a marketing strategy intended to attract free independent travellers/tourists (*FITs*), was believed to be the most profitable. But many of the sector organizations were not in a position to attract such a market, as pointed out by a marketing manager from an organization with local resort chain:

FITs are profitable, but FIT traffic is low and charter market is guaranteed.

Paradoxically, the consequence of having fixed rates in the sector was that local travel agents keen to market their product were deprived of *preferential rate* to run their businesses:

They don't give any preferred rate. All local agents gets FIT (Free independent traveller/tourist) rate.

Furthermore, problems relating to *inconsistency in pricing* are evident. Some organizations prefer to offer multiple pricing to FITs and travel agencies, in order to overcome the last-minute unsold inventories. Such offerings create difficulties in meeting customer expectations in terms of the provision and quality of services. Consequently, as one of the managers of a single resort noted:

Uniformity is lost and consistency is gone and what happens is we are losing a lot on name.

Some of the interviewees note that such negative activities will affect the long-term sustainability of the sector.

4.4.4 Summary of Sector practices

Under the major category of **Sector practices**, the low level categories of *customer expectations*, *marketing management*, *marketing strategies* and *pricing* were closely related to ICT environment.

Data has shown that customers are becoming increasingly knowledgeable and their requirements increasingly complex. Their approach to booking and fulfilling their service expectations necessitates moving beyond “basic” services. Customers not only use ICT for bookings, they also expect services such as the Internet access to be included in their holiday destinations. Personalised services, timely delivery, relevant offers, and a comfortable, homely ambience are essential for customer loyalty and retention. Most of the organizations use a number of ICT applications in meeting these expectations.

Data shows that many resorts in the Maldives still practice the conventional approach to marketing management, which is to allot bed capacity to a well-known international tour operator or chartered market. The findings show significantly different management approaches among the various types of resorts included in this study (See Table 9 for defined types of organizations). For instance, in many locally-managed resorts, a typical policy of booking/overbooking often led to “unhealthy” alternative solutions, whilst the international large chain resorts used advanced technologies to circumvent such problems. Also, quite a number of the locally managed resorts were listed on global distribution channels in affiliation with large international tour operators. However, the findings showed a number of changes are taking place. Not only is the sector experiencing a new trend of moving towards upmarket, coupled with an increase in foreign investments, it is also influenced by changes in the market; as one technical service provider commented:

There are some changes in their thinking ...they are changing along with the market changes.

Closely associated with marketing management is the concept of marketing strategies. Image-building efforts of the MTPB, using the brand name “*the sunny side of life*”, received much international and national acclaim. Thus, a number of sector organizations deemed branding as a potential tool to build trust and engender loyalty. Among the sector organizations, especially small businesses, promotion based on trust, loyalty, and relationships with customers was perceived as a core element of their marketing strategies. Large industry organizations not only focused on such activities but used other means of marketing. They recognized that advertising in various forms of

media venues, with a strong emphasis on customers and market segments, was critical to businesses. However, a number of organizations were did not engage in conducting e-commerce activities through their own websites but instead had their presence on another electronic distribution channel.

A closely related element of marketing activities is pricing. A number of sector organizations, being dependent on the conventional approach to marketing management (where bed capacity is over booked), posed major challenges to pricing due to economic factors such as inflation. Thus, some organizations tend to have multiple price offerings among travel agencies and FITs to overcome last minute unsold inventories, thereby distorting the tourism image. Interviewees were aware that consumers are in a position to compare similar products across online retailers. Additionally, some organizations were facing tough negotiations with existing relationships/tour operators due to new products and services in the industry. Findings show that international chain resort operators tend to have a more prudent approach to pricing. They tend to have a fixed rate which is often displayed online. The corollary was that travel agents were often deprived of preferential rate.

4.5 Sector Summary

Figure 11: Relationship between the theme two and its major categories

Within this second theme: **Sector**, the categories of **Collaboration** and **Sector practices** describes sector imperatives underlying effective ICT use. As illustrated in Figure 11, the two categories are interrelated. **Collaboration** within the organizational field shapes and directs **Sector practices** within the industry as a whole. Simultaneously, **Sector practices** are directly influenced by **Collaboration** issues. The **Collaboration** issues - *governance issues, sector harmony, and work culture/environment* - stem from the

organizational field, whereas the issues related to **Sector practices - *customer expectations, marketing management, marketing strategies,* and *pricing*** - originate from activities among the sector organizations, and are closely associated to ICT and e-business usage.

The **Collaboration** issues stemming from the organizational field indicate potential for anarchy and threaten the industry's sustainability. Institutional theorists posit that institutional rules are not fixed and formation of institutional structures depends on social interaction (DiMaggio & Powell, 1983; Scott, 2001), and these structures within the institutional field create asymmetrical power relations among their members, rewarding dominant participants while sanctioning others (Phillips, et al., 2000). Thus, **Collaboration** among sector members as well supporting organizations shapes the industry and influences its level of ICT use.

Within **Sector practices**, issues of *customer expectations, marketing management, marketing strategies,* and *pricing strategies* influenced ICT usage. Research on utilisation and diffusion of new technologies shows the importance of sector or industry level context (Newell, Swan, & Robertson, 1998). Although there are significant differences among various types of organizations in the tourism sector organizations used in the study, their lack of collaboration and the strategy of trying to compete with international competitors have major implications to the practices. As one IT manager from an organization with local chain resorts explained, comparing their business with international chain resorts:

Even though product look alike, their tour operators, their target market, everything is very different, so we try to copy things from successful properties, you know but those properties may not look at us in an equal level.

As highlighted by Hannan and Freeman (1984) the organizations within the industry or the organizational population face similar environmental vulnerabilities, fostering similarities in structure and adaptive capabilities (Hannan & Freeman, 1984). Such a perspective provides in-depth conceptualisation of ICT within the sector (discussed in Chapter 6 – Identifying Institutional Forces and Building Theoretical Framework).

The issues arising from this theme are: **Sector**, confirming that the degree of effective usage of ICT or e-business is largely related to the lack of **Collaboration** within the organizational field and the adaptation of **Sector practices**. An inter-relationship between the themes is evident with the next theme, **Sector**, largely dependent on theme one, **Country**, and the causes and consequences leading to theme three, **Information Systems**.

4.6 Theme Three: IS

The third theme: **IS**, representing the Information Systems domain, is derived from findings related to organizational factors influencing effective ICT use and development. It particularly focuses on the technological expertise of staff and their status in using ICT for technology-dependent activities in their organizations. Table 22 shows the theme's major and low level categories. Two major categories, **Perception of ICT** and **exploitation of ICT**, emerged from low level categories. (The low level categories are italicised in the text for easy reference).

Table 22: *Constructions of the key research theme: IS*

Major categories in the theme: IS	Low level categories
Perception of ICT	<i>technology experience (effect)</i>
	<i>technology dependency</i>
	<i>technology knowledge</i>
Exploitation of ICT	<i>software experience</i>
	<i>web development</i>
	<i>e-distribution</i>

This theme focuses on activities undertaken in tourism sector organizations relating to effective ICT use. The two major categories, **Perception of ICT** and **Exploitation of ICT**, have been identified by the interview responses, as briefly highlighted in the Table 22 (summarised in Appendix 6).

Table 23: Organizations response to Theme Three: IS

Major Categories	Low level Categories	Organizations
Perception of ICT	technology (experience)	A, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, T, U
	technology dependency	A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U
	technology knowledge	A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, U
Exploitation of ICT	software experience	A, B, C, D, E, F, G, H, I, J, K, L, N, O, P, Q, R, S, T, U
	web development	A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R
	e-distribution	A, B, C, D, E, F, G, I, J, K, M, O, P, R

The first major category, **Perception of ICT**, relates to the industry organizations' understanding of ICT use. The second major category, **Exploitation of ICT**, relates to the level of organizations' ICT activities, based on their ICT understanding. These major themes, along with the low level categories, are discussed in the following sections.

4.6.1 Perception of ICT

This major category relates to issues resulting from organizations' understanding and ICT expertise. More specifically, it describes the **Perception of ICT** based on the *technology experience*, *technology dependency*, and *technology knowledge* of sector organizations. These low level categories emerged from open codes during the comparative analysis process. The open codes were created from data relating to these categories and are listed in Table 24. (The open codes are italicised in the text for easy reference in subsequent discussions).

Table 24: Components of category Perception of ICT

Major category	Low level categories	Open codes
Perception of ICT	<i>technology experience (affect)</i>	<i>Meeting user requirement, top-down decision making, initiative, management enthusiasm, email overloading, poor data management</i>
	<i>technology dependency</i>	<i>Email dependency, overcome geographical isolation, enhance scheduling, customer information, cost saving, information sharing, time critical</i>
	<i>technology knowledge</i>	<i>Business knowledge, short job tenure, lack of knowledge sharing, experience/expertise, local requirements, capability development.</i>

4.6.1.1 Technology experience

Within the major category, **Perception of ICT**, organizations' level of experience with technology influenced how they perceived the usefulness of ICT. As noted earlier, there seemed to be a varying degree of reluctance within the sector to deploy ICT. Although the sector organizations were largely dependent on ICT, they seemed to be struggling with it.

As indicated earlier, all the organizations had implemented some sort of Property Management System (PMS). The purchase of such a system was often decided by the organization's owner. One of the application service providers described the situation:

We deal with the owner; it's the owner who sees our Demo.

Often the information or product was not shared with the end users (*meeting user requirement*). As a result the service providers were unable to satisfy end user needs adequately, even with some basic training. As an application service provider expressed:

When we reach the implementation stage, they would say we want our system to be like this...sometimes we don't get some of the outputs that they require...at times we have to redesign the system.

The staff working in resorts, or the end users, noted the management or head office (owner's office) make most of the decisions (*top-down decision making*). For instance, when questioned about the decision to use a particular application, one response was:

This was decided by the management itself

This hierarchy seemed to limit what a person, especially an operational staff member, can do within an administrative framework. Moreover, the owners had little knowledge about the intricacies of the practical environment. Thus, even though ICT solutions were available and capable of overcoming difficulties, organizations often lacked a person equipped with the knowledge and leadership to take such *initiative*. As one of the application providers commented:

Generally in Maldives what often happens is, they don't realise the benefits that they get in investing in technology. It is important to educate them with the outputs that it would have.

Accordingly, most of the interviewees admitted that most of the functions available in their software applications were unused. When questioned about why, they often had no answer. One of the IT managers from an organization with a single resort stated:

I don't know why we are not using it.

It appears there was not an encouraging or innovative culture within the organizations (*management enthusiasm*). A lack of enthusiasm to explore the potential of existing systems was further compounded among those staff working in resort islands lacking the internationally well-known software Fidelio. Not only the executive management but most of these staff, had limited knowledge about the software but perceived it as a possible solution for their existing problems. When questioned about Fidelio, an IT manager for an organization with chain resorts admitted:

When we go for Fidelio I don't think this much error is there. It will not be there...Fidelio is so great, I heard.

The existing ICT services available appeared to be unorganised and less structured. For instance, one of the forms of communication organizations were dependent on was email. The increasing reliance on email resulted in high volumes of email sent and received (*email overloading*). Some organizations experienced major problems

managing emails. A manager from a travel agency reported difficulties attending to the emails:

That's a major problem, the mail getting blocked with junk mail and you can't send any mails. We depend so much on the emails for all the bookings and all the things.

An IT manager from an organization with local resorts pointed out:

When it comes to final confirmation, roughly about seven emails are exchanged between back and forth. So, imagine on a daily basis we have 20 arrivals, so 20 arrivals means 20 times 7 emails, so 140 emails for one day's booking, So it's a waste of time, the storage, you know, staff, all these things.

As highlighted above, the approach to managing the customer data was inefficient and resulted in wastage of resources (*poor data management*). One of the application service providers illustrated this:

When a resort operates for three years, or four years down the line, when we look at it, quite large garbage is in the system... In most places this is a problem, there are very few places where they authenticate and check the data.

4.6.1.2 Technology dependency

Closely associated with ***technology experience*** is organizations' ***technology dependency***. Despite high costs involved in deploying ICT services, ICT appeared to be contributing to the payoff in investments. ICT seemed to be a useful tool to fulfil tourism service providers' promises to deliver richer, exceptional services.

All the organizations were becoming increasingly dependent on email (*email dependency*) as a method of communicating among themselves (especially with their international counterparts) as well as providing customer service. Answering emails was a crucial marketing function, especially for the travel agencies. Thus one of the marketing managers from a travel agency asserted:

About 150 emails per day,...sometimes in order to confirm a booking we might have to pass 15 to 20 emails back and forth...let's say minimum five to seven emails...The biggest role in a travel agency is their email. More than phone, or faxes, now email. As they say email has "revolutionised" all the businesses.

In addition to use of this basic Internet tool, some organizations were using the Internet to *overcome geographical isolation*. For example, one of the IT managers from an organization with local chain resorts articulated how ICT was used to maintain their PMS:

Our contract takes into consideration the fact that we are quite far from Male'. Daily physical transfer will incur a high cost on transfer...What happens now is that physical presence is no longer required...Now we use Internet...They look after the system maintenance through the network.

In most organizations the PMS was also used to *enhance scheduling* and manage day-to-day activities among staff. One of the managers from an organization with local chain resorts illustrated this:

You can manage also all the rooms. How many quantities of towels you can edit [on the system], how many soap, which kind of bed sheet you need...

In tandem with scheduling, sharing of *customer information* through PMS was at the heart of daily operations. Nearly all organizations depend on the system to keep track of customer information/activities, starting from the first point of booking confirmation or entry into the system. For instance, one of the safari vessel operators described how his saved customer information helped identify prospective customers:

That is 14 or 15 times repeated customer requests, we need to seek ways for him, so that information, we get only because we have gathered such information and kept it as a soft copy.

Furthermore, a number of interviewees confirmed the advancements of ICT applications offered low-cost solutions promising for their businesses (*cost saving*). As one the safari vessel operator explained:

The things that we used to do by phone now we can do it by Internet, or through email. That is one of our expenses that have reduced drastically.

Many of the interviewees noted the ability to upload information in real time was an imperative for the sector. A safari vessel operator described the convenience of the technology to provide information (*information sharing*):

This cannot be done without giving information ..Now today in a matter of seconds that is transferred...for example, diving status, these things are updated day to day, right after a dive in 30 minutes time.

Another safari vessel operator described how *time critical* information sharing was:

When there are good waves coming they want to send email to their friends who are interested in that, "Now the waves are like this and it's such big and come soon". We want them to talk as such. Then they will come from the next flight, to surf. So, it is very important.

4.6.1.3 Technology knowledge

The **technology knowledge** was largely based on the sector's technology experience and dependency. It was found that all organizations included in this study were largely dependent on ICT, although struggling with it. The struggle can be attributed to inadequate knowledge and inexperience of people engaged in the tourism sector - both the general staff and those engaged in deploying ICT.

Often the case was that operational staff performed their daily operations using the system and IT personnel took care of system maintenance. For instance, managers in charge of information technology in a resort held total responsibility for any activity relating to ICT within their resort. The role was very diverse and included everything from software to hardware, including network maintenance.

As discussed earlier (under theme two, *work culture/environment*), because of lack of ICT awareness among top management, the few technical personnel available were struggling to seek opportunities to fulfil their potential. The majority of ICT managers in tourism organizations were foreigners. This could be because some tourism sector organizations try to follow other similar organizations that tend to bring in foreign management. In this regard, one of the application service providers noted:

We have very much noticed that most of the resorts operating companies are bringing in foreign management

However, most ICT managers employed in the sector organizations not only had limited knowledge in meeting the requirements of ICT capabilities to manage a resort/hotel, but also lacked business knowledge. For instance, an interviewee who had worked in a hotel as an IT manager (IT personnel) for two years admitted their lack of *business knowledge*:

Marketing, yet that area is not something that I know

Most of the operational staff had basic technology literacy and only some had undergone limited formal training. In most of organizations staff were trained informally, ‘on the job’ to perform daily operations. Whenever there was a problem relating to ICT, such as glitches in the system, IT staff would normally troubleshoot. Often a single person was assigned for the task and had *short job tenure*. A frequent issue raised by the IT staff was being solo, as one of the IT managers from an organization with local chain resort reported:

Sometime there are problems that there is a need for two person, like, for example, you need to connect, I cannot connect so, instead of going back and forth one should be staying to check on the server, or software.

Another issue was that there was no system of sharing technical knowledge/difficulties among and within the organization (*lack of knowledge sharing*). In most cases the staff engaged in performing daily operations were fairly new to the job and lacked the fundamental knowledge to understand the system and improve their operations. The lack of experience and expertise in the organization (*experience/expertise*) resulted in unnecessary problems, as a technical service provider described:

A common problem is that the IT person in the resort is leaving and the new IT person coming and doing something to the network which causes some problem. Normally there are foreign IT managers in the resorts...Actually no one will have this capability; they will have to come and learn.

The lack of knowledge retention or sustainability in the organizations indicated in the above quote is compounded by the geography of the Maldives. The majority of foreign IT managers did not seem familiar with local geographical environments (*local requirements*). One of the telecommunication service providers pointed out:

Their mind set is more based on the city hotels. In Maldives we are not having actually city hotels; this is resort islands, so it doesn't fit this environment.

International chain resorts, however, generally had a strategic approach to geographical challenges. They employed either a local person or a person with experience in managing ICT in a “small island” context to manage these activities.

Another issue stemming from the Maldives' vulnerability was the lack of merchants providing commodities and services of modern technologies. The prospects of acquiring new capabilities (*capability development*) or opportunities to deploy these technologies were limited. One of the technical service providers explained their approach to installing such equipment:

If we bring something like IP TV, if we are bringing them, we bring people from the manufacturers to install them...They will come here and do the first installation, and then onwards our staff can perform the job.

4.6.2 Summary of Perception of ICT

The findings showed that the **Perception of ICT** was based on the low level categories **technology experience**, **technology dependency** and **technology knowledge** within the sector.

All the organizations in this research sample were utilising some forms of ICT and had access to Internet technology to some extent. Although using ICT, they seemed to be struggling with it. This approach to the implementation of ICT applications - lack of coordination, leadership, hierarchy, and top management awareness and enthusiasm - resulted in mismanagement of existing ICT resources. Software applications such as PMS were often implemented rather radically, although acceptance and utilisation of the changes were proceeding slowly. This is because it was often the owner's decision to implement the software and such decisions were made with little or no consultation with the staff who would be eventually using these applications. Consequently, during the time of implementation, the staff had to face a major reform in maintaining day-to-day tasks.

This research found that all sector organizations were increasingly dependent on ICT. Sector organizations used ICT and were dependent on email as a common communication method, especially for dealing with international partners and customers. Furthermore, ICT was used to overcome the geographical barrier to manage day-to-day activities, and as a useful tool to save time and money. In many organizations day-to-day operations were bound by reliance on technology, especially to

manage the front office operations. Most of the organizations deemed ICT as an essential tool for their business.

The findings suggest that the effectiveness of ICT or e-business usage was primarily driven by the technological understanding, skill and capabilities of the staff. Technology knowledge and ability to explore the opportunities offered by ICT were based on experience, business understanding, expertise, and familiarity with the environment. Thus, because of certain limitations in the knowledge capabilities of staff, most organizations were having management difficulties; even technical staff responsible for ICT activities often lacked the knowledge, skills, and capabilities required by the tourism sector. Furthermore there is little evidence of effort on the part of management to facilitate the development and sharing of knowledge/experiences. Additionally, opportunities to develop capabilities in the Maldives were limited.

4.6.3 Exploitation of ICT

Some of the low level categories associated with **Exploitation of ICT** were created largely because these activities were closely associated with the effectiveness of ICT usage. These issues - more specifically, *software experience*, *web development*, and *e-distribution* - were described by interviewees as areas largely technology dependent and critical to enhance their businesses. A set of open codes was created from interviews to illustrate the low level categories listed in Table 25. (The open codes are italicised in the text for easy reference in subsequent discussions.)

Table 25: Components of category Exploitation of ICT

Major category	Low level categories	Open codes
Exploitation of ICT	<i>Software experience</i>	<i>Software bandwagon, software leverage, strategic use of the systems, sophisticated and expensive, software troubleshooting, usability, repetition of tasks.</i>
	<i>Web development</i>	<i>Importance of web presence, attitude towards existing websites, web maintenance, web negligence, web restructuring, web customisation, approach to upgrade the web, online real-time solutions, top management support, industry structure, financial commitment</i>
	<i>e-distribution</i>	<i>Accept online payments, engaged in strategic networks, perceived obligations to participate in e-distribution, travelling behaviour of consumers, impediments in local environment</i>

4.6.3.1 Software experience

Within the major category, **Exploitation of ICT**, *software experience* was diversified and included an assortment of software applications. As indicated earlier, these ranged from well-known PMS systems to locally developed applications. As defined earlier

(under the section 3.4.2 *Sample population: Overview of ICT within sector organizations*), most of the PMS were used to manage front office operations. Other software applications were used to manage the back office.

Many interviewees indicated that, of the PMS used (See section 3.4.2 *Sample population: Overview of ICT within sector organizations* for details), they regarded the software application Opera (Fidelio) - one of the leading software packages in hospitality and tourism - to be the best in the industry. Despite the high cost of this software's implementation and maintenance, many organizations are using it or are considering using it (*software bandwagon*). However, the approach to software adoption by many organizations results in under-utilisation of software, leading to inefficiency. One application service provider suggests that most of the businesses are not in a position to effectively use such applications:

What we have noticed is, generally, something like 30% of the software is not used. Even from available software.

This situation was reiterated by the majority of organizations who admitted that most of the functions available in their software applications were unused (*software leverage*). As one application service provider explained:

Most of the resorts do not want to use it as software solutions, often it is used as a like check-in, check-out, simple solutions, to manage only the basic day to day needs.

Most IT managers in charge of the PMS were mainly responsible for maintaining basic day-to-day activities, and were less involved in the *strategic use of the systems*. When questioned why they were not using additional functions of the software, they often had no answer; as one IT manager from an organization with a single resort admitted:

I don't know why we are not using it.

