An Investigation into Considerations for the Design of IS to Improve the Utility of the Use of the Co-alignment Model: An Integration of Strategy and IT as A Coordination Strategy Framework – A Case Study of Virginia Beach

by

Yao-Jen Chang

Dissertation Submitted to the Faculty of the
Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

in

Hospitality and Tourism Management

Committee Members

Michael D. Olsen, Ph.D.; Chair
France Bélanger, Ph.D.
Daneil J. Connolly, Ph.D.
Claire D. Schmelzer, Ph.D.
John A. Williams, Ph.D.

July 20, 2004

Blacksburg, Virginia

Keywords: co-alignment model, strategy, strategic management, information technology (IT), information system (IS), information, strategic IT, hospitality, tourism

An Investigation into Considerations for the Design of IS to Improve the Utility of the Use of the Co-alignment Model: An Integration of Strategy and IT as A Coordination Strategy Framework – A Case Study of Virginia Beach

by

Yao-Jen Chang

Dr. Michael D. Olsen, Chair

Department of Hospitality and Tourism Management

ABSTRACT

As competition has changed and made the environment more dynamic and complex for the hospitality and tourism industry, the concept of strategic management has become more important. However, under the force driving change of technology innovation, information has gone digital and electronic for business development and management. Adopting information technology (IT) for strategic management becomes an important issue for an organization.

The co-alignment model is believed to be one of the effective models for the purposes of strategic management in the field of hospitality and tourism. The primary objective of this study was to investigate important considerations for the design of an information system (IS) to improve the utility of the model. Once the important considerations are taken into account for constructing the system, such an IS is expected to facilitate the information flows associated with the co-alignment model and further work in concert with the model to strengthen the processes of strategy formulation and implementation. Together, the co-alignment model and the IS can be viewed as a Coordination Strategy Framework which also has theoretical underpinning from the

review of the literature of strategy, hospitality and tourism, management information system (MIS), computer science (CS), and information science.

Because this research topic or its similar kind has not been studied in the field of hospitality and tourism, this study is exploratory in nature. A qualitative research approach adopting a single-case study method was used. Using the co-alignment model as one of its theoretical supports along with other techniques to collect and test the interview data, the study achieved reliability and validity of the research findings.

As a major part of the conclusions of this study, the findings are the important considerations for the design of the future IS. They included the seven key issues in five dimensions, eleven recommendations, and ten propositions that explained the relationships among the managerial aspects implicated in the framework implementation, especially the interactions between the future IS and the co-alignment model. Furthermore, as the framework is an integration of a strategy model and an IT application, it also gives a new perspective to the term “strategic IT” that denotes the strategic use of IT.

Dedicated to my wife and best partner Jennifer M.; to my parents Che and Sue-I C. Chang, the greatest philosophers of all; and in loving memory to Geng L. Chang, my grandmother, who always inspired me and believed in me.

You taught me how to think and sustain my value systems.
You gave me unconditional love and support.
You have made the many great sacrifices to complete my study.

Because of you, I prevail over the anxieties and difficulties of life.
Because of you, I can think into thoughts and don't get derailed.
Because of each of you, I am not alone and able to continue.

May Buddha bless you and protect you always.

ACKNOLODGEMENTS

I would like to express my heartfelt gratitude and thanks to those individuals who were instrumental in helping me to complete my doctoral education and dissertation. First and foremost, my utmost thanks goes to Dr. Michael Olsen, my major professor and chair of my dissertation committee, for his guidance, help, patience, and immeasurable amount of time provided during my doctoral education and dissertation process. There has been hardly anyone as close as him to see this research evolve over time.

My sincere appreciation also goes out to Dr. Bélanger, Dr. Connolly, Dr. Schmelzer, and Dr. Williams, my dissertation committee members, for their criticism, encouragement, tolerance, and cooperation during the entire dissertation process. Their scrutinizing eyes did not allow me to produce the work that was anything less than the best I could do. In addition, I would also like to extend my thanks to Mr. Jim Ricketts, the Director of the Convention & Visitors Bureau (CVB) in Virginia Beach, for his cooperation and assistance during the phase of data collection.

Last, and certainly not least, I would like to recognize the endless support of my family: my wife, Jennifer M., my parents, Che and Sue-I, my sister and brother-in-law, Mei-Hui and Chien-Liang Chen, my brother, Yao-Wen, and my parents-in-law, Mr. and Mrs. Cho. Despite the great geographic distance they have always been there for me in my heart. They have given me all they possibly could throughout my professional and personal life to this day. Words cannot adequately express my appreciation for being my side to go through the hardship and for the many great sacrifices that they have made. I could hardly be who I am today without them. I thank them for believing in me and always being there to provide their constant stream of understanding, support, and motivation when I so much needed.

TABLE OF CONTENTS

Chapter 3 – Methodology

Chapter 4 – Results

Chapter 5 – Discussion and Conclusions

LIST OF ILLUSTRATIONS

LIST OF TABLES

Chapter 1
Introduction

Background

The research of strategic management in the field of hospitality and tourism has been studying the impact of the environment on an organization's success. There are many variables making up of the environmental influence, such as political factors, technological factors, competition factors, cultural factors, etc. These factors, alone or together, can bring either the immediate change or the long-term impact to the organization's business development and management.

Today, solutions to business challenges to respond to the environmental impact are aided by a combination of information systems. One of the evident examples is that over the last 50 years, the old fashioned "deal on a handshake" has been replaced by deals over the cellular, the Internet, and now the wireless Internet. This shift not only describes the different way people do business but also illustrates the change in business competition. This is especially obvious in the tourism business as the industry reacts to the innovation of Internet technology. For example, the Travel Industry Association (TIA) reports that as of 2003, 42.2 million travelers "are online travel bookers" or "have actually made travel purchases online". TIA also finds that 29% of these online travel bookers make all of their travel purchases online, rising 6 percentage points since 2002.

The TIA's reports indicated that not only the online business is going strong for the hospitality and tourism industry but also provided the contemporary evidence about the new way people do business. This kind of contemporary observation implies that the competition as well as the environment has been changing by the innovation of information technology (IT).

As this kind of change is commonly seen in business, researchers in the hospitality and tourism immediately recognize the overwhelming impact of Internet technology and delve into studying the topic of electronic commerce (e-commerce). The topic of online business (or e-commerce) triggered a line of IT research within the context of managerial aspect and has been conducted by numerous researchers on three favorable topics: (1) How to transform the traditional business model into an e-business model (Pernsteiner, 2000; Heung, 2003)? (2) What are the impacts caused by the changes of the distribution network (Brian, 1998; Borbely & Vasudavan, 1999; Connolly, 1999; Hahn et al., 2000)? (3) Who are the buyers by examining the demographic information and their Internet usage in terms of the web site design and development (Bellman et al., 1999; Weber et al., 1999; Bonn et al., 1999; Chu, 2001; Chang & Weaver, 2003)?

Evidently, these topics focused on the managerial issues with an emphasis on the buyer-and-seller relationship. Researchers used the Internet to study the relationship between organization's management and IT implementation and deem the online business the future direction for the hospitality and tourism industry. However, while IT implementation has been believed to be one of the great forces driving change for business management and development, most scholars seemed to focus more on *technology* than on the other element, *information*, in IT.

The way technology changes business style is not so much as the way information (that gets assembled, transferred, and captured differently) changes organization's managerial concept. With all the information zipping around in wires and airwaves, the complexity and speed of an average business deal would be processed and completed within minutes or even seconds. Its impact is beyond marketing concern and is very significant to an organization's management philosophy. When information is in digital format and the hospitality and tourism industry has to use IT to handle various types of information, this kind of adaptation makes the business environment more complex (as companies compete with each other) and makes an organization's strategic management even more challenging.

In the tourism sector, as tourism has been regarded as an information business (Froschl & Werthner, 1997; Schertler et al., 1994), tourism researchers have recognized that tourism business is undergoing a structural change. The travel-related information going electronic makes the tourism industry have to adopt and evolve with the innovation of IT in today's information economy. This study used Virginia Beach, a tourist destination, as the research object to explore the relationships among organization's strategic management, information, and IT implementation.

By taking the changes in environment, which results from the change in the way businesses compete and IT innovation, this study used information as the unit of analysis to investigate the integration of strategic management and implementation of information systems (IS). It is an attempt to synthesize a strategy model (i.e., the co-alignment model) with an IS, if the IS can be appropriately designed. Hopefully, the finding(s) can open a window of opportunity for research in relation to strategic use of IT and offers a possible solution for the hospitality and tourism organizations to effectively react to the environmental changes for strategic planning and develop and manage their businesses successfully.

Terminology Used

Given the nature of this study being exploratory, the concepts and knowledge required are across different disciplines including strategic management, management information systems (MIS), tourism management, information science, and computer science (CS). In these areas, scholars use different terms or jargons to explain the subjects investigated in their studies. In addition, it is often seen that "IT" and "IS" are used interchangeably in the literature of hospitality and tourism. No research has been found making an attempt to specifically address the differences between these two. They seem to be assumed the same in many cases.

However, the researcher believes that perhaps because of this interchangeabilty, most studies have been consciously or unconsciously inclined to

emphasize "technology" more than "information" in the field of hospitality and tourism when investigating IT-related issues within the context of strategic management.

In addition, because this study also discusses some technical designing issues, the researcher drew a fine line between *IT* and *IS* in order to distinguish technology from information. This distinction allows the study to directly deal with information and its processing issues in relation to strategy formulation and implementation. *The highlight of IT might be its implementation but the focus of designing an IS for strategic management should be on information.*

Therefore, to avoid unnecessary confusion, some terms used in this study are listed and explained in Table 1.1. Hopefully this table can clear the way for reading and understanding of the subject.

Table 1.1 – Definitions of Terminology Used in the Study

Terminology Used	***Definitions and Explanations***
Co-alignment concept	It is a concept for the co-alignment of more than one unit or research constructs. This concept has been broadly recognized and studied in the strategy literature (Chandler, 1962; Thompson, 1967; Bourgeois, 1980; Venkatramen, 1990; Murthy, 1994; Olsen et al., 1998; Connolly, 1999; Fuchs, Mifflin et al., 2000).
The Co-alignment Principle or The Co-alignment Model	It is a strategy model that utilizes the co-alignment concept within the context of four constructs (environment events, strategy choice, firm structure, and firm performance). This is a model set forth by Olsen, West, & Tse in 1998.
IT (information technology)	IT is one type of technology that is used mainly for information processing. It is likely to be the combination of many other technologies. IT has been recognized as one of the greatest forces driving change in today's business environment. *For example*, the Internet technology, which includes technologies of the network systems, computer hardware/software, database

	management systems, … etc. In this study, IT is considered an enabler technology that only converts raw information into useable information and further delivers it to the right place, at the right time, in the right format.
IT application / IT implementation	The application or implementation that uses the information technologies to achieve a specific purpose. *Examples of IT applications*: the online purchasing systems (for e-commerce), the data warehousing/mining systems, the e-learning (distant-learning) systems, the information systems, … etc.
IS (information system)	IS is one type of IT application. It is a system developed mainly within the context of information processing. It is usually designed to suit the business needs for business development. *Examples of IS*: GDS, POS (Point Of Sale) systems, property management systems, reservation systems, yield management systems, inventory systems, strategy systems, … etc.
Strategic IT	An IT application is utilized within an organization for strategic management to help reach its business goals. It is used to strengthen the processes of strategy formulation and implementation for an organization to cope with the uncertainty and complexity of the environment. Strategic IT is a mechanism that intends to integrate information, strategy, and IT applications together for the purposes of strategic management. Its main focus is on information processing for the purpose of strategic planning.
Information processing	It is the process of converting raw information into usable information that is ready and accurate for use.

Problem Statement and Purpose of the Study

This exploratory study used the tourism segment as the research domain. The reason is, as mentioned earlier, that tourism business is an information business and has been adapted to the IT innovation. It is clear that IT has been the force driving

change to the tourism industry primarily because the new distribution systems that handle the information of products and/or services have been stirring up the competition in the marketplace.

As discussed, the dynamic characteristic of information has been changing the way tourism organizations compete and results in a broad IT adoption in the industry. Back in 1997, Sheldon already noticed that tourism organizations need to implement IT to cope with the dynamism of information as well as to understand the complexity and interdependencies among environmental variables (Sheldon, 1997). Sheldon's findings in fact indicated that organizations should also pay more attention to *the aftermath* of the IT implementation for their business management and development. In other words, the impact caused by IT adoption is seen not only on the change of competition superficially but also on the shift of the decision-making process inside the organization that must react to the environmental change triggered by the new competition.

Indubitably, IT applications, like the Internet-based systems, have changed the way information transmits and accelerates the way information flows as well. In today's information era (Cortada, 1996), promoting a tourist destination requires a highly skilled workforce from inside the organization because various types of information need to be processed and delivered in order to increase tourist visitation, which is usually the major indicator for the success of a tourist destination.

Therefore, information is an important element in today's business world. It actually plays different roles to a tourism organization and to tourists. From the view of tourists, information is important because they make their travel plans based upon their perceptions about a typical destination. Such perceptions held in their minds are formed by the information coming from either a prior experience, a current impression, or word-of-mouth of other people. Without information, tourists cannot visualize what their travel plans will look like.

Hence, from the organization's perspective, one of the possible ways to alter tourists perceptions are to provide them the right information in order to form a positive and wonderful image of the destination in the tourists' minds. In other words, the tourism organization, i.e., Destination Management Organization (DMO), needs to think about not only the products and/or services (i.e., "what to sell") but also the quality of these products and/or services (i.e., "how to develop, maintain and deliver"). These "what" and "how" issues actually represent two important dimensions in strategic management: *opportunity* and *resource allocation*.

In strategy, the definitions of *opportunity* and *resource allocation* are more restricted. Opportunity is not something that everyone knows but the one that an organization discovers and further allocates necessary resources to react to. In general, strategy scholars believe that opportunity exists in the environment where the organization operates and resources are inside the organization and need to be developed and managed.

The products and/or services of the hospitality and tourism industry are easily duplicated due to their observable characteristics and the fact that services are provided by people who can imitate other people (Morrison, 1996). In this case, the so-called opportunity mentioned above is very limited. If an organization only focuses on "what to sell" without being competitive, it cannot gain competitive advantage and also loses the chance to develop new resources. In the long-term, the organization cannot allocate necessary resources to grasp any other new opportunities in the environment in the future to stay ahead of the game. Of course, the result of this reciprocal impact is that the organization fails to gain and sustain the long-term competitive advantage. The classic example is the Caribbean that has been regarded as a premier tourist destination for the past five decades, but even with this history, it is not immune to the changes in the competitive environment. Therefore, organizations have to find an effective way to identify the opportunities existing in the environment and appropriately act upon them. This is indeed the basic idea of strategic management.

For IT research, as discussed, most prior studies in hospitality and tourism management focused on IT's implementation issues and tried to use various indicators (e.g., higher productivity, lower cost, better sales, etc.) to demonstrate IT's role. However, this study uses a different approach and is an attempt to deal with *information* in IT directly. Rather than taking a sidetrack, this study focused on information in relation to strategic planning and made IS a part of the process of strategic management in the hopes of illustrating a different way for IT applications to be used strategically. In other words, this study is trying to bring the issues of information, IT applications, and strategic management together to understand how an organization can utilize an IS to effectively make strategic plans to meet the future challenges. A strategy model, termed the co-alignment model (Olsen et al., 1998), is called upon as the major fabric of the study for this task.

The co-alignment model is designed for the purposes of strategic management. The model has a great emphasis on information processing as it suggests a set of logical process for strategy formulation and implementation. Some discussions about this model are presented in the later section in this chapter and other details are included in Chapter 2. However, although the model has been adopted and/or validated by various scholars (West, 1988; Dev, 1988, 1989; Crawford-Welch, 1990; West & Anthony, 1990; Kim, 1992; Schmelzer, 1992; Murthy, 1994; Zhao, 1994; Jogaratnam, 1996; Turnbull, 1996; DeChabert, 1998; Taylor, 2002; Sharma 2002; Chathoth, 2002), it does not suggest a way for an organization to adopt the model along with an IT application. This lack becomes extremely critical and needs to be addressed in today's information world. In other words, the missing part provides a gateway for this study to enter. Perhaps, a strategy framework that can synthesize the co-alignment model and an IS is necessary.

The purpose of this study thus emerges. Since there is no suitable IS available for the adoption in the hospitality and tourism, in order to establish such a framework, an IS that can improve the utility of the use of the co-alignment model must be found. However, constructing an IS is beyond the research scope and thus this study took the first step and investigated important considerations for such a design in hopes of

laying out the foundations for the actual system design in the future. Once such a system is built, together, the co-alignment model and the IS, can be viewed as the coordination strategy framework to strengthen strategic management for the hospitality and tourism industry. Therefore, two issues can be derived from the statement of the purpose of the study and must be achieved:

(1) An IS should be utilized to help management identify the major components defined in the co-alignment model. These components include forces driving change, value drivers, competitive methods, products and services, and core competencies.

(2) The integration of the co-alignment model and an IS should present the synergy or coordination that makes strategic management more effective. Such an integration should not interrupt the sequential and logical information flows associated with the co-alignment model.

Research Questions

The above discussion narrows the focus of this study down to finding the appropriate ideas for the design of the IS for the co-alignment model. It pointedly indicated that the primary research question is "*How should an IS be designed to improve the information flows associated with the co-alignment model?*" As mentioned earlier, designing an IS involves a number of technical issues and is beyond the research domain and not the best interest of the study. Therefore, the research question should be interpreted in the way that it is trying to find "how should such an IS be designed" and "how would such an IS work with the co-alignment model (to be integrated as the coordination strategy framework)". Thus, the above primary question need to include two important issues:

(1) What are the essential elements (i.e. information) in or associated with the co-alignment model that need to be addressed by the IS for strategic management?

(2) How does the IS work with the alignment process suggested by the co-alignment model?

Therefore, the linkage between the purpose of the study and the research questions are clearly established. In other words, the objective of this study is expected to be accomplished if the primary question, including the two sub-questions, is answered.

The Co-alignment Model

The concept of co-alignment has been well discussed in the literature of strategic management (Chandler, 1962; Thompson, 1967; Bourgeois, 1980; Venkatramen & Prescott, 1990; Murthy, 1994; Olsen et al., 1998; Connolly, 1999; Fuchs, Mifflin, Miler & Whitney, 2000). In general, the elements needed to be in alignment are environmental issues, strategies, organization's resources, and financial performance of the organization. In other words, in the processes of strategy formulation and implementation, the relationships between and among these issues need to be studied in order to achieve better performance. This co-alignment concept indeed implies the ideas of the SWOT model (Andrews, 1987; Mintzberg et al., 1998) in which the assessment of strengths and weaknesses of the organization are necessary and need to be conducted in light of opportunities and threats existing in the organization's environments. Regardless, both concepts emphasize the smooth creation of business strategy.

The co-alignment model (Olsen et al., 1998) consists of four key constructs: the environment, the choice of competitive methods, resource allocation to core competencies, and financial performance (see Figure 2.1 in Chapter 2). It brings the

co-alignment concept introduced above to a level that allows an organization to conceptualize the causal relationships of its four key constructs in a systematic and logical manner and is generally applied to the context of the hospitality and tourism industry. Its four constructs, as noted in Figure 2.1, need to be in alignment, in that there should be a significant relationship between the individual constructs if the firm's overall performance is to be above the average firm within a given industry.

According to Chathoth (2002), the hospitality researchers are investigating the overall value associated with the strategic choice and subsequent resource allocation process, and the research on the co-alignment concept is attempting to comprehensively investigate the overall value addition ability of a hospitality organization. In addition, as mentioned earlier, this model has been adopted and researched by numerous researchers in the field of hospitality and tourism and is considered a valid model for strategic management (see Chapter 2).

Therefore, for two reasons the co-alignment model is selected over other strategy models for this study: (1) the model is supported by the literature and is an efficient and valid scheme for organization's strategic management; and (2) the alignment process suggested in the model for strategic planning implies a way information transfers (which will be discussed in Chapter 2 and Chapter 3 later). It is clear that the model is the best choice for this study to research the IT-related issues for the hospitality and tourism industry.

Information Management and Strategy

The literature of MIS addresses not only the information part but also the managerial issues in relation to the strategic use of IT applications. The MIS literature has recognized the concept of competitive advantage (King, et al., 1989; King & Teo, 1994, 1996; Sabherwal & King, 1991, 1995) set forth by strategy scholars. Some MIS researchers also acknowledge the importance of environmental variables as they have direct influences on IT implementation (e.g., Neo, 1988;

Johnston & Carrico, 1988; King et al., 1989; Choe et al., 1998). In general, these MIS studies shared the same concept about environmental information with the research conducted in the strategy literature mentioned earlier.

Another strategy concept discussed in the MIS literature is resource-based view (RBV), which addresses the importance of organizational resources and capabilities in the process of strategy formulation and implementation. Overall, MIS researchers believe that the alignment process can increase convergence between IS and line managers on the kinds of systems to be developed and enable a more synergistic integration between IT applications and business knowledge (Boynton et al., 1994; Sabherwal, 1999).

Apparently both RBV and MIS researchers agree that IT applications can create a differential advantage for the organization as well as affect structural characteristics of the industry or the organization itself and become even more important to the organization's performance (Clemons & Kimbrough, 1986; Ives & Learmonth, 1984; Porter, 1985; Brynjolfsson & Hitt, 1996). This finding brings out the important role of IT applications in strategic management as it is believed to be the means to improve organization's financial performance. For example, some MIS studies empirically tested the strategic role of IT and showed that using IT applications strategically can lead to an increase in financial performance (Floyd & Wooldridge, 1990; Jenster, 1986). Jenster (1986) argued that there must be a "fit" between firm's business strategy and IS in order for a firm to achieve superior performance.

It seems clear that MIS scholars also recognize the relationships among strategy, IT, and firm performance while thinking about IT implementation. However, when referring to strategic use of IT, most studies still used firm's overall performance as the criterion to assess IT's strategic value. The information processing directly links to the strategy formulation and implementation is not studied.

Overall, along with the discussions in the earlier sections, one can find that MIS literature has been trying to theorize the relationships among organization's environment, strategy choices, competencies, IT implementation, and financial performance. The fact that these studies share the same concept set forth by strategy literature makes the co-alignment model even more substantial because it provides a valid support for this study to adopt the co-alignment model to address the relationships among information, strategy formulation and implementation, and IT applications.

Overview of Research Methodology

In order to achieve the primary objective, *investigating important considerations for the design of an IS that can improve the utility of the use of the co-alignment model* for strategic management in the hospitality and tourism industry, the study selected the tourism sector for research. The case study research method was employed using the Convention & Visitors Bureau (CVB), i.e., the DMO, in Virginia Beach as the research object.

The case study method can provide rich and insightful analysis for theory development (Yin, 1994) and is "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence is used." (Yin, 1989; p. 23). In addition, the case study method is believed to be the most appropriate technique for the studies of strategic management and policy (Anyansi-Archibong, 1987). The use of the case study approach in economics has also been well documented (Yin, 1984) and for social science research, Jane & Spencer (1994) believe that when the phenomena under investigation is contemporary in nature, the case study and qualitative methods are the favorable approaches for researchers.

Therefore, the case study method is suitable for the study as this is an exploratory research attempting to investigate a contemporary phenomenon existing in complex relationships among several objects. Moreover, the case study method can yield much data that may be studied for relationships among research constructs but not lose the nuances and understanding of each study object's environmental context (Anyansi-Archilbong, 1987).

Virginia Beach was selected as the single research object for three reasons: (1) It has a good setting for tourism and is one of the popular destinations in the USA (see its background description in Chapter 2). (2) The DMO has been utilizing the co-alignment model for strategic management. (3) The management in the CVB has been involved in a yearlong strategic workshop to develop strategic plans for the future of Virginia Beach (see Appendix 1 for the actual planning process).

Because of the above reasons, Virginia Beach is the unique and ideal object for this study. It provides a contextual setting for the necessary observation and analysis of phenomenon that is inaccessible to scientific inquiry but required for the present study.

The method for data collection was a face-to-face interview with the people in the executive or executive-related positions in the DMO. The interview questions were prepared and listed on an open-ended questionnaire (see Appendix 4) but the format of the actual interview was carried out in a flexible setup as some questions required more in-depth discussions. Fifteen people were selected and organized into nine interview sections in two days. The details of the interview design and process are discussed in Chapter 3 & 4 and the results of the data gathered are reported in Chapter 4.

The unit of analysis is *information* with a primary focus on the information defined in the first three constructs of the co-alignment model. For example, the "forces driving change" and "value drivers" in the *Environment Event*, the "competitive method" and "its products & services" in the *Strategy Choice*, and the

"core competencies" in the *Firm Structure*. Thus, when investigating important considerations for the design of IS to improve the co-alignment model, the way these types of information move forward step-by-step in the alignment process becomes the core topic of the research. Using information as the unit of analysis for the study is appropriate.

Contribution of the Research

Given the fact that this is an exploratory research, the contribution of this study can be seen from some findings. For example, *the five dimensions*, WHAT, HOW, WHY, WHO, and WHEN (see Table 5.8) derived from the data gathered raised the important issues along with the co-alignment model for the design of an IS in the future. The study also suggested *the coordination framework* (see Figure 5.2) that synthesizes the co-alignment model and an IS for the improvement of the process of strategic management.

In addition, the study brought up *eleven recommendations* for the design of the IS and for the implementation of the coordination strategy framework. At the end, *ten propositions* were obtained as a part of the research contribution and set forth the possible directions for future studies. The discussion of the research contribution was addressed in Chapter 5.

Overall, the study found that it is possible to design an IS to improve the utility of the use of the co-alignment model through taking care of the information flows associated with the model. The study's recommendations illustrates the feasibility to design such an IS and the way to implement the coordination strategy framework. Finally, the study also demonstrated the way an IT application is used directly in the process of strategic management, not trying to establish indirect linkages through the increase of productivity or the saving of business costs, to show IT's strategic role and gives "strategic IT" a different meaning.

Limitations

In the context of strategic management, the integration of the co-alignment model and the IS should be an aid of achieving and sustaining competitive advantage. However, being an exploratory study, although the feasibility for designing an appropriate IS and for the implementation of the coordination strategy framework are illustrated in the study, the true value(s) of the framework that might help achieve and sustain competitive advantage cannot be seen immediately.

In addition, some limitations come from the drawbacks of the case study method, interview format, and human's biases (from both the respondents and the researcher). More discussions about these limitations are presented in Chapter 5. Fortunately, these limitations do not significantly impact the findings of this study as the research is not to seek the generalizability but to take the first step to integrate the co-alignment model and an IS design, once it is built in the future, for hospitality and tourism management.

Summary

This chapter provided the overall view of why and how this study was designed and conducted. The chapter started with the discussion of the contemporary phenomena and linked them to the IT implementation and strategic management. As tourism is regarded as information business, Virginia Beach was the single-case study object for the study to investigate the relationships among information, IT applications, and strategic management.

The chapter also introduced a strategy model, the co-alignment model, and presented the idea as to why the model is the best one selected for this study. It is noted that a DMO should think beyond the marketing tactics and utilize the strategy concept to cope with the challenges that stems from the new competition and the more

complex environment. In addition, this chapter also presented some of the MIS studies that adopted the same strategy concept set forth by the strategy literature when trying to study the relationships among the organization's environment, strategy choice, competencies, IT implementation, and financial performance. It is important to know that the MIS literature indeed supports the co-alignment model for strategic management within the context of IT research.

At the end, this chapter briefly discussed the limitations and contribution of the study. It is feasible to design an IS that can directly deal with the information issues in the process of strategic planning. Such an IS can improve the utility of the use of the co-alignment model and work with the model together as the coordination strategy framework to strengthen strategic management. It was the researcher's hope that the findings of this study, which were seen as the recommendations, framework, and propositions in Chapter 5 (also see Appendix 7), can add the body of knowledge in strategic management literature.

Chapter 2

Literature Review

Introduction

The objective of this study is to investigate important considerations for the design of an IS. In the future, after such an IS is constructed, it needs to be able to work in concert with the co-alignment model as a coordination strategy framework, for tourist destination management. The synthesis of an IS and the co-alignment model will test the applicability of the concept of *strategic IT* in the hospitality and tourism field. The key literature necessary to support this attempt includes the studies in strategy, tourism, management of information systems, information science, and computer science. In this chapter, the background of the study objective is briefly introduced followed by all necessary literature across various disciplines. At the end of this chapter, a research framework is proposed to depict the coordination strategy framework that synthesizes the future IS design and the co-alignment model.

Background

The city of Virginia Beach is the most populous city in the Commonwealth of Virginia and the 38th largest in the United States. With the opening of its first hotel in 1884, Virginia Beach practically invented the classic American oceanfront resort experience. Salty air, sandy beaches, a boardwalk and a relaxing hotel stay were key elements of a beach getaway even then. Fast forward to the present featuring $125 million (US) in resort improvements, the Pavilion Convention Center, new hotels, year-round attractions, new golf courses, and a new convention center on the horizon, Virginia Beach has evolved into an ideal meeting location.

In 2001, Virginia Beach attracted an estimated half million attendees to the city and the Pavilion Convention Center participating in 57 consumer/trade shows and 13 conventions. In the past, the city has hosted such conventions as the Applied Superconductivity Conference, the largest scientific conference in the world. In 2002, this seaside city "rolled out the welcome mat" for organizations such as the International Plastic Modelers Society and the National Association for Interpretation, an organization dedicated to facilitating educational interpretation programs at aquariums, parks, and historic sites. These groups brought 800 and 1,200 delegates, respectively.

With more than 11,000 hotel rooms and a temperate year-round climate, this popular seaside resort is an ideal meeting destination any time of the year. It's easy to mix business with pleasure in Virginia Beach. A wide array of activities await meeting and convention groups from relaxing on the newly-widened 300 foot beach to strolling on the three-mile long oceanfront boardwalk, which also features a separate bike path. Year-round attractions provide around the clock fun – from the nationally renowned aquarium, the Virginia Marine Science Museum to historic homes tours to championship golf courses. Virginia Beach's central East Coast location makes it an ideal close-to-home meeting destination. Approximately four hours southeast of Washington, D.C. by car, and within a day's drive of two-thirds of the U.S. population, Virginia Beach is served by most major U.S. airlines and several commuter carriers at nearby Norfolk International Airport, a short twenty minute drive from the oceanfront.

Currently under design, the new $193.5 million (US) convention center project will offer almost triple the size of the existing 188,000 square foot facility and allow Virginia Beach to compete for the lucrative national and regional convention market. In the future, consistently alluring all types of tourists to come and seeking investors to develop the onsite facilities are the top priorities. Within the highly dynamic, complex, and competitive environment, the Convention and Visitor Development Department of the City of Virginia Beach recognizes that effective strategic management to establish a

comprehensive strategic plan is necessary to help meet these challenges for the years to come.

Strategy

Strategy is a very broad topic that has been discussed from various points of views. There is no one definition of strategy on which researchers agree. Van Neumann (1947) was the first to relate the concept of strategy to organizations by defining strategy as a series of actions that are decided according to the particular situations by a firm. Chandler (1962) defined strategy as an organization focusing on the need to develop basic long-term objectives and the courses of action and allocation of resources, which must be made to carry out the organization's goals. Chandler's (1962) concept of strategy was market/product growth oriented and is considered seminal to the field of strategy. Ansoff (1965) summarized that strategy is the decision rules and guidelines that define growth for the firm. He considered that a firm's strategy is a common thread that establishes the relationship between the present and future product markets. The firm's future is thus foreseen in the success of the future product market and strategy needs to be in the same direction of pursuing such success.

Strategies are the means for the firm to carry out its objectives (Chandler, 1966). Andrews (1971) defined strategy as a pattern (objectives, purposes, goals and major policies, along with a plan for achieving the firm intended goals) within the organization. Organizations use strategies to crystallize their environments into a set of problems and opportunities for the organization to act upon (Andrews, 1980). Organizations try to connect, respond, integrate, and/or exploit their environments using strategies (Schaffer, 1987). Hofer & Schendel (1978) classified strategy hierarchically into corporate, business, and functional levels. Both the corporate- and business-level strategies are important to explain a firm's profitability (Beard & Dess, 1981). Many agree that an appropriate business strategy will help align the organization with its environment

(Andrews, 1971, Hofer & Schendel, 1978; Porter, 1980). Olsen et al.'s (1998) co-alignment model has extended this concept to the value-adding level and articulates that strategy is a way of thinking that enables the firm to derive the creative competitive methods to add value to the firm.

Miles & Snow's (1978) typology and Porter's (1980) generic strategy classification are referred to frequently in the literature. Hambrick (1983) pointed out that both of their ideas fit with each other. The idea of the prospectors focusing on innovation (Miles & Snow) represents the differentiation strategy (Porter); the defender's production efficiency and low cost concept (Miles & Snow) indeed is the cost leadership strategy (Porter); the analyzer's efforts to use innovation for production efficiency and identify the market segment (Miles & Snow) is the combination of differentiation and cost leadership strategy (Porter). Their discussions represent that alternative competitive strategies can be viable to gain competitive positioning (Perrow, 1967; Portor, 1980; Hall, 1980; Hamermesh et al., 1978; Anderson & Zeithmal, 1984; Mintzberg et al., 1998). Mintzberg et al. in their book "*The Strategy Safari*" (1998) stated that the intended strategy, unrealized strategy, and emerging strategy can all boil down to the realized strategy a firm has to adopt. This indeed reconciles the concept of "timing of match" in Olsen et al.'s study in 1992 providing preliminary evidence suggesting that achieving a match between strategy and environment (both internal and external) has significant performance implications. The authors argued that since the "match" takes time and is very difficult to be achieved, management must accept the less than perfect match to cope with the imminent challenges. Apparently the "less than perfect match strategy" is the "realized strategy" that a firm has to adopt.

Strategy literature has generally acknowledged that business strategy should reflect environmental analysis in order to determine a firm's position and its allocation of resources in order to achieve its business goals. Hofer & Schendel (1978) summarized the concept of strategy into four components: (1) scope (product/market and geographic

territories), (2) resource, deployments and distinctive competencies, (3) competitive advantage, and (4) synergy. These four components have been adopted as the emphasis by the resource-based view scholars who in general believe that the firm's resources and capabilities are the aid to reach the synergy among all other components and are the major determinants to achieve competitive advantage for the firm. Table 2.1 lists the different definitions of the concept of strategy in earlier works.

Table 2.1 – Various Definitions of Strategy

Scholars	Definitions
Von Neumann & Morgenstern (1947)	A series of actions by a firm that are decided on according to the particular situations.
Chandler (1962)	The determination of the basic long-term goals of an enterprise and the adoption of courses of action and the allocation of resources necessary for carry of these goals.
Ansoff (1965)	A rule for making decisions determined by product/market scope, growth vector, competitive advantage, and synergy.
Chandler (1966)	Strategy can be conceived of as the means through which an organization carries out its business development plans.
Ackoff (1970)	Concerned with long-range objectives and ways of pursuing those that affect the system as a whole.
Andrews (1971)	Strategy is decision rules and guidelines that define the scope and growth direction of the firm. It is the pattern of objectives, purposes or goals and major policies and plans for achieving these goals.
Schendel & Hatten (1972)	The basic goals and objectives of the organization, the major programs of actions chosen to reach these goals and objectives, and the major pattern of resource allocation used to relate the organization to its environment.
Glueck (1975)	A unified, comprehensive, and integrated plan designed to assure that

	the basic objectives of the enterprise are achieved.
Hofer & Schendel (1978)	The match between organization resources and skills and the environmental opportunities and the risk it faces and the purposes it wishes to accomplish.
Miles & Snow (1978)	The means used by organizations for consistently responding to the environments they have enacted. Strategy is a pattern or stream of major and minor decisions about an organization possible future domains.
Mintzberg (1978)	Consistent patterns in streams or organizational decisions to deal with the environment.
Schendel & Hofer (1979)	The classifications of the way firms compete in an industry.
Porter (1980)	The ways the organizations can stake out a "defensible" position within an industry; coping with competition
Olsen & DeNoble (1981)	The means through which organizational resources are employed to meet organizational objectives and the accomplishment of an organization purpose
Steiner et al. (1982)	It is a formulation of the organization's basic mission, purposes and objectives … and the program to achieve them.
Leontiades (1982)	It is a systematic methods or dealing with uncertain environments … what course of action to follow, what steps to take.
Bower (1982)	It is management of the fundamental relationship across the boundary of a system and its environment.
Schaffer (1987)	Strategic archetypes represent (1) broad competitive formulas, (2) the degree of efficiency required, (3) the scale of operations, (4) the means and intensity controls, (5) the level of services offered, (6) the quality levels sought, (7) product/service design, (8) the design of product/service delivery system, and (9) channels of distribution (Porter, 1980)
Webster & Hudson (1991)	A general program of action of major importance with an implied commitment of emphasis and resources to achieve a basic mission.

Hamel (1996)	Strategy is revolution leading the firm towards success.
Porter (1996)	The creation of a unique and valuable position involving different activities.
Thompson & Strickland (1996)	The pattern of actions managers employ to achieve organizational objectives.
Olsen, Tse, & West (1998)	Strategy is a way of thinking. It is a reflection of the competitive methods management has invested in and firms need to consistently allocate resources to these competitive methods.

In general, the various perspectives of strategy come from the differences in three primary areas: the breadth of the concept of business strategy, the components of strategy, and the inclusiveness of the strategy-formulation process (Tse & Olsen, 1999). These areas have been studied by researchers in the field of hospitality and tourism as well in order to comprehend what strategy really is.

Mintzberg et al. (1998) tried to summarize the various views of strategy through ten schools of thoughts: the design school (a process of conception), the planning school (a formal process), the positioning school (an analytical process), the entrepreneurial school (a visionary process), the cognitive school (a mental process), the learning school (an emergent process), the power school (a process negotiation), the cultural school (a collective process), the environmental school (a reactive process), and the configuration school (a process of transformation). They discussed strategy within the framework of these ten schools and found that the nature of the strategy process is prescriptive, specific, and configurable (Mintzberg et al., 1998).

Regardless, strategy is generally believed to begin from the analysis of information that especially addresses environmental information available to the firm.

The co-alignment model (Olsen et al., 1998) recognizes the importance of information and suggests that identifying the forces driving change in the environment is the first step for strategy formulation in the process of strategic management.

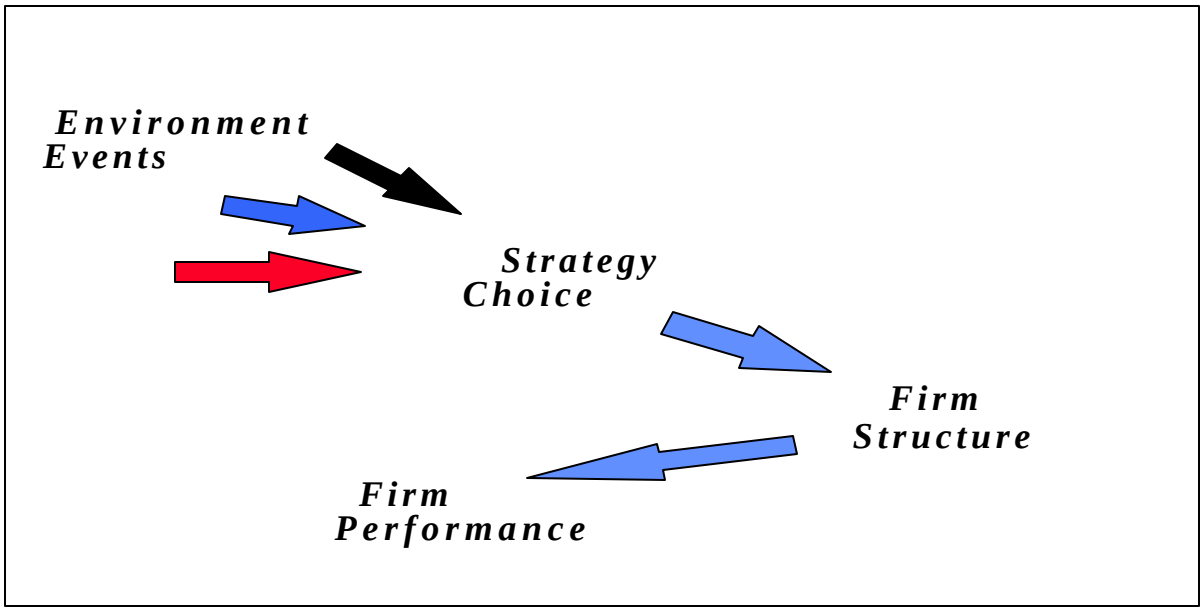
The Co-alignment Model

The concept of co-alignment has been well discussed in the literature of strategic management (Chandler, 1962; Thompson, 1967; Bourgeois, 1980; Venkatraman & Prescott, 1990; Murthy, 1994; Olsen et al., 1998; Connolly, 1999; Fuchs, Mifflin, Miler & Whitney, 2000). In general, the elements needed to be in alignment are environmental issues, strategies, organization's resources, and financial performance of the organization. In other words, as the strategy formulation and implementation occur, the relationships among these issues need to be addressed from the perspectives of the external and internal environmental issues in order to achieve better performance. This co-alignment concept indeed implies the ideas of the SWOT model (Andrews, 1987; Mintzberg et al., 1998) in which the assessment of strengths and weakness of the organization is necessary and needs to be conducted in light of opportunities and threats existing in the organization's environments. Regardless, both concepts emphasize the smooth creation of business strategy.

The co-alignment model (Olsen et al., 1998) consists of four key constructs (Figure 2.1), relating to strategic management and includes the environment, the choice of competitive methods, resource allocation to core competencies and financial performance. It brings the co-alignment concept to a level that allows an organization to conceptualize the causal relationships of its four key constructs in a systematic and logical manner and is generally applied to the context of the hospitality industry. Its four constructs, as noted on Figure 2.1, need to be in alignment, in that there should be a significant relationship between the individual constructs if the firm's overall performance is to be above the average firm within a given industry. According to the

authors, "if the firm is able to identify the opportunities that exist in the forces driving change, invest in competitive methods that take advantage of these opportunities, and allocate resources to those that create the greatest value, the financial results desired by owners and investors have a much better chance of being achieved" (Olsen et al., 1998, p.2).

Figure 2.1: The Co-Alignment Model

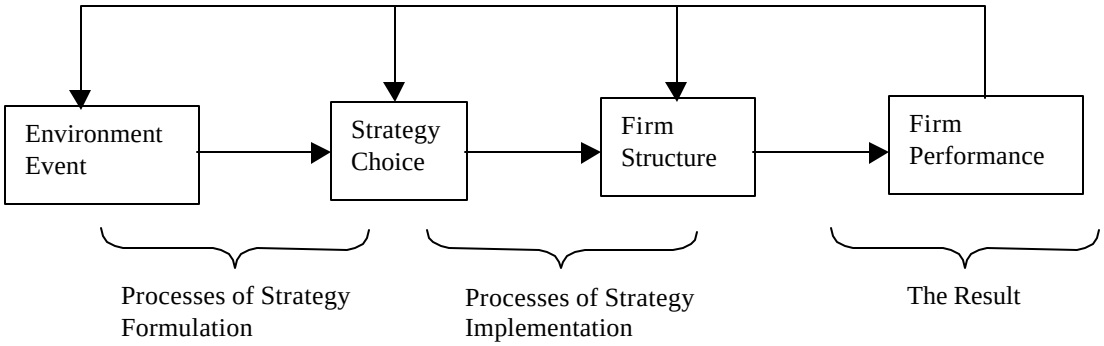


Source: Olsen, Michael D., Joseph West, and Eliza Ching-Yick Tse (1998): Strategic Management in the Hospitality Industry, 1998.

Although the alignment process denoted in the model is progressed from one construct to another, the process of achieving alignment generally follows a sequence of effort that is iterative. The result of the co-alignment reflects the *Firm Performance* and should also mirror the whole alignment process and each of the constructs involved. Thus, in terms of its alignment process for strategic planning, the co-alignment model

(Olsen et al., 1998) can be interpreted in three parts with a recursive relationship as dissected in the diagram (Figure 2.2) below:

Figure 2.2: Interpretation of Alignment Process of the Co-alignment Model



These alignment processes of the model illustrate how the co-alignment model guides managers to formulate and implement strategies in sequential and logical steps. These processes, especially the iterative steps, also present how the co-alignment model can effectively help an organization fully conceptualize the causal relationships among the environment events, strategy choice, firm structure, and firm performance.

The concept of the co-alignment model (Olsen et al., 1998) has been adopted and/or researched in the field of hospitality management (West, 1988; Dev, 1988, 1989; Crawford-Welch, 1990; West & Anthony, 1990; Kim, 1992; Schmelzer, 1992; Murthy, 1994; Zhao, 1994; Jogaratnam, 1996; Turnbull, 1996; DeChabert, 1998; Taylor, 2002; Sharma 2002; Chathoth, 2002). These studies addressed the relationships between and/or among the four constructs of the co-alignment model. Table 2.2 summarizes the conclusions of this line of research.

Table 2.2 – Studies Supporting the Co-alignment Model in the Hospitality & Tourism Management

Research	Segment	Conclusions or Findings
West (1988)	Restaurant	Found that strategy does affect performance in a given environment and, therefore, the concept of determinism does not hold; in addition, high performing firms scan environments in support of strategy
Dev (1988, 1989)	Hotel	A statistically significant relationship was found between location and perceived environmental uncertainty, as well as operating arrangement and perceived environmental uncertainty.
Crawford-Welch (1990)	Restaurant	The relationship between environment, strategy, and firm performance is significant. Different environmental settings can be identified based on variables theoretically grounded in the environmental dimensions of complexity, dynamism, and munificence.
West & Anthony (1990)	Restaurant	Found significant results when treating the environmental scanning as a moderator between the six strategic groups found and their performances
Kim (1992)	Hotel	The author investigated the impact of political issues for business expansion in hotel industry and found that political impacts limit the managerial autonomy and strategic freedom.
Schmelzer (1992)	Restaurant	There is a significant relationship between the choice of strategy and firm's structure by investigating how strategy was implemented in three multi-unit restaurant firms.
Murthy (1994)	Hotel	Found significant relationship between strategy choice and firm performance. High performers follow different strategies (Push strategy) as compared to low performers (Pull strategy).

Zhao (1994)	Hotel	Investigated the antecedent factors in the external business environment that influence the entry mode choices of a multinational lodging firm. The author obtained several propositions concluding the existence of the relationship between the environment and firm's choice of strategy.
Jogaratnam (1996)	Restaurant	A significant relationship was found existing between strategic posture, munificence, and performance. The strategic posture clearly influences performance.
Turnbull (1996)	Tourism	The author investigated the influence of political risk events for the tourism development and hotel investment in Caribbean countries. The level of tourism development plays a moderating role in the relationship of the political risks and multiple enterprises investment in the Caribbean area.
DeChabert (1998)	Restaurant	There is a significant relationship between firm's structure and its financial performance. Alignment and communication of core competencies began to surface as it relates to organizational goals and firm performance.
Taylor (2002)	Hotel	The study revealed the importance of co-alignment in hotels and the results indicated that performance was best when there was co-alignment.
Sharma (2002)	Tourism	The co-alignment principle is used to evaluate the Tourism Satellite Accounts (TSA) and found that the co-alignment principle was able to identify several aspects that are overlooked by the TSA implementation in Tanzania.
Chathoth (2002)	Restaurant	A high variance in firm performance is explained by the co-alignment between environment risk, corporate strategy, and capital structure.

The findings of these studies suggest that the relationship of the environment events, strategy choice, firm structure, and firm performance (i.e., the four constructs of

the co-alignment model) exists and is important. Nevertheless, while research to date has explored the relationships between and among the constructs and results generally support the model, no research has looked at a specific integrating mechanism for the model and how it enhances alignment. It is thus an objective of this study to seek such a mechanism by integrating the co-alignment model with an information system.

Information Flow, Communication, and Co-alignment

Information flow and communication is an important component in the co-alignment model in which environmental information is the most critical and essential variable that launches the whole co-alignment process. The environmental information is observed, collected, and analyzed in each step of the process in the co-alignment model. Understanding how information flows throughout the co-alignment model can help decision-makers implement the co-alignment concept effectively.

The importance of information flow and communication had been addressed in the study of tourism management especially regarding the topic of destination image, one of the most frequently researched topics in the literature on tourism, as it is believed that information promotes and forms destination images in tourists' minds. Another frequently examined topic in the tourism literature is the travelers' information search which underlines the importance of valid information about a destination (Schul & Crompton, 1983; Gitelson & Crompton, 1983; Perdue, 1985; Snepenger & Snepenger, 1993; Fodness & Murray, 1997, 1998, 1999; Vogt & Fesenmaier, 1998). Sheldon (1997) provides a thorough insight into the information flows and the types of information needed to be transferred between the respective players in the tourism market.

For example, travelers are exposed to Internet technology and can easily receive various types of information about travel products and/or services directly from different

suppliers. The way the information flows from the suppliers to the buyers or vice versa has thus changed. Suppliers *must* try their best to improve their communication channels with their customers in today's network economy in order to succeed. This change was illustrated in the study of Werthner & Klein (1999) who used a rough figure to illustrate the initial market situation and placed the consumer and the supplier on both ends of a communication cloud, which both have to cross. The term "communication cloud" is self-explanatory representing the barrier of communication between the buyers and suppliers. The communication refers to the ongoing exchange of information between both sides.

Werthner & Klein's (1999) idea is very similar to the communication systems in Information Theory in which the basic limitations of various methods of communication are concerned with the quantification, coding and transmission of information. Information theory was originally formulated by Nyquist (1924) and by Hartley (1928) but was not articulated and finalized until 1949 by Shannon who is regarded as the founder of the modern theory. According to Shannon (1949), when information moves from one end to the other, the traveling would create noise that can distort the real message underlying the information. The receiver thus needs to decode the distorted information for further implementation and meanwhile takes the risk of misinterpretation. The decoding task is challenging and can be viewed as a procedure of information processing and analyzing.

From the point of view of strategic management, the procedure of information processing and analyzing is included in the co-alignment model because the model recognizes that information is the important component for strategic planning and provides a step-by-step guideline to deal with the information flows. Information is not only necessary to start the co-alignment processes but also critical for the creation of strategy. In other words, the model's logical design for information flows is necessary to achieve the "realized strategy" that stems from the mixture of "intended strategy,"

"unrealized strategy," and "emerging strategy" (Mintzberg, 1998) after careful inductive and deductive inferences resulting from information processing and analyzing.

Although the technological developments over the past years have improved the view of information theory, the concepts of how information flows and gets distorted are still valid and still the major challenge for management. If an IS can improve the utility of the use of the co-alignment model, it can enhance the processes of alignment suggested in the model and thus the synthesis of this IS and the co-alignment model can help reduce the time and errors associated with achieving a "match" between the firm's environment and strategy choice (Olsen et al., 1992). Otherwise by the time a strategy is assessed, decided, and implemented, the strategy might become obsolete in today's competitive environment in which all sorts of information flows freely and can lead to competitive opportunity. Thus the use of IS (i.e., an IT application) in aid of strategic planning seems inevitable. As a matter of fact, the use of IT applications in the tourism sector has evidently been strong but not in the area of strategic management.

IT applications can be defined as the means for acquisition, storage, processing, communication, and display of information. According to a report released by the White House, Office of the Press Secretary (2000), there are three major elements composing an IT application: (1) computer hardware, (2) communication systems, and (3) computer software. The Internet has come to be recognized as the most typical symbol of information technology in this sense.

The term "information technology" does not equal "technology" and should be interpreted differently. Traditionally, technology has been treated as a tool that handles the issues of productivity, efficiency, labor saving, etc. Today, because information has gone digital, technology that is adopted to process the information is commonly recognized by the name "information technology"(IT).

In this study, *IT is defined as an enabler technology that only converts raw information into useable information and further delivers it to the right place, at the right time, in the right format.* When an organization adopts IT, it creates new information that might be usable for business development and thus creates a more dynamic environment for competition. Therefore, strategic thinking must be applied if an organization is to take advantage of IT in this information era (Cortada, 1996). By summarizing the discussions so far, the way of thinking for organizations is suggested as follows:

- An organization must recognize the structural view suggested by Werthner (1996), Froschl & Werthner (1997) and realize that many intermediaries are needed in the communication clouds to act as the linkages for both sides (sellers and buyers) of the clouds. Thus the competition is greater than ever and creates more potential for complexity.

- An organization must recognize Shannon's (1946) information theory and seek a more effective "decoding system" to filter the noises and handle the complex linkages among all environmental variables.

- The co-alignment model provides a step-by-step guideline to collect and analyze information and, therefore, is suggested as the effective "decoding system" to process the environmental information for strategic management purposes.

For any business, the higher the degree of dependency on information is, the more management needs to address the above concepts and understand the role of the co-alignment model. The need to construct an IS to enhance the information flows throughout the co-alignment model in order to improve the utility of the use of the model becomes evident.

Tourism – An Information Business

Froschl & Werthner (1997) point out that there are three observations reflecting the nature of tourism and its products as well as the ongoing changes within the tourism market and the respective importance of IT implementation. They argued that (1) tourism is an information business, (2) tourism undergoes a structural change, and (3) tourism business goes electronic. Researchers regard tourism as an information business due to these structural reasons (Schertler et al., 1994). Tourists have to leave their original environment and move to a geographically distant place in order to experience the tourism products and services.

In terms of tourism, the value of information truly is the travel motivation as identified in Stabler's (1990) model for destination image formation. Tourism products and services have to be ready for purchase and consumption when the tourists come, because a priori assessment of their quality is impossible (Werthner & Klein, 1999). This suggests that decision-making and actual product consumption are separated in time and space. However, this gap can be narrowed by the information flow, which carries the various and pre-prepared information traveling between buyers and service providers (the sellers). This characteristic of tourism products and services entails high information search costs and causes informational market imperfections (Williamson, 1985). This, in turn, leads to the establishment of specific product distribution and information channels and value-adding chains. Different groups are handling different kinds of information and can initiate the flows. In his view, the main entities, such as, consumers, intermediaries, and suppliers are very similar to the structure view of Froschl & Werthner (1997) and thus once again confirms that tourism is an information business.

Because tourism is an information business, the traveler's information search becomes one of the favorite topics in tourism research. Tourism literature has

categorized a traveler's information search into two types: internal and external search (Engel, Blackwell, & Miniard, 1995). A number of studies illustrated that the use of different types of external information sources varies greatly on the basis of various elements (Gitelson & Crompton, 1983; Snepenger et al., 1990, Fodness & Murray, 1997; Gursoy, 2001). Consumer behavior literature also suggests that the effectiveness of an external information search is influenced by the extent of prior product knowledge (Brucks, 1985; Alba & Hutchinson, 1987; Vogt & Fesenmaier, 1998). These arguments are perfectly logical, and it is believed that the prior product knowledge can enhance one's internal memory and assists in the decision making process (Brucks, 1985).

Regardless, with abundant information produced literately every second in the dynamic and competitive business environment, one can imagine how fast this so-called prior knowledge can languish or be replaced by newer information. In this case, the concept of internal/external information search probably cannot effectively hold its ground in today's dynamic environment with regard to the consumer's purchasing behavior. Consumers might always reach out looking for information in their daily Internet surfing activity, especially when the tools (e.g., the Internet and personal digital assistant (PDA) or cell phone with wireless technology) are feasible and prevalent. When such an external information search becomes a major activity for most travelers, the necessity to use IT for business development becomes prominent in order to enhance the information exchange process for sellers, buyers, management, and stakeholders.

Tourism – An Imagery Business

In conducting an information search, it is expected that the traveler would have a visitation place or experience in mind as the target to launch a search process. This visitation place is considered a tourist destination in the tourism literature. Tourism as an experience takes place in destinations and tourists travel to destinations to see attractions, to participate in leisure activities, and to experience new cultures (Uysal, Chen, &

Williams, 2000). Thus, it has been a major challenge for a regional management to develop and promote its location. One of the possible ways of doing so is to create a new image or reinforce an existing positive image of the place in the minds of travelers (Uysal, Chen, & Williams, 2000).

Destination image is one of the frequently studied topics in tourism literature due to this reason. Numerous studies indicate that travelers structure a destination image in their minds according to the information received (Fishbein & Ajzen, 1975; Burgess, 1978; Stabler, 1990; Gartner, 1993; Buck, 1993; Baloglu et al., 1995). These studies not only present that tourism is an industry based on imagery but also agree that information theory is applicable to tourism management. The overriding concern in the literature is to construct, through multiple representations of paradise and imagery (of the destination), an image that entices the outsider to place himself or herself into the symbol-defined space (Buck, 1993). From a practical standpoint, the more complete measurement of a destination image provides more useful information for positioning and promotional strategies (Mayo & Jarvis, 1981).

Stabler (1990) suggests an image creation model as a function of tourist demand and supply by integrating consumer behavior and economic theory. According to his model, the image formation cannot be isolated from either tourist demand or supply as they both influence the image formation. Stabler (1990) believes that image is presented as a function of consumer factors (e.g., socio-economic characteristics, motivations, perceptions, and psychological characteristics) and supply factors (e.g., information about promotional, non-promotional, social sources, previous destination experience). He suggested that the transmission of information from supply (destination) through the marketing of tourism and the media, previous experience and opinions of other consumers, combined with motivations and socio-economic characteristics form perceptions, the images of tourism and tourist destinations (Stabler, 1990). His model indeed reveals three major determinants of image held in the absence of actual visitation:

(1) travel motivations, (2) sociodemographics, and (3) information sources. Numerous scholars across disciplines and fields have consistently and repeatedly cited these elements as the determinants of image formation as well. Information sources, travel motivations, and sociodemographic variables have also been recognized as key elements in image formation models and as antecedents of tourist destination image in traveler destination selection models (Stabler, 1990; Gursoy, 2001).

Hence, the need to create a destination image and perception is an important mission for a destination management organization (DMO) which is responsible for destination management including planning activities, marketing or branding of the entire destination, training and education, and even daily operation. Stabler's (1990) elements certainly validate the linkage between information and image creation. However, these elements only point out the concerns from the view of marketing and fail to provide feasible steps to help a DMO identify the opportunities and threats in the complex environment and formulate an effective strategic plan to meet the current and upcoming challenges.

Tourism studies recognize that the tasks of DMO's are manifold but with a common objective – to promote and sustain tourism in a destination. In principle, DMO's can be viewed as a non-computerized information system that engages in gathering information about the local, regional or national tourist products and distributing this information worldwide. On the other hand, they also have to deliver information to the local suppliers informing them about current trends, the general market situation, and national and international competition. These tasks are obvious on the descriptive level but rather challenging on the execution level.