Thus, additional functions of the software were deployed as a remedy to persisting operational problems rather than to enhance businesses. For instance, an IT manager from an organization with a single resort reported:

We don't use that function...but now they are thinking of using it because now front office finds it difficult because we are not using that function.

One reason for the delay in implementing additional functions is the perception that the PMS deployed in organizations were too *sophisticated and expensive*. This was especially the case with organizations using Fidelio. In the Maldives, a very basic package of the PMS was distributed. This package included a basic training module. Additional packages/functions and trainings were offered separately at an additional cost. Many organizations using this PMS felt the advanced training package and the additional packages/functionalities were too expensive on top of the high cost involved in purchasing and using the basic Fidelio system. Thus, the organizations that used Fidelio seemed less comfortable in using the applications which were sophisticated and expensive although less problematic. When questioned about Fidelio, a manager from an organization with local chain resorts explained:

I feel that we should be able to use it [Fidelio] more than what we already do. It need to be more efficient. It is not that efficient...I mean to say they should get used to it and feel comfortable with it.

Another reason appears to be the difficulties organizations faced in managing the systems (*software troubleshooting*). Many of them reported they faced a number of technical problems with the PMS, although software providers were supportive in troubleshooting. The situation was more prevalent in organizations that had PMS other than Fidelio. For instance, one IT manager from an organization with a chain resort asserted:

Computerised PMS is there. But now we are having some problem, lots of problems. Sometimes there will be overflow error in the system...what you have to do is, you have to send the database....and they will give an update.

An organization using Fidelio reported:

The most frequent problem is Fidelio gets stuck. If it happens that the computer gets stuck due to some reason...then we will have to index it and restart Fidelio again.

Aside from technical problems, many of the PMS users, except for those using Fidelio, felt their PMS was user friendly and affordable (*usability*). When those organizations were questioned about advantages of the software, comments such as the following were frequent:

A user-friendly software, for layman.

Many staff with limited knowledge about Fidelio perceived it as a possible solution for their problems. When asked about Fidelio, an IT manager working at an organization with chain resorts anticipated:

When we go for Fidelio I don't think this much error is there. It will not be there...Fidelio is so great, I heard.

Consequently, since none of the PMS on their own appeared to be sufficient for business, a number of software applications were used in most organizations to supplement the functionalities of existing PMS. The front operations were managed by the PMS and additional software applications were used to manage back office operations. This resulted in a considerable amount of replication of tasks in many organizations (*repetition of tasks*) generally to bridge the gap between front and back office operations or to update information from the head office. For instance an area frequently requiring repetitive work was the managing of financial accounts. A manager from an organization with single resort explained:

We have not interfaced it...handle the back office separately. I think most of the resorts do that.

When questioned further why he did not use the back office functions of the existing PMS system he replied:

There is no back office system in Fidelio, I mean a stable back office system in Fidelio. That is the disadvantage of it.

4.6.3.2 Adoption and use of websites

Web presence was a common approach to **Exploitation of ICT** among the sector organizations. The Internet has become an increasingly useful marketing tool and distribution channel for the tourism sector, owing to its interactive ability to facilitate communication (Wang, 2008; Wang & Fesenmaier, 2006). The majority of interviewees deemed the web important to their business (*importance of web presence*). With increased on-line access and the proliferation of e-commerce for leisure end-users, many organizations were concerned about their own websites. For example, a manager from an organization with a single resort commented:

We have a website, reasonably comprehensive but not satisfactory, because it is not up to current standards.

In this regard, many interviewees regretted that their websites were not up to par with their competitors' (*attitude towards existing website*). Such regret was reflected in comments such as:

Feel ashamed to talk about it. (*Manager from an organization with local chain resorts*)

Although in most organizations a person was assigned to the task of maintaining the website (*web maintenance*), some admitted their websites were not maintained properly (*web negligence*).

It has a number of broken links. (*Manager from an organization with local chain resorts*)

Thus, many of the organizations in the sector were in the process of enhancing their website features and functionalities (*web restructuring*) with characteristics such as easy navigation, and variety/customised information for customers (*web customisation*). For instance, offering the website in multiple languages relevant to the targeted market was seen as a critical factor in marketing. The manager from an organization with local chain resorts mentioned:

We are going to cover all our main languages in the one we are developing now

Additionally, some organizations were in the process of moving from static online presence to increasing levels of interactivity:

We are re-launching the website with all the new properties [soon] and Internet booking is also included...the only thing is the payment stage. That is what is required.

Many organizations expressed their intention or desire to introduce new websites within a short period of time (*approach to upgrade the web*); as one of the managers from a hotel enthusiastically stated:

Our new website will be up say in one and half month at most (*Manager from a hotel*)

Furthermore, the majority of the organizations were confident about the prospects of e-business in adding value to their business:

We would most prefer is to have direct booking that is because the margin that we get is high and the loyalty to the hotel would be big. *(Marketing manager from an organization with single resort)*

But a number of organizations were reluctant to embrace such sophisticated e-commerce or *online real-time solutions*. Thus, they responded to interview questions regarding adoption of such functionalities in their upcoming websites with statements such as:

No we won't have it *(Manager from an organization with local chain resorts)*

and

Online booking will not be there. *(IT personnel from a hotel)*

Furthermore, some interviewees claimed lack of support from top management (*top management support*) was impeding the advancement of incorporating e-distribution functions in their website. This was corroborated by evidence from top management. When interviewed on the implementation of online solutions, one response was:

We are thinking. *(Manager from an organization with local chain resorts)*

Such apathy towards implementing online business processes seemed fuelled by the *industry structure* and *financial commitment*, coupled with the “availability” of services to support adoption. Most of the interviewees from locally managed resorts noted that the existing marketing strategy limited their bed capacity to commit to online business processes. This was because they have already sold their beds to tour operators or travel agencies. For instance, a manager from an organization with local chain resorts explained:

We do not have rooms. People must be able to book and pay for the rooms that are available and that can be confirmed.

Similarly, a hotel manager noted that continuing commitment to operators inhibited allocation of beds for online solutions:

We have already allocated for certain operators

It was also generally agreed they had limited budget to support such adoption:

At the moment in Maldives e-commerce and merchant accounts are really expensive...it is way too expensive for us to implement (*Manager from an organization with local chain resorts*).

4.6.3.3 E-distribution

Closely associated with the low level category of **web presence, e-distribution** was also an issue about which a number of interviewees expressed anxieties in terms of performance. The international chain resorts were the only organizations which had developed their own websites as an e-distribution channel or more specifically, to *accept online payments*. One of the international chain resort managers explained:

We have a reservation web site, any person can just go into our site...[website address] They can do the booking; you know you can get the information: what we can see in the brochures, what all facilities that we give as with the stay, food, all these things the prices, and everything is mentioned and then the guest make his online booking.

However, nearly all the sector organizations had their own websites (although some were inaccessible) used for advertising and marketing. Thus, among those who have developed their own websites as a marketing tool, some organizations were engaged in strategic networks (*engage in strategic networks*) to position themselves in the competitive market in order to partake in distribution channels.

When you log into... [website name], our website, if you want to make booking you will be redirect to... [name of a GDS] that is our partner in making online reservation. (*Manager of an organization with local chain hotels*)

Some organizations, especially those with a single resort, expressed their intention to participate in such networks of relationships:

I am currently undertaking some of the affiliate programs with hotel like hotel booking website, such as hotel.com, last minute, Travelocity and all this places (*Marketing Manager of an organization with local chain hotels*)

Additionally, many interviewees expressed a sense of urgency about the need to implement or take part in these channels (*perceived obligations to participate in e-distribution*). One of the marketing managers from an organization with local chain resort explained:

We need it now. We cannot compete with places like Thailand and Philippines because of that. We cannot depend on the charter operators forever. That will also go. The aviation industry is making a lot of developments so these things will become

redundant soon. And, as I said previously, tourists are coming to us directly now and we are not able to cater to them at present so it's a big setback.

As reflected in the above quote, such perceived obligations appeared to have derived from the change in customers' approach in planning a holiday (*travelling behaviour of consumers*). For instance, a number of interviewees noted a rapid increase in the number of Free Independent travellers (FITs). One of the managers from an organization with local chain resort noted that:

For the past one year the increase is roughly about 50%.

Thus, some resorts were targeting their market towards FITs. A manager from an organization with local chain resorts expressed:

Our promotions and our promoting this product the campaigns and everything is targeting on the FITs.

Despite their desire to attract various markets and implement e-distribution channels, interviewees' comments such as the above, were often followed by identification of the *impediments in local environment* they were facing. Most of these difficulties were issues related to insufficient resources and the institutional conditions of the Maldives (as discussed under the theme: **Country**). The implications of these issues were also reflected in interviewees from organizations which had implemented sophisticated e-business or e-distribution channels. For example, one of the international chain resort managers pointed out:

Already now we have complaint, customers telling us "I can't get a flight and I had to postponed my trip".

4.6.4 Summary of Exploitation of ICT

Within this theme: **IS**, findings showed that the sector organizations were struggling in their efforts to exploit ICT. The sector organizations agreed their *software experiences*, *web-development* efforts and approach to manage *electronic distribution* channels posed various challenges for the future.

The findings showed that most of the organizations were struggling to strategically use the software applications. Generally in the Maldives, the software was under-utilised

due to being either too complex and sophisticated, or troublesome and cumbersome. Most organizations used a number of applications, due to misalignment between the functionality of packages and the requirements of those implementing organization. This resulted in replication of tasks.

The data showed that although web development was deemed important by tourism sector organizations, they generally agreed their websites were badly maintained, neglected, and required major restructuring and improvements. Due to lack of top management commitment fuelled by limited resources and industry structure, most organizations were reluctant to adopt online real-time solutions. Although many organizations expressed interest in investigating the feasibility of introducing online real-time solutions, they were reluctant due to the local unavailability of such services. A number of organizations also expressed reluctance due to their lack of bed capacity resulting from their approach to managing their tourism product.

Closely associated with **web presence**, for most of the sector organizations in this study, **e-distribution** was seen as a strategic form of web presence. This study showed sector organizations, except international chain resorts, had developed their own websites but were engaged in strategic networks to offer online real-time solutions. Most of the interviewees deemed such Internet presence as essential, considering the customers' travelling behaviour and the limitations in setting up e-commerce online real-time solutions.

4.7 IS Summary

Figure 12: Relationship between the theme three and its major categories

Within this theme: IS, two major categories - **Perception of ICT** and **Exploitation of ICT** - raised issues relating to technology imperatives underlying effective use of ICT.

As illustrated in Figure 12, the **Perception of ICT** within the organizational field influences the **Exploitation of ICT** within the sector, and vice-versa. Similarly, the low level categories *technology experience*, *technology dependency* and *technology knowledge* are interdependent, and software experience embraces the experience of *web development* and *e-distribution*. The major category **Perception of ICT** is formed based on its low level categories, whereas the low level categories emerge from **Exploitation of ICT** forming the theme: IS.

The two major categories, **Perception of ICT** and **Exploitation of ICT**, are focused on the understanding of IS among and within the institutional field. These two major categories reinforces the observation of Zheng (2007), who argues that a person living in a highly ICT literate environment would have high information exploiting capability. Swanson and Ramillar (1997) also posit that perception and exploitation of ICT, which they call “organising vision”, is strongly influenced by the institutional environment within the institutional context.

The categories within this theme: **IS** are inextricably linked to the previous two themes: **Country** and **Sector**. Moreover, the three themes influence and affect each other and emphasise the intricacies shaping ICT usage in the tourism sector of the Maldives.

4.8 Chapter summary

The three themes: **IS**, **Country** and **Sector**, are formed based on the low level and major categories, which were generated from the open codes identified from the data collection and analysis process, revealing the theoretical insight of the phenomenon in the given context. The use of a combination of grounded and multi-grounded theory has provided a richer, more realistic understanding of the issues. The low level categories reflect not only the causes and influences (factors) the tourism sector is experiencing, but also the pressure of the forces (institutional forces) impacting on the use of ICT. The sets of factors are interdependent and grouped to reflect their inextricable link to the institutional forces within each theme to give a theoretical understanding of the problem under investigation. This set of factors and institutional forces will be discussed in relation to the literature review in the following two chapters (Chapter 5 and Chapter 6

respectively), in order to get a deeper understanding of the issues relating to adoption and integration of ICT and e-business in the tourism organizations of the Maldives.

CHAPTER 5: IDENTIFYING FACTORS

5.1 Introduction

This chapter identifies the factors (derived from the research) that can affect the adoption and integration of ICT and e-business in tourism organizations of the Maldives. The findings show that the low level categories that result from the analysis process (using a combination of grounded theory and multi-grounded theory) indicate the causes or influences affecting the problem under investigation or represent some of those factors identified in the preliminary theoretical framework (described in Chapter 2 – Literature Review). The low level categories represent a set of factors (causes) affecting the adoption and integration of ICT and e-business in the tourism organizations of the Maldives. The findings also show the factors can be represented under three themes: **Country**, **Sector**, and **IS** domain. These factors, generated from the findings using a combination of grounded theory and multi-grounded theory, will be discussed in relation to the literature review (in Chapter 2) in order to get a deeper understanding of factors more pertinent to the Maldives.

By identifying these factors, this chapter also answers the first research question, and its sub-questions 1, 2, and 3 (See Chapter 1 - Introduction, section 1.4 The research objective and questions).

RQ1- What factors affect the adoption and integration of ICT and e-business in the tourism organizations of the Maldives?

Sub-question 1: How do the conditions within the country affect adoption and integration of ICT and e-business in the tourism organizations?

Sub-question 2: How do characteristics of the sector affect adoption and integration of ICT and e-business in the tourism organizations?

Sub-question 3: How do the factors related to IS affect adoption and integration of ICT and e-business in the tourism organizations?

This chapter provides an important foundation of the research's theoretical framework and deals with factors arising from the three themes mentioned above: **Country**, **Sector**, and **IS** domain. The next chapter (Chapter 6 – Identifying Institutional Forces and building theoretical framework) will deal with the other substantial part of the tentative theoretical framework; identifying institutional forces which describe the pressure from the institutional field of the tourism sector in the Maldives. More specifically, this chapter discusses factors identified from the findings, as shown in Table 26, in relation to the literature and reveals new factors or distinct issues.

Table 26: Domains and factors affecting adoption and integration of ICT and e-business in the tourism organizations of the Maldives.

Domain (Themes)	Factors (low level categories)
Country	<i>technological infrastructure</i> <i>human capital</i>
	<i>social and cultural influences</i> <i>vulnerability</i> <i>policy</i>
Sector	<i>governance issues</i> <i>sector harmony</i> <i>work culture/environment</i>
	<i>customer expectations</i> <i>marketing management</i> <i>marketing strategies</i> <i>pricing strategies</i>
Information Systems (IS)	<i>technology experience (effect)</i> <i>technology dependency</i> <i>technology knowledge</i>
	<i>software experience</i> <i>web presence</i> <i>e-distribution</i>

5.2 Theme One: Country

Within this theme: **Country**, the availability of resources and local conditions conducive to ICT usage are crucial to determine factors of the conceptual framework of the development and use of ICT and e-business in the tourism sector. Specifically, *technological infrastructure*, *human capital*, *social and cultural influences*, *vulnerability*, and *policy* are the local contextual factors affecting ICT usage. These are discussed in turn.

5.2.1 Technological Infrastructure

The need for a stable, perpetually improving telecommunication infrastructure nationwide is a pressing issue. Findings show there is high demand for robust telecommunication infrastructure. Telecommunication liberalisation in 2002 improved the situation significantly. However, this research has shown there is still more to be achieved. Although the tourism sector is creating a high demand for telecommunication infrastructure irrespective of the high costs involved, current services remain inadequate to meet the requirements of the entire sector. This is because only up-market island resorts can afford high quality services, unlike the numerous small players actively involved in the tourism businesses. Tourism activities involving mobile tourism, such as cruising and diving, require a nationwide coverage of high-quality, high-speed network Internet and telecommunications accessibility. However, service providers note that implementing such services over the entire country is not feasible, due to high costs resulting from the geography of the Maldives and its limited population. As discussed earlier in the literature review, the Maldives has made impressive achievements in providing a telecommunication infrastructure (Minges & Gray, 2004) although this is expensive to implement (See Chapter 3 – Research Methodology, *Figure 7: Telecommunication statistics*) and costly to sustain. Despite the country's commendable achievements, the available services are still inadequate for the requirements of the tourism sector and are therefore hindering effective use of ICT and e-business deployment. This affirms Walsham and Sahay's (2006) finding that the quality of infrastructure is still inadequate in developing countries.

5.2.2 Human capital

Human capital is one of the major factors influencing the adoption and integration of ICT usage. A number of interviewees note that the lack of human resources available in the Maldives is a serious issue for the tourism industry. During the time of the field work, the largest job-seeking group in the Maldives was school leavers. Many of the interviewees note school leavers have basic computer skills. However, they also note they lack the awareness and skills necessary to perform jobs required by the tourism industry, bringing into question the relevance of formal education in terms of the tourism job market. The findings show only some of the sector organizations are engaged in formal on-the-job training, and nearly all organizations have large numbers of foreign workers employed as managers. Tourism sector organizations appear to be

reluctant to employ locals. This approach of selective employment, coupled with employers' approach to human resource management, with limitations in providing training opportunities, appears to result in an uneconomical use of human capital.

Researchers have reported that for countries to play a meaningful role in the new global knowledge environment, highly skilled, technologically literate workers are needed in all sectors (See Mansell & Wehn, 1998; Raab, et al., 2002). The literature strongly supports the idea that an inadequate stock of human capital plays a major role in determining the development of ICT in developing countries (J.-W. Lee, 2001; UNCTAD, 2003) and that on-the-job training plays an important role in skill development (Adam & Urquhart, 2007; UNDP, 2001). International organizations such as the World Bank and the United Nations emphasise that the quality of education is important (See Gillis, 1999/2000) and that formal education should train students to continuously update their knowledge and skills (World Bank, 2000). Thus, a strategic approach to human resource management is needed in order to use ICT and e-business effectively.

5.2.3 Social and cultural influences

Social and cultural influences play an important role in shaping the ICT environment of a country. Research findings show that Maldivians' innate qualities such as intelligence, talents such as creativity and desire to use technology are contributing positively to the effective use of ICT within the tourism sector. On the other hand, certain social and cultural issues, such as resistance towards engaging in the tourism sector per se, have a negative effect on the level of ICT usage. Furthermore, the findings show that organizations tend to follow the activities of similar organizations seen as successful. They tend to take for granted that activities practiced in other organizations, for instance relying on tour operators for marketing, are the answer to their problems, without carefully considering possible alternatives.

Social and cultural influences have also been shown to play a significant role in shaping technology adoption decisions. The World Bank (2007) notes that innate abilities and talents, along with other capabilities, are part of "human capital" which makes a person economically productive. According to Thompson et al. (2001), innate

qualities or understandings by individuals can be regarded as aesthetic labour in the form of tacit skills. Thompson et al. (2001) articulate that interactive service sectors, such as tourism, largely rely on these tacit competencies in addition to technical or product knowledge. However, often little emphasis is given to them. In a previous case study conducted by ITU, Minges and Gray (2004) acknowledge that willingness to access and use ICT and electronic transactions has a positive effect on ICT diffusion in the Maldives. This current study has shown that such *social and cultural influences* also have a positive effect on ICT usage in the tourism sector in the Maldives (See page 140-141).

Conversely, researchers have also found that *social and cultural influences* can have negative implications for ICT usage (See Hill, et al., 1998; Thanasankit & Corbitt, 2000). Several studies have shown that countries have distinctive cultural traits, such as levels of trust, which can affect the extent of e-commerce usage and potentially limit the benefits gained by using ICT (See Efendioglu & Yip, 2004; Travica, 2002). This current research has shown that distinctive social-cultural influences, such as the impetuosity of Maldivians and their attitude towards the tourism industry, lead to negative consequences affecting development, and especially effective ICT development. The attitude could be because the Maldives is a Muslim country and because tourism can be seen as having a negative impact on society. The current findings also show that organizations in the tourism sector tend to follow other organizations and adopt the traditions, and norms of the sector, where the tendency is for organizations to rely on established relationships rather than strategic planning to do business.

5.2.4 Vulnerability

This research has shown that issues relating to the vulnerability of the Maldives are critical. Findings show that the main areas of **vulnerability** are related to the geographical location of the archipelago, its limited population, its susceptibility to natural disasters, and the salty-humid-tropical environment. These problems pose major challenges to the effective use of ICT. The Maldives also has to jump the hurdle of reaching the critical mass for economies of scale. The high investments required and logistic distribution costs due to the unique climate are compounded by susceptibility to natural disasters. Not only is there limited literature on SIDS, but academic literature relating to the impact of the Maldives' vulnerability in relation to ICT is sparse. However, among the few relevant studies, one, conducted by Armstrong and Read (2003), notes that the situation in "SIDS with islandness becomes worsened due to the specific vulnerabilities". Adam and Urquhart (2007) show how islandness becomes a barrier for knowledge-sharing across organizations. Despite the popular prediction that the Internet has the potential to overcome distance and time (See Malecki, 2003), this research has found that although factors such as a sound telecommunication infrastructure are crucial, **vulnerability** is a prevalent factor influencing ICT and e-business efficiency, and is even more significant to SIDS like the Maldives.

5.2.5 Policies

Policies can strongly influence the level of ICT and e-business usage in the Maldives. The findings show that existing regulations and policies, as well as the absence of needed policies, directly and indirectly affect ICT usage. Policies to promote ICT need to take into account issues related to education, information, vulnerability, and culture, in addition to issues directly related to ICT such as consumer protection and Internet security. At the time of data collection there were no laws to protect the e-business environment in the Maldives. Consequently, tourism organizations were reluctant to exploit the additional opportunities offered by ICT, although they use it for daily activities.