Using information to change a tourist's perception of a destination image seems a valid move but certainly is not an easy job for DMO's. Several studies have been conducted from this perspective by examining images and perceptions of places as the

approaches for developing tourist destinations (Gartner, 1993; Dann, 1996; Gursory, 2001). However, most have studied one or a few places at a time about the issue of image or perception and are weak in attaining the generalizability for the body of knowledge of destination management (Crompton, 1979; Gartner & Hunt, 1987; Fakeye & Crompton, 1991).

In general, the travel intermediaries like DMO's are treated as a broker whose major job is to provide visitors information for a given destination (Roehl, 1990; Gartner & Bachri, 1994; Dimanche & Moody, 1998). In other words, the importance of information recognized in the literature of tourism is mostly limited to the relationships between sellers and buyers in the sense of marketing and rarely addresses the concepts of strategic management. When emphasizing marketing promotions, a DMO is likely to be restricted in the framework the management assembles information and sends it out to the public and then uses the visitation volume as an indicator to measure the popularity of the destination. However, a high visitation volume might be a short-term or a one-shot result from the low-price enticement and is weak in strategic management for long-term competitive advantage.

The information focusing on marketing promotion allows travelers to make deals at heavy discounts or even obtain them for free. Of course, when prices are artificially low, demand becomes artificially high. This easily produces short-term results but make the popularity of the destination image questionable in the long run. Therefore, it is suggested that DMO's should also go beyond marketing tactics and try to develop their strategic thinking in order to take advantage of information transmission for strategic management.

Since information is the major element for a traveler to construct a destination image as suggested in the literature, its circulation would make the environment more dynamic. DMOs' appropriate reactions to these changes in environments in which the

business is operating become critical. However, a DMO's function is hard to formulate due to the complexity of environments and variance of destination characteristics. In addition, each destination faces a unique set of problems and opportunities. It is rather difficult to make generalized statements about tourist destinations that are universally applicable. Even only in the sense of marketing, the question is – with all this information rampaging around in the global scope and suppliers working hard trying to catch up with travelers' expectations, is a traditional DMO still the best intermediate to handle the dynamics of the Internet (or global) market? What actions can the DMO take to manage the destination effectively?

As discussed earlier, in today's digital economy, abundant information is produced literally every second and this complicates the business environment. Consumers have a variety of choices in technology products, such as PDA's, wireless phones, computer software, etc. to help search for suitable information. The need for a DMO to use IT becomes prominent in order to enhance the information exchange process for sellers, buyers, management, and stakeholders. This need is also supported by the findings of Froschl & Werthner (1997) who concluded that tourism is an information business, tourism undergoes a structural change, and tourism business goes electronic.

Because each destination faces a unique set of problems and opportunities existing in its environments and has its own characteristics, it is almost impossible to achieve a universal strategy for every DMO to manage and develop its destination. However, by changing the way of thinking a DMO is expected to strengthen its capability to react to the changes in its environments for a more effective strategic management. This goal can be successfully achieved by adopting the co-alignment model, as suggested in the hospitality literature (see Table 2.2).

However, the faster information circulation makes information flows in the co-alignment model even more complex than ever. Managers need to not only think

strategically but also have the capability to utilize IT applications wisely and internally in order to formulate and implement their strategies. In other words, various environmental information, strategic thinking, and IT applications all need to be taken into consideration at the same time when contemplating the issues of destination image.

The Alignment of Information, Strategy, and IT Applications

Some scholars suggested that when using IT to alter the organization's produces and services and the way the organization competes in its industry and increase market share, the organization is implementing IT strategically to create competitive advantage (Weill & Olson, 1989; Weill, 1991; Weill& Broadbent, 1998). This argument is the plainest statement that describes how to use IT strategically. However, it does not address the core element "information" in IT clearly. The definition of "strategic IT" has not come to a consensus by researchers in the field of hospitality and tourism, but in general, it means that an IT application is utilized within an organization for strategic planning to help reach its business goals. It can be considered a competitive method or core competency utilized to cope with the uncertainty and complexity of the environment. In other words, when referring to "strategic IT," it implies two dimensions as reflected in the term used: *strategy* and *IT*. The reason is obvious: abundant information has to be managed and processed in the way the organization desires in order to allow the organization to better formulate and implement its strategy and benefit from it. The concept of "information processing" used in this study is defined as *converting raw information into usable information that is ready and accurate for strategic management and decision making for the managers.*

In retrospect, the definition of information processing is similar to what was suggested in Shannon's (1942) information theory in which the decoding step for the distorted information can be considered a procedure for information processing and analyzing in order for the receiver to have the usable information. In other words, since

the “noise” will occur in information transmission, the usable information can only be obtained through a decoding process. This is extremely important for strategic management as well since the threats and opportunities are underlying the environmental events that emit various crude or distorted information. To resort to strategic use of IT under challenging and uncertain external environments, firms must try to identify and seize the opportunities existing in that environment by understanding the environmental information or variables. That is, aligning IS with business goals and strategy is a way to compete and a way to exploit IT (King & Teo, 1997; Segars & Grover, 1998; Teo & King, 1996).

Therefore, in the sense of information, strategy, and IT applications, the meaning of strategic IT is a product of the three aimed at information processing. Strategic IT applications need to be used in a way the organization can control and in turn to obtain competitive advantage over its rivals or to prevent rivals from gaining any advantage. Previous studies have shown that the dynamic and complex information in the external environment often encourages or requires firms to utilize IT applications in their strategies in order to survive (King, Gover, & Hufnagel, 1989; King & Teo, 1994, 1996; Sabherwal & King, 1991, 1995). This concept ties IT and strategy together. However, other than for strategy formulation, information processing is also crucial for strategy implementation as the communication and understanding between the strategy planner/designer and controller/implementer must remain clear and accurate.

Neo (1988) identified three factors as the major facilitators in an organization’s decision to use IT applications for strategic purpose: environmental uncertainty, the business role of the IS function, and the distinctive competencies in IS. Among these factors, the environmental uncertainty comes from several domains. Johnston & Carrico (1988) conducted a field study of 11 industries and found that the industry’s environmental factors such as competition, deregulation and changes in technology influence the direction and pace of the development of strategic IT applications. This

idea was also supported by King et al. (1989) and Choe et al. (1998) who empirically found a positive relationship between perceived environmental uncertainty and the IS that is implemented within the firm's strategic planning.

The way researchers treat a strategic IT as a product of information, strategy and IT enhances the importance of the present study in which seeking a synthesis of a strategy model (i.e., the co-alignment model) and the considerations for designing an IS is the ultimate goal. Table 2.3 presents the difference between aligning IS with strategy in the MIS literature and the alignment of the four constructs in the co-alignment model in terms of the elements that need to be in alignment and the parties who need to be involved.

Table 2.3 – Co-alignment Concepts in the Co-alignment Model and in the MIS Literature

Underpinning Theory	Elements to Be Co-aligned	Parties Involved
The Co-alignment Model (Olsen, West, & Tse, 1998)	• Environment • Strategy • Firm Structure • Firm Performance	• The top manager is the combination of the strategist and strategy planner; the value-adding manager • Any necessary parties that are involved in the resource allocation process to execute the specific strategy choice (i.e., the competitive method)
Alignment of IS and Strategy (Baets, 1996; Broadbent & Weill, 1991; Nath, 1989)	• Strategy • Organization • IS Infrastructure • IS Planning	• Collaborative work among IS managers, strategy planner, and top managers

In MIS literature, Baets (1996) suggested that the alignment of IS with strategy is a collaborative process among business strategy, business organization, IS infrastructure, and IS planning. Such an alignment requires many facilitating activities, such as the IS manager's involvement in business strategic planning, upper management's understanding about IS strategy, IS manager's education of business goals and sufficient commitment to IS from the top management (Broadbent & Weill, 1991; Nath, 1989).

In the co-alignment model, the executive is the combination of strategist and planner who is responsible to place the environment, strategy choice, firm structure, and firm performance in alignment. The co-alignment model itself has already taken the issues in information and strategy into careful consideration. Constructing an IS on the basis of the model is meant to enhance the information flow and information processing for the co-alignment process. The IS or an IT application must be embedded in the co-alignment principle as a part of the model as long as the model's synergy is not violated. By doing so, the co-alignment model is integrating an IS and illustrates the true meaning of strategic IT. The relationships between an IS and each construct of the co-alignment model will be discussed in the following sections.

Environment Events and IS

The importance of the environment is evident in the literature of strategic management (Chandler, 1962; Thompson, 1967; Bourgeois, 1980; Venkatraman & Prescott, 1990; Murthy, 1994; Olsen et al., 1998; Connolly, 1999; Fuchs, Mifflin, Miler, & Whitney, 2000). As discussed earlier, the environmental information is the most important source for an organization to assess the possible external opportunities and threats. This information needs to be in an alignment with the organization when formulating the strategies. The co-alignment model (Olsen et al., 1998) illustrates this alignment among its four key constructs (Figure 2.1) in hopes of achieving positive financial performance.

According to the model, *Environment Events* is the first construct that addresses the importance of the environmental information. The organization's business domain "is a reflection of the pattern of interrelationships that exist between the organization and the forces that drive change within that environment" (Olsen et al., 1998, p.80). Thus the model suggests several frameworks or classification schemes that are hierarchical in nature and consist of the remote, task, industry, firm, and functional categories. The authors argued that forces that drive change should emerge first in the remote category and filter down through each category until they affect the firm (Olsen et al., 1998).

Thus, an organization should try to conduct an environmental analysis starting with the remote environment, which consists of five elements: technological, sociocultural, political, economic, and ecological. "Within each of these five elements are a number of variables that ultimately drive change and lead to opportunities or threats for the firm" (Olsen et al., p.81).

Therefore, one of the first uses of an IS needs to be in the way an organization can effectively process the information from these five elements. As information is the essence of IT, an IS should be designed to satisfy this purpose.

Another major type of information suggested by the co-alignment model exists in the task environment that is the more familiar environment for most managers and consists of information about the customer, supplier, regulator, and competitor (Olsen et al., 1998). According to the co-alignment model, the information in the task environment usually dominates the attention of a manager daily and the changes taking place in this environment are a direct result of activities developing in the remote environment categories (Olsen et al., 1998).

The necessity of conducting an environmental scanning is to understand the opportunities and threats for the organization. Two main elements are expected to be identified through this scanning process: forces driving change and value drivers. The meaning of forces driving change is obvious, as they are the emerging patterns influencing the industry. An organization should be able to see its trend into the future as clear as possible in order to take advantage of it.

However, knowing the forces driving change can not make the organization profitable automatically. The managers should be able to identify value drivers from these forces driving change. Value drivers are performance variables, such as sales volume, consumer satisfaction, consumer preference, etc. As being termed, they have tremendous impacts on business financial performance. Identifying the value drivers is one of the most challenging aspects in the process of strategic management. To be successfully doing so, sufficient and accurate information is required. Hence, an IS needs to have the capability to help management collect and store the information correctly from both the remote and task environments and further in aid of processing the information for strategy formulation and implementation.

Of course, in today's information economy, the electronic format of information has made the process of assessing validity and reliability of the information even more difficult. Anyone can construct a web site on the Internet and publish information regardless of its validity and reliability. Although IT applications can help and speed the process of collecting, organizing, and storing the electronic information, they cannot assess the validity and reliability of information. The solution still relies on human's intellect and the body of knowledge possessed by the IS users. "By knowing the body of knowledge, managers are able to concentrate their scanning on the most respected, valid, and reliable sources." (Olsen et al., 1998, p.114).

In other words, once the body of knowledge is established, the forces driving change and value drivers can be identified correctly and the advantage and power of using an IS can be achieved. When the management, i.e., the IS users, meets this requirement, not only can the organization place the information and IS in alignment and head to the next step of the co-alignment process but also illustrates the causal relationships of the variables examined.

Strategy Choice and IS

Once the environmental information is collected, it needs to be analyzed and stored into an IS. When all a firm's activities for searching and identification of IS are performed to deal with the external environment, the firm has recognized the importance of environmental information and IT (Das et al., 1991; Teo & King, 1997). In other words, as noted by the MIS researchers, when a firm recognizes the relationships between the organization and its environments and is striving to identify the appropriate IT application, the firm attempts to use such an IT application to process the environmental information effectively to outperform its rivals.

In the co-alignment model, finding a way to outperform the rivals by a firm means finding the competitive method to achieve better financial performance. *Strategy Choice* is the second construct of the co-alignment model focusing on the competitive methods in which firms invest in order to achieve their objectives (Olsen et al., p.56). Investing and utilizing an IS in order to outperform competitors qualifies such IS as a competitive method if such an IS can add values to the organization and should be recognized from the environmental scanning. In other words, if an IS is viewed as a competitive method, it has to be identified from the environmental information and value drivers in the previous construct (Environment Events). It needs to have a portfolio of products and/or services that can generate positive cash flow streams over its economic life for the organization (Olsen et al., 1998; p148).

Although adding values to the organization is an excellent achievement, from the prospective of strategic management, an IT application should be utilized in a way to help an organization gain long-term competitive advantage. If an IS is designed to strengthen an organization's strategic management, it should not be limited in the view of competitive method to add value in its economic life.

When an IS is considered a competitive method, it has a limited life and will likely be imitated by the competitors. If this happens, it will no longer significantly add values to the organization and will become a critical successful factor that a firm should have in order to compete with others. It becomes a must-have asset to the organization and shares organizational resources. The most evident example to illustrate this statement is *online reservation systems* which almost is the must-have IS for the hospitality firms. The organization needs to allocate resources to this system to keep it function appropriately but hard to use it to add significant values anymore, let alone for the purpose of strategy formulation and implementation.

From the perspective of strategic management, an IS should be able to fully enhance the whole alignment process of the co-alignment model. An appropriate IS should be designed as a mechanism that works for and with each construct without breaking the co-alignment model's sequent information flows. In other words, an IS should be designed in a way with capability to enhance the information flows of the model in order to improve the utility of its use for strategic management.

Therefore it is clear that an IS should not be considered a competitive method to an organization if it is for the purpose of strategy formulation and implementation. An IS should be designed in a way it can synthesize the whole co-alignment model through the enhancement of the model's information flows.

Firm Structure and IS

Firm Structure is the third construct of the co-alignment model emphasizing the efforts of resource allocation. Firms can only achieve a better financial performance if they match their resource allocation efforts with the right competitive methods (Olsen et al., 1998). From this perspective, there are two lines of thinking to view the IS adopted by the organization:

First, IS should be in aid of transmitting the information for firm's resource allocation efforts. As noted earlier, an IT is defined as an enabler technology that converts raw information into useable information and further delivers it to the right place, at the right time, in the right format. Hence, when an IS effectively delivers the usable information to the right place, at the right time, in the right format, it plays the role helping the firm match its resource allocation efforts with the right competitive methods.

Secondly, because an IS has the capability to store information, it builds a database during its implementation. A well-constructed database can provide significant information for decision making. Once it is built and functions effectively, the database and the IS become core competencies that ensure the execution of the firm's competitive method and help in the process of strategy implementation in the future effectively.

The discussion above illustrates different views of an IS in the context of the firm structure. Together they delineate the way an organization develops and accumulates its resources and capabilities. Indeed, this view is supported by the resource-based view (RBV), a field of study in the strategic management. RBV researchers believe that only with sufficient resources and capabilities can an organization comprehend the external opportunities and threats to achieve and sustain competitive advantage (Itami, 1987; Miller & Shamsie, 1996).

This line of strategic thinking begins as far back as the work of Selznick (1957) and Penrose (1959). While the economic tools focus on the issues of product and market, the traditional strategy concept is phrased in terms of the firm's resources that can be used for analyzing the firm's relative strengths and weaknesses (Andrews, 1971). However, as discussed earlier, the RBV only becomes a strong concept with the work of Wernerfelt (1984), Rumelt (1984), Barney (1986), and Miller & Shamsie (1996) who stress that a successful firm should possess heterogeneous collections of resources that allow the firm to implement different strategies and yield different returns. In addition, these strategies and returns should also be sustainable and prohibitively costly to imitate.

In fact, by specifying a resource profile for a firm, it is possible to find the optimal product-market activities (Wernerfelt, 1984). A firm's resources can be viewed as "strengths and weakness" (Wernerfelt, 1984) and can also be defined as the assets (tangible and intangible) that are tied semi-permanently to the firm (Caves, 1980; Wernerfelt, 1984). Dierickx & Cool (1989) used "bundle of assets" to describe a firm's resources and capabilities and argued that such assets need to be consistently accumulated over a period of time. Examples of resources are: R&D capability, human capital, dealer and customer loyalty (Itami, 1987; Dierickx & Cool, 1989), brand names, knowledge of technology, skilled personnel, trade contacts, machinery, efficient procedures, capital, etc. (Wernerfelt, 1984). Although the exact definition of resources and competencies has not been agreed to by scholars, there is a consensus that RBV has been instrumental in improving the legitimacy of strategic management (Rugman & Verbeke, 2002).

From the standpoint of RBV alone, constructing an IS using the framework of the co-alignment model can enhance the resource allocation systems because the synthesis of the IS and the co-alignment model as a whole can effectively handle the information flows for information sharing and exchange. This synthesis represents a coordination framework that is expected to handle the interrelationships among the various parties

involved in the implementation of the co-alignment model, such as strategy designers, planners and implementers.

The discussion of this section extends the meaning of an IS being considered a tool for cost reduction or other purposes. To a firm, IS is a core competency that helps achieve competitive advantage because the process of implementing such a system requires the collaborative relationship between the system and its users. As discussed earlier, environmental information is extremely important for strategic management. Managers should have the body of knowledge to identify and analyze the information to obtain the useful data for strategy formulation and implementation. Hence, when an IS is designed for strategic management, its users also need to have the ability to adopt such a system. This interaction between the IS and management likely to initiate the creation of knowledge and build up the organization's resources and capabilities. It is possible that as time goes by such an IS will be embedded in the organization's structure and will not be taken away by any users involved.

This line of discussion indeed is supported by some RBV literature in which scholars have addressed that the process to develop and accumulate firm's resources and capabilities will result in knowledge creation (Nonaka, 1991, 1994; Spender, 1994; Grant, 1996). When this state is reached, the organization can own a knowledge creation network that is attached and embedded within the organization's network and is hard to be imitated, traded, or substituted (Dierickx & Cool, 1989). Therefore, an IS should be designed for the purpose of strategic management and should be considered a core competency that can aid an organization achieving and staining long-term competitive advantage.

Firm Performance and IS

Studying the relationship between firm performance and IS is a huge challenge as numerous variables are involved in this relationship. There are a number of scholars conducting benefit analysis as an attempt to understand IT's value in relation to the firm's business success (Diebold, 1987; Saunders & Jones, 1992; Brady et al., 1992; Semich, 1994; Brynjolfsson & Hitt, 1996; Apostolopoulos & Pramataris, 1997; Bharadwaj & Konsynski, 1997; Grover et al., 1997). Although these researchers have studied the "soft" benefits of IT applications, such as strategic advantage, service, quality, timeliness, added flexibility, employee satisfaction, etc., their findings still cannot sustain *the absolute positive relationship* between IT applications and firm's financial performance. After all, IT investments alone do not sufficiently determine firm's financial success and current available valuation techniques cannot fairly assess IT's value proportionally. For example, Brynjolfsson & Hitt (1996) and Hitt & Brynjolfsson (1996) studied 370 *Fortune 500* firms and found a positive correlation between technology investments, increased productivity, and consumer value, but the authors were unable to correlate these benefits to substantiate business profitability due to high standard errors of the measures used.

Apparently, these researchers tried to deal with IT and firm performance directly. This is not the case in the co-alignment model, however. In the co-alignment model, *Firm Performance* is the last construct defining the outcome of the alignment process. Because the model is a strategy model, the *Firm Performance* is more like the "overall outcome of the strategy implementation". Hence, the relationship between IS and *Firm Performance* should focus on "using IS for strategic management in hopes of improving the outcome of strategy implementation". As suggested by the authors, the cash flow stream is the major indicator of this outcome. It also represents *the final result* of the firm's strategic management after implementing the co-alignment model.

Therefore, although IT investment is likely to be a part of a firm's strategy, it is not the focus of this study using the co-alignment model to specifically investigate IT's investment return. In addition, it is very difficult to directly link the firm's financial result to its IS or implementation individually. Thus, the topic of firm performance is not quite the same as what had discussed by the researchers above trying to understand IT's value in firm's overall performance. In addition, such a linkage involves the issues of intangible values and IT investments and is beyond the domain of this research.

Moreover, because the hospitality researchers have provided support to uphold the co-alignment model as discussed earlier (see Table 2.2), the model is believed as a valid strategic model that can help improve an organization's financial performance. Thus, this study does not worry about the assessment of IT's value but believes that once an IS can improve the utility of the use of the co-alignment model, i.e., the processes of strategy formulation and implementation, the IS will be an aid to improving a firm's performance.

In addition, when an IS creates a differential advantage, it affects structural characteristics of the industry and becomes even more important to the organization's performance (Clemons & Kimbrough, 1986; Ives & Learmonth, 1984; Porter, 1985; Mata, 1995). As it reaches this stage, from the perspective of the co-alignment model, as addressed in the previous section, the IS adopted is the core competency for strategic management and the effect of significant performance or competitive advantage should be expected.

Furthermore, MIS literature also supports this outlook. Some studies (e.g., Floyd & Wooldridge, 1990; Jenster, 1986) have empirically showed that strategic IS can lead to an increase in performance. Jenster (1986) argued that there must be a "fit" between the firm's business strategy and IS in order for a firm to achieve superior financial performance. Although few studies found that IS might have no effect or negative

relationships with the firm's financial performance or reputation (Chan & Huff, 1993; Chan et al., 1997), most MIS researchers believed that the firm's significant performance can be expected from the IS implementation (Porter & Millar, 1985; Warner, 1987; Brown et al., 1995). Brown et al. (1995) investigated the long-term financial gains of strategic IT applications by analyzing thirty-five firms which successfully employed strategic IS. The results of their analysis indicated that the stock market reacts favorably to the announcements of the firms that are using an IS for strategic planning. The authors also found that these firms tend to be more productive and more profitable than their industries and competitors in subsequent years.

These studies (in MIS and in the hospitality and tourism management) support the concept of strategic management in the co-alignment model. The model suggests that when the firm is trying to implement the competitive method selected, it needs to identify the core competencies to support such an implementation in order to achieve superior performance (Olsen et al., 1998). Thus when an IS can enhance the co-alignment model on the aspects of strategy formulation and implementation, the relationship between a firm's financial performance and its IS can be expected.

Designing An IS in A Framework for Strategic Management

The discussion of relationships between each construct of the co-alignment model and IS is meant to illustrate that an IS can improve the utility of the use of the co-alignment model if the IS is constructed correctly. Based on the literature reviewed and the discussion provided so far, the following key topics emerge:

- In the strategy literature, environmental information is extremely important for an organization's strategic plan that includes the processes of strategic management.

- The co-alignment model is supported by the literature in strategic management, MIS, and hospitality management as it takes the environmental information into consideration carefully. The model is also broadly applied in the hospitality industry.

- Tourism literature suggests that tourism is an information business based on imagery. Destination image is the key to develop a successful tourist destination and information is an important element to the image formation.
- Information has gone digital and thus DMO's need to have the capability to process the abundant and dynamic information in order to effectively manage and develop their destinations.

- Since information is the critical element for the integration of strategy formulation and implementation and tourism is also an information business, the appropriate linkage between strategic and tourism management is the information flows.

- Besides being broadly applied in the hospitality industry, the co-alignment model is the suitable framework for designing an IS as its information flows throughout the model provide the effective way for strategy formulation and implementation for DMO's.

- As the technology innovation supports today's digital economy, adopting IS within the context of the strategy to develop business and help management in decision making is important.

In addition, many tourism studies also indicate that an analytical framework is needed within which the many aspects of managing tourist destinations can be investigated. Some tourism scholars suggest that a soft and open system is a better

framework to interpret the information involved (Mill & Morrison, 1985; Leiper, 1990; Checkland & Scholes, 1990). The "soft" feature of this framework should be concerned with the interactions of tourists, staff, and residents in tourist destination areas; it needs to be 'open' because it must be able to recognize other information in legislative, cultural and technological contexts of the tourism process (Laws, 1995).

The literature reviewed across various disciplines such as strategy, tourism, information science, MIS, has resulted in the necessity to develop a framework to better deal with information. While the co-alignment model has incorporated most of these concepts and provides the most promising guideline for DMO's to formulate and implement the strategic plans, adopting the model to design an IS seems to be the next move. The topics outlined above also point to the direction that a coordination strategy framework that is the synthesis of an IS and the co-alignment model is necessary.

A Coordination Strategy Framework: The Synthesis of the Co-alignment Model and the Strategic Destination Information Systems (SDIS)

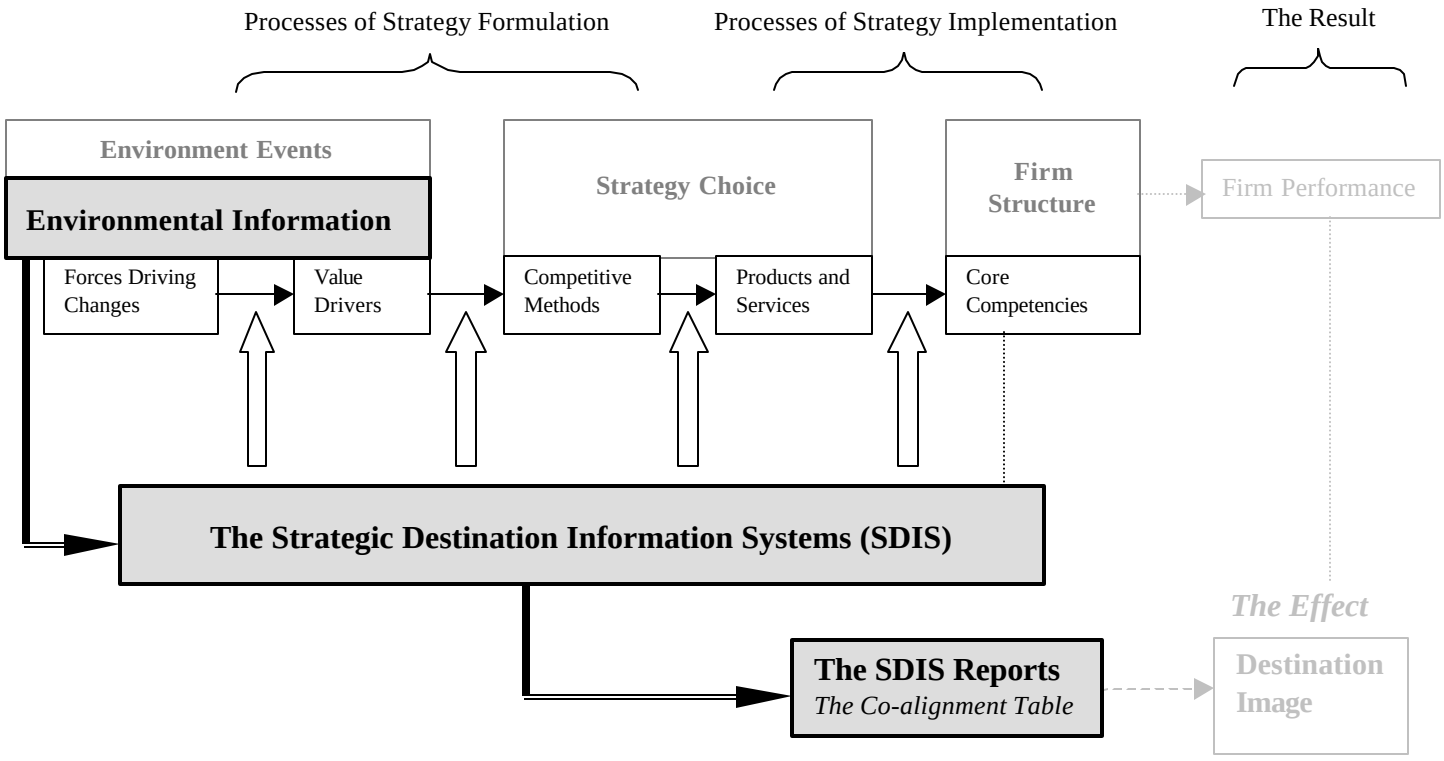
As the environment is becoming more dynamic and complex, DMO's need to have the capability and skills to identify the opportunities that exist in the environment. The co-alignment model suggests a logical and systematic way to do so. However, because tourism is regarded as an information business (Froschl & Werthner, 1997; Schertler et al., 1994) and information is going digital in today's information era (Cortada, 1996), DMO's need to be able to utilize IT strategically to benefit from the opportunities underlying the environmental events.

Utilizing IT strategically means to adopt efficacious strategic thinking for IS implementation. Thus the focus should be on information processing that recognizes the contextual variables defined in the co-alignment model, such as forces driving change,

value drivers, competitive methods, and core competencies. Laws' idea of having a soft and open system (1995) seems to provide the best support for the notion of developing a framework that synthesizes an IS and the co-alignment model. This integration can be presented by an IS that enhances the processes of the co-alignment model. When such a synthesis is achieved, it can help reduce the time and errors for an organization to achieve a "match" between its environment and strategy choice (Olsen et al., 1992) and be in aid of strategy implementation.

The research framework (Figure 2.3) proposed seeks to take into consideration the major concerns in the literature studies. It demonstrates the relationship between the IS and the co-alignment model and illuminates how should the IS be placed to work with the co-alignment model. This IS is called "The Strategic Destination Information Systems (SDIS)" as an intermediate in the research framework because it is used to enhance the alignment processes of the co-alignment model (i.e. to improve the utility of the use of the co-alignment model). The anticipated effect is to form or improve the positive destination image as it is expected to be used strategically for tourist destination management. The constructs of the framework are represented in the gray-shaded rectangles. The dotted lines in the framework indicate the connections among the constructs of the research framework and the co-alignment model and illustrate the dependency and synthesis of them as well. The descriptions of the framework are presented in the sections to follow.

Figure 2.3: Coordination Strategy Framework – The Synthesis of the Co-alignment model and the Strategic Destination Information Systems (SDIS)



Note 1: The whole model presents the view of the coordination strategy framework that aims at achieving the synthesis of the co-alignment model and the IS design, SDIS.

Note 2: The dotted lines denote that (1) the SDIS should be considered a core competency in the context of the co-alignment model and (2) the result of the framework, The Co-alignment Table, can be used for strategic management to improve the image of the tourist destination. The positive destination image will in turn improve the destination's financial performance.

Note 3: The ⇨ denotes the way the SDIS helps in processing and enhancing the information flows throughout the co-alignment model.

Note 4: The light gray fonts and shapes of the figure indicating that it is beyond the research domain of the study but are expected and supported by the literature.

Environmental Information

The environmental information is the most important source for an organization to assess the possible external opportunities and threats (Chandler, 1962; Thompson, 1967; Bourgeois, 1980; Venkatraman & Prescott, 1990; Murthy, 1994; Olsen et al., 1998; Connolly, 1999; Fuchs, Mifflin, Miler & Whitney, 2000). Collecting and analyzing the environmental information is the first step of the alignment process of the co-alignment model (Olsen et al., 1998) for strategy formulation and implementation.

As discussed earlier in the section of exploring the relationships between the environment events and IS, the co-alignment model suggests several classification schemes that are hierarchical in nature and consist of the remote, task, industry, firm, and functional categories. The forces that drive change should emerge first in the remote category and filter down through each category until they affect the firm (Olsen et al., 1998).

The SDIS focuses on the environmental variables in the *remote* and *task* environments. As defined in the co-alignment model, the remote environment consists of five elements: technological, sociocultural, political, economic, and ecological. "Within each of these five elements are a number of variables that ultimately drive changes and lead to opportunities or threats for the firm" (Olsen et al., p.81). Another environment is task environment, which includes the information about the customer, supplier, regulator, and competitor (Olsen et al., 1998). These types of information usually dominate the daily operation of the business and the changes taking place in this environment are a direct result of activities developing in the remote environment categories (Olsen et al., 1998).

According to the co-alignment model, the major purpose of collecting and analyzing the information in both the remote and task environments is to identify the

forces driving change and *value drivers*. As suggested by the literature reviewed, for DMO's, the forces driving change (FDC) and value drivers (VD) reveal the opportunities and threats to the business and are very important for strategy formulation. The concepts of FDC and VD are very conceptual and need to be obtained by human's intellect and cognitive skills through the body of knowledge that one possesses as addressed earlier. However the SDIS can provide steps to guide managers to excise their intellectual skills to increase the accuracy of the resulting FDC and VD. The FDC and VD identified should be stored in the SDIS to ensure their accuracy, reliability, flexibility, and reusability for further use in strategic management.

The Strategic Destination Information Systems (SDIS) – The Role of Information Technology

As suggested earlier, IT is considered an enabler technology that only converts raw information into useable information and further delivers it to the right place, at the right time, in the right format. It is plausible to view IT as a knowledge generator because from the view of cognitive science, knowledge is obtained via a series of complicated mind processing activities. These activities process information into concepts that are later built into an individual's *existing knowledge structure*. Finding a correlation between variables is one thing; discovering causation and turning that into concepts is another. IT cannot mechanically produce knowledge but it can produce information in a format that is ready for human use to gain knowledge. The function of the SDIS fits these statements. In other words, the SDIS helps process all raw information (i.e., the environmental information collected earlier), converts it into usable information, and stores it in a right format for other processes of the strategy formulation and implementation.

The SDIS in the coordination framework is an intermediate that is designed to turn raw information into usable information in order to follow the guideline of the co-alignment model for strategic management. Its design involves a six-level construction: Security Level (SL), Data Storage (DS), Data Conversion (DC), Data Transport (DT), Data Integration (DI) and Data Analyzing (DA) (Figure 2.4).

The design of the level or layer structure stems from the concept of the Open Systems Interconnection (OSI) Reference Model (1978, 1984). The OSI model was developed in the late 1970s by the International Standards Organization (ISO) as the theoretical network model. Finally in 1978, the ISO released the first version of what was to become known as the OSI model and later, in 1984, an OSI revision was published and has become an international standard to serve as the basis for most discussions of networking.

Thus, the six-level design is compatible with most network systems and is the backbone of the SDIS. The term "level" works in the same way as do the layers of the OSI model and when a task is being executed (i.e., requested by the user), the whole process gets launched and information gets processed level-by-level and step-by-step. To demonstrate the feasibility of such design, here is how the SDIS is expected to work:

The first level is the Security Level (SL), a security checkpoint, in which various security features should be adopted (e.g., Firewall for networking, Black Ice for intrusion prevention, and anti-virus for virus infection). Account validation of users (or the various types of users in the future, such as the suppliers, DOMs, investors, and stakeholders) is executed on this level as well. The Data Transport (DT) level is in charge of unpacking and sending data in which information will be cut into small pieces with necessary identification numbers attached and ready to flow and transmit. The Data Conversion (DC) level performs the tasks of analyzing, coding, and decoding for the data received

from the DT level. This level means to filter out the noise as suggested in the information theory (Shannon, 1949). The major programming tasks are carried out here.

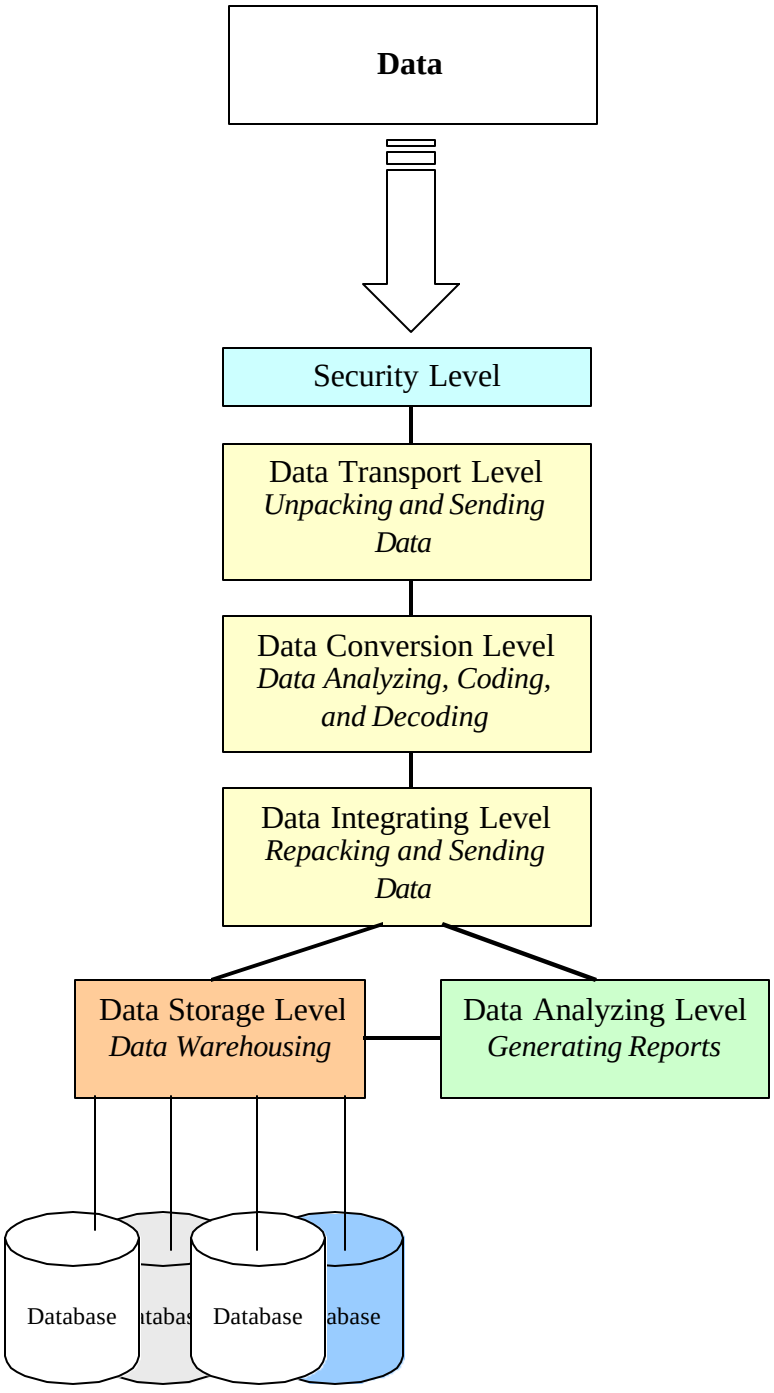
Once the data is processed through the above levels, it will flow to the Data Integrating (DI) level. The DI level handles data repacking and then sends the data out to the storage or for users' use. The pieces of chunk of data sent from the DC level with identification numbers attached are assembled here and sent to the right place. Next, the Data Analyzing (DA) is the level that is designed to generate readable reports in a simple format that serves as usable information. Reports are prepared based on the requests of the users. For example, for internal use requested by the mangers, *the co-alignment tables* (which will be discussed in the next section) can be produced to demonstrate the causal relationships as to how the strategy is formulated and should be implemented. All data will be processed and prepared for storage in the Data Storage (DS) level which indeed is the data warehouse where data can be stored in the plainest format that is ready for use at any time.

The OSI model provides a framework for the design of the SDIS, but the major concept that is required to handle the complicated relationships among information (i.e., data) is the database management systems (DBMS), especially for the relationships of various databases. The accurate links and transmissions among databases are critical and complex and several challenges are expected since the technical and business standards are not well established in the current state in the hospitality and tourism industry. At this point, the discussion provided here serves as an exploratory role for a possible solution towards the future. However, given the success of the OSI model this idea for the design of the SDIS is feasible and capable of handling the heterogeneous information flows. For the technical designing issues about databases, the literature in the Computer Science (CS) has thorough discussions and offers sufficient support. Because its detailed discussion is beyond the research scope of this study at this point, if necessary, this aspect will be addressed more in the later chapters as it fits.

The multiple database design allows the system to have an open character to take advantage of the World Wide Web (WWW) platform for a further upgrade and improvement. It also leaves the door opened for data warehousing in the future when the environmental information becomes more complicated. It is possible for the system to be integrated with other databases, such as the suppliers' databases, in the future.

Although the technique-related issues are not the main focus of the study, it is necessary to demonstrate how the ideal SDIS should be constructed technically. This section, by discussing the technical aspects for the design of the SDIS, is an attempt to present *the feasibility* of constructing such a system. The study is not trying to deal with the technical topics and build the system but is meant to illuminate the considerations for the future IS design and further demonstrates the possibility of achieving the coordination strategy framework proposed.

Figure 2.4: The Design of the SDIS Construct



The SDIS Reports – The Co-alignment Table

After the discussion of the constructs of the antecedents (i.e., the environmental information) and intermediate (i.e., the SDIS) of the research framework, this section will discuss the consequence of the framework. The construct denotes the result of the research framework is *The SDIS Reports.*

After all necessary information has been collected and stored into the SDIS, the user will be able to request the usable information for a specific purpose. Overall, the usable information can be obtained and be displayed in different formats, as parts of the system reports, to suit the user's needs. However, in the present study, the ultimate result of the coordination framework is to manifest how can an IS, once appropriately designed, work with the co-alignment model by enhancing the alignment processes of the model. Thus, the focus of the SDIS reports is on *the co-alignment table* – a table that presents the relationships between/among the forces driving changes, value drivers, competitive methods, products and services, and core competencies. The co-alignment table looks like Table 2.4, a simple format with useful data, and illustrates the causal relationship suggested in the co-alignment model as well.

The information included in the co-alignment table should be confidential and used internally as they reveal how an organization's strategy is formulated and implemented. The columns of the table from left to right contains information about forces driving change, value drivers, competitive methods, products and services, and core competencies. These types of information are built upon each other and extremely valuable because they are the final results of each step of the alignment process suggested in the co-alignment model. It is obtained through a complex process sequentially and is very important for an organization's strategic management.

Once information is stored in the SDIS and is ready to be assembled for strategic management, the information can be retrieved separately depending on the user's needs individually. Table 2.4 shows the format of the co-alignment table indicating how each essential element of the co-alignment model should be presented in a simple and easy reading layout.

The co-alignment table contains five columns and each column respectively presents information of *Forces Driving Change*, *Value Drivers*, *Competitive Methods*, *Products and Services*, and *Core Competencies*. The first column should be completed first and each of them (columns) should be built upon each other in sequent, from left to right. This process of building the table depicts the dependency of the information and delineates how information flows from one construct to another of the co-alignment model (also see Figure 2.2).

For example, the first table in Table 2.4 illustrates the essential information of the competitive method, *An effective comprehensive distribution system*, and intends to show the logical and causal relationships between and among this competitive method (i.e., the strategy choice) and its correlated information denoted in other columns of the table. Managers should read this type of table from left to right carefully to understanding such relationships for strategic management.

Although there is missing information in the second and fifth column of Table 2.4, the focus of the discussion in this section is on the format of the co-alignment table, which is the result of the coordination strategy framework. The SDIS is expected to produce the co-alignment table in the format presented and provide all essential information including forces driving change, value drivers, competitive methods, products and services, and core competencies. In addition, since these types of information are in the electronic format, they will also be stored in the system for future use in the way the management desires for business development and management.

Table 2.4.1 – The Format of the Co-alignment Table (Example 1)

Competitive Method A: An effective comprehensive distribution system

Forces Driving Change	*Value Drivers*	*Competitive Method*	*Products and Services*	*Core Competencies*
Technology • Information creates instant transparency regarding quality of goods and services offered from a destination • Quality standards are increasingly driven by third party validators • Changing customer relationship paradigm	N/A	**An effective comprehensive distribution system that is based upon the latest in E-marketing thinking**	• Marketing cooperatives • Marketing to locals • Data warehousing and data mining capabilities • Permission marketing tactics • New approaches to reaching the customer and new messages to do so	N/A

Note: When the SDIS is implemented, the unavailable information is expected to be identified and the co-alignment relationship will be presented. The discussion of the absent information will be addressed in Chapter 3.

Table 2.4.2 – The Format of the Co-alignment Table (Example 2)

Competitive Method B: An attractive and friendly investor environment

Forces Driving Change	*Value Drivers*	*Competitive Method*	*Products and Services*	*Core Competencies*
Assets and capital • Global capital market imperatives • Tourism a low return industry • Tourism a high risk industry • New innovative attraction • A portfolio approach to financing high risk projects • Public and Private partnerships	N/A	**An attractive and friendly investor environment**	• Investment in a balanced portfolio of attractions to match the needs of a heterogeneous demand profile • Investment in demand generators that are anticipatory of future customer needs • The generation of a variety of sources of capital to invest future attractions • Creation and maintenance of an environment that is low risk from the investors perspective • An investment acquisition team capable of generating the investment funds necessary • An investor communication team capable of communicating on an ongoing basis with investors to assure a complete an friendly investor relations environment	N/A

Note: When the SDIS is implemented, the unavailable information is expected to be identified and the co-alignment relationship will be presented. The discussion of the absent information will be addressed in Chapter 3.

Summary

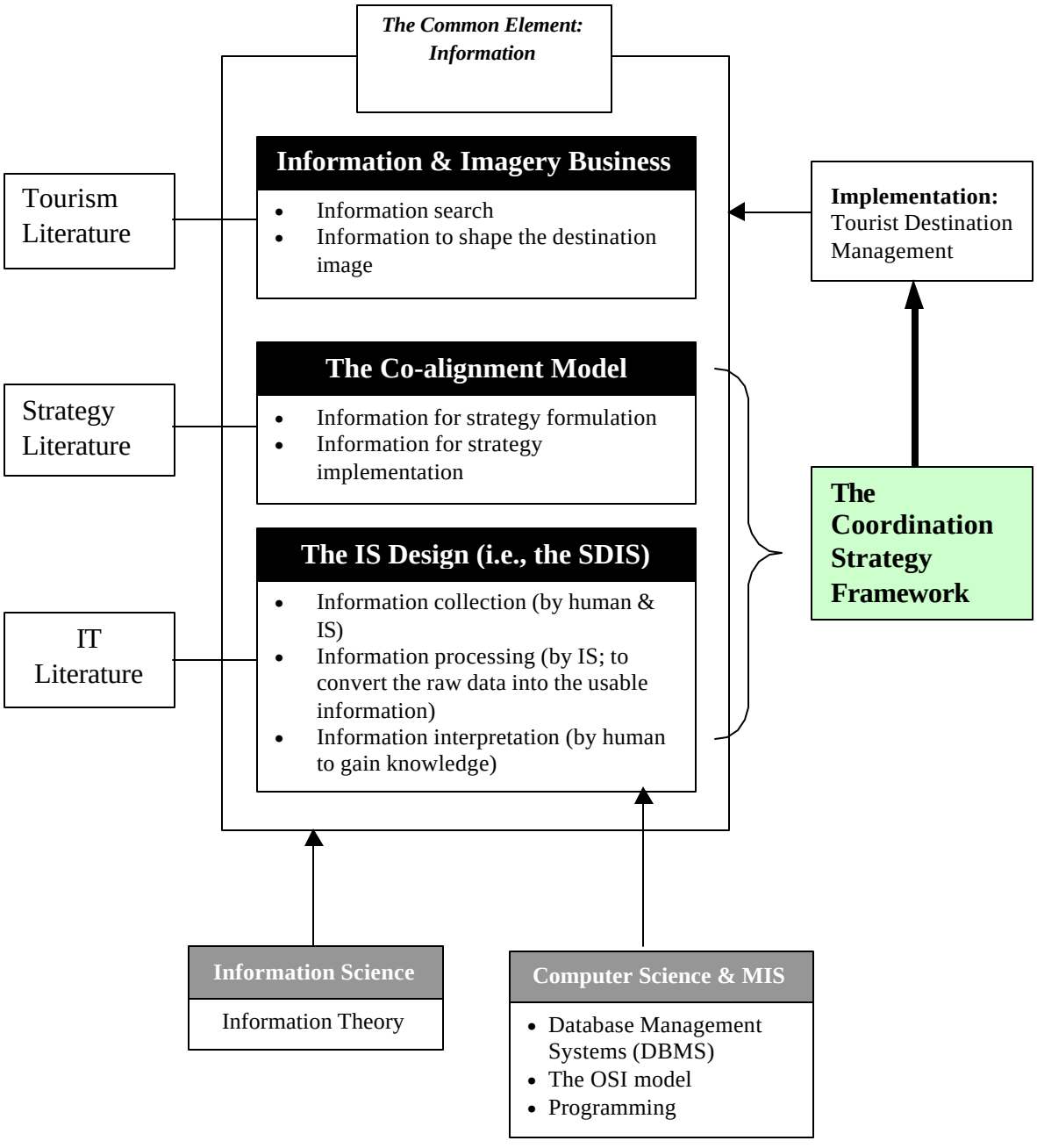
The primary purpose of this study is to discover how an IS should be designed in order to improve the utility of the use of the co-alignment model and further attain a coordination framework that synthesizes this IS and the co-alignment model for strategic management. The purpose of this chapter has been to review appropriate literature in the fields of strategic management, tourism, information theory, management information systems, and computer science. The literature has recognized that the environment is becoming more dynamic and complex and an organization needs to have the capability and skills to identify the opportunities that exist in the environment in order to succeed. The co-alignment model (Olsen et al., 1998) suggests a logical and systematic way to do so and indeed provides the sufficient knowledge for information management and strategic management. When the tourism scholars regard the tourism as an information business (Froschl & Werthner, 1997; Schertler et al., 1994) and information is going digital in today's information era (Cortada, 1996), DMO's need to be able to utilize IT strategically to benefit from the opportunities underlying the environmental events.

This chapter also presented the necessity to integrate the body of knowledge in the fields of strategy, MIS, computer science, and tourism. In other words, the challenge is how to synthesize "a strategy model," "an IS," and "tourism issues" all together in order to demonstrate the merits of integrating the co-alignment model and the use of an IS.

The coordination strategy framework proposed in this chapter was for such a purpose and is an attempt to demonstrate how an IS can improve the utility of the use of the co-alignment model if it is designed appropriately. The framework illustrated the importance of the alignment of information, strategy, and IS. It is a soft and open system as suggested by Laws (1995) and is constructed on the basis of the literature studies.

This chapter reveals that the possible way to deal with various issues across three different disciplines (strategy, IT, tourism) is through their common element that can hold them together and that is **information**. The information theory (Shannon, 1964) has provided the knowledge base to sustain this thought. Once this framework is obtained it can be implemented for strategic management for tourist destination management by DMO's to develop and manage their destinations effectively. The expected result of this implementation is to strengthen or form the positive destination image for business development. Figure 2.5 summarizes the integration of the literature for the construction of the research framework in this chapter.

Figure 2.5: Key Literature Review for the Construction of the Coordination Strategy Framework



In the last section of the chapter, Table 2.4 demonstrates the format of the co-alignment table as *the expected result* of the framework as well as presents that an appropriate design of the SDIS should take information into consideration carefully. An IS can be used for strategic management through the element of *information*, especially within the setting of the co-alignment model.

If the SDIS can be designed in a way to enhance the process of building the co-alignment table step by step, then it is possible for this system to enhance the information flows of the co-alignment model for the processes of strategy formulation and implementation. Once the SDIS is implemented, it plays different roles in different stages during such processes:

- **SDIS is an IS** because it can collect and process the information and thus enhances environmental scanning for strategic management purposes.

- **SDIS is more than a tool** because it can be used not only to deal with the information reliably and accurately, over and over again, but also for strategic planning for the competition.

- **SDIS is core competence** because it can deal with the information reliably and accurately and provide the usable information to help strategic management for the competition. Furthermore, since the use of IS can enforce the information flows of the co-alignment model, the whole alignment process becomes a valuable asset to the organization as suggested by the RBV literature. It is expected that, via the process of the SDIS implementation, a knowledge network and knowledge database can be created.

- **SDIS is strategic IT** because it is designed under the setting of the co-alignment model. It is not only an IS that intends to improve the utility of the

use of the co-alignment model but also a mechanism to help attain the coordination framework for effective strategic management.

As mentioned earlier, this study is *not* trying to build an IS but to present the necessity to have an IS constructed to handle the abundant and various types of information needed for strategic management. The above summary illustrates that the SDIS has multiple roles for strategic planning and plays an important role in the whole coordination strategy framework. When the SDIS can improve the way information flows in each step suggested in the co-alignment model, it can improve the utility of the use of the model and thus improve the processes of strategy formulation and implementation. However, DMO's need to recognize that any IS implementation is a collaborative process (Baets, 1996; Kilmann, 1995) and requires many facilitating activities (Broadbent & Weill, 1991; Nath, 1989). The interrelationships among various parties involved (e.g., the CEO and managers in different positions) should be thoroughly considered.

The research methodology adopted to understand how the SDIS should be designed to reach the coordination framework proposed in this chapter will be discussed in Chapter 3. The implementation of the framework and the feasibility of designing the SDIS will be presented in Chapter 5 following the result of the data analysis in Chapter 4.

Chapter 3

Methodology

Introduction

As briefly discussed in Chapter 1, this study is seeking to improve the utility of the use of the co-alignment model through the utilization of IS. The coordination strategy framework is the synthesis of the co-alignment model and an IS and is an attempt to provide a better evaluation of the causality of forces driving change, value drivers, and competitive methods. In Chapter 2, the relevant literature was reviewed to explore the necessary elements as the underpinning theories for the study. It concluded that a coordination strategy framework that can integrate the co-alignment model and an ideal IS can possibly be the solution to strengthen strategic management for the hospitality and tourism industry. This chapter will describe the research methodology and design of the study.

The literature review has demonstrated that the importance of the concept of co-alignment has been thoroughly discussed and recognized in the fields of strategic, hospitality, and tourism management. Co-alignment consists of four key constructs and includes the environment, the choice of competitive methods, resource allocation to core competencies, and financial performance. The co-alignment model (Olsen et al., 1998) brings this relationship to a level that allows an organization to conceptualize such a relationship for strategy formulation and implementation in a systematic and logical manner among the four key constructs.

Bringing an IS into the alignment relationship for strategy formulation and implementation can illustrate IT's strategic role and achieve a coordination status between IS and strategy. It was suggested that this coordination status can be reached by

the proposed framework that synthesizes the co-alignment model (Olsen et al., 1998) and the SDIS and can be adopted for strategic planning to meet future challenges. This chapter builds upon the progress made so far in the previous two chapters and addresses the issues of methodology.

Objectives of the Study

By utilizing the co-alignment model, the general forces driving change in the tourism future are expected to be identified first. Environmental information needs to be collected, entered, and stored into the SDIS for further use to obtain the value drivers, competitive methods, products and services, etc. It is a collaborative work between a machine and human. The IS and its implementation is to enhance this collaborative work and strengthen the management and implementation of each step of the strategic planning process.

The coordination strategy framework proposed in Chapter 2 represents the synthesis of a strategy model and an IS. It requires joint efforts between a human's intellect and cognitive skills and the system's reliable processing function. This framework is an innovative view of utilizing an IS for effective strategy formulation and implementation within the context of the co-alignment model (Olsen et al., 1998), once such as IS is appropriately designed. **The primary objective of the present study thus focuses on investigating important considerations for the design of an IS that can improve the utility of the use of the co-alignment model.** In other words, it is an attempt to explore how should an IS be constructed to improve the utility of the use of the co-alignment model.

However, this objective should be interpreted in two different ways: *First,* from the perspective of the co-alignment model, an IS should be utilized to help identify forces

driving change, value drivers, competitive methods, products and services, and core competencies. *Secondly*, from the perspective of the synthesis, the integration of the co-alignment model and an IS should present the synergy or coordination that makes strategic management more effective without interrupting the sequential information flows of the alignment process suggested by the co-alignment model. In other words, an IS needs to be designed in a way to maintain and improve the co-alignment model's sequence of information flows and alignment process.

In order to achieve the primary objective, the study employs the case study research method using the Convention & Visitors Bureau (CVB), i.e., the DMO, of the City of Virginia Beach as the research object to investigate how should the SDIS be designed to implement the coordination strategy framework. Given the consideration of the types of data collected through the steps of the co-alignment model, the study is a qualitative research in nature.

Qualitative Research

This study is a qualitative research design because the types of data were collected by following the processes suggested in the co-alignment model (Olsen et al., 1998). The qualitative research has been used in many disciplines and is a method for investigating topics that are interdisciplinary, transdisciplinary, and sometimes counterdisciplinary (Denzin & Lincolin, 1994). In addition, Marshall & Rossman (1989) argued that the qualitative approach is best for questions or problems that need to make a case for "thick description" and detailed analysis which yield valuable explanations of processes. According to the authors, the approach is "exploratory or descriptive and stresses the importance of context, setting and the subjects frame of reference." To better utilize this method, abundant information is required and data can be obtained through various collection techniques, such as interviews, workshops, focus groups, think thanks,

reports, documents, etc. All materials collected are used in an attempt to understand and explain a phenomenon.

Given the nature of the material collected from the strategic workshop, the qualitative research seems to be the most appropriate method to deal with the heterogeneous and conceptual information. Furthermore, while seeking to understand the relationships between research objects and trying to estimate and validate the dimensions of the environmental variables, qualitative research is also a better form. Furthermore, based on the research questions and contexts, the qualitative research is still the better choice that can avoid the mistakes made in the quantitative research, such as the lack of relevant variables, the use of the outdated or unsuitable data, the questionable sampling process, etc.

In addition, for IT research, scholars often preferred the idiographic approach because it allows the researcher to focus on a single event or phenomenon, attempting to understand it in its context or natural setting (Franz & Robey, 1984; Benbasat, Izak, Goldstein, & Mead, 1987). Parkhe (1993) suggested two approaches with respect to the qualitative research and one of them is subjective-idiographic-qualitative-insider approach. According to Parkhe (1993), this approach requires the researcher to use qualitative methods to reveal the rich, dynamic and complex insights into phenomena and reality under individual centered and naturalistic environmental contexts. The idea of idiographic approach discussed by these researchers sufficiently explains the necessity of utilizing the qualitative method to handle the rich information and the effort of seeking the coordination strategy framework in the study.

The Case Study Research Method

The case study method is one of the examples of qualitative research techniques (Connolly, 1999). Yin (1994) argued that the case study method, if used correctly, could provide rich and insightful analysis for theory development. In his earlier study (Yin, 1989), he defined the case study as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence is used." (p. 23). Eisenhardt (1989) also suggests that the case study is a research strategy, which focuses on understanding the dynamics present within single settings. Eisenhardt (1980) believed that the case study method has the potential for developing novel concepts and paradigms because it blends inductive and deductive thinking.

Moreover, Anyansi-Archibong (1987) stated that the case study method appears to be the most appropriate technique in strategic management and policy studies. He believes that, using this method, the researcher can study the significance and influence of the environment, corporate culture and personal characteristics (Anyansi-Archilbong, 1987). According to him, "the case method yields much data which may be tested for significance and relationship while not losing the nuances and understanding of each firm's environmental context."