According to Lall and Teubal (1998), the literature emphasises that setting national priorities for industrial and technological development plays a crucial role in development. Although various researchers have found that policies are fundamental to

the process of e-commerce adoption and usage (Audenhove, Burgelman, Nulens, & Cammaerts, 1999), there is no consensual way of policy-making within the literature. Thus, Avgerou (1998) argues that there is no proven “best practice” or policy for developing countries. Further, she argues that best practice and policies deriving from industrialised countries may not be feasible or sufficient to the local context of developing countries. This research shows the existence of some critical issues distinctive to the local contextual environment that must be taken into consideration. The lack of policies and regulations for governing development of ICT in the Maldives strongly affects the level of ICT usage in the tourism industry. For instance, the unavailability of merchandised accounts from local banks or the delay in providing these services is hindering tourism sector organizations in providing online real-time solutions. There exists an urgent need for the Maldives to enact laws and regulations to create a favourable environment for effective ICT use. Furthermore, there is a need to formulate policies to educate, train, and create awareness in line with the development of the Maldives.

5.3 Theme Two: Sector

The **Sector** comprises two major categories related to **Collaboration** and **Sector practices**. *Governance issues*, *sector harmony*, and *work culture/environment* describe the factors relating to **Collaboration**, which in turn influence the **Sector practices** factors: *customer expectations*, *marketing management*, *marketing strategies*, and *pricing*, which affect ICT usage in the tourism sector in the Maldives.

5.3.1 Governance issues

Governance issues affect the level of **Collaboration** within and among tourism sector organizations. Findings show that government authorities, in particular the ministry responsible for managing tourism activities and its department managing the Destination Management Organization (DMO), were the key players responsible for governance issues in the sector. However, the findings show these government authorities are politically influenced by the elites undermining a strategic approach to tourism development. Furthermore, lack of co-operation, accountability, and knowledge-sharing within and across government authorities are affecting the execution/implementation of strategic plans.

The **governance** issues relating to the tourism sector are also reflected in the relevant literature. To begin with, researchers have shown that DMOs often play a critical role in managing the entire sector for the benefit of the country (See UNCTAD, 2005; Werthner & Klein, 1999). Current research shows that this is indeed the case in the Maldives. Promotional activities conducted by the government have contributed significantly to the tourism industry. Additionally, some researchers contend that in less-developed countries the tourism sector tends to be dominated by the elites (Lakin & Bertamini, 2002; Telfer & Sharpley, 2008; Tosun, 1998). Current research findings show that the Maldives is no different. Furthermore, even within prominent IS literature, researchers have confirmed that strategic planning (eg: W. R. King, 1978) and the extent of coordination in assimilating web technologies (eg: Chatterjee, et al., 2002) are important structural characteristics that can stimulate or hinder ICT usage. Jamal and Lagiewski (2006) also note the need for coordination and collaboration in the tourism sector. However, in line with findings reported by Jamal and Lagiewski (2006), the current findings also show that a lack of co-operation, accountability, and knowledge-sharing with other government authorities is affecting the strategic planning process.

5.3.2 Sector harmony

Findings show that the power of the business elites has the capacity to affect not only governance issues in relation to government authorities, but **sector harmony** itself. The findings show the sector lacks unity and integration. Most organizations seem to be reluctant to engage in relationships with stakeholders and their competitors, let alone to build relationships with government authorities. The approach to tourism development in the Maldives – enclave tourism also compounds their distinction from the social environment. However, during the time of data collection, new associations representing various segments of the industry were in the process of forming or had recently formed in order to strengthen these relationships.

More generally, the literature emphasises that relationships among various segments of the industry are important (C. M. Hall, 1994, 2008; Lakin & Bertamini, 2002). Of particular relevance to the current findings, is research which indicates that economic, political, and social structures in the Maldives have a significant impact on the tourism sector (eStandardsForum, 2009; Jamal & Lagiewski, 2006; Rasheed, 2005; Reimer,

2007). Issues such as the elite's domination of the sector, and the close relationship between the government and large tourism sector players reflect issues of nepotism and favouritism said to exist within the tourism sector. Jamal & Lagiewski (2006) argue that involving various segments of the tourism sector and the tourism institutions in the planning process of tourism development could be the answer to rectifying the flaws in the tourism planning. Reimer (2007) describes the situation of the development of tourism in the Maldives with a closer look at the country's socio-economic and political structures. The current research findings note that the power of the business elites and lack of involvement across the various institutions of the tourism sector is influencing the relationship within the sector, which in turn influences effective use of ICT in tourism organizations.

5.3.3 Work culture/environment

This research shows that *work culture/environment* is a major factor hindering utilisation of human capital. Although there is a lack of skilled labour in the Maldives, some interviewees note that there are skilled young professionals in the country. However, their skills are not utilised because of the country's approach to managing the work environment and the locals' preference for white collar jobs. A relaxed top-down management approach, compounded by the availability of cheap labour from neighbouring countries, coupled with the lack of coherent standards for employment, has worsened conditions. Consequently, nearly all organizations included in this study reported high staff turnover.

The findings of this research on the tourism sector in the Maldives support Mansell and When's (1998) observation that "In many LDC and smaller or island developing countries, there is a high proportion of skilled young professionals who have substantial innovative potential" (p. 111). However, the current research shows that, in the Maldives, few of these skilled young professionals are engaged in the tourism industry. This phenomenon has been an enduring issue in the Maldives. For example, in a study done in the late 80's, Sathiendrakumar and Tisdell (1989) note the development of the tourism sector in the Maldives has not "yet created substantial local employment opportunities" (p. 265). They doubted the sectors' employment-creating potential due to their approach in managing the tourism sector. This is also reflected in a more recent

study by Adam and Urquhart (2007), who note that the existing socio-cultural environment impedes IT capacity building. In the current research, interviewees admit that the tourism industry is highly reliant on foreign labour to manage businesses. This is often the case in the tourism sector in developed countries (See J.-G. Choi, Woods, & Murrmann, 2000; McDonald & Kippen, 2001; Sinclair, 1998) and labour shortages and associated international migration is a pressing issue throughout the tourism sector (J.-G. Choi, et al., 2000). Furthermore, researchers note that high staff turnover is also a serious issue in the tourism sector and warn that this hampers the development and transfer of knowledge in organizations (Hjalager, 2001, 2002; Yang & Wan, 2004). This research has shown that the tourism sector in the Maldives is experiencing high staff turnover, and the situation is worsened by the country's approach to managing human resources.

5.3.4 Customer expectations

Customer expectations are the core factor in tourism services. Meeting customer expectations is among the key goals of the tourism sector. According to a number of interviewees, customers are becoming increasingly demanding and their choices in the marketplace are enhanced by knowledge mediated by the Internet. However, although nearly all organizations included in this study perceived that deploying various ICT applications was critical to enhancing their service capabilities, few were found to be sufficiently technologically advanced to engage in using online real-time solutions. The organizations therefore need to augment their ability to satisfy their customers, and are urged to deploy ICT tools to enhance their service capabilities.

This research has shown that although many of the interviewees are aware of ICT's potential to meet customer expectations and are using it to provide services and satisfy customer demand, few organizations are in a position to use advanced ICT solutions to meet the customers' expectations online. The findings of this research support Buhalis and O'Connor's (2005) statement that engaging in e-commerce activities not only offers a variety of services such as satisfying personalised needs and making timely offers, but it also increases customer loyalty and retention. More generally, a number of researchers argue that engaging in ICT and e-business activities has the potential to address the increasing needs of customers. Research has also shown that strategic use of technology

has enhanced the efficiency of delivering services (Kandampully, 2006; Minghetti, 2003) and triggered the emergence of new customer services (Siguaw & Enz, 1999). Researchers note that meeting customer expectations in the use of ICT is challenging (Niinenen, Buhalis, & March, 2007) and success is largely dependent on organizations' ability to acquire and utilise information (Law, Leung, & Buhalis, 2009).

5.3.5 Marketing management practices

Marketing management practice is a significant factor characterising industry performance. Although the traditional approach to managing the market generated less revenue to tourism organizations, many organizations managed by locals are reluctant to change, given the relationship they have built with their tour operators. This could be partly because there are no local airline flights. A huge part of the resort bed capacity of these organizations was managed through distribution channels. Whilst engaging in attracting the FIT (Free Independent Traveller) market and/or in web marketing, unlike the international large chain resorts, most of the organizations managed by locals reflected a poor management approach, leading to problems such as overbooking. Furthermore, the findings show that at the time of the study a number of organizations were moving up-market and others were in the process of selling their tourism products to foreign investors.

As discussed earlier in the literature review, although the Maldives still practices traditional approaches to managing the market, research has shown this does not yield a high return (See Mowforth & Munt, 2003; UNCTAD, 2005; Wijk & Persoon, 2006). This study has shown that presence in distribution channels reflects not only as an effective means for marketing but also shows the need for tourism organizations to use the opportunities offered through technology. Thus, a number of studies urge the tourism sector to increase its usage of ICT (See Buhalis, 1998, 2000c, 2003; Buhalis & Law, 2008; Buhalis & O'Connor, 2005; UNCTAD, 2005). For instance, Buhalis and Law (2008) note that the potential of the web to target particular markets by addressing the needs of each market has allowed some organizations to supplement or even replace their offline tourism management strategies, bringing various advantages. However, this research shows that most of the tourism organizations in the Maldives are still unable to deploy ICT effectively in managing their market.

5.3.6 Marketing strategies

Choosing a marketing strategy is a major decision factor for the industry. Like a number of researchers (See Morgan, Pritchard, & Piggott, 2002; Williams & Palmer, 1999) many interviewees feel branding is a key component of marketing strategy. In this regard, branding the country as a tourism destination was one of the most positive strategies adopted by the Maldivian government (as a DMO). Thus, some organizations tend to adopt this strategy to reinforce customer loyalty and trust, which forms the basis for spreading information positively via word-of-mouth. Although some organizations rely totally on strategies such as word-of-mouth, finding that advertising in print magazines had little effect, many also recognize that marketing through the Internet and advertising on electronic media such as television are robust forms of advertising. A customised focus, for example using the customers' own languages, has been found to add more value resulting in increasing occupancy rates.

Current research findings show that interpersonal relationships and word-of-mouth are amongst the most effective strategies in marketing. The Internet allows people to reach other people, and word of mouth is no longer restricted by time and space. The findings of this research also support the general understanding among researchers about the significance of electronic environments in promoting the tourism organizations (See Gretzel, et al., 2000; Litvin, Goldsmith, & Pan, 2008). Gratzel et al. (2000) note that the web not only offers a cheaper and faster method of marketing but also the opportunity to do things differently - such as providing customised services to customers. Thus, electronic environments are particularly critical for the Maldives, especially because the country has positioned itself as a unique high-end market and has diversified its major markets in terms of countries marketed to (Ministry of Tourism and Civil Aviation, 2006b).

5.3.7 Pricing strategies

Pricing strategies are a critical factor for sustainable tourism and findings show that pricing was one of the strategies with serious implications for the sector. Given that the tourism offerings were long committed to international tour operators (at a lower price), during the time the interviews were conducted, many of the organizations were suffering from high inflation coupled with record high world oil prices. Additionally,

the findings show that during this time the tourism sector was also undergoing major transformations in terms of products and services. Furthermore, some organizations were engaged in inconsistent pricing or pricing competition, using different means such as online marketing, to offer multiple pricing to overcome unsold inventories. Thus, some of the interviewees noted that such activities could have a negative effect on the sector.

The literature review emphasises that customers are becoming increasingly computer savvy and therefore in a position to compare similar products across online retailers (Santoma & O'Connor, 2006; Varini, et al., 2003). Researchers urge the tourism industry to structure pricing strategically. They warn that lowering the price is not a sustainable competitive advantage (K. N. Thompson & Coe, 1997; Vanhove, 2005), can have a strong negative effect on customer satisfaction, and often leads to revenue loss (See Enz, 2003; Santoma & O'Connor, 2006). However, the current research showed that most organizations were focused on increasing their occupancy rate instead of having a strategic approach to pricing, possibly because of the economic downturn. This research also supports the findings of a number of researchers that although most organizations are aware of the behaviour of their customers, some still tend to offer multiple pricing. As researchers warn, this seems to be creating complications such as distorting the destination image of the Maldives.

5.4 Theme Three: IS

Within the theme: **IS** the factors *technology experience*, *technology dependency* and *technology knowledge* shape the **Perception of ICT** among tourism sector organizations. *Software experience*, *web development* and *e-distribution* are the major factors dependent upon the level of ICT exploitation in these organizations. These factors influence the **Perception of ICT** and level of **Exploitation of ICT**, and affect integration and use of ICT and e-business in the tourism organizations of the Maldives.

5.4.1 Technology experience

Prior experience in using technology affects individuals' **Perception of ICT** and strongly influences the technological know-how of the industry. However, awareness and exposure to technology are often bounded by practices within organizations. Nearly

all sector organizations have a centralised management structure, and often the senior management are not familiar with ICT. However, the decision to adopt or implement ICT is often made with little or no involvement from the employees practically engaged in day-to-day ICT tasks. Consequently, the implementation and management of ICT activities does not meet the expectations of either owners/managers or end users.

Thus, this management structure and approach to the implementation and management of ICT activities – or, in other words, their technology experience - can be attributed to what is discussed in the literature review as radical change, which is disruptive and impacts negatively on processes, operations, knowledge, and morale (Gallivan et al., 1994; Orlikowski, 1993). For instance, the current research findings show that some organizations had implemented the high-tech international software Fidelio; but due to their limited knowledge and the lack of involvement from end users during the implementation of the software, the application did not meet their expectations. Consequently most of the organizations are not obtaining full benefits from advanced ICT applications and are struggling to make best use of them.

5.4.2 Technology dependency

Technology dependency is another factor affecting the **Perception of ICT**. The findings show that tourism organizations are compelled to use ICT whether they like it or not. Certainly, the tourism sector of the Maldives is highly dependent on technology; if the country is to compete with the international market, use of technology especially the Internet, is vital. Tourism organizations have no choice but to embrace modernity if they are to remain in the market. Organizations are dependent on technology because it allows them to minimise costs, save time, and overcome geographical distances to provide timely services to their customers. The findings show that email was one of the most vital applications used in the industry. All the sector organizations included in this study had a PMS implemented. This was perceived as an essential tool, not only because of its usefulness and/or ease of use, but its necessity in enhancing services and managing customer information.

A large number of studies have shown “relative advantage” or “perceived benefits” or “perceived usefulness” to be a significant predictor of ICT deployment (See Chwelos, et al., 2001; Gibbs & Kraemer, 2004; Iacovou, et al., 1995; Tornatzky & Fleischer, 1990).

Some studies have shown that in addition to “perceived benefits”, “external pressure” to use technology is a major determinant of ICT adoption (Gibbs, Kraemer, & Dedrick, 2003; Teo, et al., 2003). Current research findings have shown that organizations adopt ICT not only because of external pressure or perceived benefits, but because ICT is a necessity upon which the sector depends. This research found that all sector organizations were increasingly dependent on ICT; for instance, email was a common method of communication within the industry, especially when dealing with international counterparts and customers. The sector organizations are compelled to use ICT in order to keep up with other similar businesses. Furthermore, ICT was used to overcome geographical barriers, manage day-to-day activities, and as a useful tool to save time and money. Organizations perceive that if they are to be part of the tourism sector they must use it.

5.4.3 Technology knowledge

Technological knowledge as an integral part of human capital affects perceptions of ICT users which, in turn, affect the effective use of ICT. Although the tourism sector in the Maldives is keen to adopt technology, most sector organizations were found to be struggling to maintain their systems, let alone improving them. Most organizations lack mechanisms to maintain and retain knowledge. Findings show that in many organizations, the IT Manager, or the person in-charge of the ICT activities, was quite new to the job and had limited knowledge of the business and local requirements. In other words, they lacked experience and were challenged by the daily maintenance of existing systems. Furthermore, given the small population of the Maldives, opportunities to acquire new capabilities are rather limited and few people are engaged in such activities.

Researchers unanimously agree that this type of technology knowledge resource represents a specific kind of human capital or expertise. As many researchers contend (See Adam & Urquhart, 2007; Hitt, Ireland, & Lee, 2000; Raab, et al., 2002), this is one of the crucial factors affecting technological efficiency. Technology knowledge can be explicit or tacit, and has great value in creating competitive advantage (Hitt, et al., 2000). The extent of technological knowledge is deeply rooted in the context of social and cultural practices, and is often low in LDC's, affecting the country's technological

progress (UNCTAD, 2007). However, many other developing countries lack adequate technical knowledge which affects their technological progress (UNCTAD, 2007), and as the current research findings have shown the Maldives is no different. The findings show that given the limitations of the country as a SIDS, the Maldives experiences major challenges in addressing this problem. For instance, an ICT employee in an island resort is expected to take care of all ICT activities, including hardware, software, security maintenance, networking, installation, integration, training etc.

5.4.4 Software experience (knowledge)

Software experience is a factor on which the sector is heavily dependent. At the time of the study, all the sector organizations included in this research had PMS implemented. Although the high-tech international PMS used in some of the sector organizations are sophisticated and expensive, many organizations are either already using high-tech international PMS or intend to purchase them soon. Most of the other PMS used in sector organizations have more technical problems but were regarded as more user-friendly. Regardless of the type of PMS implemented, the systems are not well utilised. For example, most of the PMS used to manage front office activities also have functionality for house-keeping activities but only a few organizations use them for that purpose. Most organizations use the PMS and many other software applications to support management operations (especially back office operations). This has resulted in a number of tasks being repeated, due to lack of integration of software applications. For instance, customer invoice details were entered into the front office system (usually the PMS) as well as into another software application used to manage accounts.

Researchers generally agree that the usage of software applications encounters additional challenges in developing countries in relation to the economic, social, cultural, and technological factors of the country (See for example Garcia-Murillo, 2003; Huang & Palvia, 2001). Schneider (2002) points out that “experience is in highest demand where technical (software) knowledge needs to be combined with human judgment and the ability to make informed compromises” (p. 571). A previous study on the tourism sector in the Maldives by Adam and Urquhart (2007) attributes inefficiency to lack of knowledge management techniques and lack of social and human capital. They note the existence of a major gap in most organizations between the organization’s

software knowledge capabilities and adaptability to local conditions/situations (Adam & Urquhart, 2007). Current research findings also show this to be one of the problems faced when dealing with software applications in tourism sector organizations. These organizations were not only having difficulties finding capable people to manage applications, but were also struggling to fit the applications to local requirements.

5.4.5 Web presence (adoption and use of websites)

Websites were perceived as one of the most common ways for the industry to engage in e-business activities. Many of the organizations included in this study have their own websites and deem web development as an important electronic distribution channel, but, at the time of the study, were in the process of upgrading their websites. They felt that their websites required restructuring and that more emphasis needed to be given to customisation (such as options to choose different languages). E-commerce or online real time solutions were seen as an important component of the website, but the majority of sector organizations were still reluctant to incorporate them during the time of data collection. This was mainly due to industry structure and the financial burden they had to bear given the services available to implement these functionalities.

Although many organizations were in the process of web development, the current research showed many believe researchers' assertions that websites serve as a major distribution channel, as well as a means of meeting the needs of customers (Law, et al., 2009; Morgan, Pritchard, & Abbott, 2001). Research has also shown that organizational factors such as top management commitment and facilitating conditions such as online real-time solutions affect web development and the use of the Internet (See Chang & Cheung, 2001; S. Kamel & Hussein, 2004). The current research also highlights the significance of these issues as a major factor affecting the perceptions and attitudes towards engaging in e-business activities. For example, most of the organizations were waiting for the local bank to open an online merchandise account in order to implement on-line payment solutions. As Minges and Gray (2004) indicate, the Maldives still requires infrastructure to be strengthened and costs to be lowered when compared to other countries.

5.4.6 E-distribution

Electronic distribution channels are another factor on which the tourism sector depends. They were perceived as a simple route to tap into international markets. The findings show even those organizations with their own websites maintain a presence in other electronic distribution channels. All the sector organizations were engaged in strategic networks to market their products, and perceived this as a necessity, given travelling consumers' Internet behaviour. However, many sector organizations were reluctant to adopt emerging e-business technologies, which may diminish existing relationships and traditional ways of doing business, given impediments in the local environment to creating favourable conditions for the deployment of e-business activities.

Researchers have also emphasised the importance of e-distribution channels for tourism (cf. Buhalis, 2000a; Dale, 2003). Buhalis (2000a) notes electronic distribution channels as one of the most dynamic elements in the tourism industry. The current research findings reinforce Buhalis (2000b) and Dale's (2003) notion that e-distribution or participation in strategic networks is critical for the tourism industry to gain competitive advantage. The findings of this research also show that organizations are largely dependent on international e-distribution channels to market their product, particularly in view of the lack of alternative marketing opportunities available.

5.5 Two new factors

Most the factors shown to be significant were identified in the literature review. However there are two exceptions. A prior assumption made in this research was to focus on the issues relating to Small Island Developing States with the characteristics of islandness, and to explore the situation from a broader perspective to include various segments of the industry and the supporting industry organizations or institutional environment of the sector. This research has identified two additional factors affecting the adoption and integration of ICT and e-business in the tourism organizations of the Maldives. *Vulnerability* of the country within the **Country** domain and the *technology dependency* within the **IS** domain comprise two new factors that strongly affect the adoption and integration of ICT and e-business.

Within the **Country** domain, **Resource limitations** can be crucial but the **Local conditions** are an inherent part of the country. Despite technology adoption and diffusion being key theoretical issues in technology studies, few studies stress the issue of *vulnerability* as a significant factor influencing the use of ICT. Among the factors within **Local conditions**, *policy*, and *social and cultural influences* have been widely explored. Many writers predict that ICT has the potential to overcome geographical barriers and Cairncross (2001) goes further, to argue that ICT offers “the death of distance” (p. 16). However, ironically, little emphasis is given to the how issues of *vulnerability* influence the use of ICT. Furthermore, researchers note that local conditions in SIDS, especially islandness, pose major additional challenges for the adoption and diffusion of ICT or e-business activities. This research has shown that, as a SIDS with islandness experiencing these additional challenges, the Maldives needs to give strong emphasis to issues of *vulnerability* (such as the high costs involved in implementing, managing, and maintaining ICT, and the limitations, lack of economies of scale, and the difficulties in reaching a critical mass) in understanding the country’s ICT usage. Thus, the factor of *vulnerability* requires much attention in understanding the level of ICT usage or effectiveness in this context.