Hence, the case study technique is essentially a good method for the present study because the co-alignment model (Olsen et al., 1998) is suitable for strategic management (Taylor, 1002; Chathoth, 2002) and is used as the setting for the development of the SDIS. From the contemporary observation, as the information goes electronic in today's world, the case study approach is an appropriate method to research the IS implementation as it fits within the critical paradigm of the reality (Eisenhardt, 1980). Besides, the case study method has been utilized by researchers in investigating IT issues, including Cho (1996) and Connolly (1999) in the lodging industry, Banker et al. (1990) in the fast food industry, and Copeland & McKenney (1988) in the airline industry.

As discussed earlier, the co-alignment model starts with the inductive process with the recursive process of both inductive and deductive inferences. It fits the descriptions of Perry (1998) that both induction and deduction are each necessary for the other to be of value. The case study methodology works best when organizational and managerial issues are to be examined (Yin, 1989) and is a rigorous, coherent one, based on justified philosophical positions (Perry, 1998).

Justification of the Case Study Method

As suggested by Yin (1994, p.1), there are three conditions that must be considered when selecting a research strategy: (1) the type of research question which will determine the choice of the research method; (2) the control an investigator has over actual behavioral events; and (3) the focus on contemporary versus historical phenomenon.

Using Yin's criteria, therefore, the case study method turns out to be the most appropriate methodological choice for the present study as the primary aim of this research is exploratory and descriptive for an investigation about a contemporary phenomenon within a real-life context in the tourist destination setting.

In addition, the case study method can also offer more flexibility during the data collection process, by allowing the researcher to alter and revise the research design after the initial stage of the study (Yin, 1989, 1994). For example, in the justification of the understanding and implementation of the co-alignment model, the means for collecting information is via communication established between the researcher and the respondents.

Furthermore, when the researcher has little control over events and the focus is on gaining understanding of a contemporary phenomenon (e.g., the IT innovation) in the real world, the case study method is an appropriate and justifiable methodological choice (Connolly, 1999). All these characteristics of this study together and individually justify the use of case study methodology.

Research Design

A research design is a plan guiding the researcher in the collecting, analyzing and interpreting of observations (Nachmias & Nachmias, 1976). This kind of plan indeed is to ensure the research process being as smooth as possible.

This study is to investigate the relationships between an IS (i.e., the SDIS) and a strategy model (i.e., the co-alignment model). The use of interviews would be effective because it provides an opportunity for the researcher to ensure that the interviewees understand the concept of the co-alignment model first in order to think about IS implementation. However, before conducting the interviews, according to Yin (1989), there are five design components that are important for a research effort to avoid any potential problems. These components are:

1. The statement of the research questions.
2. The propositions of the study, if any.
3. The unit of analysis.
4. The logic linkage between the data and the propositions.
5. The criteria for interpreting the findings.

Since the case study method is employed in the present study, the development of a theoretical framework is required (Yin, 1989). The theoretical framework for this study

is the coordination strategy framework proposed in Chapter 2. Of these components above, the interpretation of the data results along with the findings, recommendations, and propositions are presented in the reminding chapters of this study but others are discussed in the following sections.

Research Questions

The primary objective of this study is to understand how should an IS be designed to improve the utility of the use of the co-alignment model in hopes of attaining a coordination strategy framework for effective strategic management for DMO's. The focus of the study, therefore, is on the information flows between and among the constructs of the co-alignment model. Hence the utilization of the IS emphasizes the causality relationships among forces driving change (FDC), value drivers (VD), competitive methods (CM), products and services (P&S), and core competencies (CC) that are selected by the tourist destination's management organization. The research question is meant to achieve the primary objective of this study and is stated as follows:

> *How should an IS be designed to improve the information flows associated with the co-alignment model?*

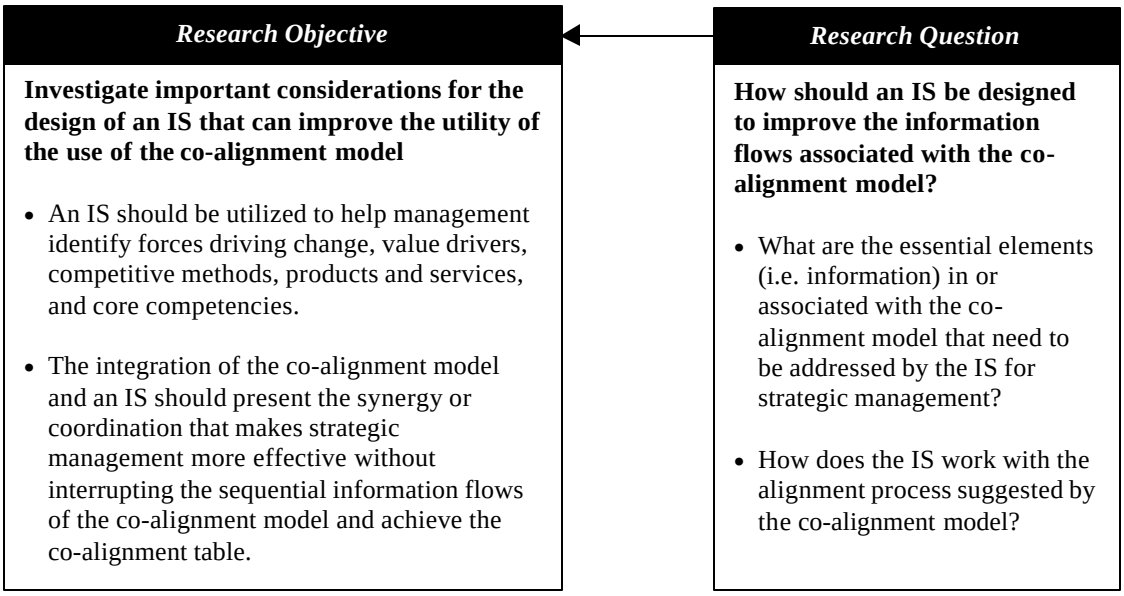
However, designing an IS involves a number of technical issues and is beyond the research domain. It is not the intention of this study trying to construct a real system. Thus one can interpret the above research question in this way: finding "how should such an IS be designed" and "how would such an IS work with the co-alignment model (to be integrated as the coordination strategy framework)." These twofold meanings give the study a more appropriate stand to deal with the strategy and IT issues together for the field of hospitality and tourism. In other words, the above primary question actually includes two important issues:

(1) What are the essential elements (i.e. information) in or associated with the co-alignment model that need to be addressed by the IS for strategic management?

(2) How does the IS work with the alignment process suggested by the co-alignment model?

This research question along with its two sub-questions (i.e., the important issues included) above are an aid to achieving the research objective. Once an IS can be designed to enhance the information flows of the co-alignment model, such an IS is the SDIS and the organization that uses the SDIS is utilizing an IS under the guideline of the co-alignment model to help identify the FDC, VD, CM, P&S, and CC. When an organization correctly implements the SDIS over and over again for strategic management purpose, its resources and capabilities are expected to be built and accumulated and thus reinforce its core competencies to execute its competitive methods and gain competitive advantage. Although this statement cannot be tested in this study because the effect takes some years to occur, according to the RBV literature this inference is valid. Figure 3.1 presents the view the research question helps achieve the primary objective of this study.

Figure 3.1: The Research Questions to Achieve the Research Objectives



The research question was answered in the interviews. The interviewees were asked to try their best to provide the answers to each question. The answers provided as well as the comments offered and difficulties encountered for doing so were also be recorded by the researcher as a part of the data results for further analysis. The details of the interview process and questions will be discussed later followed by the section of data collection.

Unit of Analysis

In theory construction, a domain or unit of analysis is required to comply with the parsimony principle. Within the unit of analysis, the level of data should be collected in a specified level so that the collection can be closely related to the research questions (Yin, 1989). In the present study, the unit of analysis is *information*. In addition to the environmental information in the remote and task environments suggested by the co-

alignment model (Olsen et al., 1998), the focus in on the information defined in each construct of the co-alignment mode. For example, the "forces driving change" and *Environment Event*, the "competitive method" and "its products & services" in the *Strategy Choice*, and the "core competencies" in the *Firm Structure*. Thus, as the research question is about investigating the considerations for the design of a future IS that helps improve the information flows associated with the co-alignment model, using *information* as the unit of analysis can closely relate to the research question.

The Logic Linkage between the Data and the Propositions

With respect to the case study method, Yin (1989) suggests three dominant modes of analysis: pattern-matching, explanation building, and time-series analysis. These modes are indeed implied in the alignment process of the co-alignment model (Olsen et al., 1998), which is conducted in a series systematic and logical procedures to obtain the data (i.e., the FDC, VD, CM, and CC), step by step. Therefore, the co-alignment model (Olsen et al., 1998) is the logical linkage between the data analysis. Based upon the data analysis, the propositions can be developed as a part of the results of this research.

In addition, because system design is the other important topic for this study but is beyond the research scope of the hospitality and tourism management, the literature research in the fields of MIS and Computer Science (CS) is also required to serve as the logic linkage for the discussions of technical aspects to derive the recommendations and propositions from the results of data analysis.

Case Selection and Research Boundary

In the case study research process, case selection has been emphasized as an important element. In contrast to selecting a quantitative random sample, the selection of cases in this methodological framework is based on theoretical sampling, which means that cases are chosen on the basis of their theoretical and not statistical reasons (Eisenhardt, 1989). The selected case may be chosen to continue previous research in those settings or simply to expand emerging theoretical considerations. In fact, the objective of theoretical sampling is either to replicate or expand the understanding of an emergent theory. A single case is selected for this study.

According to Yin (1994), there are three primary reasons for the selection of a single case as the subject of inquiry. These reasons include: (1) A single case is chosen because it represents a unique or extreme example of some phenomenon worthy of study and of interest to the researcher. (2) The single case of interest may represent a critical case for testing well-formulated theory to see if it can be upheld or if it should be refuted. (3) A single-case study approach is appropriate when the selected case serves a revelatory purpose.

In this study, the single case selected as the study object as well as the research boundary is Virginia Beach, a tourist destination in the Commonwealth of Virginia. Virginia Beach was selected for the following reasons:

(1) Its temperate year-round climate and easy mixture for business and pleasure entitles it to be one of the popular destinations in the USA (see its background description in Chapter 2).

(2) The DMO in Virginia Beach has been utilizing the co-alignment model (Olsen et al., 1998) to formulate and implement its strategic plans. The management

has the good understanding of the co-alignment concept that makes itself a unique sample for this study.

(3) The management has participated in the workshop in which a broad and diverse group of tourism industry stakeholders gathered together and focused on the future of tourism in the Virginia Beach area. The participants were led by facilitators to develop a strategic plan for the DMO (i.e., the Convention & Visitors Bureau (CVB) of the City of Virginia Beach) and have identified the forces driving change, competitive methods, and core competencies for the near term future of tourism. The actual planning process conducted in the workshop was indeed guided by the alignment process suggested in the co-alignment model (see Appendix 1).

Therefore, Virginia Beach is the ideal object for the study. It provides a contextual setting for the necessary observation and analysis of phenomenon that is inaccessible to scientific inquiry but required for the present study.

Data Collection

Given that there is no prior research synthesizing the co-alignment model and IS and no earlier studies observing the implementation process of an IS similar to the SDIS, the data gathering method would need to be flexible. Therefore, the format of open-ended interviews was adopted. Kerlinger (1986) suggested that the interview technique is one of the most common forms of obtaining information from people. The interview technique has become recognized as a tool for systematic and scientific inquiry (Kvale, 1996; Connolly, 1999). This technique allows the researcher to explore related areas of investigation that may in turn be influencing the information process. For example, some related problems encountered during the interviews or any comments and suggestions

made by the interviewees with regard to the interview questions might be valuable for gathering the ideas for the design of the SDIS, the primary research objective. The face-to-face interview technique certainly helped the researcher collect all necessary data. The interview format and question will be discussed in detail later. This section will focus on the types of data that should be collected in the interview.

The SDIS is constructed on the basis of the literature study in various disciplines but uses the co-alignment model as the backbone for its fabric. As the literature suggested, the complex and dynamic environment is the source of opportunity if a DMO has the capability and skills to identify them. The co-alignment model, as addressed, has provided a valid and effective way of thinking for DMO's to formulate and implement their strategies. Thus, the environmental information suggested by the co-alignment model (Olsen et al., 1992) is the one that needs to be collected and stored in the system's database for further use to help reduce the time and errors in achieving a "match" between the organization's environment and its strategy choice (Olsen et al., 1992). In this study, the environmental information is one type of information as the unit of analysis that is derived from the remote and task environments as discussed earlier.

The environmental information was collected from the strategic workshop as presented earlier and should be stored in the IS. The co-alignment process conducted by management starts with the analysis of such information to obtain the data that are particularly addressed in the co-alignment model, like FDC, VD, CM, and CC. As discussed, because the DMO of Virginia Beach has tried to adopt the concepts of the co-alignment model earlier in the strategic workshop led by facilitators to develop its strategic plan, it thus is an ideal subject for this study. In the workshop, the DMO has successfully gathered some of the data, such as FDC, CM's, P&S, and general CC's (see Appendix 1 for the actual planning process conducted in the workshop). However, two types of these data that are very important for the completion of the co-alignment process

were not obtained. These absent data include value drivers (VD's) and specific core competencies (CC's) for a specific competitive method (CM) (see Table 2.4).

Since the Visioning Strategic Workshop was led by facilitators who have thorough understanding about the implementation of the co-alignment model, the data gathered in the workshop are considered valid and are valuable to this study. It provides the "starting point" for the researcher to commence this study. In addition, the workshop overall also provides the best foundation for this research for the following reasons:

First, the data collected was via a nominal group process which has been validated in over 40 similar efforts in the context of the hospitality industry. Such processes were also guided by the professionals who have a good understanding of the co-alignment model and thus insure validity and reliability of the data obtained.

Secondly, since the SDIS should be designed in the way to enhance the information flows and alignment process of the co-alignment model, the lack of the data (VD and specific CC) indeed provides an excellent opportunity to test the feasibility of completing the information flows and to investigate other information-related issues.

Therefore, the focus of the interview is to (1) collect the VD on the basis of the known FDC and (2) ask the interviewees to select the specific CC for the specific CM from the list of the general CC identified in the workshop. These efforts will help gain the respondents' perspectives about designing an IS for the co-alignment model in terms of information flows.

Reliability and Validity

The objective of achieving reliability of the case study is to insure that other researchers can replicate the study. The reliability criteria for this study would therefore relate to the processes of information collection, compilation, and processing. Because these processes are conducted in a systematic and logical manner suggested by the co-alignment model that is supported by the researchers in the field of hospitality management (see Table 2.2), constructing an IS to enhance the model's information flows discussed should help achieve reliable results for strategic management.

Furthermore, the reliability of data gathered can be achieved through *internal consistency* in the following manner:

(1) Using various questions to measure the same concept:

In order to measure the information flows associated with the co-alignment model, the opened-ended interview questionnaire (see Appendix 4) was designed to collect the relevant data defined in each of the model's constructs. For example, to measure the concepts related to the *Environment Events*, questions like Q1-1, Q1-2, Q2-1, Q2-2, Q2-3, Q3, Q4-1, and Q5 are all designed for the purposes of dealing with the information flow between the FDC and VD. Similarly, there are several questions used to measure the concepts related to the *Firm Structure*, including Q6-1, Q6-2, Q7-1, Q7-2, Q7-3, Q8, Q9, and Q10. In other words, there is a series of questions associated with the constructs of the co-alignment model and are the means to measure the same concepts to insure the internal consistency. More information regarding this issue is included in the next section where the design for data collection is discussed (also see Table 3.1).

(2) Reviewing the interview data repeatedly:

The interviews were all recorded on audiotapes. Prior to the interview, the recorder was carefully tested to ensure its working functionality so that the voice recorded could be clear for listening. The internal consistency is likely to be increased through the researcher's efforts in repeatedly reviewing the interview contents recorded. Relative discussion about this matter is included in Chapter 4 along with the data gathered.

For validity, as it refers to the truth and correctness of a statement, it becomes a challenging issue in qualitative research. In this study, the validity can be achieved by the following techniques:

(1) Member checks:

Because validity relies on the truth of the statements made by the respondents, the researcher can go back to verify these statements with the interviewees later to insure the correctness of the interpretation of the data collected. More discussions are included in Chapter 5 (also see Appendix 5).

(2) Convergence:

This is *face or content validity* as it comes from the support of the literature. As the data was collected using the framework of the co-alignment model as discussed earlier (as well as in the next section), given the fact that the model is supported by various studies (Sharma, 2002; Chathoth, 2002; Taylor, 2002; also see Table 2.2), the content validity is likely to be achieved. In addition, the data result with respect to the possible system design is also supported by the literature of MIS and CS (see Table 5.9), the content validity for designing the SDIS is achieved. In other words, the convergence is thus established through the comparisons to the literature in these disciplines and the *face or content validity* is likely to be achieved.

(3) Divergence:

As discussed, because the ideal interviewees are those who had participated in the strategic workshop in which the participants implemented the co-alignment model for strategic planning for the future development of the area of Virginia Beach, the interviewees are assumed to have a good understanding about the co-alignment concept. This assumption indeed serves as the criterion to establish the divergence with the actual data result and in turn to help increase the data validity. Further discussion is included in Chapter 5.

Other techniques that can be employed to help achieve the validity are through "extensive quotations" and "independent checks". The former is the quotation directly from the interview notes as reported in Chapter 4 and the latter comes from the assistance of the research committee chair who offers his verification with respect to the truth and correctness of the data gathered.

Moreover, *external validity* of the study and the SDIS *might* be achieved in the future by the coordination strategy framework since the framework integrates various fields of studies and is observed for strategic management purposes while implementing an IS by a DMO. In other words, external validity defines the boundary for which the findings can be interpreted and applied (Brinberg & McGrath, 1985; Kerlinger, 1986; Yin, 1994; Babbie, 1995) if the SDIS can be appropriately designed in the future.

Furthermore, as suggested by Yin (1984), the context of the case study design can help deal with the challenge of knowing whether a study's findings can be generalized beyond the immediate investigation or research efforts. Thus, with the support of the literature on the co-alignment model the system design, as long as the proposed SDIS does not modify the model's settings and violate the literature findings, the reliability and

validity of the coordination framework that synthesizes the co-alignment model and IS can be achieved.

Interviews for Data Collection

As discussed earlier, the format of open-ended interviews was adopted for this study to gather the unknown data. Prior to the interviews, the researcher needs to establish a stable scheme for the meetings, such as the primary contact for the interviews, pre-selection of the interviewees, questionnaire development, etc. Appendix 2 provides a general set of guidelines for this purpose.

While face-to-face and one-on-one interviews were being conducted to increase participation in the research process, given the nature of this investigation, the respondents interpreted the interview questions in various ways. The researcher was thus doing his best to guide the interviewees to stay in the right direction in search of their answers. In order to reduce the difficulty of interviews as well as to increase the data validity, the preferred and ideal interviewees were those who had the clear and accurate concepts about the co-alignment model and should be selected prior to the meetings (see Appendix 2). In other words, the positions or titles of interviewees are not important. As long as the person has a good understanding about and can well conceptualize the co-alignment model, he or she would be a good sample for the research.

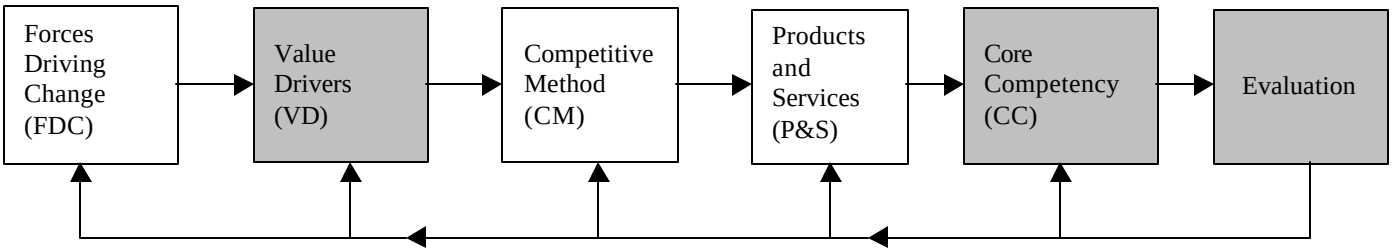
However, because the co-alignment model is a model for strategic management purposes, the respondents for the interviews are all from the important positions of the CVB. For the purpose of confidentiality, the identity of these interviewees is kept private but the organizational structure is reported in Appendix 6.

Furthermore, given that most of this inquiry would require information from the top managers, it was essential to gain their confidence about the whole process and receive as much cooperation as possible. The open-ended and face-to-face interview format allowed for achieving this objective.

As soon as the preparation for the interviews is complete, the focus will be on how to gather the most reliable and valid data. As addressed earlier, the alignment process of the co-alignment model is sequential and should be pursued in a linear but iterative fashion. Thus, the information flows of the co-alignment model are the principle for data collection. The researcher conducted a formal presentation for all respondents before the individual interview starts to ensure that the interviewees understand the purpose of the interview and how the interviews will proceed.

Each construct of the co-alignment model stands for specific meanings and denotes specific type(s) of information. For example, the *Environment Events* construct is defined in search of forces driving change (FDC) and value drivers (VD); the S*trategy Choice* construct is interested in finding the competitive method (CM) and its products and services (P&S). Figure 3.2 below is very similar to Figure 2.2 in Chapter 2 and denotes the concepts of the co-alignment model as well as the types of data and information flows of the model (cf. Figure 2.2 and 2.3). This figure also demonstrates the interdependency of the information flows in the alignment process of the co-alignment model as the information goes forward step by step based upon each other. It also points out the information flows to which the SDIS attempts to enhance.

Figure 3.2: Information Flows: The Guideline for Data Collection



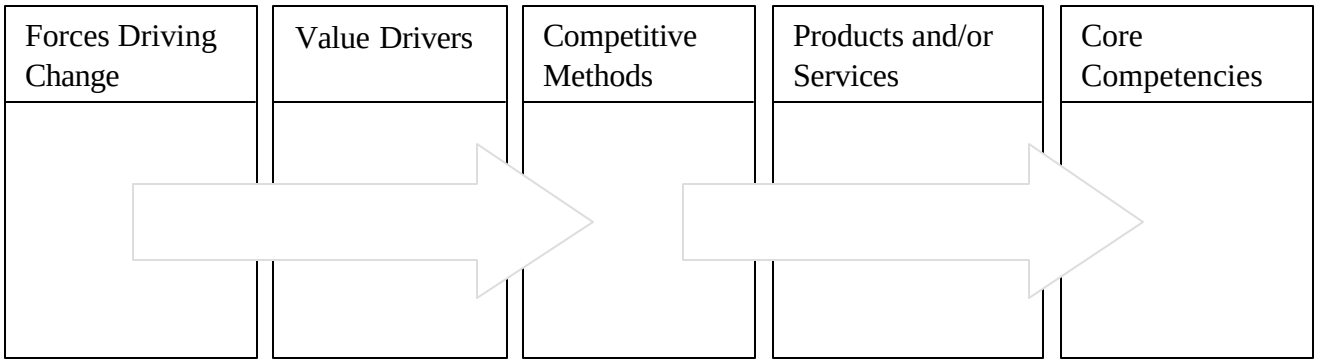
The ideal respondents *are expected to* feel comfortable about the co-alignment model and are anticipated to understand the meaning of Figure 3.2 as well. Figure 3.2 was also a highlight of the formal presentation conducted prior to the interviews. In the case that this is found lacking during the actual interview, this figure was also made available to the interviewee and explained again by the researcher. The importance of this figure is that information *must* flow from one box to the next box, otherwise, the alignment process has no way to complete for strategic planning. As discussed earlier, the data that was not gathered in the previous workshop is what needs to be collected in the interviews. One can notice that these types of data, such as VD and CC are presented in the gray boxes in Figure 3.2.

The last box in the figure is gray too and is denoted as "Evaluation" indicating that information about "who conducts the evaluation and why" and "when the evaluation process starts" also need to be collected in the interview as well. The necessity for gathering such information is to ensure that *the causal relationships between and among the boxes are clearly presented*. In the case that such a relationship is weak, the evaluator will ask for a *redo* or *re-examination* on the data identified and thus the recursive flow occurs.

This evaluation is different from the evaluation method suggested in the co-alignment model in which the "cash flow" is the tool to measure the result of the alignment of the model's constructs. However, the evaluation in Figure 3.2 is about "data quality" that is critical for determining the competitive method and its implementation. The recursive flows will not stop until the causal relationship is clear to the evaluator and thus the final result of executing the CM's can expect to be good and reflect on the organization's cash flows. This iterative feature can be controlled and enhanced by the SDIS as long as the user (i.e., the evaluator) knows how and when to initiate and end this cycle after a careful evaluation. Thus, the responsibility of such an evaluator is great and the information about this design is significant and was collected in the interviews.

Once these types of data denoted in the gray boxes in Figure 3.1 are successfully collected the whole information flow of the co-alignment model are established. As suggested in the coordination framework in Chapter 2, if the information flows in Figure 3.2 can proceed without any disruption, then the co-alignment table can be built as a result of the framework. Thus, as the information moves forward from one box to another, the co-alignment table will be built column-by-column, from-left-to-right at the same time. This effect is shown in Figure 3.3 below (also see Appendix 3).

Figure 3.3: Building the Co-alignment Table



Therefore, collecting the VD and CC in the interviews was one of the most important tasks since without them the information flows and the co-alignment table cannot be obtained and the attempt of using the information flows as the foundation to construct the SDIS cannot be established.

Of course, any system designer cannot overlook the future users' perceptions. Hence, the researcher also collected this kind of information during the ongoing interviews. As discussed earlier, the difficulty, challenge, comments and suggestions encountered or provided by the interviewees are valuable for the design of the SDIS. In addition, the researcher's observation was also reported as a part of the data results in Chapter 4.

Therefore, the purpose of interview is to gather the information of VD, CC, and Evaluation as well as the respondents' comments and any challenges encountered in the interviews. In order to capture all types of the information, the open-ended interview questionnaire was carefully designed and contains four parts (see Appendix 4). Because reliability pertains to the consistency of the data gathered, in each part, there is a leading question followed by several other questions to measure the major concept delineated in

that particular part. The discussions of these parts designed for the questionnaire are as follows.

The first part is the formal presentation to all respondents with a Q&A section to refresh the interviewee's concept about the co-alignment model. The presentation also illustrated the purpose of the interview and the objective of this study.

The VD and CC and all other relative concerns and comments of these data are expected to be gathered in the second and third part of the questionnaire respectively. In the interview, the respondent was asked to do their best to identify the VD's based upon the FDC provided and to select the CC's for the CM's selected. The performance of the respondents and detail discussions about these exercises and processes will be presented in Chapter 4.

The fourth part of the questionnaire deals with the interviewees' perceptions about the evaluation and re-evaluation, i.e., the recursive and iterative information flow related to the last gray box in Figure 3.2. Table 3.1 below summarizes the discussion about the data collection so far in accordance with the interview questions for the respective data interested. The complete format of the questionnaire and the question statements are presented in Appendix 4 at the end of the research. The unknown information in Table 3.1 indeed was the one denoted in the gray box in Figure 3.2 as well.

Table 3.1 – Data Needs to Be Collected in the Interviews

Constructs of the co-alignment model	*The Types of Data*	*Known / Unknown*	*Interview Questions*	*Obtained From*
Environment Events	FDC	Yes		Visioning Strategic Workshop
	VD	**No**	**Q1-1, Q1-2**	**Open-ended Interview**
	Who, Difficulty, Comments, and Feedback	**No**	**Q2-1, Q2-2, Q2-3, Q3, Q4-1, Q5**	**Open-ended Interview**
Strategy Choice	CM	Yes		Visioning Strategic Workshop
	P&S	Yes		Visioning Strategic Workshop
	Who, Comments, and Perspectives	**No**	**Q4-2, Q11**	**Open-ended Interview**
Firm Structure	General CC	Yes		Visioning Strategic Workshop
	Specific CC for a specific CM	**No**	**Q6-1, Q6-2**	**Open-ended Interview**
	Who, Difficulty, Comments, and Feedback	**No**	**Q7-1, Q7-2, Q7-3, Q8, Q9, Q10**	**Open-ended Interview**
Other Issues related to the information flows	**Evaluation Results (e.g., comments & suggestions)**	**No**	**Q12, Q13, Q14**	**Open-ended Interview**

Following the result of the Visioning Strategic Workshop, two different CMs were selected for the study. One of them is "An effective comprehensive distribution system based upon e-marketing" with which the DMO's management is most familiar and has prior experience developing and implementing. The other is "An attractive and friendly investor environment," which in this case the management has the least

experience. The interviews were conducted with respect to two major concerns (Q1 and Q6):

- Based upon the FDC associated with these two CMs, the interviewees were asked to identify the VD's; and

- On the basis of the CM and P&S, the interviewees were asked to identify the respective CC for each of the CMs from the list of general CC obtained from the workshop.

The unknown information presented in Table 3.1 was thus collected in the interviews with regard to these two CMs. Ideally, once the unknown information is collected, two sets of causal relationships among FDC, VD, CM, P&S, and CC can be obtained. Because these two sets of information flows can represent two sets of causal relationships and are expected to provide some valuable information for the researcher to interpret the role of "evaluation" in the whole alignment process and the entire information flow. The researcher can thus compare these causal relationships along with the comments and feedback provided by the respondents for further inference to obtain important considerations, such as key issues, recommendations, propositions, etc. for the design of the SDIS in the future.

However, the respondents were not able to complete these sets without the researcher's help and guidance and thus the comparison was not conducted. Fortunately, the results did not affect the investigation of the information flows associated with the co-alignment mode as the challenges encountered can be factored in as the considerations for the design of the SDIS. Detailed discussions will be presented in the later chapters.

Overall, as discussed earlier, using the framework of the co-alignment model for data collection increases data validity as the model helps establish the convergence with

the literature in strategic management. Moreover, as discussed earlier, the challenges encountered and expressed during the interviews and the respondents' feedback and suggestions are very important for designing the future IS. Using the face-to-face and one-on-one technique and following the four parts designed in the questionnaire to conduct the interviews, the researcher ensured the interviews stay on the right track and interacted with the respondents closely. In addition, the dialogues of the interviews were recorded on tape for further review and analysis. These efforts thus increased the accuracy, reliability, and validity of the data.

Data Analysis

Given the fact that the nature of this study is qualitative, the data collected are mostly in words and text. There are several books giving overview of the different methods of qualitative analysis to deduce the meanings from the interview data (Miles & Huberman, 1994; Silverman, 1993; Tesch, 1990; Wolcott, 1990, 1994; Steinar, 1996). According to these authors, the form of the interview results will mainly be in words in meaning condensation, interpretation, and narrative analyses. It is suggested that, since the form of the data collected will mainly be in words, the researcher should do his/her best to read into these forms using his/her knowledge and logical analysis.

Because the research objective is to seek an IS (i.e., to learn how the SDIS should be designed) for the improvement of the utility of the use of the co-alignment model, it is possible that the interviewees' responses were implicit especially regarding the technical issues for designing the system. Therefore, while analyzing the data gathered, the researcher needed to adopt his knowledge in the fields of hospitality and tourism management, MIS, and CS to *deduce* the meanings underlying the responses collected in the hopes of obtaining more perspectives for both managerial and technical aspects. The following are some focuses with regard to the data analysis.

First, the feasibility of completing the information flows needs to be studied so that the interrelationship between the co-alignment model and the SDIS can be seen. One should remember that "human factor" is still the biggest element influencing the result of strategic planning. If the system user does not have a good understanding about the concept of strategic management and the co-alignment model, the true value of the SDIS will not come out. By focusing on how the data (i.e., FDC, VD, CM, P&S, and CC) moves forward from one step to another can provide some significant insights about this topic.

Secondly, since the technical issues are beyond the respondent's knowledge and the research scope of the field of hospitality and tourism management, they were not discussed directly in the interview. However, it is the researcher's responsibility to interpret their responses on the basis of logical reasoning and the literature support in the fields of MIS and CS. In addition to the researcher's background of being an experienced system designer, the literature support indeed is the way to sustain the reliability and validity of the system design.

Finally, because the co-alignment model has been recognized and adopted in the field of hospitality and tourism (see Table 2.2), as long as the SDIS can be functioning in the way that does not alter any setting of the model, the integration (i.e., the model and the system working together) should inherit the model's reliability and validity. In other words, the reliability and validity of the result of the strategy coordination framework proposed should be sustainable.

Contextual Application of Co-alignment and the Coordination Strategy Framework

The challenge prior to implementing the SDIS is to conduct the environmental scanning. The management needs to be able to do so to launch the information flows for the co-alignment process. In other words, the management that is trying to adopt the SDIS needs to have a good grasp on the co-alignment model (Olsen et al., 1998) in the first place in order to benefit from the integration of a strategy model and an IS.

For example, the process used to reach the strategic plan in the Visioning Strategic Workshop earlier for Virginia Beach actually consisted of four steps: (1) environmental scanning, (2) identification of competitive methods, (3) developing and maintaining core competencies, and (4) the development of an implementation plan. These systematic steps are indeed the alignment processes suggested by the co-alignment model. Experiencing the alignment process by following these steps provides the best opportunity for the management to develop its capability to implement the SDIS and the coordination framework. These steps as a whole also demonstrate *a way of thinking* rather than a one time action or annual event and can not be substituted by a machine or a system completely.

As addressed earlier, **this study is to investigate important considerations with respect to how should an IS be designed in the way to improve the utility of the use of the co-alignment model through the enhancement of the information flows in and between each of the alignment steps**. Once this is done, the implementation of the SDIS can attain the combination of strategy and IT and thus is expected to illustrate the meaning of *strategic IT*. In other words, by synthesizing an IS and the co-alignment model, an IT application is implemented within the context of strategic management. It is believed in the literature (see Chapter 2) that when such a synthesis is reached an organization can achieve and sustain competitive advantage.

Summary

This chapter discussed the research design and methodology of the study. The advantage and necessity of using the single-case study method, the selection of the case, and qualitative approach were also discussed.

In addition, how the research questions were formulated in hopes to achieve research objective was addressed as well. The questionnaire contains four parts and the face-to-face and one-on-one approach was utilized to ask these questions in the interview to explore the information flows (Figure 3.2) of the alignment process suggested in the co-alignment model. The challenges encountered by the respondents were also gathered in the interview and thus provided some perceptions about the design of the SDIS.

The completed format of the open-ended questionnaire was presented in Appendix 4. These questions were attempts to gather the data that was not collected in the Visioning Strategic Workshop held in 2002. The unknown information denoted in Table 3.1 is the data that needs to be collected in accordance with the constructs of the co-alignment model.

In the last section of this chapter, the contextual application of co-alignment and the coordination strategy framework was addressed to point out that the co-alignment model is the backbone of the whole framework and human intellect is required for the SDIS implementation. Overall, the data gathered need to indicate the feasibility for deigning the SDIS and the integration of the co-alignment model and the system. Further discussions about this feasibility and the implementation of the research framework will be reported in the remainder of this study that comprises of Chapter 4 discussing the results of the data obtained and of Chapter 5 that presents the conclusions and discussion of the study.

Chapter 4

Results

Introduction

This chapter provides the evidence gathered on each of the open-ended questions in the interviews. It then explores the issues related to the research questions. The primary purpose of the study is to *investigate import considerations for the design of an IS that can improve the utility of the use of the co-alignment model*. The discussion of evidence in interviews is shown to gain the user's perspective in relation to the information flows between/among the components suggested in the co-alignment model for the future design of the IS (i.e., the SDIS).

The information and discussions presented in this chapter are the results of interviews conducted in the Convention and Visitor Development Department of the City of Virginia Beach, the Convention and Visitors Bureau (CVB). The information gathered in the interviews can be viewed as an extension of the yearlong strategic planning workshop. The information obtained in the workshop, like Forces Driving Change (FDC), Competitive Methods (CM), Products & Services (P&S), and organizational general Core Competencies (CC), served as the foundation for the process of the interviews. Each of these types of information is known to the interviewees as the interviewees were the participants of the workshop.

Although the dialogues of the interviews were recorded, the original observations from each interview together with the individual's personal information are of a confidential nature. Therefore, access to them is restricted. For the reason of confidentiality, details about the individual sources, positions, and responsibilities are also restricted. For this reason, a coding scheme has been developed, which will only be

shared with the dissertation committee members on request. No numbers have been quoted for reasons of discretion.

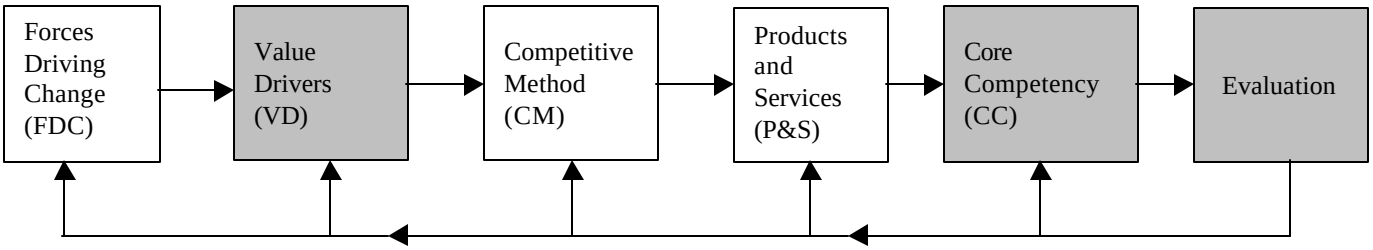
This chapter is organized using the information collected in the interviews along with the questions asked, providing evidence toward the research questions. The information stated in the chapter reflects the opinions of the persons interviewed. The focus of the interview is presented first, followed by the responses to each question asked, and finally the summary of the data is presented. The researcher's findings from the direct observations are blended into these sections where it fits.

The Main Focus of the Interview

The research question of the study is "*how should an IS be designed to improve the information flows associated with the co-alignment model"?* As addressed in the previous chapters: the improved information flow will result in better quality of the information like FDC, VD, CM, P&S, and CC, and thus will also improve the performance of CM. Therefore, the main focus of the interview is to gain the perspective about the information flow from the user's point of view.

Refer to the table (i.e., Table 3.1 in Chapter 3) and information flow chart (i.e., Figure 3.2 in Chapter 3) below, one can easily understand the focus of the interview. They both are included here to serve as the precursor to lay out the results of the interviews in this chapter. The detailed descriptions of the table and the figure will not be redundantly stated in this section again.

Information Flows: The Guideline for Data Collection (Figure 3.2 in Chapter 3)



Data Needs to Be Collected in the Interviews (Table 3.1 in Chapter 3)

Constructs of the co-alignment model	***The Types of Data***	***Known / Unknown***	***Interview Questions***	***Obtained From***
Environment Events	FDC	Yes		Visioning Strategic Workshop
	VD	**No**	**Q1-1, Q1-2**	**Open-ended Interview**
	Who, Difficulty, Comments, and Feedback	**No**	**Q2-1, Q2-2, Q2-3, Q3, Q4-1, Q5**	**Open-ended Interview**
Strategy Choice	CM	Yes		Visioning Strategic Workshop
	P&S	Yes		Visioning Strategic Workshop
	Who, Comments, and Feedback	**No**	**Q4-2, Q11**	**Open-ended Interview**
Firm Structure	General CC	Yes		Visioning Strategic Workshop
	Specific CC for a specific CM	**No**	**Q6-1, Q6-2**	**Open-ended Interview**
	Who, Difficulty, Comments, and Feedback	**No**	**Q7-1, Q7-2, Q7-3, Q8, Q9, Q10**	**Open-ended Interview**
Other Issues related to the information flows	**Evaluation Results (e.g., comments & suggestions)**	**No**	**Q12, Q13, Q14**	**Open-ended Interview**

The table and figure above illustrate some important points: (1) The figure shows the clear information flows among the major types of information that need to be identified in the co-alignment model. (2) The table indicates how the information transits or flows and any issues relative to this transmission are worth discussion. (3) Together, both clearly demonstrate the focus of the interview in relation to the research question and the purpose of the study.

The Interview and Interviewees

As discussed in Chapter 3, the ideal interviewees are those who possess the concept of the co-alignment model (Olsen et al., 1998) and had participated in the earlier workshop. Following a formal presentation addressing the purpose of the study and a review of the concept of the co-alignment model, the interviews were conducted in two days in an informal and flexible format and the interview dialogues were recorded on audiotapes.

Fifteen people, all in executive or executive-related (e.g., the assistant or staff of the executive) positions, participated in the interviews. The original format of each interview was designed as one-on-one within a time span of one hour. However, given the time restriction of the organization's business operation and the participant's understanding about the co-alignment model, some interviews were conducted in a group of two or three. The actual interview time was thus extended to more than one hour for meetings with groups.

Another major reason for the change of the interview format necessary was because some of the interviewees dealt with the same issue together in the workshop and would be more effective in participating in discussion if they met with the researcher as a group. Therefore the fifteen participants were reorganized into nine interviews which

were completed in two days. Table 4.1 provides the overall information about the meetings. For the purpose of confidentiality, the number in the parenthesis is not necessarily the order of the interview conducted but the coding number representing an interview session. If the interview is conducted with a group, the number after the multiplication sign denotes the size of the interview party.

Table 4.1 – Supportive Information of the Interviews and Interviewees

Interview Session	***Day / Interview Time***	***Number of Interviewees***
Pre-session: The Presentation (including Q&A)	First Day / One hour	All (15) and Other employees of the organization
Interview(1) *denoted as Interview(1)x2*	First Day / One and a half hour	2
Interview(2)	First Day / One hour	1
Interview(3) *denoted as Interview(3)x3*	First Day / Two hours	3
Interview(4)	Second Day / One hour	1
Interview(5)	Second Day / One hour	1
Interview(6)	Second Day / One hour	1
Interview(7) *denoted as Interview(7)x2*	Second Day / One and a half hour	2
Interview(8) *denoted as Interview(8)x3*	Second Day / Two hours	3
Interview(9)	Second Day / One hour	1

The change of the interview format in some of the interview sections might have resulted in both positive and negative impacts on the data – because the group discussion could make an individual's response richer or biased. The respondents met in a group might have had enforced each other's opinions and shaded his or her true answers. In other words, it might have a slight impact on the reliability and validity of the data.

However, it is extremely hard to measure each of the respondents' statements as no one can actually read into one's mind. The researcher has done his best to control the interview flow and directed questions first to the person who is not likely "the leader", who had the tendency to express his or her opinions promptly, of the group to prevent that person from following other people's answers. Therefore, because of this effort made, different statements were collected from the group interviews. As seen in the data reported in the tables in this chapter, the different responses were denoted as A, B, or C. This attempt could lessen the negative impact of the change of the interview format.

In the formal presentation prior to individual or group interviews, the table and figure discussed at the beginning of this chapter were carefully addressed. During the interview, the respondents were guided to mainly focus on the information flows. The table (see Table 3.1) and the figure (see Figure 3.2 or Appendix 4) were made available for this purpose the whole time. In the process of the interview, in addition to the responses provided the researcher was also observing their reactions to each of the questions asked.

The following sections will present and discuss the data collected from the interviews. For the purpose of effectively illustrating the data collected, the results of the data are organized into four parts using the format suggested by Table 3.2 (see Chapter 3 or the first table in this chapter). In other words, the table (Table 3.2) is separated into four parts for the presentation of the data collected. They are Part I (Table 4.2) for

Environment Events, Part II (Table 4.3) for *Strategy Choice*, Part III (Table 4.4) for *Core Competencies*, and Part IV (Table 4.5) for *Evaluation*.

Each part indeed has its focus of discussion of a specific topic that is denoted in Italic. For example, Part I is an attempt to address the issues of FDC, VD, and their relevant concerns via the questions of Q1-1, Q1-2, Q2-1, Q2-2, Q2-3, Q3, Q4-1, and Q5. Pat III is trying to understand the issue of Strategy Choice through the discussions of Q4-2 and Q11. Other parts should also be interpreted in the similar way to oversee the questions asked with respect to the issues discussed. Hopefully, this organization can clearly present the data collected from the interviews and highlights the issue of internal consistency addressed in Chapter 3 for the achievement of data reliability.

Data Collected and Environment Events (Part I)

In Part I, the results of data reflect on the first construct of the co-alignment model, *Environment Events,* in which the main concerns are on FDC and VD. The interviewees were asked to identify VDs on the basis of the known FDC (Q1-1 & Q1-2). Next, according to this experience, the interviewees were asked to address their concerns, comments, and other relevant issues about the FDC and VD and their interrelationship (Q1-2, Q2-1, Q2-2, Q2-3, Q3, Q4-1, & Q5). Table 4.1 is the overall look of Part I indicating each of the questions asked in the interview. The results of the data are presented in the tables from 4.2.1 to 4.2.7 in the rest of this section.

Table 4.2 – Data and Environment Events (Part I)

Constructs of the co-alignment model	*The Types of Data*	*Known / Unknown*	*Interview Questions*	*Obtained From*
Environment Events	FDC	Yes		Visioning Strategic Workshop
	VD	**No**	**Q1-1, Q1-2**	**Open-ended Interview**
	Who, Difficulty, Comments, and Feedback	**No**	**Q2-1, Q2-2, Q2-3, Q3, Q4-1, Q5**	**Open-ended Interview**

Results of Data Collection (Part I)

- *Q1: Please use the information in the left column "Forces Driving Change" and provide the Value Drivers that are believed to be associated with these forces in the right column.*

As stated in the Question One, the interviewees were asked to try their best to identify the Value Drivers (VDs) that are relative to the Forces Driving Change (FDC) given in the left column of the table. As discussed in Chapter 3, two forces were selected for this exercise as the study is interested in obtaining two sets of information flows for further investigation. Table 4.2.1 and Table 4.2.2 contains the results of these questions.

Table 4.2.1 – Identify VDs for the First Force (Results of Q1-1)

Forces Driving Change	*Value Drivers*
Technology • Information creates instant transparency regarding quality of goods and services offered from a destination • Quality standards are increasingly driven by third party validators • Changing customer relationship paradigm	*Interview(4)* • Fully integrated systems • High-tech advertising agency • Quality research regarding customer data • Relationships-ability to forge with service providers • Skillful technical staff *Interview(5)* • Availability of new technology to general public, e.g., live pictures of the destination • The acceptance of technology as being real (i.e., Will the public believe what they are seeing?) *Interview(7)x2* • More than 75% know about Virginia Beach on the Internet • More than 26% of sales was sold online *Interview(9)* • Flexibility of technology spending (i.e., the CVB can redirect funds to a typical technology or to different vendors.) • Technology vendors ** Other interviewees were not able to identify VDs and thus did not provide their answers for this question.*

Table 4.2.2 – Identify VDs for the Second Force (Results of Q1-2)

Forces Driving Change	*Value Drivers*
Assets and capital • Global capital market imperatives • Tourism a low return industry • Tourism a high risk industry • New innovative attractions • A portfolio approach to financing high risk projects • Public and Private partnerships	*Interview(4)* • Knowledge about cultural differences • Data to explain actual returns vs. perceived low returns • Ability to offset high risk factors or perceptions • Master plans (regional or local) to attract quality attractions • Redevelopment policy • Strategy and incentives to develop partnerships • Good corporate ethics and reputation *Interview(6)* • Labor costs • Quality of employees *Interview(7)x2* • Customer's demand / expectation / satisfaction / perception / preference • Quality & type of the P&S • Economic condition • Competition • Price of P&S • Tax rates • Gas prices • Terrorist attacks • Record of tourism growth *Interview(9)* • Interest rate • Political atmosphere ** Other interviewees were not able to identify VDs and thus did not provide their answers for this question.*

The results of the Question One were poor. The exercise taken by using the known FDC to identify the VDs was too hard for the respondents. From the results in the above tables, most interviewees could not identify VDs by just using the FDC provided in the left column. Hence, other follow-up questions (Q2, Q2-1, Q2-2, and Q2-3) were asked to explore about the challenges that caused such poor results.

- *Q2: Do you have any difficulties in identifying the Value Drivers using the Forces Driving Change provided?*

Table 4.2.3 – Difficulty of Identifying VDs (Results of Q2)

Yes / No	Frequency
Yes (go to the sub-questions: Q2-1, Q2-2, and Q2-3)	12
No (go directly to the question Q3)	3

From the summary table of Question Two above, other than three people, most of the interviewees believed that they did have some difficulties about the excise in identifying value drivers in Question One. Thus, from question Q2-1 to Q2-3, the respondents were asked to further discuss their difficulties.

Table 4.2.4 – Difficulty-Related Issues When Identifying VDs (Results of Q2-1, Q2-2, and Q2-3)

Interviews	***Q2-1: If yes, what is/are the difficulty/difficulties?***	***Q2-2: If yes, in your view, what are the reasons that cause the difficulty?***	***Q2-3 If yes, in your opinion, how should/can this difficulty be reduced?***
Interview(1) x2	• Don't understand the terminology	• The statements of FDC need to be more concise and clear • The language and wording used in FDC needs to be more user friendly	• An editor or communication-major person can help edit the writing of the statement of the FDC • Descriptions / Outside models to show how the FDC would work.
Interview(2)	• The language used to describe the FDC is not understandable	• Don't understand what exactly VD means • Not sure what I interpret from the written statements is correct	• Need someone to guide me through the concept of FDC and VD • Use user-friendly language
Interview(3) x3	• A: The language • • B: The statements • C: The language used	• A: Other than the language is unclear, it has been a while since last time we discussed the co-alignment model • B: It is very difficult to understand the language used – seems foreign to me • C: Not familiar with the language used	• Maybe provide the definitions of the terms used in the statements • Maybe more discussions and excises about the concept of the co-alignment model
Interview(4)	• N/A (No difficulty)	• N/A	• N/A

Interview(5)	• The concept of VD is not clear • The co-alignment model • There is a big gap between academia and industry	• The terminology used is not understandable • It's been too long from the last practice • Sometimes the academic model/example is not applicable in the real world; very unfamiliar • The co-alignment concept is new. I'm still trying to understand it. It is a new turf for an old dog.	• Provide detailed descriptions and examples about the FDC • Need more regular reinforcement to keep up with the concept – maybe via internal group discussions or external consultant's help • Need to understand the co-alignment model in theory and in practice
Interview(6)	• The terminology used is not clear and the concept of VD is vague.	• Lack of definitions and examples of the FDC • We are the Government organization and are not familiar with the terms used in private business world • Hard to grasp the co-alignment model.	• FDC are very complicated and need specific information to make them clear • Discussions can help understand the terminology used because often times we mean the same thing but use different wording
Interview(7) x2	• N/A (No difficulty)	• N/A	• N/A
Interview(8) x3	• A: Don't see the data needed , don't understand the language • B: Don't know how to use the model to calculate the expected return, which will not be told upfront by the bank, investment institute, etc. • C: Don't understand the co-alignment model well	• How to get the right data for the identification of VD? • Don't know the concept of environmental scanning and FDC • Don't know what is VD	• Someone should be dedicated to identifying the data-related issues for FDC. • Information sources are needed to tell the user where are these FDC coming from and how would they work.

Interview(9)	• The concept of the co-alignment model	• It's been too long since last touch with the co-alignment model. I did not know it well in the first place and now don't remember what have learned from last time.	• The concept of the co-alignment model and previous findings need to be kept fresh via discussion on a regular basis in our department.

Among the fifteen respondents, three of them felt no difficulties in identifying the VDs with a degree of confidence (1 = poor confident; 5 = very confident). Table below summarizes the result of Question Three including the reasons about their confidence.

- *Q3: If you answered "No" in Q2, are you confident with the accuracy of the Value Drivers that you identified (1 = poor confident; 5 = very confident)? Why?*

Table 4.2.5 – Confidence for Identifying VDs (Results of Q3)

Interviews	***Confidence / Scale***	***Reasons***
Interview(4)	Yes / 4	Because the FDC are easy to understand and have been in the whole process for a year. I also think that I understand the co-alignment model in a certain way.
Interview(7)x2	A: Yes / 3 B: Yes / 4	A: I'm fine with my VDs but I'm not very confident. Because even if the customers are telling us what's happening out there, we still cannot quantify these VD. I guess that I need more research to ensure my confidence. B: I feel confident, because competition is driving the way we do business and I have the experience interacting with the customers at my position and they are telling us what's going on out there, thus, I'm confident with these VDs that I identified.

The next question is trying to understand, besides the VDs, what other information should also be included to facilitate the determination of the CM. After the exercise in Question One, the interviewees are aware of the challenges for identifying the right information by just using the statements provided. For this question, the respondents were asked to make the assumption that the problems that they have mentioned with the FDC are rectified and that the VDs are also identified. They then provided their perspectives as to how the similar difficulties can be avoided for the determination of CMs, if additional information other than the statements of VDs is necessary.

- *Q4-1: You know that the Value Drivers are important for management to seek Competitive Methods. Other than the Value Drivers, in your opinion, what <u>other information</u> is needed or important and should also be included to help determine the right Competitive Methods?*

Table 4.2.6 – Other Information Necessary for the VDs (Results of Q4-1)

Interviews	***Other Information***
Interview(1) x2	• How do we use these VDs? • Further descriptions about these VDs
Interview(2)	• No other information is needed; as long as the language describing the VD is clear, you don't need other additional information
Interview(3) x3	• A: Maybe include some explanations and examples as to the purpose of the VDs • B & C: more explanations about the VDs will be very helpful to determine the CM

Interview(4)	• Should provide more information about the VDs that can reflect the reality in the business • Provide the perspective about the relationship between the FDC and the VD. For example, if the FDC is very global, then should demonstrate how would that force link to the local reality/business. This kind of linkage might lead us to come up with different CM. • If the information (FDC and VD) is too global, the CM identified might be unrealistic and might be happening in many years.
Interview(5)	• Should include the detailed descriptions and definitions about these VDs • Provide the perspectives of the VD that can reflect on the current environment
Interview(6)	• Should include the definition of VD and all definitions for all other concepts set forth by the co-alignment model
Interview(7) x2	• Should give examples or scenarios as to how the concept of VD works. These examples should also be categorized in different business segment, like Tourism examples, F&B examples, Lodging examples, etc. all kinds. • All other key issues related to the VD; for example, consumer's perceptions, our time-line for the identification of the VDs
Interview(8) x3	• A: Mission statement and description of each project • B & C: Clear descriptions of the VDs
Interview(9)	• Research findings about the customers, trends, etc. need to be included to make the VD more meaningful

Following Question Four and Question 4-1, Question Five is trying to get the potential IS user's perspective about who should be the one performing the task of identifying the VDs so that the challenges that they have encountered can be greatly reduced. The original interview question is below and the table following summarizes the results of the responses.

- *Q5: According to your business structure, what position(s), i.e., who, do you think should be in charge of performing this task (of identifying the value drivers)? Why?*

Table 4.2.7 – "Who" & "Why" of VDs (Results of Q5)

Interviews	*Who*	*Why*
Interview(1) x2	• A team that comprises division heads (or general managers of the division)	Because they should know what is going on out there
Interview(2)	• People who need to have the knowledge about that specific FDC • Depends on the FDC, a team should be formed that includes the Director, finance people, and others with the specific knowledge relating to that FDC & VD	This task requires an overall view of the business and specific knowledge about the FDC.
Interview(3) x3	• A: A team in which the core part is formed by the division heads along with executive directors • B: A team of division heads	FDC is relating to the future. You should include more people's ideas about what will happen in the future to come up with better VDs.
Interview(4)	• A team of division heads or anyone with the right expertise. • If it has to be done by a single person, the person should be the one who understands the business well. For example, my job deals with almost every aspect in the government and that might help me to be able to identify the VDs.	People in different function areas can offer different views about the future. For example, convention marketing and tourism marketing is very different and my administration has more to do with government and politics, etc.
Interview(5)	• It needs to be done by a team. But someone who is on top and sees the organization as a whole should be in charge of this task. • In addition, we might need some regular feedback from front-line employees to the team.	This is a difficult task and you want to get as many people involved as possible, so that you can look at business development from different angles.

Interview(6)	• The Director's Assistant	Because this person is a strategic thinker, coordinator, and facilitator and has a good understanding about the co-alignment model
Interview(7) x2	• A team that must include Marketing people, Research people, and Finance experts • We should have a project leader first to call for a meeting to assemble the team. The team thus selects a team leader for the team work but this project leader will be the one responsible for the overall progress	People in marketing, research, and finance areas are very important because they relate to almost all kinds of projects. In my opinion, I think the Research people should do this for us to kick off the whole process to put us on the competitive edge.
Interview(8) x3	• Position doesn't matter; it has to be someone who has the industry skill, analytical ability, and specific knowledge	You can't assign this job to someone just because of his or her position.
Interview(9)	• The Director or CEO	This is a top-down thing; otherwise it won't be completed. In our organization, the top management's involvement is necessary.

Summary of the Part I

In this section, the data collected is an attempt to deal with the issues relative to *Environment Events.* It basically discusses the interrelationship of FDC and VD. Respondents seem to have difficulties to identify VDs by only using the FDC provided. Only did three respondents (20% of the total responses) feel less challenging and were able to identify the VDs in relation to the respective FDC. The general difficulties largely result from three issues:

Firstly, the language used to describe the FDC is not understandable. *Secondly*, the definition and concept of FDC or/and VD set forth by the co-alignment model is not well established in the respondent's mind. *Finally*, the concept of the co-alignment model overall is hard to grasp and there is not enough practice or discussion about it. These issues were summarized in the Table 4.2.4 above under the statement of Question

Two including the discussions of the reasons causing these difficulties. In addition, they all offered some possible solutions for these challenges to the best of their knowledge.

As for the issue of "who should be doing the job identifying the
thought that this is not a one-man task and should be conducted in a team manner. Most of them believed that division heads or someone in the administrative office in the top position should be responsible for this mission.

Overall, the results of the data collected in Part I demonstrate that the information flows "between FDC and VD" and "between VD and CM" can be smooth if the challenges encountered can be handled well. This provides a useful information in answering the research question for the design of the IS. If the IS (i.e., the SDIS) is meant to improve the information flows in this part, then the results should be taken into consideration carefully for the system design. Further discussion as to how the results in this session would be meaningful for the design of the SDIS will be addressed more in Chapter 5.

Data Collected and Strategy Choice (Part II)

The data collected in Part II deals with the issues related to *Strategy Choice*. As discussed, the core concept about the strategy choice in the co-alignment model is the competitive method (CM) and its products and services (P&S). Table 4.3 displays the topics and questions discussed in the interview as well as serves as the road map of the discussion in this section.