Another new factor in the theoretical framework is the level of **technology dependency** influencing **Perceptions of ICT** within the **IS**. Findings show the tourism sector is largely dependent on technology, and organizations are struggling with limited knowledge and experience to exploit ICT effectively. In other words, if organizations are to be engaged in the tourism business, competing with other international organizations, they have to use ICT to find a niche in the international scene.

Various researchers have shown that “perceived benefits of the technology” are an important determinant of ICT adoption (See Chwelos et al., 2001; Gibbs & Kraemer, 2004; Iacovou et al., 1995; Tornatzky & Fleischer, 1990). A number of studies also identify “external pressure” as an important determinant of ICT adoption and use (See Chwelos et al., 2001; Gibbs & Kraemer, 2004; Iacovou et al., 1995). Thus, *technological dependency* represents the necessity for organizations to rely on technology, not only due to perceived benefits or external pressure, but also because it has become an essential tool to manage tourism services, particularly for dealing with customers and managing the tourism organization to meet the expected standards. In

other words, *technological dependency* arguably represents not only the perceived benefits of the technology and external pressure described in adoption literature, but also the organization's dependence on technology in order to fulfill the necessities of management. All tourism sector organizations were dependent on ICT to manage their day-to-day activities. Thus, the factor *technological dependency* is a major determinant that strongly affects ICT usage in countries like the Maldives

5.6 Chapter Summary

After taking the literature review into consideration in relation to the findings summarised in Tables 27, 28, and 29 which represent the factors affecting the adoption and integration of ICT and e-business in the **Country**, the **Sector** and the **IS** domain respectively, this research has shown that even though most of the findings reinforce factors identified in the literature review, there are still some significant aspects pertinent to SIDS with islandness. More precisely, two new factors: *vulnerability* within the **Country**, and *technology dependency* within the **IS** domain were found to be strongly affecting the adoption and integration of ICT and e-business in the tourism organizations of the Maldives. These factors also answer the first research question, and its sub-questions one, two and three.

Table 27: Summary of the Country factors affecting adoption and integration of ICT and e-business in the tourism organizations of the Maldives

Country
<i>Technological infrastructure</i>
<ul style="list-style-type: none"> ▪ Demand for high quality, fast Internet infrastructure in the tourism sector ▪ Essential nationwide coverage, especially for mobile tourism activities (such as cruising) ▪ Economic feasibility of implementing high quality infrastructure
<i>Human capital</i>
<ul style="list-style-type: none"> ▪ Limited Human resource capability available ▪ Level of computer skills of the largest job-seeking population inadequate to meet the demands of the tourism sector ▪ Work force approach to employment and employers' approach in managing human resource in the tourism sector seems uneconomical and unsustainable
<i>Social and cultural influences</i>
<ul style="list-style-type: none"> ▪ Maldivians' keenness to use ICT has a positive effect ▪ Attitude towards engaging in the tourism sector workforce were negative, especially for women ▪ Impetuosity of the people is a negative influence ▪ Tourism sector organizations still largely dependent on social networks for business
<i>Vulnerability</i>
<ul style="list-style-type: none"> ▪ Lack of economies of scale and critical mass hinders ICT adoption ▪ High cost of logistics such as transportation costs due to the islandness acts as a double barrier for ICT adoption ▪ Susceptibility to natural disasters incurs high cost and creates critical environment ▪ The nature of the environment (humid-salty environment), requires special care and incurs high costs in implementing and maintaining physical tools/hardware
<i>Policy</i>
<ul style="list-style-type: none"> ▪ Policies to promote ICT need to address issues of education, creating awareness and information sharing/protection, vulnerability, and culture is required ▪ Lack of rules and regulations to conduct electronic transactions/e-environment hinders ICT adoption

Table 28: Summary of the Sector factors affecting adoption and integration of ICT and e-business in the tourism organizations of the Maldives

Sector
<i>Governance issues</i>
<ul style="list-style-type: none"> ▪ Supporting industry organizations, especially government authorities, need to give relative importance to all segments of the tourism sector and encourage participation ▪ Sector largely influenced by local elites has a major impact ▪ Supporting organizations, especially government authorities, need to create a more accountable and cooperative work environment
<i>Sector harmony</i>
<ul style="list-style-type: none"> ▪ Limited relationship between and among some of the sector organizations and the supporting organization hinders ICT adoption ▪ Local elites dominate the sector
<i>Work culture/environment</i>
<ul style="list-style-type: none"> ▪ Relationships within the work environment were rather subtle due to lack of awareness among top management ▪ The relaxed top-down approach to managing organizations using cheap labour on a short-term contract basis intensifies the high staff turn-over ▪ High influx of cheap labour from neighbouring countries effects ICT development
<i>Customer expectations</i>
<ul style="list-style-type: none"> ▪ Meeting customer expectation was a major objective of the organization ▪ Customers are increasingly demanding high-quality, timely services including access to ICT promotes its usage ▪ Providing personalised customer services increases customer loyalty and retention
<i>Marketing management</i>
<ul style="list-style-type: none"> ▪ Organizations' reluctance to change their approach to managing the market, risking their existing relationships with currently established channels such as tour operators, hinders ICT usage and development ▪ Risking a long-term or sustainable approach to managing their customers ▪ The inability to keep pace with change given the dynamic environment of the tourism sector hinders maximising the potential of ICT
<i>Marketing strategies</i>
<ul style="list-style-type: none"> ▪ Ability to create a well-known brand in the market brings significant benefits to the business ▪ In addition to traditional means, advertising and marketing through electronic media was deemed important ▪ Providing customers information was critical, given the growing trend to capture a diversified market
<i>Pricing</i>
<ul style="list-style-type: none"> ▪ Inability to cost tourism product strategically due to lack of understanding of their characteristics ▪ Lack of a robust pricing strategy to participate in the boundless venues of marketing and advertising

Table 29: Summary of the IS factors affecting adoption and integration of ICT and e-business in the tourism organizations of the Maldives

IS
<i>Technological experience (effect)</i>
<ul style="list-style-type: none"> ▪ The top-down management approach and inertia in the sector inhibits enthusiasm and innovativeness in the work environment ▪ Limited training and the difficulties facing in managing the existing systems dampens innovativeness
<i>Technology dependency</i>
<ul style="list-style-type: none"> ▪ Largely reliant/dependent on email and other software applications ▪ Tourism sector is highly reliant on technology to overcome geographical barriers and as a cost-saving and time-saving equipment
<i>Technology knowledge</i>
<ul style="list-style-type: none"> ▪ Lack sufficient knowledge of computer to apply the technology knowledge to the practical environment (lacked business knowledge) ▪ IT managers have limited experience and time to develop their capabilities ▪ Limited opportunities exist for training and capability development
<i>Software experience (effect)</i>
<ul style="list-style-type: none"> ▪ Software bandwagon ▪ Only a portion of the PMS implemented were put to use and many other applications were used to supplement it ▪ The high-tech international PMS used were too sophisticated and expensive whereas other PMS were more problematic
<i>Web development</i>
<ul style="list-style-type: none"> ▪ Perceived as an important distribution channel ▪ Most of the websites were neglected or not maintained ▪ Upgrading processes lack top management support and/hence financial commitment ▪ Organizations were seeking to incorporate online real time solutions
<i>e-distribution</i>
<ul style="list-style-type: none"> ▪ Tourism sector organizations were engaged in e-distribution channels and strategic networks ▪ The sector had difficulties in attracting FITs due to the changing travelling behaviour of customers (preference for online booking) ▪ Tourism organizations difficulties in acquiring resources to implement online real time solutions

CHAPTER 6: IDENTIFYING INSTITUTIONAL FORCES AND BUILDING A NEW THEORETICAL FRAMEWORK

6.1 Introduction

As highlighted earlier, the findings discussed in Chapter 4 not only identify factors affecting the integration of ICT and e-business in the tourism organizations of the Maldives, but also the institutional forces affecting them. These institutional forces are discussed in relation to theory before the discussion moves on to construct a new theoretical framework, since building a framework that better accommodates the findings of this research than the preliminary theoretical framework drawn in Chapter 2, section 2.5.1 *The preliminary theoretical framework*, is a substantive part of the aim of this chapter.

The first part of this chapter focuses on the institutional perspective in understanding the issues relating to the adoption and integration of ICT and e-business in the tourism organizations of the Maldives. The findings show that the pressures from the institutional field, i.e. key suppliers, resources and product consumers, regulatory agencies and the network of organizations that interact with the tourism sector in the Maldives, affect the adoption and integration of ICT and e-business. The findings also show that the major categories resulting from the grounded theory/multi-grounded theory analysis process reflect the significance of the institutional field in the tourism industry. That is, the structural, social, political, and economic activities that form the institutional environment significantly affect the level of ICT usage in tourism sector organizations. These organizations are bound by social, political, and economic activities or forces beyond the control of any individual organization. Furthermore, in addition to the supporting industry organizations such as government authorities, national and international environments also affect the **Country**, **Sector**, and the **IS** domains identified.

Identifying institutional influences or forces in this way provides a different perspective in understanding the issues relating to the adoption and integration of ICT and e-business. This institutional perspective in turn adds another dimension to the theoretical framework highlighted in Chapter 2 – Literature review. This chapter therefore

discusses the institutional forces affecting the level of ICT usage under the three themes: **Country**, **Sector** and **IS** domain as tabulated in Table 30. 7 Prior to this discussion this chapter also comments on the findings that reflect the heterogeneous nature of the industry, and dynamics within the industry. These characteristics play a significant role in shaping institutional forces.

In discussing these institutional forces, this chapter also answers the second research question (Chapter 1 - Introduction, section 1.4 Research objective and questions)

RQ2- How do existing institutional forces affect the adoption and integration of ICT and e-business in the tourism organizations of the Maldives?

Table 30: Domains and the institutional perspective affecting adoption and integration of ICT and e-business in the tourism organizations of the Maldives

Domain (Themes)	Institutional forces (Major categories)
Country	Resource limitations
	Local conditions
Sector	Collaboration
	Sector practices
Information Systems (IS)	perception of ICT
	Exploitation of ICT

The latter part of the chapter builds on and modifies the preliminary theoretical framework outlined in Chapter 2. Chapter 5 – Identifying Factors, and the first part of this chapter focus on identifying institutional forces and provide the two most substantial parts of the theoretical framework, the factors and the institutional forces, identified within the three domains: **Country**, **Sector** and **Information Systems (IS)**. The initial theoretical framework was modified based on these factors and forces. This emergent theoretical framework provides a better understanding of the issues underpinning the adoption and use of ICT and e-business by tourism organizations in the Maldives.

6.2 Heterogeneity and dynamism in the tourism industry

The findings also reflect issues that reflect the complexity and direction of industry growth in the tourism sector in the Maldives. The dynamic and heterogeneous nature of the sector plays a significant role in shaping the industry. For example, one of the major transformations reported, influenced by ICT, was the diversity in marketing management strategies. Although many organizations deemed their traditional approach of total dependence on tour operators and/or the charter market a success, some organizations have adopted a mixed approach to marketing to incorporate complex transformations within the hospitality industry, both internationally and locally. For instance, nearly all organizations are members of strategic marketing networks and listed in prominent distribution channels (See Chapter 6, section 6.4.2 *Sector practices*), reflecting their attempt to keep up with the recent transformations in the world tourism industry, and to participate in more sophisticated online marketing and distribution strategies.

Another trend was the diversification of market segments and products, encouraged by the government's decision to expand the tourism industry (See Chapter 3 – Research methodology, section 3.3.2 *Overview of the Maldives tourism industry*). The industry is experiencing a trend towards the high-end market. A number of tourism organizations are moving into the high-end market via joint ventures, or by renting or selling their tourism businesses to prominent industry leaders with diverse offerings in the hospitality industry. Government-owned tourism businesses (or joint venture companies) are no exception. Furthermore, the leasing of additional resorts for tourism activities has been conducted in a manner that required a high investment cost, in turn encouraging foreign investments. The rapid influx of high-end or up-market resorts into the industry strongly affects pricing as well as product offerings. As highlighted in the findings (Chapter 4 – research findings, section 4.4.3.4: *Pricing strategies*) the average price range has escalated and, in order to include a variety of product offerings, pricing has become far more complex. In addition to up-and-coming resorts, even long established tourism organizations have diversified their product offering. For instance, most resorts now have a spa (Ministry of Tourism and Civil Aviation, 2006b) and a number of resorts are offering environmentally friendly products and services to keep abreast with the emerging conscience consumer market (a new international tourism

trend where consumers not only seek freedom and independence but also ecologically sensitive lifestyle products and services, and health-related services such as spas).

The dynamic and heterogeneous nature of the industry (See Chapter 2 – Literature review, section 2.1) not only influences the approach to tourism practices in relation to the product and market (for example, introducing spas and eco-friendly products and services to cater for consumers who seek ecologically meaningful experiences), it also strongly influences the approach to the tourism sector's management strategies and the perception of tourism among members of the tourism sector. Organizations are increasingly geared towards embracing ICT-based management approaches and recognize the industry's information intensiveness. The findings show that the tourism industry is also influenced by market changes, which in turn impact on ICT practices in the hospitality industry. Some owners of tourism organizations perceive that importing foreign management will help them better manage their businesses at an international level. The findings also show that changing approaches to management, or institutional changes, not only affect the **Perception of ICT** but also the level of **Exploitation of ICT** within these organizations. Nearly all organizations perceive technology or ICT as an essential tool for business and are dependent on it. However, the *work culture/environment* of many tourism organizations does not support this perception. There are inadequate human resources available in the Maldives (See Chapter – 3 Research Methodology, section 3.3.1 *Background of the Maldives (research site)*) and the tourism sector depends on foreign labour. In addition, a number of tourism organizations import international management practices which rely heavily on ICT. This is intended to be a remedy but threatens the opportunities of the local workforce. Furthermore, the supporting industry organizations, as part of the institutional environment, do not seem to comprehend the repercussions of the heterogeneity and dynamism in the industry. As indicated in the findings, these support organizations are unaware of the demand for new services and products that recent technological transformations create. For instance, the findings show that little is done to create a secure environment to process financial transactions which are now common in the industry. Similarly, the findings also show there is little coordination among different government authorities or training institutions to address the increased demand for human capital created by the expansion of the sector. This lack of **Collaboration** between key players in the institutional environment not only hinders the effective use

of ICT among industry organizations, but also threatens the success of the tourism industry as a whole.

6.3 Institutional influence on Theme One: Country

The adoption of ICT and e-business by tourism sector organizations, and their alignment with the conditions and resources available, is closely associated with the way the tourism sector behaves, leading to institutional change. These institutional changes strongly influence the challenges of **Resource limitations** and the way issues relating to **Local conditions** of the country are addressed.

6.3.1 Resource limitations

Some of the most significant institutional aspects related to **Resource limitations** are influenced by the entry of renowned international chains and the high-end market trend. For instance, as highlighted in the findings, technological services providers are experiencing an increase in demand for high quality infrastructure, especially from up-market tourism organizations, irrespective of the cost of providing the services. Service providers are compelled to establish a sound technological infrastructure in order to gain legitimacy from tourism organizations and to sustain or expand their businesses. Furthermore, in order to uphold their tourism image organizations, especially up-market tourism businesses, are obliged to provide quality ICT services to their customers. Although this level of service in the institutional environment requires the establishment of sound telecommunication infrastructure, the demand for telecommunications is insufficient to cover the costs of providing high quality services across the Maldives. While it is often mobile tourism service providers or safari vessel operators who are looking to have such services established, most of these are small businesses and therefore unable to create a sufficiently high demand for such services, given the high cost of providing access.

Similarly, the expansion in tourism services has resulted in increased demand for human resources. Since the very beginning of the tourism industry in the Maldives, engagement of locals in the industry has been limited. High staff turn-over and employment of staff on a short-term contract basis is common. To overcome the high turn-over many tourism businesses, especially the resort islands, have been managed by employing a

large number of foreign employees on a short term contract basis. However, because most businesses also lack a planned approach to resolving the long-term human resource management shortages, this practice undermines the sustainability of good management practices, including support for ICT activities. Moreover, as new establishments in the tourism sector tend to imitate practices they perceive as successful, the employment of foreign labour on short term contracts persists.

6.3.2 Local conditions

Within the **Country**, **Local conditions** are influenced by a number of forces within the institutional environment. The findings show that one of the significant issues is that most tourism organizations seek to adopt the most common methods of dealing with issues arising from the physical environment. Another significant finding is that most issues identified as social/cultural influences reflect social structures in the country. While these may be invisible, they have a strong influence on organizational behaviour, for instance, the industry-wide keenness to adopt technology increases the tendency to use ICT within the organization. These social/cultural influences, along with physical features of vulnerability, means that various elements in the sector to share common problems, irrespective of their management approaches. For instance, the barrier of lack of economies of scale makes services more expensive. These issues lead to the importance of formulating policies at national level that would address the institutional demands for efficient and effective ICT use. While the Maldives government have taken some strategic initiatives to improve local conditions, such as eliminating a state monopoly on telecommunications (See Chapter – 3 Research Methodology, section *3.3.1 Background of the Maldives (research site)*), existing policies remain inadequate. This is despite the claims by government authorities and tourism associations that they are strengthening the legal and regulatory framework to encourage e-methods of doing business. The reality is that the regulations introduced are not well implemented, bringing into question the effectiveness of Maldives tourism master plans and national development plans.

6.4 Institutional influence on Theme Two: Sector

The tourism sector is not in harmony in creating an environment conducive to development for all members of the industry. Well-established large businesses have somehow been able to create a favourable environment for their businesses while the “small” players or small businesses with less power are driven along on waves of institutional environment and change. Furthermore, these changes are influenced by issues of lack of **Collaboration**, which in turn strongly affects the **Sector practices** within the **Sector**.

6.4.1 Collaboration

A strong institutional aspect is the role of **Collaboration** or the extent of interaction and coalition between and among government authorities and tourism organizations. The findings highlight one key issue in that the most prominent businesspeople, the tourism sector elites, strongly influence the government and the supporting industry organizations. The findings also show that giving senior government positions to prominent business elites creates opportunities for them to harness the institutional environment in their favour (See Chapter 4 – Research Findings, section 4.4.1.1 *Governance issues*). Sector harmony is undermined by accusations of corruption among elites and senior government officials. Additionally, the findings show that the less powerful businesses have developed a sense of cynicism towards the government, which in turn affects their level of engagement in adopting reasoned strategies such as participating in tourism promotional activities. Furthermore, the lack of **Collaboration** is further compounded by the lack of relationships within government organizations as well as in sector organizations. For instance, the findings show that lack of cooperation within government agencies, and lack of properly defined tasks and responsibilities of departments within the tourism industry, undermine efficiency. Similarly, tourism sector organizations’ staff were experiencing difficulty in interacting with the top management in their own organizations (See Chapter 4, section 4.4.1.3 *Work culture/environment*), leading to high staff turnover. This lack of **Collaboration** has a negative effect on tourism organizations because of their interdependency, which shapes the structure of the institutional field. As Phillips et al (2000) describe, the institutional field is contingent on the structure of power within the field. Thus, interdependency between

institutionalisation and **Collaboration** strongly influences the processes in the institutional field and *vice versa*.

6.4.2 Sector practices

An element of coerciveness and normative sanctions within the sector are reflected in **Sector practices**. A significant issue related to institutional change within the sector is the approach to marketing management, which is strongly influenced by customer expectations. Given that customers are becoming increasingly knowledgeable and able to make complex decisions based on the choices accessible through the Internet, the sector is compelled to change from traditional ways of relying solely on the charter market or tour operators and to focus their marketing strategies towards engaging with global distribution channels. Another institutional aspect is that, because of the dynamics and heterogeneity of the industry, organizations are driven by perceived new competitive pressures. As discussed in section 6.2 Heterogeneity and dynamism in the tourism industry, many tourism sector organizations are changing their product, market, and approach to management and also recognizing the dramatic changes in the hospitality industry that are due to ICT. A number of organizations are adopting strategies such as branding, repositioning their market, changing their product offerings, and creating customised services in order to strengthen their market position. Irrespective of the size of the organization, sector organizations tend to constantly adjust their strategies to conform to new trends, and to modernise their offerings in ways they perceive as more legitimate or successful in identifying a niche within a competitive market.

6.5 Institutional influence on Theme Three: IS

Perception of ICT and **Exploitation of ICT** are the outcome of the extent of understanding of IS within and among members of the organizational field, resulting from the interplay of the **Sector** and **Country**. A number of activities described within these two major categories reflect the fact that the institutional pressure to conform is driving organizations to become more similar in their practices, a process referred to as isomorphism, and to utilise ICT without due caution or strategic planning.

6.5.1 Perception of ICT

Perception of ICT is largely influenced by the institutional field. The “fit” between individual organizational requirements and trends in the sector gets out of alignment. As highlighted in the findings, the top-down approach to management in most of the sector organizations widens the gap between organizational requirements and sector trends, reducing opportunities to gain efficiency. In most of the organizations, the work environment is structured in such a way that operational staff have less say in strategic planning activities. The situation is intensified by the lack of ICT knowledge available in the organization. Under these circumstances, executive management with less understanding of IS, and of the strategic use of IS, tend to follow other organizations’ approach, which they perceive as successful, leading to isomorphism.

6.5.2 Exploitation of ICT

Such isomorphism is also reflected in the category **Exploitation of ICT**. For instance, as reflected in the findings, most organizations had adopted or expressed their desire to adopt the well-known high-tech software applications available or to join the software bandwagon, irrespective of the organizational capabilities or their approach to management. On the other hand, the findings show that, while most of the organizations perceive the importance of web development and a strong web presence, existing websites are often neglected. This is partly due to their inability to access the resources and services required needed for this form of e-business. However, irrespective of the state of their own websites, all sector organizations had a presence in well-known electronic distribution channels and perceived engaging in such strategic networks as crucial.