Table 4.3 – Data and Strategy Choice (Part II)

Constructs of the co-alignment model	*The Types of Data*	*Known / Unknown*	*Interview Questions*	*Obtained From*
Strategy Choice	CM	Yes		Visioning Strategic Workshop
	P&S	Yes		Visioning Strategic Workshop
	Who, Comments, and Perspectives	**No**	**Q4-2, Q11**	**Open-ended Interview**

The CM and P&S are "known" data because they were identified in the strategic workshop and are considered reliable and valid types of information for the study. Thus, the focus of the interview was on other issues like "who", "comments", and "perspectives" via the discussion of Question 4-2 and Question 11. The relationship between CM and VD was actually discussed in Question 4-1 in the previous section (Part I) and will not be included here. Table 4.3.1 summarizes the respondent's comments about the "who" and "why" questions.

Results of Data Collection (Part II)

- *Q4-2: According to your business structure, what position(s), i.e., who, do you think should be in charge of determining the Competitive Method and its Products and Services? Why?*

Table 4.3.1 – "Who" & "Why" of CMs (Results of Q4-2)

Interviews	*Who*	*Why*
Interview(1) x2	Not sure but we did it as a group in the workshop.	More discussions can help identify the right CM.
Interview(2)	The Director	His position is entitled to do this.
Interview(3) x3	The Director and the team of the division heads.	You cannot work on a strategic plan that is not supported by the people on top.
Interview(4)	The Director and the teams who did the VD and CC. But the Director is the one responsible for the result.	You need to have the people in the high rank to approve the strategic plan
Interview(5)	A team led by the Director	A single person might not be able to understand the information provided.
Interview(6)	The Director and his assistants	They know what is possible and what is not
Interview(7) x2	The Director and his administrative staff	Because this is the result of the strategy which the organization is interested to pursue.
Interview(8) x3	A group of discussion like what we did in the workshop.	You need to gather most people's opinions about this.
Interview(9)	Everyone who has been involved in the process but the Director is the one who makes the final decision.	You need to hear what everyone has to say after he/she has been going through the FDC and VD.

Question 4-2 is simply to understand the respondent's perspective about the right person(s) for the task of determining the CMs. The other question discussed for this part is Question 11 that is more closely related to the topic of *Core Competencies* (CC) in the next section (Part III). It is actually the extension of Question 10 that is designed to address the CC topic in the next section. It is included here just for the purpose of

discussion about CM because a CM will have no meaning without being implemented correctly. Indeed CM and CC should not be separated as they both are crucial for the result of a strategic plan. The results regarding the implementation issues will be presented in the next section.

Question 11 here intends to know who, assuming the CCs are correctly identified, should be in charge of the strategy implementation in order to ensure the CM be successfully executed with least errors. Table 4.3.2 lists the interviewee's responses.

- *Q11: According to your business structure, what position(s), i.e., who, do you think should be in charge of implementing these core competencies that you just selected to carry out the competitive methods? Why?*

Table 4.3.2 – "Who" & "Why" of CM Implementation (Results of Q11)

Interviews	***Who***	***Why***
Interview(1) x2	A team which might be the sub-committee of the CC team that includes various people with various specialties and knowledge	The CCs are the specialties of different departments. You need to have the people in these departments involved.
Interview(2)	The Director who can oversee the project	You cannot coordinate every department's work if you are not supported by the CEO.
Interview(3) x3	A new team that includes the Director and other people from the top	Decision makers are important to allocate the resources

Interview(4)	A team led by the division heads with their supporting staff	Because you have a department budget that may not be feasible to implement all of these things at one time. You really have to bring the negotiations into the implementation process. Also, you may also have to develop some sequencing of the CCs as well into the budget year. There should be all sorts of time-lines that everyone agrees with.
Interview(5)	Division Heads' assistants	Because the Division Heads' assistants can make things happen
Interview(6)	Maybe the Director's assistant again but if necessary, he or she can assemble a team that includes division heads. If a team is formed, a team leader should be selected by the team members. This leader should have the right knowledge about the specific CM.	You need a cross-function team to have all kinds of CCs with sufficient supports.
Interview(7) x2	The same project leader in the CC team and is accountable to the Director	Because you have to have an accountability to control and mange the whole process.
Interview(8) x3	Resort management office or the City Manager	They are in the right position.
Interview(9)	The person might be the same one who did the CC but if the CM is about a project in a higher scale that deals with the budget issues, the right person for this job should be the Director.	A strategic plan might be set forth for a particular purpose. It all depends on what the CM is and what needs to be involved.

Summary of the Part II

The result of this section shows that most respondents believe that a CM should be determined by the Director, who is in the highest position of the CVB, because it is the strategic plan for the future. They seemed to imply that no one else can be responsible for the result of the strategic plan other than the Director. Some believe that although the Director should made the final decision, the determination of a CM should be done by a team that includes everyone who has been working on the previous steps for FDC and VD. They believe that, in this way, people can share the responsibility and are likely to work together.

For the implementation issue, although few thought that division heads should be doing this job, most of the respondents believed that people from the top of the organization should be in charge of the overall implementation process. The main reason is that a strategy implementation requires various knowledge, expertise, and experiences across all kinds of divisions. It would be critical to have a top executive involved to oversee the whole process.

Overall, it seems most respondents consider the Director the one that should be responsible for the result of the implementation even if there might be a team actually doing the implementation work. It is the researcher's observation that it is possible that the respondents are afraid of taking any responsibilities in a government organization. Regardless, the results of this section indicate that once the FDC, VD, CM, P&S, and CC are successfully identified, finding the right person(s) to execute the CM is just a technical question and feasible. In other words, the information flow for implementation is more like a question closely related to the management and not to the system design technically. Indeed, strategy literature does suggest that strategy implementation is an issue under the category of organizational structure with an emphasis on resource allocation. Further discussion will be presented in the next chapter.

Data Collected and Core Competencies (Part III)

Another exercise, other than the identification of VDs conducted at the beginning of the interview for the first question, focuses on the issue of *Core Competencies* (CCs). According to the co-alignment model, the task should be conducted following the FDC & VD is to determine the CM and then the management should focus on the resource allocation in order to execute the CM selected. Part III will discuss the issues of information flow regarding strategy implementation.

In the format similar to the previous section, this section starts with Table 4.4 below to illustrate the questions and issues asked and discussed in the interview. The results of these discussions are presented in the order of the questions asked accordingly in several tables (Table 4.4.1 – Table 4.4.6).

Table 4.4 – Data and Core Competencies (Part III)

Constructs of the co-alignment model	*The Types of Data*	*Known / Unknown*	*Interview Questions*	*Obtained From*
Firm Structure	General CC	Yes		Visioning Strategic Workshop
	Specific CC for a specific CM	**No**	**Q6-1, Q6-2**	**Open-ended Interview**
	Who, Difficulty, Comments, and Feedback	**No**	**Q7-1, Q7-2, Q7-3, Q8, Q9, Q10**	**Open-ended Interview**

Since the organization's general CCs were identified in the workshop, the interviewees were asked to select the required CCs from the list of the known twenty-one general CCs. In the case that the necessary CC is not found in the list, the respondent can write it down in the designated space. The interviewees were guided to focus on understanding the CM and its P&S provided when doing so. Each of them was also asked to complete this task to the best of his or her knowledge, experience, and position in relation to the understanding of the CM and its P&S provided.

Table 4.4.1 and Table 4.4.2 presents the results of this task for two different CMs respectively. The frequency denotes how many times the same CC has been considered necessary for that particular CM and its P&S.

Results of Data Collection (Part III)

- *Q6: Please refer to the information in the fist two columns ("Competitive Method" and "Produces & Services") and identify the specific Core Competencies that are believed required to implement the competitive method in the first column. Please do so by (1) selecting the core competencies from the table "The General Organizational Core Competencies" below (You may just write down the number of that core competency as your answer.), or (2) identifying the new core competencies that are not listed.*

Table 4.4.1 – Select the CCs for the First CM (Results of Q6-1)

Competitive Method	*Products & Services*	*Core Competencies*	
An effective comprehensive distribution system that is based upon the latest in E-marketing thinking	• Marketing cooperatives • Marketing to locals • Data warehousing and data mining capabilities • Permission marketing tactics • New approaches to reaching the customer and new messages to do so	*The List of General CC*	*Frequency**
		1. Database marketing capability	**12**
		2. Management information systems to link tourism providers (i.e., suppliers), CVD (i.e., the DMO), customers	**12**
		3. Data warehousing and mining	**10**
		4. Standards measurement and enforcement	5
		5. Research regarding customer expectations	**13**
		6. Assessing and monitoring service delivery issues	6
		7. Service audit & standards	5
		8. Customer service training	4
		9. Provision of resort amenities	2
		10. Effective transportation system	3
		11. Provide safe secure environment	4
		12. Research methods and data gathering	**13**
		13. Master planning process/capabilities	6
		14. Stakeholder communication/education	8
		15. Investment standards maintenance	2
		16. Investor Acquisition team	2
		17. Investment/reinvestment incentive packages	2
		18. Leadership and vision	9
		19. Building teamwork and alliances	7
		20. Source of capital	5
		21. Financial management know-how	3
		New core competencies added: *Interview(4)* • Advertising IT system – fully integrated with communication *Interview(9)* • In-house technology • Expertise in e-marketing	

**The "frequency" denotes the number of times that respective CC has been chosen as the required one for the CM by the respondents. The top five's are shown in bold.*

Table 4.4.2 – Select the CCs for the Second CM (Results of Q6-2)

Competitive Method	*Products & Services*	*Core Competencies*	
		The List of General CC	*Frequency**
An attractive and friendly investor environment	• Investment in a balanced portfolio of attractions to match the needs of a heterogeneous demand profile • Investment in demand generators that are anticipatory of future customer needs • The generation of a variety of sources of capital to invest future attractions • Creation and maintenance of an environment that is low risk from the investors perspective • An investment acquisition team capable of generating the investment funds necessary • An investor communication team capable of communicating on an ongoing basis with investors to assure a complete and friendly investor relations environment	1. Database marketing capability	5
		2. Management information systems to link tourism providers (i.e., suppliers), CVD (i.e., the DMO), customers	3
		3. Data warehousing and mining	4
		4. Standards measurement and enforcement	4
		5. Research regarding customer expectations	9
		6. Assessing and monitoring service delivery issues	4
		7. Service audit & standards	4
		8. Customer service training	4
		9. Provision of resort amenities	6
		10. Effective transportation system	5
		11. Provide safe secure environment	9
		12. Research methods and data gathering	7
		13. Master planning process/capabilities	**12**
		14. Stakeholder communication/education	8
		15. Investment standards maintenance	**12**
		16. Investor Acquisition team	**10**
		17. Investment/reinvestment incentive packages	**10**
		18. Leadership and vision	**10**
		19. Building teamwork and alliances	**10**
		20. Source of capital	9
		21. Financial management know-how	9
		New core competencies added: *Interview(4)* • Regional / Master plan • Regional transportation plan *Interview(9)* • In house expert on reducing operating finance	

**The "frequency" denotes the number of times that respective CC has been chosen as the required one for the CM by the respondents. The top six's are shown in bold.*

From the results, one can easily see that the top five CCs required for the first CM are "Research methods and data gathering (*frequency=13*)", "Research regarding customer expectations (*frequency=13*)", "Database marketing capability (*frequency=12*)", "MIS to link suppliers, DMO, and customers (*frequency=12*)", and "Data warehousing and mining (*frequency=10*)." The top six's for the second CM include "Master planning process/capabilities (*frequency=12*)", "Investment standards maintenance (*frequency=12*)", "Investor Acquisition team (*frequency=10*)", "Investment/reinvestment incentive packages (*frequency=10*)", "Leadership and vision (*frequency=10*)", and "Building teamwork and alliances (*frequency=10*)."

Following the exercise in Question Six, the next question is to understand whether or not there are any difficulties encountered while trying to select the right CCs. The original statement of the question is listed below.

- *Q7: Do you have any difficulties in selecting the Core Competencies from the list (i.e., the General Organizational Core Competencies) provided?*

Table 4.4.3 – Difficulty of Selecting the CCs for the CM (Results of Q7)

Yes / No	Frequency
Yes (go to the sub-questions: Q7-1, Q7-2, and Q7-3)	0
No (go directly to the question Q8)	15

Table 4.4.3 above shows that the respondents felt no difficulties in selecting the necessary CCs for the particular CM and its P&S from the list. No one failed to do so and thus the Question 7-1, 7-2, and 7-3 were skipped. Table 4.4.4 below is for Question Eight which tries to understand the confidence that the respondents felt about their

selections with their reasons. The confidence level is indicated on the scale of 1 to 5 (1 = poor confident; 5 = very confident).

- *Q8: If you answered "No" in Q7, <u>how confident</u> you are with the accuracy of the Core Competencies that you just selected (1 = poor confident; 5 = very confident)? Why?*

Table 4.4.4 – Confidence for Selecting the CCs for the CM (Results of Q8)

Interviews	***Confidence / Scale***	***Reasons***
Interview(1) x2	A: Yes / 4 B: Yes / 3	• A: I'm confident about most of the CCs that I selected because we aspire to hold a number of them. We understand that we must have them for the CM. • B: I'm fine with my selection because, in my position, I play a supportive role for most of them.
Interview(2)	Yes / 4.5	• I feel very confident because my personal knowledge and experiences help me understand almost all of them. I think what I select will help create an investor-friendly environment for the CMs. • In addition, because there is a list for me to choose from, I found it is a lot easier than trying to fill out a blank like the exercise of identifying the VDs. You know the multiple choice is easier than essay.
Interview(3) x3	A: Yes / 4 B: Yes / 4 C: Yes / 4	• A: Because I'm more familiar with these terms. Also, we have been talking about them in my job. • B: I feel confident because most of the competencies are issues that we know and are familiar with. • C: I feel good about my selection because the language is easier to understand even though I was not here in the workshop. • Overall, this group feels that a list of CC helps a lot to complete the task. The multiple choice is always easier than essay questions.

Interview(4)	Yes / 4	• I'm confident to a certain degree but not as high as 5 because some CC are too generic – not specific enough. For example, "Stakeholder communication/education" (#14) could be put everywhere. "Stakeholder" needs to be defined first. • Another example is "leadership" (#18). This needs to be careful defined as well. If we want to build an investor-friendly environment, what I would want in a leadership is to have qualified staffs who know about investment strategy and maybe even have a background in real estate development. So it's not only the value of the leadership itself, the leader should also have the ability to hire the right people. Thus, the definition of leadership should be defined in a more specific way.
Interview(5)	Yes / 3.5	• I'm not very confident because these are not in my area of expertise but I can use the knowledge I have to select from the list.
Interview(6)	Yes / 4	• I'm confident but the list does not cover all bases. In addition, it is possible that one year later, the environment changes and we know that we need new CC but we might not know what these CC's are. Thus, a selection is easier but who will come up with the list first? We came out with this in the workshop – not really our own work. If we always need someone to do this for use, we might lose capability to identify the new CCs.
Interview(7) x2	A: Yes / 4 B: Yes / 3	• A: I feel confident because they are clear and most CC are now in place and are being acted upon. • B: I feel okay because these CCs have been thought out and discussed. I can understand them
Interview(8) x3	N/A (blank)	• Selection is always easier. • The researcher's observation: the respondents don't seem to know the definition of CCs although explanations were provided.
Interview(9)	Yes / 4	• I feel very confident because I feel that I have a better understanding in CM and P&S provided and what it takes from point A to point B.

- *Q9: Other than the Core competencies, in your opinion, what <u>other information</u> is needed or important and should also be included for implementation?*

As discussed, CC is the required resource, capability, skills, expertise, etc. for the implementation of the CM. It is obvious that the result of a CM greatly depends on the CC. Hence, if the meaning of the CC is not clear, then the error rate of finding the right set of CC is high.

Question Nine is trying to learn how the respondents think in terms of this issue. They were asked if there is other information that should also be included to help other people understand each of the CC correctly and effectively. In other words, other than providing a list of CC, what other information should also be included to minimize the probability of selecting the wrong CC. Table 4.4.5 lists the results of the respondents' comments and Table 4.4.6 presents the respondents' ideas about who should be the suitable person(s) to perform the task of selecting the CC.

Table 4.4.5 – Other Information Necessary for the CCs (Results of Q9)

Interviews	***Other Information***
Interview(1) x2	No need, sufficient enough
Interview(2)	Although some descriptions might be necessary for some CC, like "Service audit & standards " (#7), in general, I don't feel it is necessary to include additional information.
Interview(3) x3	A list is convenient but in the design of IS, the system should allow users to add new CC because things change quickly.

Interview(4)	We should include the limitations about the CC to clearly state what we can really do and hope to do. Besides, same concern addressed earlier, we need some detailed descriptions for some terms (e.g., #18, "The leadership and vision statement"). What is this? Do we have it? If no, how can we have that? You don't wake up next day and have a leader. In addition, our expectation about a CC might be necessary as well because we want to know how such a CC would possibly work.
Interview(5)	No, not necessary because I'm constrained by what the co-alignment model suggested. I don't think we should complicate things but just show CC only.
Interview(6)	Maybe more explanations and descriptions with examples.
Interview(7) x2	A: We should provide some definitions for some CCs. For example, "The Leadership (#18)" is unclear. Besides, the definitions of all terms used in the co-alignment model should be available throughout the whole process. B: I found there is no need because they are clear enough.
Interview(8) x3	N/A
Interview(9)	We need some detailed descriptions for these CCs, especially for something like "Investment standards maintenance" (#15). It sounds important but understand what it means. It should be descriptive.

- *Q10: According to your business structure, what position(s), i.e., who, do you think should be in charge of performing this task (of selecting or identifying the core competencies)? Why?*

Table 4.4.6 – "Who" & "Why" of CCs (Results of Q10)

Interviews	***Who***	***Why***
Interview(1) x2	The same team that identify the VD or a new team comprises different Division Heads for this purpose only.	It must be done by a team because many CCs come from different function areas.

Interview(2)	Maybe by all of the decision-makers. A team should be put together including the people who have a stake in it representing aspects of experience. However, it is not necessary to be formed according to the position. It might be better if it is based on the experience or education.	Only people from the top can control these CCs.
Interview(3) x3	Same division heads who are also identifying the VD earlier	They are closely related to the CC. Knowing the VD is even a plus.
Interview(4)	Same team doing the VD in Q5. However the Director should be involved as well.	Because when you have different people with different specialties from different divisions, you can cover a broader bases. Also, this is a chance for the moment of truth, they can look at themselves to see what kinds of competencies do they really have.
Interview(5)	It should be someone in the planning area like the division heads. Of course you are always better off with more than one person doing this.	You get to see things from different angles.
Interview(6)	A team of division heads; if overlap with other task is okay, one can do more than one thing	Because the division heads know better about their own capabilities
Interview(7) x2	A: Depends on the CM, usually it should be the same project leader but might not be the same VD team. We should bring the person who has the right expertise, even the outside experts, into the team. But the project leader should always be the insider and should be held accountable for the result B: Put together a new CC team, not the same VD team. This team should include the division heads and a project leader should be elected from the team and be responsible for this task.	Team is always better than an individual to put the necessary CCs together. Basically, The leader should be selected according to his/her knowledge and experience with regard to the CM.
Interview(8) x3	It should be done in a team effort, i.e., it should cross divisions and include any possible individual. It all depends on the purpose. Position doesn't matter.	This is a complicated task and doesn't seem likely to be done by an individual.
Interview(9)	It should be done by division managers, depending on the CM to determine what division needs to be involved	Because the division managers are all in the practical fields and should know their skills well.

Summary of the Part III

The main focus of this section is on CC. Surprisingly, all respondents found that the task of selecting the appropriate CC from the list was not difficult with a confidence range from 3 to 4.5 (1 = poor confident and 5 = very confident). This provides another valuable piece of information for the design of the SDIS. The respondents seemed to agree that selecting the right CC from a list is very doable and is likely to be accurate.

Other comments related to CC about "who" and "other additional information" were also discussed in the interviews. The respondents seemed to believe that a team including "division heads" in their organization is the suitable party to deal with the issue of CC. Most thought if the description and definition of the CC is clear, no other additional information is needed.

Another important issue relating to CC is implementation. It impacts the way the CM is being carried out and thus has a direct linkage to the final result of the strategic plan. This topic was discussed in the previous section, the Part II, along with the CM and its P&S and hence was not included here. Overall, in terms of the information flow, the result shows that the linkage between the" CM and P&S" and "CC" is very smooth and feasible using the format of CC selection.

Data Collected and Evaluation (Part IV)

The emphasis of the last part of the results of the data is on *Evaluation*. As discussed in Chapter 2, the co-alignment model suggests *cash flow streams* as the major indicator to evaluate the outcome of the CM selected as well as the outcome of the whole alignment process. The *Evaluation* denoted in the information flow chart means differently from what is suggested in the co-alignment model. The purpose of having it

included in the research framework for designing the future IS was fully discussed in Chapter 2 and Chapter 3. In short, it is a design to increase the validity of the information identified in each earlier step via a possible iterative process (see Figure 3.2) before the CM gets implemented. In other words, it intends to help obtain more accurate information *within* the co-alignment process in order to increase the possibility of achieving better financial performance shown in the organization's cash flow streams.

While the information is flowing from one box to the next box in Figure 3.2, the co-alignment process is in progress. There are three issues that need to be discussed during this progress to ensure that the data obtained is accurate enough for further use. These issues include:

(1) Who should be in charge of the whole process?

(2) Who is evaluating the quality of the information after the co-alignment process is complete?

(3) How often should the information be reviewed and updated once the co-alignment process is done?

These questions were asked in the interview through Question 12, Question 13 and Question 14 in the hopes of learning the perspectives of the respondents about the topic of evaluation.

Continually using the same style as earlier for the discussion, Table 4.5 points out these questions followed by the result of the responses in Table 4.5.1 – Table 4.5.3 with discussions.

Table 4.5 – Data and Evaluation (Part IV)

Constructs of the co-alignment model	*The Types of Data*	*Known / Unknown*	*Interview Questions*	*Obtained From*
Other Issues related to the information flows	**Evaluation Results (e.g., comments & suggestions)**	**No**	**Q12, Q13, Q14**	**Open-ended Interview**

Results of Data Collection (Part IV)

- *Q12: According to your business structure, what position(s), i.e., who, do you think should be in charge of supervising and managing each step of the co-alignment process? Why?*

Table 4.5.1 – "Who" & "Why" for Supervising the Co-alignment Process (Results of Q12)

Interviews	***Who***	***Why***
Interview(1) x2	The Director	He might be the only one who can push the co-alignment process moving forward.
Interview(2)	The Director is responsible for the whole process but he would need someone doing the supervision job for him. This person would be the project manager who is assigned to this task, not necessary to be someone in a certain position.	The Director might not be able to follow each step of the co-alignment process closely due to his busy schedule. The project manager should do this for him.
Interview(3) x3	A: The same CC team in Q11 but should elect a team leader to be responsible for supervision and management.	The members in the CC team are the division heads who have the power to oversee the whole process.
	B & C: Another candidate is the Director's Assistant.	The Director's assistant is the connector between the city and the Director.

Interview(4)	The Director's assistants or the team leader of the VD team in Q5. This team leader may not have to be a division head but should have the right expertise for this job in order to be elected by the team.	The people in the VD team have their own knowledge, skills, and capability in some specific areas. The team leader elected from this team should have the function links to other people in the organization and thus is capable to doing this job.
Interview(5)	A team comprises the representatives from different divisions. They will select their own team leader who has the best grasp of the co-alignment model. Of course, the representative is not necessary to be the division head.	In order to supervise and manage each step of the co-alignment process, one needs to know the model very well
Interview(6)	Someone in the executive level and has the capability to oversee the whole process	You need to have someone from the top to ensure the progress of the whole thing.
Interview(7) x2	A: Director staff B: The same project leader of the VD/CC team earlier	We probably have not enough manpower to let a person do only one thing. Overlap is okay and might be a plus in this case.
Interview(8) x3	Director Assistant(s)	They can coordinate different departments.
Interview(9)	Director staff who has the strategic mind	Because this position has the expertise and experience of dealing with all the important things

Once the information denoted in each box of the Figure 3.2 are obtained, the information flows associated with the co-alignment model are illustrated and the alignment process is complete. How accurate and valid information is will be the next concern. The interview is designed for the primary purpose of testing the information flows and not for the test of the "correct answer". The researcher had done his best to keep the respondents on the right track for the primary purpose when some of them were attempting to give the "correct answer" to each question.

In other words, up to this point of the interview, even if the respondents have shown that it is feasible for information to smoothly transmit from one step to the next step, the information might not necessarily be accurate enough and ready for use. Hence, the function of evaluation becomes critical because when the iterative process goes round by round, the accuracy and validity of the information are expected to increase. Therefore, the question like "who should be doing this evaluation task to launch and end the iterative process?" becomes important. Question 13 below is designed to gather the respondent's comments about this issue and Table 4.5.2 summarizes the results of this question.

- *Q13: According to your business structure, what position(s), i.e., who, do you think should be in charge of <u>evaluating</u> the data obtained in each step of the co-alignment process? Why?*

Table 4.5.2 – "Who" & "Why" for Evaluating the Co-alignment Process (Results of Q13)

Interviews	***Who***	***Why***
Interview(1) x2	A third party from outside; for example, the city's agencies who have the best interest in tourism; these agencies can work with some consultants together as a team to conduct the evaluation	This team can provide a more objective view to assess the quality of the data provided by the internal people.
Interview(2)	The Director & his administrative staff; if necessary, we can bring in a professional from outside	The Director and his staff should have the knowledge and experience to know if the data is good enough.
Interview(3) x3	The Director and the teams that have been involved should work together to do the evaluation	According to the leadership style that we have – we are very open and honest and we all want the same goal. We should work better together without many conflicts.
Interview(4)	The Director or one of his staff who can keep the Director involved	The Director's division is the unit to kick off and end the process.

Interview(5)	A 3rd party – the external people, like the city employees from different departments or consultants and experts in the hospitality industry, etc.	Because we have a limited number of people assigned to work on the previous tasks already. We might not have extra people exclusively doing the evaluation work.
Interview(6)	The Director's assistant(s) or maybe a new team that includes outsiders, such as consultants, private sector folks, industry peoples, committees relating to the CM, etc.	The Director's assistant has the personality and capability to do this very well. The outsider might be able to see the holes that we couldn't see.
Interview(7) x2	A: The evaluation should be performed by the project leader between each step before moving forward B: The Director in conjunction with the outside party	A: The information should not be used for the next prupose before it is evaluated and is good enough. This way we can fix the problem right away in a smaller scale. B: Because together, they can look at the whole process with different perspectives for evaluation
Interview(8) x3	The Director	He is responsible for the whole process.
Interview(9)	The Director's Assistant(s)	The same reason as the last one, this person is in the core administration team and is dealing with all the important things

Once the whole co-alignment process is complete and all kinds of information are correct and ready for further use, the strategic plan is obtained. However, "how long will the information remain valid and accurate for management" becomes the next important issue as environment is dynamic and will not stay the same. This issue is discussed through Question 14.

Question 14 is the last interview question designed to understand how often the management should go back to review and update the information to ensure it is not outdated and is still good for the current competition. Table 4.5.3 presents the result of the interviewees' responses.

- *Q14: Once the necessary information is collected and the co-alignment process is complete, how often do you think that management needs to re-examine or update the information? Why?*

Table 4.5.3 – Frequency of Review & Update of Information (Results of Q14)

Interviews	***Frequency of Review & Update***	***Why***
Interview(1) x2	• A: Quarterly • B: Semiannually	N/A
Interview(2)	Quarterly	Because you can set your particular business goal for the next 3 - 6 months for a particular project.
Interview(3) x3	• A: Depending upon each time-line of the CM has been given play out • B: Semiannually • C: Yearly	• A: The CM is the key for the whole plan • B: Quarterly is better but might be too hard to do • C: Every year should be enough
Interview(4)	Annually (minimum)	Because we are at an annually budget cycle; besides, if it's less than one year, it will be too much for the people doing it.
Interview(5)	As often as possible but monthly is too often; at least quarterly	Because the external factors will have a great impact on the investment environment at any time. For instance, technology environment changes very fast and we always need to look into the reality
Interview(6)	At the beginning, quarterly and later should be once per year but sometimes it's just pure competitive pressure	Quarterly might be overkill so annually is better
Interview(7) x2	• A: If the CM is not successful, then go back to re-exam every thing. • B: As often as possible but it depends how the trends go; I think it should be semiannually	• A: Obviously how CM works can tell us if it is time to review every thing • B: We don't know what would happen out there

Interview(8) x3	At least annually but prefer semiannually	Annually is more feasible because it is too complicate.
Interview(9)	It depends on how fast the thing gets changed. Usually semiannually, but some data might need to be updated annually only.	Go back to study the environment semiannually is doable but some data might only be available at the end of every year.

Summary of the Part IV

As mentioned earlier, the focus of this section is on three issues: supervising each step of the alignment process, evaluating the data obtained, and the frequency of reviewing and updating the obtained data.

For the first issue, according to the respondent's perspective, the person who should be in charge of supervising and managing each step of the co-alignment process is the one in the administrative office. This person could be the Director, the Director's staff, or the same team who did the VD or CC task earlier. The common reason for this is because these people can oversee the whole process all along. However, while believing the ideal person must be someone in the top position, most respondents also recognize that this person must have the right expertise and understand the co-alignment model well.

As for the evaluation, most interviewees believe that the person who does this job should be the Director, the Director's assistant, or a team that includes the third party from outside. For an obvious reason, as indicated by the respondents, the evaluation is like an approval for a "go" and should be given from someone in the executive office. The common reason to bring in the outsider, like consultants, the city managers, the people in the private sector, some experts in some specific area, etc., is in hopes to gain different perspectives from different angles to ensure that the alignment process is good

and the effective strategic plan can be obtained. However, there is one, only one, interesting response – a respondent suggested that, other than the whole evaluation at the end, the evaluation should also be conducted between each step (e.g., between FDC&VD, VD&CM, CM&CC) before moving to the next level. This comment is quit interesting and will be discussed more in the next chapter.