6.6 Tracing the institutional influences to institutional theory

Institutional theory explains how external structures and practices propagate among organizations within and across institutional fields; or in other words, why organizations tend to become similar over time, and resemble other organizations with the same environment. The concept that best describes this process of homogenisation is isomorphism (DiMaggio & Powell, 1983), which, the authors argue, emerges out of the complex interplay of the influences of so

cial structures, as identified in Giddens' (1979) structuration theory. This isomorphism resulting from organizational interconnectedness has forceful implications for effective ICT use in the tourism organizations included in this study. Firstly, the level of interconnectedness or collaboration has the potential to transform the institutional field (Lawrence, Hardy, & Nelson, 2002; Phillips, et al., 2000). The findings of this current research have shown that **Collaboration** stems from the relationships between and among the members within the institutional field. They also show that the level of **Collaboration** while an important factor in the institutional field in shaping the tourism sector in the Maldives, (See section 6.4.1 Collaboration), may not be the strongest factor identified in the findings.

As highlighted in the literature review, Phillips et al (2000) describe the institutional field as more contingent on the structure of power within the field. Furthermore, according to DiMaggio and Powell (1983), there are three mechanisms or forces that increase homogeneity in an institutional environment, Mimetic pressure, Coercive pressure, and Normative pressure. These mechanisms are not always empirically distinct, but provide mechanisms to facilitate analysis. These three forces and their impact on ICT can be clearly identified in the responses of participants, as shown below.

6.6.2 Coercive pressure

Coercive pressure stems from formal and informal pressure for compliance with institutional rules and the practices of the society and the industry within which organizations function. According to the findings, the actions of formal institutions such as government authorities were inadequate to create an institutional environment that fosters ICT usage among the tourism sector organizations. Thus, the coercive pressure experienced by the tourism industry in the Maldives to use ICT effectively was more external and customer-driven. Given that the success of the tourism industry depends on providing services to customers, processes in the tourism sector demand that organizations seek ways to meet customer expectations, which are often based on the image that the tourism sector portrays. The findings show that the tourism sector organizations examined provide basic services such as Internet access, but feel pressured to go beyond this. This highlights the organizations' perceptions that having a particular standard of service is necessary to uphold their image in the market. Similar

coercive pressure to use a PMS to facilitate the provision of services, in conformity with **Sector practices** was also felt by the organizations in this study. Such practices have become informal standards, perceived as basic to engaging in the tourism industry.

6.6.2 Normative pressure

Normative pressure is caused by the power of collective structures as well as through professional, business, and other key organizations (Powell & DiMaggio, 1991). The research findings show that it is the norm for tourism sector organizations to use software applications such as PMS to manage their businesses, and that implementing software applications to manage day-to-day activities must be part of their establishment. As discussed earlier, one of the significant issues strongly influencing ICT practices within the sector is the prominence of high-tech software applications designed for the hospitality industry. The software applications provider has a presence in the country and nearly all the up-market tourism organizations have implemented it. It is perceived as the right way to gain a competitive edge among international chain resorts. Thus, using PMS and other software applications was perceived as normative behaviour among the tourism sector organizations irrespective of their type of business, their capabilities, and their approach to implementing applications.

6.6.3 Mimetic pressure

Mimetic pressure may cause an organization to behave like other organizations in the environment, in response to strategic uncertainty (DiMaggio & Powell, 1983). The findings show that this is one of the most significant institutional mechanisms present among tourism sector organizations in the Maldives. The practice of ICT adoption within organizations varies, depending on their position in the market, but there are similar approaches to ICT adoption among the different types of organizations examined in this research. For instance, most of the international chain resorts tend to mimic locally owned businesses in their approach to overcoming vulnerability issues, while local businesses tend to mimic the international chain resorts in their approach to management. This has both good and bad impacts. On one hand, the locally managed resorts tend to use high-tech software applications without due caution and strategic planning. On the other, locally owned and/or managed organizations are developing their own websites as strategic marketing measures to make effective use of ICT.

Social as well as organizational structures and the three forceful mechanisms outlined above have created legitimate forms and routines within the tourism sector environment, therefore reinforcing institutional homogeneity. The three mechanisms are not always distinctive; in instances where organizations are coerced by a prominent leader or professional organization into imitating their peers, organizations are becoming increasingly similar but not necessarily more efficient. In other words, tourism sector organizations tend to follow what other similar organizations are doing not because they understand what they are doing, but because they perceive it as a factor in their success.

In tandem with the above discussion on how the ongoing interaction between tourism organizations and the institutional context leads to isomorphism, it is important to note that the transformations resulting from the heterogeneous and dynamic environment of the Maldives tourism industry also affect the institutional field. The institutional field is an emergent, evolving structure shaped by influences from social structures and these transformations, in terms of:

- market management strategies (the use of multiple sources of marketing channels),
- change in the type of product offerings (for example: moving to up-market product),
- the increase in the type of services (for instance to include spa facilities),
- the approach to managing the resort (for example: employing international management),
- the approach by tourism owners to managing their business (selling off their property to renowned international hotel chains for example Hilton), etc.,

The institutional field thus encourages tourism organizations to embrace modernity including technological innovations. However, as evident from this research, such reform and modernization is not necessarily based on technical efficiency but driven by the strategic and deterministic orientation of the organization.

6.7 The new institutional force

The theoretical framework, as configured in Figure 13, reflects a variety of perspectives of the factors affecting the development and use of e-business in tourism organizations in the Maldives. This in turn provides a broader understanding of the key factors affecting the development and use of ICT or e-business, especially in the **Sector** domain, which includes industry organizations, along with supporting organizations such as government authorities, associations and private-sector organizations. The revised and emergent theoretical framework introduces a new institutional focus within the **Sector**; the level of **Collaboration**. This aspect has become significant due to the sector level focus of this research, which has shown that factors relating to issues of **Collaboration** strongly influence the organizational field in shaping the tourism sector to strategically align **Sector practices** in using ICT. In the Maldives, as in many other developing countries, “governments fill a critical function in terms of creating an environment that is conducive to the greater use of ICTs” (UNCTAD, 2009, xiv). On the other hand, the lack of collaborative practices between government agencies is closely related to challenges faced in efficient ICT use (Ezz, Papazafeiropoulou, & Serrano, 2009). The findings of this research have shown the uncoordinated relationships between and among government authorities, industry organizations, and supporting industry organizations negatively affect **Sector practices** in tourism organizations in the Maldives.

This research has also shown that the barriers to **Collaboration** are inherently social/political rather than technical in this instance. *Governance issues* inhibit the strategic planning objectives of the tourism industry of the Maldives and the industry is influenced by the vested interests of the business elites. This has led to a lack of *sector harmony* within the industry. Furthermore, as experienced by sector organizations, the low level of collaboration among and within industry organizations mitigates against a productive *work culture/environment*. The findings show that the level of collaboration or the relationship between the government authorities and tourism sector business elites plays a major role in shaping the institutional field. The level of collaboration within the institutional field has the potential to shape the rules, norms, and resources in the institutional field. In other words, the findings of this research support the argument of certain researchers (Lawrence, et al., 2002; Phillips, et al., 2000) that collaboration has

the potential to transform processes in the institutional field. However, the findings also show that this potential is not being realised, due to lack of collaboration within and among tourism sector organizations. Furthermore, the findings of this current research support researchers who contend that often, the tourism sector in SIDS is dominated by the elites (Lakin & Bertamini, 2002; Telfer & Sharpley, 2008; Tosun, 1998). In this study, given the smallness of the country, the impact of the level of **Collaboration** is critical within the institutional field, and significantly affects ICT usage.

6.8 Building the revised theoretical framework

Figure 13: A theoretical framework for investigating the adoption and integration of ICT and e-business in tourism organizations in the Maldives

Figure 13 shows the theoretical framework emerging from this research. This framework is derived from the initial theoretical framework based on explicitly defined theoretical propositions identified from the literature review as described in Chapter 2, section 2.5.1. *The preliminary theoretical framework*. The theoretical propositions

tentatively identified from the literature pointed towards the entities that might influence the usage and development of e-business in the tourism sector in the Maldives. The initial framework was divided into two parts; external environmental factors and internal organizational factors, as discussed in Chapter 2 – Literature Review. However, the analysis process resulted in the emergence of three major themes representing three domains; **Country**, **Sector**, and **IS**. The findings show that although the low level categories emerging from the research are closely associated with the conceptual entities drawn from the literature review, the categories actually broaden the level of conceptualisation, strengthening the existing theories with new theoretical propositions. The relationship between the three domains is recursive; all three interact with and influence each other. In other words, none of the domains is independent of the others. Moreover, these domains are not bound by the national environment. In fact, all three are influenced by both the international and national environments. For instance, international software applications (which are closely associated with the **IS** domain) are used by many leading international hotel chains in the tourism sector (**Sector** domain) in the Maldives (**Country** domain). However, it must be remembered that all businesses discussed are located in the Maldives and are therefore also strongly influenced by the local environment.

Table 31 shows that each of the themes or domains, **Country**, **Sector**, and **IS**, are supported by both major and low level categories in the data. The set of themes, major categories, and low level categories emerged from grouping the open codes generated from the comparative data analysis process. It was found that the low level categories reflected a set of factors and the major categories reflected the institutional forces affecting the adoption and integration of ICT and e-business. These factors, and the institutional forces, discussed in Chapter 5 and Chapter 6 respectively, are the two major perspectives represented under the three themes of the theoretical framework (Figure 13).

Table 31: Domains, Institutional influences, and Factors affecting the adoption and integration of ICT and e-business in the tourism organizations of the Maldives.

Themes	Major Categories/ Institutional forces	Low level Categories/ Factors
Country	Resource limitations	- <i>technological infrastructure</i> - <i>human capital</i>
	Local conditions	- <i>social & cultural influences</i> - <i>vulnerability</i> - <i>policy</i>
Sector	Collaboration	- <i>governance issues</i> - <i>sector harmony</i> - <i>Work culture/environment</i>
	Sector practices	- <i>customer expectations</i> - <i>marketing management</i> - <i>marketing strategies</i> - <i>pricing strategies</i>
IS	Perception of ICT	- <i>technology experience</i> - <i>technology dependency</i> - <i>technology knowledge</i>
	Exploitation of ICT	- <i>software experience</i> - <i>web development</i> - <i>e-distribution</i>

6.8.1 Inter-relationships among the themes

Although the data analysis process has led to the identification of factors under three themes, the relationships within and among them are non-linear and in many instances reciprocal. The distinction of the various domains, which enabled the identification of more specific factors, forms the basis of understanding ICT usage.

As highlighted in Chapter 5, the contextual environment comprising the **IS**, **Sector** and the **Country** domains was, on the whole, influenced by institutional forces. Those institutional forces and the set of factors tabulated (as shown in Figure 13 and Table 32) give a theoretical understanding of issues more pertinent to their respective contextual environment, though they are by no means exhaustive or absolute nor are they explicit to their respective domain.

One example of this entwined relationship relates to *human capital*. The internal capability (technology know-how within organizations) and external collaboration (among the sector) are viewed as complementary to absorptive capacity. In other words, in relation to the theoretical framework, **Perception of ICT** and **Exploitation of ICT** within **IS** domain, **Collaboration** and **Sector practices** within **Sector** domain, **Local**

conditions and finally **Resource limitation** in terms of *human capital* within **Country** domain, are all issues that determine *human capital* capabilities. This research has shown that people's innate abilities, talents, and capabilities are related to many factors and driven by forces affecting ICT usage. More specifically, the findings show many factors in the **IS** domain are based on the capabilities of organizations' owners and staff. **Perception of ICT** was based on knowledge about the product, technology, awareness, and beliefs about ICT in the tourism industry. Frequently, issues were related to lack of knowledge about business activities, with owners as well as staff having limited knowledge about the software applications used in their organizations, and/or limited knowledge of how to apply the software to address local needs. Similarly, among factors related to **Exploitation of ICT**, a major issue was technological capabilities. On the positive side, the tourism sector has created opportunities for people to develop their capabilities in areas such as networking and web designing. However, even within the **Sector**, the industry experiences limitations in the required human capital. For instance, the findings show that approaches to marketing strategies and management are based on approaches organizations perceive to be successful in similar organizations, with little thought given to efficiency. Organizations were shown to have limited staff capability to analyse and evaluate the situation carefully. Additionally, such approaches have become institutional practice, and created a work culture within the tourism industry where less priority is given to strategic planning and innovation and less emphasis put on building human resources. Consequently, the structures within the tourism industry very much depend on the conditions of the **Country**. The weight given to human resources is, in turn, influenced by limited educational opportunities within the Maldives. Despite this, the people of the Maldives are not only keen to use ICT, they are also keen to further their level of formal education. Conversely, some issues relating to human capital stem from the social-cultural environment. Many local people, especially the young generation, are reluctant to engage in employment requiring manual effort. Furthermore, employees are reluctant to employ Maldivians, describing them as impetuous and having insufficient commitment to their jobs. Employees tend to bring in foreign workers, who are easily available from neighbouring countries (reflecting the influence of the international environment). These interlinked relationships among the different themes, institutional forces, and factors, illustrate the non-linear and inter-related nature of relationships.

While the above paragraph discusses just one example of the entwined nature of relationships represented within the theoretical framework, all the relationships within the framework should be seen as mutually supporting and interdependent; the framework necessarily requires some “artificial separation” of these factors and institutional forces, representing them as discrete in order to provide a theoretical understanding of the features affecting adoption and integration of ICT and e-business.

6.8.2 The emergent theory

The theoretical framework (Figure 13) shows a set of factors and institutional forces affecting the adoption and integration of ICT and e-business in the tourism industry of the Maldives. The adoption and integration of ICT and e-business in the Maldives’ tourism industry was not only affected by these factors but also shaped by institutional forces emanating from the country’s institutional environment.

More specifically, the factors - *technological infrastructure, human capital, social and cultural influences, vulnerability* and *policy* in the **Country**; *governance issues, sector harmony, customer expectations, marketing management, marketing strategies, pricing strategies*, and *work culture/environment* in the **Sector**; and *technology experience (effect), technology dependency, technology knowledge, software experience, web presence*, and *e-distribution* in the **IS** domain - as well as the institutional forces - **Resource limitations** and **Local conditions** in the **Country**, **Collaboration** and **Sector practices** in the **Sector**, and **Perception of ICT** and **Exploitation of ICT** in the **IS** domain – combine to have a significant effect on the adoption and integration of ICT and e-business among the tourism organizations of the Maldives. In addition, international pressures shaping the institutional field of these tourism organizations affect these three domains.

Furthermore, this research has shown that three new aspects (reflected in the theoretical framework) strongly affect the adoption and integration of ICT in the tourism organizations of SIDS like the Maldives. These include the factor of the vulnerability of the country within the **Country**, the level of **Collaboration** within the **Sector** influencing the institutional field, and the factor of *technological dependency* within the **IS** domain. The problems relating to implementing and using ICT tools in the tourism sector organizations were exacerbated due to the **vulnerability** of the Maldives. For

instance, implementing and using ICT in the Maldives incurs additional costs due to the islandness of the country. The factor *technological dependency* is inevitable, especially for SIDS with islandness such as the Maldives. The tourism sector of the Maldives is highly dependent on technology to perform day-to-day activities and perceives it as an essential tool in order to compete with the international market. Additionally, in the Maldives tourism sector, relationships among and within the industry organizations and supporting industry organizations, or **Collaboration**, are critical in shaping the institutional field. The major influence, **Collaboration**, has the potential to shape the rules and norms as well as the resources in the institutional field.

6.9 Chapter Summary

The institutional forces affecting the adoption and integration of ICT and e-business in the tourism organizations of the Maldives, represented in Table 31, show that the contextual environment plays a significant role in shaping the use of ICT. This study has shown that the level of **Collaboration** within the institutional field of the sector has the potential to shape the rules, norms and resources to harness ICT to deliver business outcomes. The institutional forces in Table 32, relating to the **Country**, **Sector** and the **Information Systems** domain also answers the second research question.

RQ2- How do existing institutional forces affect the adoption and integration of e-business in the tourism organizations of the Maldives?

Table 32: Institutional influences affecting adoption and integration of ICT and e-business in the tourism organizations of the Maldives.

Themes/ Domain	Major Categories/ Institutional forces
Country	<i>Resource limitations</i> <i>Local conditions</i>
Sector	<i>Collaboration</i> <i>Sector practices</i>
IS	<i>Perception of ICT</i> <i>Exploitation of ICT</i>

The organizational field is influenced by the **Country**, **Sector** and **IS** domains. Within the **Country** domain, the institutional field is shaped by **Resource limitations** and

Local conditions. Whereas the **Sector domain** is shaped by the level of **Collaboration** and **Sector practices** which in turn shape the institutional field and have the potential to affect the **IS** domain. The institutional forces impacting on the IS domain are **Perception of ICT** and **Exploitation of ICT** both of which strongly affect the adoption and integration of ICT and e-business among and within sector organizations.

The revised theoretical framework in Figure 13 sets out a theoretical understanding of the problem under investigation. The framework identifies a set of factors and institutional forces based on the findings of this study, which are significantly affecting the adoption and integration of ICT and e-business in tourism organizations in the Maldives.

CHAPTER 7: CONCLUSION

7.1 Introduction

The primary aim of this thesis was to explore and describe how organizations in tourism organizations in the Maldives adopt and integrate ICT and e-business. This aim was supported by the development of a theoretical framework providing insight into the issues. In comparison with the preliminary framework (Figure 5, p.77) the research has enabled us to identify a more complex set of factors, which are reflected in this revised theoretical framework (Figure 13, p.232). In particular, the study has uncovered three new factors: the **vulnerability** of the country within the **Country** domain, **technology dependency** within the **IS** domain, and an institutional force, the lack of **Collaboration** within the **Sector** domain, that appeared to play a key role in shaping the level of ICT and e-business. These factors had not been identified in previous research. Furthermore, whereas the initial theoretical framework was based on internal and external factors, this study has shown that these three domains, the **Country**, the **IS** industry, and the Tourism **Sector** interact with and influence each other and are themselves subject to both internal and external influences.

7.2 Reflections on this research

In order to achieve the research objective of exploring and describing how tourism organizations adopt and integrate ICT and e-business in the context of SIDS, through the methodologies outlined in Chapter 3, this study addressed two main research questions, along with related sub-questions:

RQ1- What factors affect the adoption and integration of ICT and e-business in the tourism organizations of the Maldives?

Sub-question 1: How do the conditions within the country affect adoption and integration of ICT and e-business in the tourism organizations?

Sub-question 2: How do the characteristics of the sector affect the adoption and integration of ICT and e-business in the tourism organizations?

Sub-question 3: How do the factors related to IS affect adoption and integration of ICT and e-business in the tourism organizations?

RQ2- How do existing organizational forces affect adoption and integration of ICT and e-business in the tourism organizations of the Maldives?

Due to the scarcity of literature focusing on the research objective within the published IS research (as noted in Chapters 1 and 2), a variety of literature was borrowed from various domains, such as the hospitality industry. The literature review that forms Chapter 2 thus provides a holistic view of existing research related to this study. From this, a *priori* theoretical framework with explicitly defined theoretical propositions was formed to direct the research (as discussed in Chapter 3). Such an approach proved useful for understanding the complex nature of the research.

The research questions themselves were answered using the research methodology detailed in Chapter 3, using an interpretivist paradigm. The data collections involved 21 organizations in total. Although types of organizations were identified initially, the “constant comparison” and iterative nature of analysis led to the identification of seventeen organizations for the first phase of data collection and identification of six organizations for the second, as described in Chapter 3 – Research Methodology section 3.5 *Data Collection techniques*. Data was analysed using a combination of two analytical procedures drawn from grounded theory and multi-grounded theory methodologies. While these methods partly overlap, each has its own strengths and limitations. Grounded theory prescribes a rigorous inductive way of generating theory from empirical data. In practice, using established theories served as a source of inspiration to challenge the abstractions made from empirical data. Multi-grounded theory prescribes a theory condensation process (corresponding to selective coding in grounded theory) to precede explicit grounding processes. In practice, at the explicit grounding stage, the theory was rather subtle and theoretically sensitive to conceptualization based on other theories in the literature. Thus, the theory condensation process and explicit grounding process were conducted cumulatively in an iterative way while the empirical theory was developing. Therefore, a combination of these two theories, grounded theory and multi-grounded theory, was a good fit for data analysis in this thesis.

This interpretive analysis allowed the “discovery” of a number of factors and institutional forces shaping the adoption and integration of ICT and e-business in the tourism organizations of the Maldives. These factor and institutional forces allow us then, to answer the research questions above. At the same time, the selection of theory which the various the codes reflect (that is, the Factors identified as Low level categories, and the Institutional forces identified as Major categories were made in the conjunction with the development of the emerging theoretical framework. Thus, as summarised in Table 27, 28 and 29 of Chapter 5, the factors that impact the adoption and integration of e-business in the tourism organizations of the Maldives are: *technological infrastructure, human capital, social and cultural influences, vulnerability* and *policy* in the **Country** domain; *governance issues, sector harmony, customer expectations, marketing management, marketing strategies, pricing strategies*, and *work culture/environment* in the **Sector** domain; and *technology experience (effect), technology dependency, technology knowledge, software experience, web presence*, and *e-distribution* in the **IS** domain. This answers the first research question by identifying a set of factors relating to the conditions within the country; the characteristics of the tourism sector, and Information Systems, affecting ICT and e-business in the tourism organization of the Maldives. Similarly, Table 30 of Chapter 6 describes how forces emanating from the institutional environment - **Resource limitations** and **Local conditions** in the **Country** domain, **Collaboration** and **Sector practices** in the **Sector** domain, and **Perception of ICT** and **Exploitation of ICT** in the **IS** domain – influence the adoption and integration of e-business in the tourism organizations of the Maldives. This not only answers the second research question but, by bringing out the significance of the institutional perspective, also provides a deeper understanding of the research problem, thus revealing intrinsic issues more prevalent in countries such as the Maldives.

As noted in the introduction to this chapter, these factors and institutional forces are conceptually grouped and linked under the three themes, or domains - **Country, Sector** and **IS** - to form a revised theoretical framework that reflects and supports the findings. This theoretical framework, firmly grounded in the data, shows that ICT and e-business adoption and integration in tourism organizations is affected by the **Sector**, which in turn is influenced by the **Country**, which in turn impacts on **IS** within tourism

organizations, thus reflecting the inter-relatedness and inter-dependence of the institutional forces and themes. In addition, all these forces and themes are affected by international pressure shaping the institutional field of tourism organizations in the Maldives.

Furthermore, the factor of the *vulnerability* of the country within the **Country** domain, the level of **Collaboration** within the **Sector** domain influencing the institutional field, and the factor of *technological dependency* within the **IS** domain constitute three new aspects which strongly affect the adoption and integration of ICT and e-business in the tourism organizations of the Maldives. Thus, the revised theoretical framework provides a deeper theoretical understanding of this issue and has possible implications for similar other SIDS. It is therefore expected this framework will serve as a useful tool for both theory and practice.

The theoretical framework can be seen as a major outcome explaining the phenomenon investigated. Through its focus on the context, that is, the Maldives as a SIDS with islandness, the study has revealed that there exist additional factors pertinent to SIDS, especially SIDS with islandness, that need to be considered in order to understand the use of ICT and e-business in this context.. The frequently addressed set of factors (identified in the preliminary theoretical framework generated from the literature review) is insufficient to explain how ICT and e-business are used in SIDS. A small country is largely affected by vulnerability. This vulnerability is further exacerbated by the islandness of the country, making ICT a dependent tool for development. Being a SIDS with a limited population, coupled with many other factors, social, cultural and economic, has major implications. Among them, the relationships shared among members of an industry or sector has the potential to shape the rules and norms, as well as the resources, in the institutional field of a SIDS. Thus the focus of the study has also revealed the multifaceted nature of the institutional environment. Understanding how tourism organizations use ICT and e-business to find a niche in the international market also proved to be significantly more complex than anticipated. The theoretical framework that emerged from the data provides a coherent and structured way of interpreting this complexity, strengthening the reliability of this study.

In summary, identifying a set of factors coupled with a set of institutional forces is a suitable way to acknowledge the complexity of the phenomena under investigation. Taking this broad perspective in analysing the data allowed the researcher to describe the complexity of the situation in a SIDS with islandness, ensuring the relevance of the findings.

7.3 Limitations of this research

Despite deploying a rigorous research methodology, there were certain limitations arising from the study. It is important to recognize the difficulties and limitations intrinsic to the proposed research design.

- The experience of the selected organizations formed the primary source of data. It was assumed that the interviewees would be able to accurately portray the position of their respective organizations. Obtaining a clear identification of the issues and conditions was one of the difficulties of this study. The selected organizations may represent a less explicit structure or process for e-business that could be mapped on to other organizations. Furthermore, because the major source of data collection was semi-structured interviews, not all questions were asked to all interviewees. These idiosyncrasies limited the comparability of different types of organizations.
- It is possible that the organizations selected from one country (the Maldives), and the resorts included from those accessible upon request are a source of bias. However, it is important to note that the sample represents the whole industry and includes a variety of types of organizations; local as well as multinational and supporting industry organizations were included in order to capture various perspectives. Nevertheless, this research does not claim that the aspects identified are exhaustive. Thus, the generalizability of this research needs to be considered carefully because “no one size fits all”.
- The data analysis may influence researcher subjectivity, because much of the evidence was collected from interviews and documents. This was partially remedied by returning transcriptions of the interviews to the interviewees for

their approval and consent. Furthermore, a combination of grounded and multi-grounded theory methods was used to analyse the data, which required constant comparison of data in order to reach theoretical saturation.

7.4 Contribution of this research

This research has deepened our understanding of the adoption and integration of ICT in the tourism organizations in the Maldives (a SIDS with islandness). Using a combination of grounded and multi-grounded theory analysis to identify a set of factors pertaining to the adoption and integration of ICT and e-business in a specific complex context, this study has developed a theoretical framework for conceptualising the factors and institutional forces affecting the process. The framework represented in Figure 13 and tabulated in Table 32 provides one way of examining the adoption and integration of ICT in the tourism organizations of the Maldives. This research has provided a number of contributions to both theory and practice.

7.4.1 Contribution to theory

One of the main contributions of this research lies in the development of a theoretical framework for explaining factors affecting the adoption and integration of ICT and e-business usage among the tourism organizations of the Maldives. The theoretical framework has shown that ICT and e-business adoption and integration are affected by conditions within the **Sector** and within the **Country**, as well as by the **IS** domain. The relationship between the three domains is recursive; all three interact with and influence each other. Additionally, these three domains are affected by international pressures shaping the institutional field of tourism organizations. This theoretical understanding of the issues provides a mechanism to facilitate their analysis.

Although existing research supports the idea that technology adoption is influenced by organizational and environmental factors, these theories fail to explain factors critical to SIDS. More generally, this study contributes to the technology adoption literature by identifying a set of factors inherent in the context of the study that affect technology adoption. More specifically, this study has extended theory to add two new factors; **technology dependency** and the **vulnerability** of the country to technology adoption theory. Focusing on the organizations of a specific industry, in this case the tourism industry of the Maldives, this study has shown that ICT is indispensable to the industry, and tourism organizations are dependent on technology.. In other words, **technology dependency** is a major factor in the **Information Systems** domain, influencing organizations' technology adoption. In a similar vein, tourism organizations of the Maldives have to use ICT to overcome some of their environmental conditions or vulnerabilities, especially those due to the country's islandness. In other words, **vulnerability** is a critical environmental factor in the country domain, influencing technology adoption.

Further, in addressing a situation that was poorly understood this study has been able to show that the adoption and integration of ICT in the tourism industry of a SIDS cannot be understood without considering the local conditions and the institutional field of the country. The focus of the research on the use of ICT in the tourism industry a SIDS highlights the need for more research to investigate local conditions in developing countries when researching the use of ICT in tourism. In particular, the findings of the

research that the adoption and integration of ICT and e-business in the Maldives' tourism sector is shaped by institutional influences or forces emanating from the country's institutional environment has highlighted the relevance of institutional theory to the study. Although, in the past, institutional theorists have noted the importance of networks and inter-organizational connections, this research has shown that these relationships are *critical* in shaping the institutional field in SIDS like the Maldives. And, given that **Collaboration** between tourism industry organizations has the potential to shape rules and norms, as well as resources in the institutional field, the extent of that **Collaboration** has the potential to shape the use of ICT and e-business among tourism organizations, affecting the social, economic and cultural well-being of the country. Hence, this research helps to inform institutional theory, to gain insight into how the level or extent of **Collaboration** shapes the institutional field. In this way, the research has demonstrated how applying a distinctive view – applying the institutional perspective to the Maldives tourism industry—can improve our understanding of how ICT and e-business can be more successfully utilized in the tourism industry in general, a critical area of development for many SIDS.

The unique multiple disciplinary perspectives used in this research, i.e. Information Systems, Tourism Studies and Development Studies, thus not only bridge the gap between IS research and tourism research, focusing on technology adoption, but also add to the very limited literature focused on SIDS with islandness among developing countries. This multi-disciplinary perspective has helped identify critical areas of research in SIDS for future IS researchers. In addition, this approach, adopted in combination with institutional theory in order to understand the complex problem under investigation, has provided a far richer explanation of the factors affecting ICT and e-business adoption and use in tourism organizations in SIDS with islandness, and forms a major part of the unique contribution of this study.

7.4.2 Contribution to practice

This research also has important managerial and practical contributions. The theoretical framework is easily understandable and closely represents the reality of the area studied.

It identifies not only the factors but also the institutional field, and explains the site of research and experiences.

The use of ICT and e-business in tourism and supporting industry organizations needs to be informed by the conditions existing in the **Country, Sector** and the **IS** domains. This knowledge should guide the future efforts of tourism organizations, keeping in mind the influence from the institutional field, including the international pressures. The findings, and the theoretical framework developed alongside the findings, identify major issues that need to be addressed, and tourism organizations can use these as a guide for strategic planning and management in the sector.

The findings may be useful for sector practitioners, helping them develop a broader perspective of the organizational setting as well as a deeper understanding of the situation in a SIDS with islandness such as the Maldives. In this way, the research has the potential advance the tourism industry in the country, helping organizations develop and promote ICT and e-business in a way more tailored to the environment.

Finally, the research also serves as a guide for government authorities in the Maldives to develop better strategies, policies, and regulations. Government authorities need to address the issues identified in this research, which are critical for the future success of the tourism industry in the Maldives.

7.5 Directions for future research

The theoretical framework that emerged from this research to explain the adoption and integration of ICT and e-business among tourism organizations in the Maldives has the potential for use in other contexts, especially in other SIDS. The theoretical framework forms a broad starting point for future researchers. The framework, represented in the various themes and categories, would allow researchers to critique and develop it in order to acquire a deeper understanding of the issues relating to adoption and integration of ICT and e-business in other contexts.

Furthermore, researchers could also apply the broad perspective of this research to focus on different industries, in other countries. This research has shown that taking a broad

perspective of the tourism industry, by including the institutional field and supporting industry organizations, has allowed the capture of a realistic and comprehensive view of the industry's direction and growth and the processes involved in shaping the tourism environment.

7.6 Chapter Summary

In summary, this study has added richness to the understanding of how adoption and integration of ICT is affected in a particular industry (tourism organizations) in a given context (a SIDS, the Maldives). It has become clear that the adoption and Integration of ICT is a complex process, largely depending on the specificities of the situation and the context. A theoretical framework has been developed to show that ICT and e-business adoption and integration in the tourism sector is affected by a set of factors and conditions within the **Sector** and the **Country** as well as the **IS** domain. The relationship between the three domains is recursive; all three interact with and influence each other. In addition, international pressure shaping the institutional field of the tourism organisations affects these three domains. This research has not only revealed intrinsic issues (important factors and the significance of institutional forces) more prevalent in countries like the Maldives but has also identified the potential value of these findings to researchers and practitioners, and suggested possible opportunities for future research. Although the limitations of this research are noteworthy, it is hoped that it will be of use to researchers and other stakeholders.

This research has contributed for the following publications:

- Ali, V., Cullen, R. & Toland, J. (2013). Information and Communications Technology in the Tourism Sector of the Maldives: an Institutional Perspective, Hawai'i International Conference on System Sciences, 7-10 January, Maui, Hawai'i
- Ali, V., Cullen, R. & Toland, J. (2013). Information and Communications Technology and Tourism in Small Island Developing States: The case of the Maldives Fourteenth Annual Global Information Technology Management (GITMA) World Conference, June 16-18, 2013 in Kuala Lumpur, Malaysia (*Received Best Paper Award*)

APPENDICES

Appendix 1 Interview outline

What are the e-commerce activities in the tourism sector?

- Tell me about how you have been using ICT in your organization
- Why do you use this software? Give an example (ref Questionnaire)
- How does this software help your business (ref Questionnaire)

How does e-commerce adoption and deployment progress in this sector?

- Tell me about the development of ICT in your organization?
- Who manages ICT activities? Are they outsourced? Why? Was it a good choice?
- What really makes you buy or adopt a new software/hardware (ref questionnaire)

What are the benefits of e-commerce activities?

- Does ICT help in achieving your business goals? How?
- Could you tell me about an incident where you felt ICT benefited your business?

What are the potential applications of e-commerce in the tourism industry? How were they developed?

- How does ICT affect your business or help in achieving your targets? What impact does ICT have on your business?
- Which application is the most useful? What existing applications can be used more effectively? (ref Questionnaire)
- What other application do you wish to have? Why?

What are the problems in usage and development of e-commerce in this sector?

- What are the problems you face in using ICT? Can you give me an example?
- What could be a solution for this?

What are the benefits of having a web site, and how do the tourism organizations make sure potential clients can find their products?

- How do you market online?
- What are the benefits of having a web site? Who is responsible for it?
- How does your web site contribute to your business? Do you know how people view your web site?
- How often do you update your website? Who is responsible for it?

How are various ICT functions of the organizations interrelated to each other?

- How are your networks interrelated among different departments of your organization? Does your web site have any relation to other applications? How? (ref Questionnaire)
- How are documents exchanged? (internally/externally)
- How do you manage your network/s? Is it adequate for the business?

How does the sector organization's management view e-commerce in the sector?

- What is the goal of your business? What is your core competency?
- How do you market your product using ICT? How do you manage customer relations? How does ICT help with repeat custom?
- How do you manage your business partners? Do they have access to your systems?

Is the management aware of the e-commerce dynamics of the sector and the potentials of e-commerce?

- Tell me how you have been changing your business using ICT?
- What are your future plans for marketing? In your opinion, what would be the best thing to do? Why?
- How do you assess your ICT activities? How do you monitor them or identify what is to be done next?

What sort of human capital exists? How is it developed in the tourism sector? What are the problems in managing human resources?

- Tell me about your staff capabilities (IT Staff)
- Do your staffs often come-up with some suggestions?
- Do you have adequate staff to maintain and manage ICT? What are their capabilities? How are they trained?

Does the sectoral environment reinforce e-commerce usage and development in the tourism organizations?

- Have you experienced radical changes in the way you market your product? How? (intermediation/disintermediation - pricing strategy)
- Tell me about the major changes that you have experienced? Were these difficult? Why?
- How associated are you with other competitors? Do you share business ideas? (formal or informal)
- Do you feel any pressure from your competitors? How?
- Tell me about how you market your product with the help of international counterparts?

What are the external environment factors and how and why do they influence e-commerce in tourism organizations?

- Tell me about the relationships with the international travel agencies or tour operators?
- What challenges do you face dealing with them?
- How do you meet their expectations? (extent of e-commerce usage by clients)
- Is climate change and other environmental concerns affecting your business?

How does the national environment influence e-commerce in tourism organizations?

- Do you think DMOs can help you? Do you have a close relationship with them?
- Do you think government should help with tourism? How?
- Other than government, what other parties can help you? How?
- What's your opinion on the government policy for tourism expansion?
- Do you think the political instability affects your business? How?

Appendix 2 Questionnaire

QUESTIONNAIRE

1. COMPANY INFORMATION

Company:	
Company Contact's Name:	
Contact's Title:	
Address:	
Telephone number:	Fax:
Email Address:	
Company's Website:	
Type of business: ☐ resort ☐ hotel/guesthouse ☐ travel agency	
Type of ownership: ☐ sole proprietorship ☐ joint venture ☐ other (please specify)	
Type of Business: ☐ locally owned ☐ part of local chain of hotels ☐ part of international chain of hotels ☐ other (please specify)	
Star rating:	Years in operation:
Occupancy rate:	Annual turnover (US\$):
Number of employees:	Size of business: (number of bedrooms/customers)

2. CONTACT INFORMATION

Name:	
Title:	
Email Address:	
Nationality: ☐ local ☐ foreign	Gender: ☐ male ☐ female
Age group: ☐ below 25 ☐ 26-35 ☐ 36-45 ☐ 46-55 ☐ over 55	
Telephone number:	Fax:
How long have you worked for/owned the business:	

Resort/Guest house

ICT facilities *(please tick where appropriate)*

Facilities supported by ICT:		
☐ restaurant	☐ conference	☐ leisure
☐ in-room services	☐ mini-bar	☐ telephone
☐ entertainment		
Others (please specify):		

In-room services:		
☐ Internet access	☐ entertainment	☐ telephone
☐ locker	☐ mini-bar	
Others (please specify):		

ICT infrastructure *(please tick where appropriate)*

General infrastructure in place and date of establishment (since)	
☐ email account _____	☐ broadband connection _____
☐ wireless connection _____	☐ intranet _____
☐ extranet _____	☐ website _____
Others (please specify):	

Business activities supported by ICT infrastructure *(please tick where appropriate)*

General infrastructure in place and the type of software used	
☐ customer information	_____
☐ accounting	_____
☐ human resources	_____
☐ procurement	_____
☐ room allocation	_____
☐ revenue	_____
☐ reservations	_____
☐ billing	_____
Others (please specify):	

Travel agency

ICT infrastructure *(please tick where appropriate)*

General infrastructure in place and date of establishment (since):

☐ email account _____

☐ broadband connection _____

☐ wireless connection _____

☐ intranet _____

☐ extranet _____

☐ website _____

Others (please specify): _____

Business activities supported by ICT infrastructure *(please tick where appropriate)*

General infrastructure in place and the type of software used:

☐ customer information _____

☐ accounting _____

☐ human resources _____

☐ billing _____

☐ reservations _____

Others (please specify): _____

Appendix 3 Sample letter, Information Sheet and Consent form

VICTORIA UNIVERSITY OF WELLINGTON

Te Whare Wānanga o te Ūpoko o te Ika a Māui

SCHOOL OF INFORMATION MANAGEMENT

A letter of introduction to candidate organizations

<Date>

Dear <participant>

Subject: Approval to undertake research at your organization

I am seeking approval to undertake research in your organization. I am a PhD student in the School of Information Management at Victoria University of Wellington. As part of this degree, I would like to choose your organization as an integral component of my PhD project. The Project Title is: **The role of information and communication technology in the “Sunny side of life”: An e-commerce assessment model for the tourism sector of the Maldives.**

The purpose of this research is to investigate major issues of effective usage and adoption of e-commerce. This research aims to develop an effective e-commerce assessment model that will help to further develop businesses in the tourism industry of the Maldives.

I am hoping to interview members from the tourism sector, and related organizations. I hope to acquire knowledge of the perceptions and expectations of the participants in using e-commerce. I am seeking your permission to interview members of your organization for the purpose of this research. This information will be treated as sensitive; participants will be able to check transcripts of interview and may withdraw anytime before 1 December 2008. Before conducting the interview I may also need to ask one of the members of your organization to complete a preliminary set of questions about some of the computer based applications used in your organizations. I would also like to seek your permission to review relevant documents of your organizations in order to gather more information on the subject. Wherever these are confidential I will respect that.

The project has been approved by the Human Ethics Committee of the School of Information Management at Victoria University of Wellington. All raw data will be kept confidential to the researcher, my supervisor, and a second coder or a transcriber who may be hired for the project. The collected, collated and analysed data may be published as case studies, academic journals, and presented at conferences. The thesis will be submitted for marking to the School of Information Management and deposited in the university library. Any information or opinion that you may provide will not be attributed to you, and you will not be identified in any way without your permission. A copy of the written notes and the transcription of each interview you participate in will be sent to you for review and feedback. You may revise any written notes or transcripts of recorded sessions to ensure accuracy. Throughout the project, raw data will be kept under password protection and destroyed two years after the completion of the project.

I will be grateful if you could send me your notice of acceptance before <date>. If you have any questions or would like to receive further information about the project, please contact me on <local phone no> or via email at vizaad.ali@vuw.ac.nz, or my supervisor: Associate Professor, Dr. Rowena Cullen, at the School of Information Management at Victoria University of Wellington, by phone: + 64 4 463 5788 or via email rowena.cullen@vuw.ac.nz or via post.

Yours sincerely

Vizaad Ali

Phone: <local phone no>

Email: vizaad.ali@vuw.ac.nz

SCHOOL OF INFORMATION MANAGEMENT

Information Sheet

<Date>

Dear <participant>

**Project Title: The role of information and communication technology in the
“Sunny side of life”:
*An e-commerce assessment model for the tourism sector of the Maldives***

I am a PhD student in the School of Information Management at Victoria University of Wellington. As part of this degree I am undertaking a research project leading to a thesis. The project investigates major issues of usage and adoption of e-commerce in the tourism sector in the Maldives. This research will also develop an effective e-commerce assessment model that will help the tourism industry of the Maldives. Prior to conducting the proposed project, Victoria University of Wellington requires that ethical approval be obtained for research involving human participants, and that I obtain your informed consent.

I am hoping to interview members from the tourism sector, and related organizations. I hope to acquire knowledge of the perceptions and expectations of the people who use e-commerce. Your executive has given permission for you to participate in my research. The information you provide will be treated as sensitive; you will be able to check transcripts of your interview and may withdraw at any time before 1 December 2008. The interview will take about 30 to 90 minutes. In addition to interviews, I have got permission from your executive to review relevant documents of your organization in order to gather more information on the subject. Wherever these are confidential I will respect that. If you feel the need to withdraw from the project, you may withdraw from this project, without question at any time up until 1 December 2008.

The project has been approved by the Human Ethics Committee of the School of Information Management at Victoria University of Wellington. All raw data will be kept confidential to me, my supervisors, and an assistant who may be hired for the project. The collected, collated and analysed data may be published as case studies, academic journals, and presented at conferences. The thesis will be submitted for marking to the School of Information Management and deposited in the university library. Any information or opinion that you may provide will not be attributed to you personally, and you will not be identified in any way. However, your opinion may be attributed to those of your organization if your organization authorises to do so. A copy of the written notes and the transcription of your interview will be sent to you for review and feedback. You may make changes any written notes or transcripts of recorded sessions. Throughout the project, raw data will be kept under password protection and destroyed two years after the completion of the project.

If you have any questions or would like to receive further information about the project, please contact me (details below) or my supervisor: Associate Professor, Dr. Rowena Cullen, at the School of Information Management at Victoria University of Wellington, by phone: + 64 4 463 5788 or via email rowena.cullen@vuw.ac.nz or via post.

The consent form that includes a request for permission to tape-record interviews is attached. If you agree to participate, please complete the form, sign it, and return it to me personally or in the enclosed stamped and addressed envelope by <date>.

Thank you for your time

Yours sincerely

Vizaad Ali

Phone: <local phone no>

Email: vizaad.ali@vuw.ac.nz

VICTORIA UNIVERSITY OF WELLINGTON

Te Whare Wānanga o te Ūpoko o te Ika a Māui

SCHOOL OF INFORMATION MANAGEMENT

Consent to participate in Research

**Project Title: The role of information and communication technology in the
“Sunny side of life”:
*An e-commerce assessment model for the tourism sector of the Maldives***

I have been given, and have understood an explanation of this research project. I have had an opportunity to ask questions and have had them answered to my satisfaction. I understand that I may withdraw myself (or any information I have provided) from the project without having to give reasons as long as I do it by 1 December 2008. I can do this by e-mailing Vizaad Ali or her supervisor at the email address given below. I understand that if I withdraw from the project, any data I have provided will be returned to me or destroyed by Vizaad Ali.

I understand that any information I provide will be kept confidential to the researcher, her supervisor, or to an assistant who might be hired. I understand that the information I have provided will be used only for this research project and that any further use will require my written consent. I understand that the recording of interviews will be electronically wiped two years after the conclusion of the project unless I indicate that I would like them returned to me.

[Please mark with a ✓ to indicate agreement]

- ☐ I agree to take part in this research
- ☐ I understand that I will have an opportunity to check the transcripts of the interview
- ☐ I would like to receive a summary of the results of this research when it is completed
- ☐ I understand that the data I provide will not be used for any other purpose or released to others without my written consent
- ☐ I understand the published results will not use my name, and no opinions will be attributed to me in any way that will identify me, without my written consent

Chose where appropriate/applicable:

☐ I understand the published results may use the name of our organization, and opinions can be attributed to our organization.

OR

☐ I understand the published results will not use the name of our organization, and no opinions will be attributed to our organization in any way that will identify us, without our written consent.

Signature: _____

Name of the participant: _____

Date: _____

If you have any questions or would like to receive further information about the project, please contact Vizaad Ali on <local phone no> or via email at vizaad.ali@vuw.ac.nz, or her supervisor: Associate Professor, Dr. Rowena Cullen, at the School of Information Management at Victoria University of Wellington, by phone: + 64 4 463 5788 or via email rowena.cullen@vuw.ac.nz or via post.

Appendix 4 Interview response summaries for theme One: Country

Organization	Resource limitations		Local Conditions		
	Technological infrastructure	Human capital	Social and cultural influences	Vulnerability	Policy
A	- requires setting up advanced technological infrastructure in the islands	- there are some capable Maldivians although limited in number	- there are some good educated, intelligent people in the country - Maldivians are clever people - intend to include latest technology to progress ahead - difficult to convince the top management	- require to generate facilities and resources internally and incurs high cost - basic running cost is expensive because have to generate them internally - the low lying islands makes it more risky to invest (more prone to effects of tsunami)	- significant work in IT is ongoing at government level - faces difficulties due to lack of payment gateway services availability in the country. Hoping that these services will be available soon at a reasonable price

B	<ul style="list-style-type: none"> - need to upgrade the existing infrastructure - the speed of the network is not good 	<ul style="list-style-type: none"> - the young generation joining the work force are equipped with basic knowledge of computing - basic on-the-job training is provided in most of the cases - Maldivians do not get the opportunity to educate themselves in the hospitality industry - face difficulties in finding human resources required 	<ul style="list-style-type: none"> - Maldivians are capable people, they are gentle and have a nice smile – valued characteristics for providing services - increasing incidences of young people vulnerable to new foreign influences (narcotics) - Maldivians acquire languages easily - Maldivians are reluctant to work in resorts - reluctant to change - at the implementation stage of acquiring latest applications in the industry 	<ul style="list-style-type: none"> - the country itself has unique features - the local environment, culture and the people are unique 	<ul style="list-style-type: none"> - need to train Maldivians for the hospitality industry
C	<ul style="list-style-type: none"> - has implemented high quality infrastructure in some properties - service provider attends to problems in a timely manner 	<ul style="list-style-type: none"> - staff were trained to use the software application by the vendors - often training is conducted on the job 	<ul style="list-style-type: none"> - Majority of staff will come and go within one year - Maldivians are required for the industry; who cannot be replaced with foreigners - money is not the only motive; high staff turnover 	<ul style="list-style-type: none"> - logistic arrangements incur a high cost - has difficulties in logistic arrangements 	<ul style="list-style-type: none"> - expressed concerns towards tourism income distribution in the country - need to create awareness on the importance of the tourism sector, among people of the entire country

D	<ul style="list-style-type: none"> - have a high quality infrastructure in place - network needs to be well maintained in order to avoid indirect problems 	<ul style="list-style-type: none"> - limited opportunities to get training in the hospitality industry - runs an apprentice program for locals - often lacks industry related skills and awareness 	<ul style="list-style-type: none"> - high staff turnover 	<ul style="list-style-type: none"> - salty environment affects the equipment - need to take (costly) precautionary measures for natural disasters which are more prone to island environment 	
E	<ul style="list-style-type: none"> - has high quality infrastructure - provides timely technical assistance 	<ul style="list-style-type: none"> - staff are trained on the job 	<ul style="list-style-type: none"> - Maldivians are easily to be trained and have inherent qualities required for the tourism industry - have to fight with the top management to convince them to use certain applications 	<ul style="list-style-type: none"> - 'each island is a resort' concept provides major challenges 	
F	<ul style="list-style-type: none"> - needs to upgrade technological infrastructure to provide better services 	<ul style="list-style-type: none"> - new recruits are trained on the job - the country has limited means to generate the human resources required by the sector - training people will require some time for them to be productive in the sector 			<ul style="list-style-type: none"> - lack of standards, code of ethics for industry operations - lacks quality standards - needs a cheaper means to use e-merchant accounts, waiting for the local banks to provide the services

G	<ul style="list-style-type: none"> - has difficulties due to limitations in the existing network infrastructure 	<ul style="list-style-type: none"> - faces difficulties in training staff - staff do not stay if they do not get other benefits - hard to get specialised Maldivians 	<ul style="list-style-type: none"> - felt Maldivians took the worst thing from Europe (narcotics) - careless about jobs and do not stay at jobs for a long period - Maldivians do not want to work as labourers ' - Maldivians are easily trained - Top management share less with the staff 		<ul style="list-style-type: none"> - government should establish an electronic network among tourism organizations to facilitate the sector
H	<ul style="list-style-type: none"> - faces some problems with connectivity and speed - has close relationship with service providers 		<ul style="list-style-type: none"> one generation is destroyed (by narcotics) - shares a close relation with the social networks and depends on them for business 	<ul style="list-style-type: none"> - incurs high cost due to natural calamities (eg: tsunami) 	
I	<ul style="list-style-type: none"> - existing infrastructure is not very stable 		<ul style="list-style-type: none"> - has modern applications but limited function - Maldivians are lazy - depend largely on social network for business 		

J	<ul style="list-style-type: none"> - needs to upgrade the network because the network is not very stable - services are not stable at the moment 	<ul style="list-style-type: none"> - most of the new recruits have some basic knowledge of computers - offers a good salary and benefits to the staff but they do not stay for long 	<ul style="list-style-type: none"> - switch from job to job - cultural issue intend to provide latest technology - depends largely on social network for business 		
K		<ul style="list-style-type: none"> - people are intelligent but lazy 	<ul style="list-style-type: none"> - Maldivian culture influences the work attitude - staff are intelligent but have a negative attitude and lack responsibility - jobs are easily available 		<ul style="list-style-type: none"> - government needs have more promotional activities to promote the tourism sector of Maldives as well as the hotels
L		<ul style="list-style-type: none"> - need to train the staff in every aspect 	<ul style="list-style-type: none"> - the upbringing of our children influences the attitude towards work - difficult to retain staff at jobs - cultural issue in the country - prefers the latest trend in IT 		<ul style="list-style-type: none"> - hesitant to use electronic means to process transactions due to fear of fraudulent activities - has encountered certain problems in using electronic means and could not find solutions to resolve them

M	<ul style="list-style-type: none"> - faces difficulties due to limitations in nationwide coverage - Internet speed is very slow in most of the areas even though accessible - services and quality offered by service providers are improving 	<ul style="list-style-type: none"> - lack of experienced staff - If Maldivians are offered the same benefits as foreigners get they will stay - the country is not able to generate the human resource required by the sector 	<ul style="list-style-type: none"> - foreigners cannot be replaced by Maldivians required for the tourism industry - some good qualities required for the sector are inherited from our ancestors - intend to use latest technology 	<ul style="list-style-type: none"> - difficulties in getting connection with the networks especially due to big seas within the country - gets disconnected at critical locations - has limited means for investing in high quality equipment required for services, due to limited customers 	<ul style="list-style-type: none"> - the government needs to enforce regulations in order to safeguard the protected areas of the country - need to stop shark fishing and other sea anemones - need to create awareness among Maldivians to engage in safari activities and to protect the environment - fears the lack of approach to create awareness and training might jeopardise the future of the tourism sector with foreign workers - wishes to trade with foreign currency depending on the targeted market - concerned about the security and trust in using electronic means
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N	<ul style="list-style-type: none"> - has difficulties in connecting at major locations in the country 		<ul style="list-style-type: none"> - most people have some basic knowledge to use ICT applications including web based applications - there are some ICT specialists (web designers) in the country '- Maldivians have innate qualities required for the industry - reluctant to change or expand 	<ul style="list-style-type: none"> - we do not have enough customers to generate a high demand for electronic services to be used in our business - logistic arrangements incur high cost and this is a major challenge - tourism is a risky business in this environment 	<ul style="list-style-type: none"> - lacks confidence in using electronic means due to the lack of consumer protection/ legislations - need to educate the tourism sector of the Maldives '- need to form standards/regulations to work in the tourism sector
O	<ul style="list-style-type: none"> - initially had difficulties in implementing advanced technical features - the existing system is fine but at times experiences very slow connection 	<ul style="list-style-type: none"> - some formal training arrangements are made with partners 	<ul style="list-style-type: none"> - staff turnover is very high - switches job often - we have not prepared our young generation to take up responsibilities or jobs 	<ul style="list-style-type: none"> - have limitations in getting customers due to limited population of the country - difficulties to create a sufficiently high demand to engage in international networks 	

P				- very different from city hotels especially the logistic arrangements	
Q	<ul style="list-style-type: none"> - need to address some problems faced by some tourism organizations in getting access to technological infrastructure - slow network and the services are expensive 	<ul style="list-style-type: none"> - have limitations in providing opportunities to get training in the tourism sector as well as to acquire technical training - government does not have the finance to train enough people required for the tourism sector - government facilitates training and encourages the private sector to offer training opportunities - training resort concept is yet to be developed in the country 	<ul style="list-style-type: none"> - parents are reluctant to send their children, especially females, to work in the tourism sector - everybody tries to maintain a close relationship with everyone 	<ul style="list-style-type: none"> - salty environment requires additional facilities in order to protect the equipment - providing electronic services is expensive in the country - travelling to islands is expensive - limitations in getting equipment from the market 	<ul style="list-style-type: none"> - Rules and Regulations require modification and updates - currently experiencing some problems in executing existing laws/rules/regulations - currently working on alleviating technical difficulty, more specifically the antenna problem faced by resort islands - the sector definitely needs to develop human resource in the tourism sector - do not perceive a high demand for e-merchandised accounts

R	<ul style="list-style-type: none"> - notice trend towards advanced technology usage especially in the upcoming resort islands - still at the infant stage of using advanced technologies - to some extent moving towards online solutions 		<ul style="list-style-type: none"> - normally deals with the top management - encounter problems at the implementation stage to meet the need of staff working in the field '- still reluctant to move out of the norms - relaxed environment 	<ul style="list-style-type: none"> - the scope of using ICT applications is limited in the Maldives - most complicated packages are handled in the Maldives '- implementing applications at the initial stage of resort is far more challenging in the Maldives due to its geography 	
S		<ul style="list-style-type: none"> - limitations in hospitality training - provide some apprentice programmes in the country - intend to work with government to introduce a new concept of a training resort 	<ul style="list-style-type: none"> - young people do not want to work in tourism industry and the parents are sceptical about their children working in tourism industry - Maldivians reluctant to work in labour intensive jobs - tourism sector is under criticism for not providing equal facilities to Maldivians as to foreigners '- remoteness of the islands hinders the social life of people working in resort islands - Maldivians are keen to use technology - latest gimmicks - Resorts are quick to adopt technology - we do not have enough people joining the tourism industry; lack of man power 	<ul style="list-style-type: none"> - volume of business available in the country is limited 	<ul style="list-style-type: none"> - difficulties faced by the tourism sector in getting Maldivians to work in the resorts in order to comply with the rule of employing at least 50% Maldivians in the resorts - lacks standards, regulations and code of conduct - no employment standards - need to enforce laws/regulations and police for people conducting tourism activities

T	<ul style="list-style-type: none"> -the new trend towards upmarket results in increase in demand -High demand for upgrade in infrastructure - providing high quality/speed incurs high costs, and faces major challenges due to geography of the country - have to provide quality/quarantined services especially to the emerging high end marketed resorts, resulting in high cost of infrastructure 			<ul style="list-style-type: none"> - each property has to establish their own (stand alone) infrastructure even though they belong to same management - high quality infrastructure is not feasible to cover the entire country due to limited demand for services ' - incurs a high cost to provide quality infrastructure - need to take (costly) precautionary measures to prevent devastation from natural calamities (eg: Tsunami) 	<ul style="list-style-type: none"> - there is a high demand to provide a secure environment for the tourism industry - takes the risk to provide a guaranteed services to their customers irrespective of the situation
U	<ul style="list-style-type: none"> - very different from city hotels requires high investments - need to customise the network setup to the environment 	<ul style="list-style-type: none"> - there are some good trained, qualified people in the country - face difficulties in getting training in advanced technologies 	<ul style="list-style-type: none"> - Maldivians are reluctant to partake in tourism IT activities - Maldivians are intelligent but they are impetuous - want to start a career at senior positions 	<ul style="list-style-type: none"> - difficulties in providing technical services due to physical structure of the islands - quite unique when compared to hotel concept - type of equipment required has particularities due to the environment 	

Appendix 5 Interview response summaries for theme Two: Sector

Organization	Collaboration			Sector practices			
	Governance issues	Sector harmony	Work culture/environment	Customer expectations	Marketing Management	Marketing strategies	Pricing
A	<ul style="list-style-type: none"> - strategy for tourism expansion was not wellcoordinated - limitations in logistical arrangements hinder direct booking 	<ul style="list-style-type: none"> - shares a very close relationship with the government authorities - government authority working on public interest 	<ul style="list-style-type: none"> - often young ,capable staff get frustrated when the company does not support or is reluctant to improve/implement technological developments - needs to be educated on e-commerce -there is no person to take responsibility 	<ul style="list-style-type: none"> - note that large number of tour operator bookings comes through electronic means and is increasing - there is an increase in direct bookings 	<ul style="list-style-type: none"> - booking through the Internet online sites are increasing - Internet based tour operators are increasing - Internet booking is becoming a major source of booking - reluctant to risk the percentage given to tour operators for allotment - over booking is a common practice in the country 	<ul style="list-style-type: none"> - strong emphasis is given to promote the products under the brand name - high rents demand fine brands to be introduced to yield from the product - trend is to focus on upmarket customers - different time of the year focus on different countries based on their holidays, seasons etc - need to be careful in mixing customers from different countries 	<ul style="list-style-type: none"> - increases in fuel prices make it difficult for tourism operators to maintain service quality due to high costs involved in providing the services - most preferred is to have direct bookings because the margin they get is high - the approach to pricing has also changed with the increase in services and products offered - the clientele, and the market segments have changed

B		<ul style="list-style-type: none"> - share a close relationship with the government 	<ul style="list-style-type: none"> - faces difficulties in finding people - most of the staff know basic computing, but are not experts in IT 	<ul style="list-style-type: none"> - second home for some customers - offers discount and special services to repeat customers - customers share a close relationship with staff 	<ul style="list-style-type: none"> - foresees that the organizations cannot depend on tour operators if they are to compete internationally - provides property information to tour operators using the Internet - Internet provides better means to do marketing - intends to engage more online marketing activities - manages overbooking by relocating customers to other properties often within the chain - everyone is going for five star 	<ul style="list-style-type: none"> - has well established relationship with tour operators - as we change our product, operators also change the marketing brand name for the properties although the property is marketed by the same tour operators - group branding seems to be more effective - offers packaging within the brand properties - offers information in multiple languages - deal with agents who can understand English so that the agents will translate for marketing purposes 	<ul style="list-style-type: none"> - FIT are sold at high price - have to hold the online/FIT requests until the release period in order to confirm - need to haggle with tour operators over the rates due to changes in product/services/segments
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C		<ul style="list-style-type: none"> - offer multiple prices; different prices to tour operators and also have a FIT rate available on the Internet - we are actively involved in activities organised by government 	<ul style="list-style-type: none"> - majority of the staff will leave within one year - have been focusing on increasing local staff '- try to copy things from successful properties 	<ul style="list-style-type: none"> - most customers like the property and facilities - provide special services to retain customers 	<ul style="list-style-type: none"> - the chartered flights are much cheaper therefore customers tend to book through these tour operators - because the revenue generated from tour operators is less, tries to attract FIT and other online direct bookings '- if overbooked relocate customers to similar properties especially within the chain 	<ul style="list-style-type: none"> - tour operators often fill our beds - established partnerships with online reservation service providers - offers different types of packaging within the chain (split stay, special offers, etc) - Asian people like water villas while Europeans like the beach 	<ul style="list-style-type: none"> - look for competitors prices and positioning in defining the price for the products - online rates or FIT rates are high compared to tour operator rates - strike a balance between tour operators who give continuous business and online/FIT business which generates a high revenue/profit - Has to haggle with tour operators to decide on a price and services
D	<ul style="list-style-type: none"> - concerned about the coordination of activities as the tourism sector is expanding 	<ul style="list-style-type: none"> - shares a close relationship with the government authorities and invites their VIPs to the resort to represent the tourism sector of the Maldives - the relationship with the government is good and constantly participate in their activities 	<ul style="list-style-type: none"> - facing difficulties in getting local staff due to upcoming resorts - there is lack of awareness and expertise in the industry 	<ul style="list-style-type: none"> - customers become loyal to the brand - customers form a close relationship with the staff 	<ul style="list-style-type: none"> - challenge here is the trend towards up-market 	<ul style="list-style-type: none"> Branding speaks for itself - most resorts offer similar products, customers come because of service and for staff 	

		- feels that their product is different and can keep up with the market in the future				- Europe is the major market, next is season wise Russian market and in between Japanese, Korean, and Chinese	
E		- share a close relationship with the government	<ul style="list-style-type: none"> - young IT staff have difficulties to get trust and reliability for their innovative activities - increase in number of staff 	<ul style="list-style-type: none"> - offers customised/personalised services to their customers - they don't care about money they care about services - customers feel the property is their second home 	<ul style="list-style-type: none"> - use email as a way of keeping customers updated with the resort information - have an electronic newsletter (monthly) distributed to customers - relies on Internet based marketing, magazines, tourism fairs and travel agents across the world - send CD/DVD/videos through Internet to marketing agencies 	<ul style="list-style-type: none"> - intend to introduce online booking for other activities available in the property such as restaurant bookings etc. - offers information in multiple languages - considers below 75% as low occupancy 	
F	<ul style="list-style-type: none"> - fear that the sector might experience a surge in demand for Maldives; too fast is too furious - given the situation fear that the country will not be able to fully benefit from tourism expansion 	<ul style="list-style-type: none"> - there is price competition among the sector members which results in losing the name and image of the sector - trade association(s) are not doing enough to regulate some of the things 	<ul style="list-style-type: none"> - lack of specialised people - it is now easy to train new staff because they have had basic schooling and have basic computer skills 	<ul style="list-style-type: none"> - increase in number of email bookings - most repeaters are those who are loyal to the property 	<ul style="list-style-type: none"> - The Maldives does not make the best use of IT in marketing - IT/Internet have paved way to save expenses on posting CD/DVD and interactive electronic material 	<ul style="list-style-type: none"> - need to focus on image marketing and corporate image marketing as well - varied pricing distorts marketing image 	<ul style="list-style-type: none"> - online sale facilities not yet available - intends to sell online in the future

				<ul style="list-style-type: none"> - loyal to the property, feels as a second home - constantly sharing information about the property - increasing demand for Internet services 	<ul style="list-style-type: none"> - intend to affiliate with well known online hotel booking websites - the conventional form of marketing is decreasing worldwide and electronic marketing is increasing, therefore need to focus on this market in the future 	<ul style="list-style-type: none"> - fine brands enhance the country's tourism image - customers are loyal to the property - trying to offer information in as many language as possible 	<ul style="list-style-type: none"> - FITs are offered multiple pricing which affects the name/image of the property - change in dollar exchange rate has a significant effect on us because all our prices are done in US dollars
G	<ul style="list-style-type: none"> - there is much the government authorities can do such as arranging training activities in different parts of the country 	<ul style="list-style-type: none"> - the associations can work more closely with the government authorities to promote the sector 	<ul style="list-style-type: none"> - often there are new staff in various departments - maybe owners are not advanced; lack of awareness 		<ul style="list-style-type: none"> - business is based on chartered market - if they are selling for allotments they sell to multiple parties - manage overbooking by relocating customers to similar properties or, if divers, to safari vessels 	<ul style="list-style-type: none"> - highly rely on tour operators - mostly Italian market 	<ul style="list-style-type: none"> - had experienced a high percentage of FITs would come through the website - gives different prices to different markets
H		<ul style="list-style-type: none"> - up market five star places have dropped their price to our prices (3-4 star) 	<ul style="list-style-type: none"> - tourism expansion causes increase in high staff turnover 	<ul style="list-style-type: none"> - satisfied with the management 	<ul style="list-style-type: none"> - well established long term relationships with a number of operators and do rely totally on them 	<ul style="list-style-type: none"> - focused on middle class customers and tour operators manage the marketing activities 	<ul style="list-style-type: none"> - due to recession 5 star properties have dropped the prices to 3-4 star rates, which affects the service quality which in turn affects the property image

		<ul style="list-style-type: none"> - government should assist the tourism sector to overcome the difficulties faced by the recession - we are fine but have not attended any of their meetings 		<ul style="list-style-type: none"> - satisfied with the staff/services 	<ul style="list-style-type: none"> - difficulties in getting finances from the local banks - do not have contracts with local travel agents although they take up rooms during summer 	<ul style="list-style-type: none"> - high number of repeat customers 	<ul style="list-style-type: none"> have to wait until the last minute release period to confirm bookings requested by online/FIT - cannot make strict contract with local travel agents as we do with international tour operators, because of our small society/ close relationships
I		<ul style="list-style-type: none"> - there isn't much government or the associations can do 	<ul style="list-style-type: none"> - capable IT people are on an average about 20 years of age - staff leave jobs without giving notice - offer additional benefits in order to retain staff 		<ul style="list-style-type: none"> - relies on social network and allotments 	<ul style="list-style-type: none"> -customers rely much on relationships 	<ul style="list-style-type: none"> - have a standard rate
J		<ul style="list-style-type: none"> - have different prices for different tour operators and are reluctant to give/display a particular price on the website - do not feel competitive pressure because they are able to keep the price by giving good service 	<ul style="list-style-type: none"> - not sure whether the top management will be positive towards implementing e-commerce functionalities - most of the staff knows basic computing 		<ul style="list-style-type: none"> - totally rely on the social network for their business - currently website/Internet has little to do with marketing but perceive this would change in the future - do not have to engage much in marketing due to existing high demand for the property 	<ul style="list-style-type: none"> - due to high demand for the property little is required in terms of marketing 	<ul style="list-style-type: none"> - have multiple rooms rates depending on the operator - unsure whether online booking services will be offered in the near future - our operators do not want our price to be displayed online

K		<ul style="list-style-type: none"> - shares a close relationship with other members in the sector 	<ul style="list-style-type: none"> - jobs are not very important 	<ul style="list-style-type: none"> - customers respond positively the improvements that are being made to the hotel - services and quality makes the difference 	<ul style="list-style-type: none"> - has a high percentage of repeat customers - establish close relationships with other tourism sector members 	<ul style="list-style-type: none"> - the best city hotel in the capital - try to maintain reputation of being the best in the capital 	<ul style="list-style-type: none"> - tries to maintain a constant price and have been able to do so
L			<ul style="list-style-type: none"> - jobs are often offered on contract basis for about 2 years - most of the new staff have some basic computer skills so that helps to train them 	<ul style="list-style-type: none"> - services and price make the difference 	<ul style="list-style-type: none"> - if overbooked move customers to similar properties 	<ul style="list-style-type: none"> - focused towards middle class business customers 	
M	<ul style="list-style-type: none"> - government in collaboration with the sector needs to find ways to address the requirements of the sector 	<ul style="list-style-type: none"> - concerned that some sector organizations do not bother about repeat customers - important that rates (such as room rates) represent the quality of the product and the services provided - the sector needs to work with government authorities to create awareness in the country - perceive that in the future there will be competitive pressure among the contenders 	<ul style="list-style-type: none"> - often people expect to get a high salary - perceive that if same remunerations and benefits are offered it won't be difficult to retain them 	<ul style="list-style-type: none"> - gives discount for frequent customers - provide Internet and fax to meet customer demands 	<ul style="list-style-type: none"> - Internet booking is going to increase - reluctant to use Internet as a main source due to concerns about security 	<ul style="list-style-type: none"> - offer information in the language of the target market - information distributed by a travel agent in the language of target marketing country - reluctant to engage in e-commerce activities due to lack of security measures 	<ul style="list-style-type: none"> - Maldivian rufiyaa depends on US dollar exchange rate, when Euro goes up this has a significant effect on us because our market largely depend on Europe - only recently had the opportunity to open a Euro account in the country - increase in prices of goods and services has incurred significantly negative effect on business

N		<ul style="list-style-type: none"> - we are overlooked by the government authorities - want the government to protect the local small business in operating safaris especially during the season - competitive pressure is less due to high rate of repeaters 	<ul style="list-style-type: none"> - note that it is difficult to work in safari vessels for a long period of time - seek a way to secure constant income - we do not have capacity/capability to manage on our own - intellectual capacity requires experience 	<ul style="list-style-type: none"> - provides Internet using a mobile Internet connection to meet customer needs - customised services 	<ul style="list-style-type: none"> - return from advertising in magazines is limited - the best is to retain our customers (increase the number of repeaters) 	<ul style="list-style-type: none"> - offers website information in multiple languages - offers product information in the language of the targeted market - information distributed by a travel agent in the language of targeted marketing country 	<ul style="list-style-type: none"> - change in market prices has a significant effect on our business because we have committed ahead - have long term contracts/commitment with international partners/agents
O		<ul style="list-style-type: none"> - don't know much about what others are doing - never had the time to share/discuss common issues; have been too busy maybe 	<ul style="list-style-type: none"> - most of the Maldivians do not have a particular career in mind - switches jobs often - IT functions outsourced to a professional company - difficult to persuade the top management 	<ul style="list-style-type: none"> - Increase in request to provide additional services along with the bookings. 		<ul style="list-style-type: none"> - use bill boards, tri-vision, etc to advertise sale packages - need to focus more on the tourism sector customers because of the limited local population 	<ul style="list-style-type: none"> - look for competitors' pricing in defining the price
P				<ul style="list-style-type: none"> - some customers expect travel agencies to provide additional services along with their travel arrangements often at a reasonable price 	<ul style="list-style-type: none"> - shares a close relationship with most of the tourist resorts in the country 	<ul style="list-style-type: none"> - high demand from the middle class customers but is often given to big tour operators 	<ul style="list-style-type: none"> - upcoming branded new resort does not offer multiple rates or discounts to local travel agencies

				<ul style="list-style-type: none"> - some customers expect timely response to their queries irrespective of the price 	<ul style="list-style-type: none"> - manageto provide logistic arrangement even to those places where travel agencies do not have confirmed allotments - not sure whether they could manage large number of rooms back to back 		<ul style="list-style-type: none"> - getting preferential rate for us is becoming more and more difficult now
Q	<ul style="list-style-type: none"> - lacked a long term strategic plan and tourism expansion was unexpected - had little knowledge on how other government authorities address the sector activities especially the repercussions of tourism expansion - lacked information sharing and coordination among and within government authorities 	<ul style="list-style-type: none"> - government is unable to do much about the fluctuation of prices in the industry - government does not want to get involved in controlling the prices in the industry - recently had the only meeting with people from different segments of the industry - anything that might be of disadvantage to the big businesses will be rejected at the discussion stage 	<ul style="list-style-type: none"> - once the organizations get some benefits they become relaxed - the industry has not grown professionally - many of the staff learn from experience without formal training 		<ul style="list-style-type: none"> - most of the local travel agencies have quite a small number of rooms/beds to manage - the tourism industry has not professionally grown to engage in varied forms of marketing activities - most people believe online marketing is more profitable, but their actions don't match the mindset - protects small businesses engaged in tourism activities by restricting 100% foreign ownership 	<ul style="list-style-type: none"> - definitely chartered market will exist - trying to introduce different segments to the market - Information on official website is offered in multiple languages - need to strengthen formal relationships with local travel agents and tourist property managers 	<ul style="list-style-type: none"> - pricing is solely a problem with the buyer and seller and at the moment does not foresee that government should/can intervene - having different pricing or lack of commitment to a standard price has major implications for the tourism sector - room rates are often considered confidential

					<ul style="list-style-type: none"> '- highly relies on foreign investments to finance tourism establishments; where tour operators have contributed to a great extent '- general idea is the more rooms you have the more money you make - rents are moving very high 		
R		<ul style="list-style-type: none"> - does not believe that the government and trade associations are doing enough work for the sector - believes that there isn't any other product that could compete with them in the industry 	<ul style="list-style-type: none"> - organizations are reluctant to invest in IT because they see availability of cheap labour as an alternative solution to problems - Maldivians do not think of additional solutions to generate more money '- everything is done at a slow pace '- with the increase in numbers of upcoming resorts things are changing slowly in a positive manner 		<ul style="list-style-type: none"> - most of the resorts highly rely and count on tour operators because they have performed well in the Maldives - some difficulties exist in arranging the travel arrangements to manage complex marketing strategies 	<ul style="list-style-type: none"> - reluctant to engage or seek varied opportunities in marketing - Maldivians tourism industry people do not think of a solution to generate more money - general belief that more rooms will generate more money 	<ul style="list-style-type: none"> - there is a major gap between the room rates offered to tour operators and their rec rates - online solution demands a standard pricing strategy
S	<ul style="list-style-type: none"> - work with the government very closely/together 	<ul style="list-style-type: none"> - works very closely with the government and work together to realise the best opportunities for the tourism sector 	<ul style="list-style-type: none"> - tourism sector comes under criticism for not giving Maldivians the same facilities accorded to foreigners 		<ul style="list-style-type: none"> - highly relies on tour operators 	<ul style="list-style-type: none"> - fear the new trend towards upmarket would hamper the high demand for the mid market in the country 	<ul style="list-style-type: none"> - increase in fuel prices has a significant effect on the tourism industry of the Maldives

		- lobby private sector of the sector organizations with the government	<ul style="list-style-type: none"> - It is very easy for Maldivians to leave a job and move on to another job, even to move from industry to industry because of friends/acquaintances and family - One reason why Maldivians are reluctant to work in the tourism sector is because they have to live away from the family 		<ul style="list-style-type: none"> - volume of finance required for tourism activities is very high - hard to obtain required finances locally 	- need to focus on retaining the existing market by providing such properties in the country	- increase in prices also strongly effect the upcoming resorts in the country
T		- feels that they can keep up with their market with the quality of service provided	<ul style="list-style-type: none"> - getting approval from the senior management does take some time -foreign companies do not know our capabilities; they only know our name - when they come to know they are impressed 	- provide timely services			
U			<ul style="list-style-type: none"> - change in area of interest, lack of commitment to one area of specialising - lack of commitment to stay in job - Have to send abroad to do specialised training 			Big brands demands for warranty and standards	

Appendix 6 Interview response summaries for theme Three: IS

Organization	Theme Three: IS Context					
	Perception of ICT			Exploitation of ICT		
	Technology (experience)	Technology dependency	Technology knowledge	software experience	Web development	e-distribution
A	- nearly all bookings are confirmed through Internet/email	- IT has helped to reduce costs	- have some capable Maldivians working	- a number of software applications are used to manage the business	- intends to upgrade to web site to include advanced e-commerce functionalities	- have formulated a project to create an online booking engine/online reservation - have been waiting for local banks to provide merchandised accounts or introduce payment gateway facilities
		- nearly all bookings are confirmed through email - tourism product itself is time critical to include all services		- different platforms are used by different partners - international software - Fidelio/Opera is sophisticated, expensive and difficult to customise	- major project is underway to change the existing system/approach - feel ashamed of their existing website - problem of payment gateway in the Maldives hinders the provision of providing online reservation functions online	
B	- have had many applications from various sources	- IT plays a critical role in business - front office operations totally rely on ICT	- new IT manager learning the existing setup - single IT person responsible to manage each resort	- use multiple applications at different places to manage the front office as well but intends to use a single application in the future - reservation data is re-entered into the resort system at some properties	- intends to provide detailed information about the properties and their activities - intends to provide online booking	- partner with a number of tour operators - intends to create own distribution channel

		<ul style="list-style-type: none"> - technical problems are also solved by communicating via email - marketing and reservations gets enormous amount of emails that need to be managed - Daily operations cannot be performed without IT 		<ul style="list-style-type: none"> - New software application - Opera is difficult for most of the staff - some IT staff working in the resorts perceive Opera as the best solution to their problems because they hear that it is good and is well known internationally - Opera is bit advanced 	<ul style="list-style-type: none"> - intends to provide information in multiple languages 	
C	<ul style="list-style-type: none"> - Email storage has become a problem - have a centralised system in the head office 	<ul style="list-style-type: none"> - use Internet connection to solve technical problems which in turn results in major saving especially in transportation - daily operations largely depends on ICT 	<ul style="list-style-type: none"> - have basic knowledge but limited 	<ul style="list-style-type: none"> - manages a number of software applications in various properties 	<ul style="list-style-type: none"> - Websites redirect reservation function to a global Distribution System 	<ul style="list-style-type: none"> - is listed on a GDS
D	<ul style="list-style-type: none"> - need to strategically align the business process between back office and front office 	<ul style="list-style-type: none"> - Full cycle of managing the customers starting from promotion largely depends on ICT - Guest information is shared among the chain resorts/hotels in order to serve the customer irrespective of location 	<ul style="list-style-type: none"> - lack of awareness and expertise in the industry 	<ul style="list-style-type: none"> - all front office operations and back office operations are computerised guest information is shared/used among the chain resorts 	<ul style="list-style-type: none"> - have advanced e-commerce managed by the international chain marketing department 	<ul style="list-style-type: none"> - international represented within the chain
E	<ul style="list-style-type: none"> - experience difficulties in harmonising the complete chain of hotels/resorts 	<ul style="list-style-type: none"> - Customised services are provided using advanced software applications - software applications helps maintenance and forecasting activities - guest information is shared across the whole chain of resorts world wide 	<ul style="list-style-type: none"> - Have a number of IT staff to manage the systems 	<ul style="list-style-type: none"> - uses a number of software applications but are often identical/similar or else compatible to be used with other members in the chain - Fidelio is used along with many modules/other supporting applications - have difficulties in managing the application 	<ul style="list-style-type: none"> - have advanced e-commerce managed by the international chain marketing department 	<ul style="list-style-type: none"> - international representation of the chain

F	<ul style="list-style-type: none"> - because of limitation of resources we cannot afford to have people online all the time - comprehensive/customised information is provided to guests through emails 	<ul style="list-style-type: none"> - link is provided to agents to download information - saves a lot of money and time - traditional or conventional form of marketing has reduced and Internet marketing has increased - there is a need to incorporate back office operations - largely depend on email 	<ul style="list-style-type: none"> - need to import trained personal until people are trained - new recruits are trained on the job - IT/marketing technical staff quite new to the job 	<ul style="list-style-type: none"> - number of software applications are used to manage different activities - most of the back office operations are run independent of the front office operations - most of the back office operations are semi automated - data is re-entered into the accounting system 	<ul style="list-style-type: none"> - feels their website is far below standard - intends to provide a comprehensive website - face difficulties to incorporate e-commerce functionalities in their website - lack of a feasible approach to getting access to payment gateway is a problem - providing information in multiple languages is important 	<ul style="list-style-type: none"> - intend to have own booking engine and also get listed in well known sites/engines - one of the major setback is merchandise account/payment gateway facilities are not available at local banks
G	<ul style="list-style-type: none"> - sometimes experience difficulties in downloading emails 	<ul style="list-style-type: none"> - relies on emails to exchange information Automatic creation of invoices help to serve the customers -front office is manage the rooms, stock and help serve the customers - relies on Internet/email to maintain the stock 	<ul style="list-style-type: none"> - relied on asingle staff who has limited knowledge in ICT but had some experience working in the resort 	<ul style="list-style-type: none"> - use a customised software application designed specifically for the organization to manage front office reservation functions - Also using a parallel system to upgrade the existing one but were not in a position to depend on one system due to some difficulties in managing the system - a lot of operational work is done manually especially when dealing with the accounts 	<ul style="list-style-type: none"> - less importance is given to website - nobody has updated it since uploaded 	<ul style="list-style-type: none"> - have limitations due to limited capacity of rooms available (sold to tour operators)

H	<ul style="list-style-type: none"> - have an experienced person who manages/maintains/designed the application used 	<ul style="list-style-type: none"> - plays a significant role in maintaining/serving customers/repeaters - often Internet connection/software application are used to trouble shoot, so avoiding physical presence 	<ul style="list-style-type: none"> - common technical problems arises, new staff get to be familiar with the applications 	<ul style="list-style-type: none"> - has a software designed to manage basic front office operations - use other applications to manage back office operations 	<ul style="list-style-type: none"> - view existing website as a good information site - web site is outsourced 	
I	<ul style="list-style-type: none"> - recently installed an advanced application to manage the hotel - uses an advanced application to manage basic operations 	<ul style="list-style-type: none"> - totally relies on technology to manage day to day operations 	<ul style="list-style-type: none"> - new to the advanced software application 	<ul style="list-style-type: none"> Opera is expensive but perceived as the answer to solve their problems although difficult to manage 	<ul style="list-style-type: none"> - intend to launch a comprehensive website with all the information about the property and services - thinking of incorporating e-commerce functionalities in the future 	<ul style="list-style-type: none"> - do not intend to be listed but believes that GDS or e-distribution will be approach in the future
J	<ul style="list-style-type: none"> - uses locally designed software application to manage basic day to day activities 	<ul style="list-style-type: none"> - relies on technology to manage basic day to day activities 	<ul style="list-style-type: none"> - IT personnel have limited knowledge about marketing 	<ul style="list-style-type: none"> - uses a customised application designed by an IT staff 	<ul style="list-style-type: none"> - reluctant to incorporate advanced e-commerce facilities within the website - web site helps to build the image 	<ul style="list-style-type: none"> - reluctant to engage in e-distribution due to high reliance on tour operators
K	<ul style="list-style-type: none"> - have started a new system and require more time to complete - takes time to learn/practice for the system to become live 	<ul style="list-style-type: none"> - largely depends on email to manage day to day operations - majority of communication is based on email 	<ul style="list-style-type: none"> - staff are capable but lack of enthusiasm to engage in work 	<ul style="list-style-type: none"> - software management/maintenance is outsourced 	<ul style="list-style-type: none"> - intend to introduce online reservation system asap 	<ul style="list-style-type: none"> - seeking ways to be listed globally
L	<ul style="list-style-type: none"> - staff are familiar with the existing customised software application (Microsoft Excel) designed to perform basic operations 	<ul style="list-style-type: none"> - totally rely on the applications to manage day to day front office operations 	<ul style="list-style-type: none"> --have to teach staff in front of the system 	<ul style="list-style-type: none"> - have been upgrading the existing software application to suit the current needs at front office 	<ul style="list-style-type: none"> --there has been an increase in email bookings 	

M	<ul style="list-style-type: none"> - had basic knowledge of computers 	<ul style="list-style-type: none"> - reduction in price for IT services has resulting in major savings in business - IT helps to make logistic timely arrangements - time is very critical for our business; guests wants to share information instantly with their friends (probable customers) 	<ul style="list-style-type: none"> - need people who have technological knowledge to use advanced technologies 		<ul style="list-style-type: none"> - have difficulties in establishing an online reservation system - smallness of the business also affects the feasibility of establishing online real-time services 	<ul style="list-style-type: none"> - Customer security/protection a major issue in using electronic means
N	<ul style="list-style-type: none"> - use Microsoft word and excel to manage - do not use a software application to manage the company 	<ul style="list-style-type: none"> - ICT helps to keep track of customer/repeater information enhancing business - Customers are provided with a SIM card to log on to Internet using a mobile phone connection 	<ul style="list-style-type: none"> - limited knowledge 	<ul style="list-style-type: none"> - macro written using xls 	<ul style="list-style-type: none"> - do not give much importance to own website because of the way business is managed - have affiliations with other websites hosted in other languages/countries - language is an important aspect of the website thus provides information in partner website in their local language 	
O	<ul style="list-style-type: none"> - did experience a lot of problems with emails and our business totally depends on it - time to time experience mail getting blocked with junk mails and is unable to send mails 	<ul style="list-style-type: none"> - business totally relies on ICT 	<ul style="list-style-type: none"> - staff do not work for long in one department - initially had a major problem setting up the network 	<ul style="list-style-type: none"> - manages a number of software applications and also have subscribed to well known e-distribution channels and are representatives for some airlines - maintaining IT functions are outsourced 	<ul style="list-style-type: none"> - foresee Internet as a way to provide information 	<ul style="list-style-type: none"> - have access to a number of GDS - local agents for a number of airlines
P	<ul style="list-style-type: none"> - have a dedicated server to manage inbound and outbound emails 	<ul style="list-style-type: none"> - bookings are confirmed by forwarding a number of emails back and forth; say a minimum of 5 to 7 emails 	<ul style="list-style-type: none"> - have basic computer skills 	<ul style="list-style-type: none"> - have limitations/familiarity/capability in using different applications shared within the organizations 	<ul style="list-style-type: none"> - need to be upgraded/under construction 	<ul style="list-style-type: none"> - intend to access some GDS

		<ul style="list-style-type: none"> - email is used for everything - some clients want to get the services from people who response to them at the earliest 		<ul style="list-style-type: none"> - having access to information/applications used within the organization helps to response quickly to customers 		
Q	<ul style="list-style-type: none"> - ICT services and also electricity are still expensive - need to keep backup systems because most of the equipment is not available locally 	<ul style="list-style-type: none"> - most of the ICT activities within the ministry are outsourced 	<ul style="list-style-type: none"> - need to train every year for technical training from places like Malaysia 	<ul style="list-style-type: none"> - IT functions are outsourced and faced difficulties in managing their own system - are always faced with under forecasting 	<ul style="list-style-type: none"> - have out sourced DMO website - intends to promote tourism sector web development although little has been done so far - within the tourism industry different properties have different standards in maintaining/designing their websites 	
R		<ul style="list-style-type: none"> - Now they believe and accept technology is required for service enhancement 		<ul style="list-style-type: none"> - Opera can be integrated into number of software applications <p>Opera company also promotes a number of software applications that can be integrated/compatible with it</p> <ul style="list-style-type: none"> - Additional software application has to be used with telephone/PABX because the service provider does not offer multiple rates 	<ul style="list-style-type: none"> - one of the major reasons why the tourism sector does not go for online real-time solutions is due the way business is managed - high reliance on tour operators 	<ul style="list-style-type: none"> - many organizations are enlisted in GDS and feel content with it rather than going for online real time solutions

S		Internet provides the opportunity for the tourism sector to save a lot of money and resources		generally 30% of the software applications are not used by the organizations - people are keen to adopt IT although there is a question of efficiency		
T	- geography of Maldives is very difficult when compared to land based countries in terms of provision and maintaining quality of service standards	- some properties are using two/multiple networks in order to guarantee/backup their ICT environment - able to provide quality services but will have to pay a high price for it - need to guarantee uptime (of 99.99% or 99.999%) in accordance to the agreement		- a certain standard is used to avoid difficulties in maintenance - often fibre optics is used to some extent to avoid technical difficulties in managing the applications		
U	- very few take up big resort network projects except one other party - most of the resorts/properties are going for upgrades	- Information entered into the systems can be used by multiple users	- sometimes get to participate in technical workshops in places like India - often foreign IT person who comes is specialised in one thing	- now all resorts use software applications to manage them - some resorts have started using advance applications to manage their operations - often different service providers are involved in setting up the network/system		

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