Given the reality, time constraints, and the best of their knowledge, respondents provided their perspectives about the frequency of the data update in different time spans, such as "as often as possible", "quarterly", "semiannually", "annually", or "it depends on the result of the CM", etc. The reasons for their responses are various as well, depending on their understanding of how the CM and organization work. Table 4.5.3 listed all their reasons.

In general, this section presented the issues of evaluation that intends to increase the accuracy and validity of the data obtained in each step of the alignment process. Overall, it provides some valuable information for designing the future IS with respect to the control of the information flow. Further discussion is presented in Chapter 5.

Summary

The respondents seemed to all agree that understanding the concept of the co-alignment model is very important in order to have the capability to answer the questions asked in the interview.

The research question is *"how should an IS be designed to improve the information flows associated with the co-alignment model,"* and thus the unit of analysis as discussed in Chapter 3 is information. In other words, understanding the way information flows from one point to another is the first concern derived from the research

question. Some other key issues can also be deduced from the research question and are listed in the Table 4.6 below.

Table 4.6 – Linking the Data to the Research Question

Six Key Issues Discussed in the Interview	*The Linkage to the Research Question*
1. Who should be handling the data collection?	The person who can most accurately provide the necessary data and facilitate the information flow.
2. Who should be supervising the data collection?	The person who can best insure the process in progress and thus facilitate the information flow.
3. What are the challenges encountered when attempting to identify the right information?	This is the way information gets to flow from one point to another. Understand these challenges can help design the SDIS and thus facilitate the information flow.
4. How can the challenges be reduced?	Once the challenges are taken into consideration in the system in the last issue, the reduction of the challenges can facilitate the information flow.
5. Other than the types of information suggested by the co-alignment model, any other information is needed to facilitate the way people obtain the right FDC, VD, CM, P&S, and CC?	Including other necessary information can help people complete the task effectively and thus the data will be able to transmit to the next step. This will facilitate the information flow.
6. When should the information start to move from one point to the next point?	From the format and questions designed for the interview, it is clear that the task in each step of the co-alignment process is built upon each other. In order for this process to be smooth and completed in a faster fashion, the quality of data obtained in each step for the next task becomes critical. Thus taking care of this issue can facilitate the information flow.

Table 4.6 clearly demonstrates the linkage between the six key issues discussed in the interview and the research question. For example, the first two issues listed in the table are about finding the right person(s) for the specific two tasks – data collection and supervision of the data collection. They are basically talking about "people issue". The perspectives of the interviewees, who are in the executive position, can certainly provide significant information about finding the right people and thus can further improve the way the information goes forward from one point to the next point.

Another example is the last issue (#6) listed in the table regarding the timing issue, the "when" issue, of the information flow. This issue can be discussed from two perspectives:

- First, if looking at the information flow in each segment of the whole alignment process, the "when" issue can result in a "chain effect" because when information flows step-by-step from one point to another, the results in each step are actually built upon each other.

- Second, if looking at the information flow as a whole from the perspective of the co-alignment process (e.g., Figure 3.2), the whole information flow would not be complete without the evaluation process denoted.

Thus, the “when” issue indeed includes the “timing” in two different points of time in the progress of the co-alignment: “In-between” for each step of the process and “at the end” for review of the whole process. Regardless, this “when” issue actually has significant impact on the validity and accuracy of the data and thus can influence the final result of a strategic plan. In the future, when constructing an IS, this should be taken into consideration in order to enable the system users to deal with the timing of their choices to facilitate the information flow and improve the co-alignment process.

Overall, the six key issues listed in Table 4.6 present the linkages to the research question of this study and all of them were well discussed in the interview. This means that the data collected in the interviews can certainly provide some evidence to answer the research question. In other words, the respondent’s comments and thoughts about these six issues are the most important pieces of evidence for the design of the SDIS. By carefully taking their perspectives into consideration to design the SDIS, the information flow is expected to be controlled and be improved. As the result, the improvement of information flow can in turn improve the utility of the use of the co-alignment model, which is the research objective.

Table 4.7 is the matrix as a part of the summary for this chapter. By adding “the types of data and information flows” as an additional issue, there are total seven key issues listed in the table along with the results of the data obtained from the interview.

Table 4.7 – Summary of the Results of Data Collected

Key Issues	*Summary of the Data Collected*			
	Corresponding Data: Part I	*Corresponding Data: Part I, Part II. & Part III*	*Corresponding Data : Part II & Part III*	*Corresponding Data Part IV*
(1) Types of Data and the information flow associated	• FDC • VD	• VD • CM & CC	• CM & CC	• Evaluation Results (e.g., comments & suggestions)
(2) Who should be assigned to identify the data? **(3) Who should supervise and be responsible for the task of obtaining the data?**	• Division Heads work as a team • A project leader elected by the team of the division heads should supervise the progress and be responsible for the result	• Not sure because this is done in the workshop but it should be done by a team as well • An administrative team led by the Director	• Division Heads and the Director and Someone who knows the CM best • The Director or the Director's assistant should be in charge of the whole process	• The Director or the Director's assistant • The third party from outside, such as the consultants, the city managers, people in private sectors, experts in the specific areas, etc.
(4) What are he challenges? **(5) What are the solutions?**	• Terminology used should be simple and understandable; avoid the academic language • Descriptions and Definitions of FDC • Examples or Scenarios of how would a FDC link to the VDs; the perspective for the VDs • Regular discussion of the co-alignment model • A list of FDC for selection • Information sources for FDC • Definition of VD	• The implementation is an issue closely linking to the management. How people work together is more important. The organizational structure is the key for the implementation.	• The selection is good but should allow users to input the new CC. • Research people should help establish the list of CC. • Be more specific on the language used; avoid the general terms • Definition of CC • The expectation of the CC. What do we expect to see when these CC's are used for the specific CM.	• The party who conduct the evaluation task is the one who starts or ends the iterative process and is responsible for the quality of the data obtained in each step of the co-alignment process. • Budget is an issue if bringing in the consultants and experts to the team for this task • Time-line is critical for the evaluation process

(6) What are the reasons to/not to provide the above information? Are any additional information needed?	• The gap between academia and industry • Hard to grasp the co-alignment model	• Need various knowledge, expertise, and experiences from different kinds of divisions. You need to have sufficient support from everyone.	• The environment changes and the organization should always know what kinds of new CCs should be added.	• The iterative process can increase the accuracy and validity of the data
(7) The timing and time-line of the task assigned	• Depends on the change of the environment	• Whenever the Director thinks there is a need for a new strategy plan	• N/A • This should be a follow-up process.	• Quarterly or Semiannually; Sometimes it's just pure competitive pressure

As addressed in the previous chapters, the improved information flow will result in better evaluation and performance of CM simply because the interrelationships among the FDC, VD, CM, P&S, and CC identified will be tight and clear. Table 4.7 above illustrates the key issues and the summary of the data obtained from the interview. These results provide some meaningful information to draw the conclusion of this study. Chapter 5 will utilize this table again to extend the discussion of these results in the hopes of obtaining the dimensions and propositions for the design of the SDIS and to meet the research objective of the study.

Chapter 5

Discussion and Conclusions

Introduction

This chapter brings the study on the coordination strategy framework that synthesizes the co-alignment model and the SDIS to a closure. Chapter 4 presented the results of the data collected from the CVB in Virginia Beach in reference to the elements and information flows associated with the co-alignment model as illustrated in Figure 3.2. The results from the respondents' perspectives have been linked to the research question as well in the previous chapter. This chapter delves into the implications of these results and summarizes the major findings and presents the contributions and conclusions of this exploratory study. It also sets forth the agenda for the future study.

Discussion – The Analysis of the Data Results and Information Flows

To continue the thought laid out by the matrix of the summary in the previous chapter, this section uses information flow as the framework to organize the further discussions of the data results since it is the key element that exists for the design of the SDIS. Therefore, firstly, the information flows associated with the co-alignment model are categorized into four types denoting the way information goes forward from one step to another. Figure 5.1 below is not a new design but a revision of Figure 3.2 in Chapter 3 in an attempt to logically discuss the information flows in accordance with the results presented in Chapter 4. The figure shows how the information flow is dissected into four types in different segments of the whole alignment process: *Information Flow-A* (IF-A), *Information Flow-B* (IF-B), *Information Flow-C* (IF-C), and *Information Flow-D* (IF-D).

Figure 5.1: Another View of the Information Flows and the Co-alignment Model

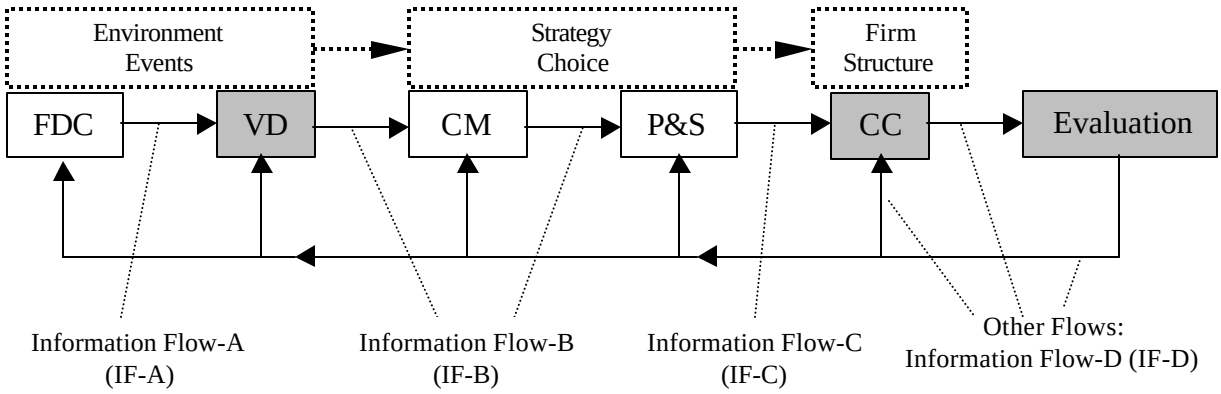


Figure 5.1 should be self-explanatory. IF-A represents the information flow between FDC and VD. IF-B denotes both of the information flows between "VD & CM" and "CM & P&S." IF-C expresses the way information moves forward from P&S to CC. All other arrows that denote the directions and destinations of the information flows are termed IF-D.

Apparently, each type of information flows is meant to deal with the specific topics associated with the co-alignment model as discussed earlier. As Figure 5.1 is just a revision of Figure 3.2 in Chapter 3, which was also one of the frameworks used to organize the presentations of data results in Chapter 4, there is no need to reiterate what these flows are. However, it is still necessary to provide this overall view to present how these notations (i.e., IF-A, IF-B, etc.) link to the data collected and the co-alignment model. The best way to demonstrate this linkage is through Table 5.1 below. This table is the revision of Table 3.1 in Chapter 3, and it shows the integration of what have been discussed in previous chapters and provides a transition to where we are now in this chapter.

Table 5.1 – The Co-alignment Model, Information flows, and Interviews

Constructs of the co-alignment model	*The Types of Data*	*Known / Unknown*	*Interview Questions*	*Information Flows*	*Corresponding Data*
Environment Events	FDC	Yes		**Information Flow-A (IF-A):** Starting point: FDC End point: VD ***FDC → VD***	**Part I**
	VD	No	Q1-1, Q1-2		
	Who, Difficulty, Comments, and Feedback	No	Q2-1, Q2-2, Q2-3, Q3, Q4-1, Q5		
Strategy Choice	CM	Yes		**Information Flow-B (IF-B):** Starting point: VD End point: P&S ***VD → CM*** ***CM → P&S***	**Part I** **Part II** **Part III**
	P&S	Yes			
	Who, Comments, and Feedback	No	Q4-2, (Q11*)		
Firm Structure	General CC	Yes		**Information Flow-C (IF-C):** Starting point: P&S End point: CC ***P&S → CC***	**Part II** **Part III**
	Specific CC for a specific CM	No	Q6-1, Q6-2, Q11*		
	Who, Difficulty, Comments, and Feedback	No	Q7-1, Q7-2, Q7-3, Q8, Q9, Q10		
Other Issues related to the information flows	Evaluation Results (e.g., comments & suggestions)	No	Q12, Q13, Q14	**Information Flow-D (IF-D):** Starting point: Eva. End point: Eva. ***All other flows***	**Part IV**

**Q11 has been placed under the IF-C from its original flow, the IF-B, for discussion purpose.*

Table 5.1 above can be viewed as the simpler format that expresses the same concept proposed by the research framework (Figure 2.3) in Chapter 2. Taking a closer look into the table, one can easily and immediately realize that once these four types of information flows are thoroughly discussed along with the results of data collected (Part I – Part IV, as presented in Chapter 4), the research question can be answered and new findings might be found. In other words, since these information flows are associated with the co-alignment model, using the results obtained in the interview to design the SDIS for effectively handling these flows (i.e., the answer to the research question) can possibly in turn improve the utility of the use of the co-alignment model. This means that the proposed coordination strategy framework that synthesizes the co-alignment model and IS can possibly be achieved.

With respect to the system design, the technical issues were not discussed directly in the interview as none of the respondents is in the IT-related filed. However, because they will be the system users, their comments for the improvement of the information flows indeed implicated how the IS should be designed.

According to the literature, there are several methods to perform qualitative analysis to deduce the meanings from the interview data (Miles & Huberman, 1994; Silverman, 1993; Tesch, 1990; Wolcott, 1990, 1994; Steinar, 1996). In general, since the form of the results will mainly be in words, it is the researcher's job to analyze this form further to his/her best. The following sections will discuss these information flows based upon the analysis and discussion of the data gathered in the hopes of obtaining some perspectives for both managerial and technical aspects.

Information Flow-A (IF-A) & Information-B (IF-B)

IF-A – Starting point: FDC; End point: VD

IF-B – Starting point: VD; End point: P&S

IF-A and IF-B are the flows that denote the interrelationship and causality of the first two constructs of the co-alignment model. These two constructs are *Environment Events* (that deals with FDC and VD) and *Strategy Choice* (that defines CM and P&S). IF-A and IF-B were discussed in the interview via several questions as presented in the second to the last column in Table 5.1.

The data gathered indicates that respondents did have some difficulties in identifying the VD's and thus illustrate that IF-A might be very hard to complete on the basis of the known FDC. This is not necessarily because the FDC is incorrect. Contrarily, because the FDC were identified in the strategic workshop led by the consultants/facilitators, they are believed to be correct. According to the results, most respondents could not understand what exactly these forces mean which is what handicapped to the completion of the IF-A. Of course, this results in poor performance in identifying the VD's. Further analyses of the data results are reported in Table 5.2 below.

Table 5.2 – Reasons for the Difficulties of Identifying VDs

*% (N)**	*Reasons*
47.1% (8)	"don't understand the statement; the language used to describe the FDC is not understandable; there is a gap between academia and industry"
35.3% (6)	"the concept of FDC or/and VD is not clear; don't really understand the co-alignment model"
17.6% (3)	"no difficulties and was able identify some VD's"

**The total of N in this breakdown is greater than the actual number of respondents (N=15), which indicates that some respondents have expressed more than one reason that causes the difficulties.*

Given the fact that the performance of identifying VD's is very poor, in order to understand whether or not the difficulties expressed by the respondents are valid, the researcher thus provided the information needed for the respondents and led the conversation into an in-depth discussion about the FDC and VD. In other words, the researcher helped the respondents review the concept of the co-alignment model, gave them the definitions and examples of FDC and VD, and discussed the statement of the FDC provided again to try to identify the VD's together. The new result appears to be very different from the original one. With the new information provided and the discussion led by the researcher, the respondents were able to identify more VD's (see Appendix 5). All respondents felt more comfortable with the co-alignment model after the discussion and believed that they can do better in the future in identifying the VD's.

This before-after comparison increases the data validity because it performed the "member checks" and "divergence" discussed in Chapter 3. The new result shows that simply providing the information about FDC in a concise statement is not enough for the respondents to complete the IF-A (i.e., complete the task of identifying the VDs). This is especially evident in the case where the respondents don't understand the terminology used and/or don't have a good grasp on the co-alignment model.

The original result, the first attempt, suggests that there are some difficulties in transmitting information from one point (the FDC) to another (the VD). It shows that IF-A will not be completed if these difficulties exist. However, the new result, the second attempt conducted with the researcher, illustrates that it is possible to overcome these challenges and complete the IF-A. Clearly, understanding the co-alignment model is a must. In addition, the SDIS should act like the researcher in a similar way, so that all necessary information related to the model, like the definitions, concepts, examples, etc.,

can be provided. That means, the IS should include a "help" function for the system users.

Technically, this "help" function is not a difficult issue in designing a system. As long as the information designated for help is stored and is ready to be called, the "help" can be established. However, this also implicates that somewhere in the SDIS, there must be a place to store this type of information and can be controlled and accessed by the system and its users.

For the IF-B, from VD to CM and P&S, since the CM and P&S were obtained from the workshop already, the respondents were not asked to conduct the similar exercise as done for the IF-A, but to provide their comments as to how to facilitate this information flow. The respondents were asked to imagine the situation that they might have run into if the information on VD's is provided in the similar format of the FDC. They all immediately agreed that they would not have been able to come up with the CM and P&S as they did in the workshop for the very similar reasons listed in Table 5.2.

Therefore, the respondents were asked to provide their comments about how the similar difficulties encountered for the IF-A can be avoided to improve the IF-B. Because the findings in IF-A demonstrate that other information is necessary to improve the information flow, the respondents believed that relative additional information should also be provided for IF-B as well. They were thus asked to provide the kind of additional information that they think is necessary to be included along with the VD's (see Question 4-1) to assist in determining the CM and its P&S (i.e., to facilitate the IF-B). Table 5.3 presents the result of the further analysis of their comments (also see Table 4.2.6).

Table 5.3 – Additional Information to Facilitate the Information Flow-B (IF-B)

% (N)	*Additional Information to Facilitate the IF-B*
46.7% (7)	• Provide some explanations along with examples or scenarios as to how to use the VD's • What is the purpose of these VD's • Some research findings might be necessary to show someone's perspective about the VD's
40.0% (6)	• Provide detailed descriptions and definitions of VD
6.7% (1)	• The mission statement and description of the project
6.7% (1)	• No other information is needed as long as the language used to describe the VD is clear

From the respondent's point of view, after going through the difficulties for IF-A, they have understood the purpose to have correct and understandable information for the next task. They have realized that only providing the VD's in a simple and concise format will not be good enough to help determine the CM and its P&S in the next step.

Therefore, the respondents clearly expressed what additional information should also be included to help complete the next task. Their comments can thus increase the feasibility of data transmission. Table 5.3 above demonstrates the types of additional information that respondents believed to be necessary for the VD's with respect to the improvement of the IF-B.

However, this result is the "follow-up result" of the exercises, including the exercise led by the researcher, of identifying the VD's in the earlier stage of the interview. The respondents at this point have already received a review of the co-

alignment model to refresh their memory about the relative concepts and definitions of the model. They thus should have the capability to provide the more reliable and valid comments with respect to the IF-B. The result shows that most of them (46.7%) believed that the perspective regarding how to use the VD's is the most important add-on to facilitate the IF-B. They also believe that this kind of perspective should be illustrated via the descriptions, definitions, and examples or scenarios of the use of the VD's.

Overall, the findings clearly indicate that detailed information about a VD must be included. Similarly, the findings seem to suggest that the SDIS should have a place to store all of the relative VD information. If the additional information is available for the user when he/she is trying to determine the right CM and P&S, then the process for such a task can be more smooth and effective. This means that the improvement of the IF-B can be expected.

Therefore, through the above discussions, one can find that there are some solutions to improve both IF-A and IF-B, and these solutions are derived from the analysis of the data gathered and should be incorporated into the design of the SDIS. In addition, other than the issue of data transmission, another major concern expressed by the respondents with regard to both information flows is to have the right person(s) carry out the respective tasks suggested in each stage, so that information can move forward effectively. As discussed in the previous chapters, these tasks are to identify the types of data defined in the co-alignment model, such as FDC and VD for the IF-A, and CM and its P&S for the IF-B.

The result indicates that a team that comprises various people, who are likely to be the Division Heads with the right expertise, is the most preferred one for the task of identifying the VD's in order to facilitate the IF-A (Table 4.2.7). The respondents suggested that this team should be accountable to the Director (i.e., the CEO) of the organization.

For the task of determining the CM and its P&S (i.e., the IF-B), most believe that it should be conducted by the Director with a team of Division Heads. Via the content analysis on the data gathered (see Table 4.3.1), Table 5.4 below further summarizes the respondents' comments regarding the "who" issue along with the frequency of the comments made.

Table 5.4 – "Who" for the Information Flows (IF-A & IF-B)

% (N)	*"Who" for the Information Flows (IF-A & IF-B)*
"Who" for IF-A:	
40.0% (6)	A team comprises Division Heads and/or Anyone who has the right expertise
26.7% (4)	A team comprises Division Heads
20.0% (3)	A team comprises the Director and Division Heads
6.7% (1)	Director's Assistants
6.7% (1)	The Director
"Who" for IF-B:	
40.0% (6)	Director and a team that comprises Division Heads
20.0% (3)	A team comprises the Director and the Director's Assistants
20.0% (3)	A group comprises people who have the right expertise
13.3% (2)	Not sure
6.7% (1)	The Director

Table 5.4 lists the party that is viewed as the ideal one(s) for the tasks defined in the first two constructs of the co-alignment mode in order to facilitate IF-A and IF-B. Apparently, "teamwork" is believed to be the most effective form for the missions of

identifying FDC, VD, CM, and P&S. Most (86.7% and 60% for IF-A and IF-B respectively) believe that teamwork would be the best way to obtain the right information in the first and second step (see Figure 3.2) of the co-alignment process. This team should involve the Division Heads and led by the Director.

Therefore, with respect to the IF-A and IF-B, the following key findings deduced from the further analysis of the data results should be considered while designing the SDIS:

(1) The respondents must have a good grasp on the co-alignment model;

(2) The terminology and language used to describe each FDC and VD should be friendly and understandable;

(3) The additional information listed in Table 4.2.6 (e.g., information sources, examples, scenarios, etc.) and Table 4.2.6 for IF-A and IF-B respectively should be stored somewhere in the system and needs to be accessible to the system users;

(4) Both IF-A and IF-B should be handled in a collaborative effort, as teamwork is the best format for the tasks defined in the co-alignment model. Teamwork is necessary and thus the SDIS needs to be able to support the multiple access for various users.

These issues indeed relate to what is suggested in the literature and through the study of the element "information", various topics can be integrated as well as shown in Figure 2.5 (see Chapter 2). For example, in the strategy literature, environmental information is critical for strategy formulation and implementation (Chandler, 1962; Thompson, 1967; Andrews, 1980; Schaffer, 1987; Hofer & Schendel, 1978; Miles &

Snow, 1978; Mintzberg, 1978; Porter, 1980; Leontiades, 1982; Bower, 1982; Intermediary & Prescott, 1990; Murthy, 1994; Olsen et al., 1992; Fuchs et al., 2000) and should be carefully treated. Moreover, using the co-alignment model to address the issues for the design of an IS is valid as the model is recognized as the most effective model for strategic management and is widely adopted in the field of hospitality and tourism (West, 1988; Dev, 1988, 1989; Crawford-Welch, 1990; West & Anthony, 1990; Kim, 1992; Zhao, 1994; Jogaratnam, 1996; Turnbull, 1996; DeChabert, 1998; Taylor, 2002; Sharma, 2002; Chathoth, 2002; also see Table 2.2).

Furthermore, as suggested in the MIS literature, the best way for collecting accurate information is through the smooth interaction between humans and systems (Baets, 1996; Broadbent & Weill, 1991; Nath, 1989) in today's information era (Cortada, 1996). In fact, the comment regarding the "teamwork" also suggests another idea that the system design needs to have the capability to handle (i.e., to synchronize or desynchronize) the multiple accesses and multiple tasks. Indeed, teamwork is recognized as one of the essential key aspects of business change in the MIS literature as well. Kilmann (1995) has found that teamwork is one of the critical successful factors to create a holistic approach for business success. Technically, this aspect involves several topics addressed in the field of Computer Science as briefly discussed in Chapter 2 in relation to the system design (Mano et al., 1986; Feghhi et al., 1991; Lennard et al., 2000; Keutzer et al., 2000; Hemani et al., 2000) and is beyond the scope of this research. However, the findings derived from the analysis are generally consistent with the literature.

In addition, the fact that data and additional information need to be stored somewhere in the system suggests that the SDIS also needs to adopt the concept of database management discussed in the Computer Science (Teorey & Fry, 1980; Teorey et al., 1986; Hull & King, 1987; Katz, 1990; Derr et al., 1994; Peckham et al., 1995; Tuttle, 2002; Pons & Aljifri, 2003) for its design. Furthermore, because some of the additional information might be provided in various web sites, it suggests that the SDIS probably

should not be designed for only running internally in a closed network. The SDIS might also need to have the direct connection to the Internet, so that the information sources that are related to the FDC and VD's can link with the system and be available for the users. In this case, the system design will have to involve the security issues as discussed in the MIS literature (Sabherwal & King, 1995; Furnell & Karweni, 1999; Cheung & Lee, 2001, Bélanger, 2002).

Information Flow-C (IF-C)

Starting point: P&S
End point: CC

If both IF-A and IF-B are successfully completed, that means that the data FDC, VD, CM and P&S are obtained (see Figure 5.1). According to the information flow chart discussed, the next stage for the information to move to is Core Competency (CC), which is defined in the construct *Firm Structure* of the co-alignment model with respect to the issue of resource allocation. One of the main ideas for resource allocation, according to the model, is to identify the CC's that are required to execute the CM and its P&S determined in the previous steps. In the interview, this task (of finding the right CC's) was actually conducted via several questions and discussions (see Table 5.1). Thus, via the analysis of the respondents' comments, some findings in relation to the considerations for the design of the SDIS can be reached.

The CM and its P&S that are determined together represent the organization's strategy choice. Once the organization understands its strategy, it then begins its search for CC's to deliver such a strategy. This understanding is indeed influenced by the information one interprets and the capability one has to do the search. In terms of information flow, this is the way information moves from the determination of "CM and P&S" to the next point "CC" and is denoted as IF-C (Figure 5.1). In the results reported,

the respondents showed no difficulties in understanding the CM and P&S given and thus had no problems in selecting the right CC's from the list. The ease with which the respondents completed this task will be discussed in detail later. Table 5.5 below compiles the results reported in Table 4.4.1 and 4.4.2 for the purpose of analysis.

Table 5.5 – Top CCs Selected for the Particular CM

Top Five CCs	***Frequency***	***Rank***
For 1st CM *(An effective comprehensive distribution system that is based upon the latest in E-marketing thinking)*		
Research methods and data gathering	13	1
Research regarding customer expectations	13	1
Database marketing capability	12	3
MIS to link suppliers, DMO, and customers	12	3
Data warehousing and mining	10	5
For 2nd CM *(An attractive and friendly investor environment)*		
Master planning process/capabilities	12	1
Investment standards maintenance	12	1
Investor Acquisition team	10	3
Investment/reinvestment incentive packages	10	3
Leadership and vision	10	3
Building teamwork and alliances	10	3

As mentioned, the respondents are all in executive or executive-related positions. With the definition of CC provided, they were asked, to the best of their knowledge and experiences, to select the most important CC's for the two CMs chosen for this research.

The CC's selected by the respondents in Table 5.5 might be accurate and trustworthy to some degree. In fact, other than a few CC's that might need additional descriptions to best define them (see Table 4.4.5), the results indicate that the respondents all felt confident in their selections (see Table 4.4.4). Therefore, it is believed that the IF-C is also feasible when a list of CC's is provided for selection. The SDIS should be designed in a way to support this finding.

However, this easiness and the difficulty in the VD exercise greatly contrast with each other. Not only because the statements of CM, P&S, and CC are easier to understand, but also because the format of identifying the CC is easier. The respondents all agreed that selecting from a list is easier than composing a statement to fill out a blank area – some even expressed that "*Multiple choice is always easier than essay*" to describe his/her experience. As a matter of fact, this statement was confirmed to be true in the follow-up question that asked the respondents to enter text statements to describe any other necessary new CC's. The result of this kind of input was very poor, only two respondents provided new CC's and others chose to leave the question blank.

Overall the results suggest that the easiness of selecting the CC's by respondents "might" have resulted from the format of "multiple choice". However looking into the data, one can see that the selections provided might not be enough to cover all bases needed to execute the respective CMs and their P&S. For example, for the second CM, "*An attractive and friendly investor environment,"* some financial ideas like "cost of capital", "risk premium", "sources of fund (e.g., equity, bonds, etc.)", "return on investment (ROI)", etc., were left out. Although these financial competencies are not available on the list for selection, they are important to the second CM and should have been added by the respondents. Remember, at this point, the respondents have discussed and exercised their understandings of the co-alignment model in the previous questions with the researcher. They should be comfortable with the concepts and definitions suggested by the model. Thus, this reveals that the respondents might unconsciously or

consciously skip the “essay question” after they complete the “multiple choice” with confidence. Although it is preferred, the format of “selection from a list” might have its drawback.

In addition, the two CM’s used for this study were selected from the total six CM’s identified in the strategic workshop. The original idea discussed in Chapter 3 was to compare with these two CM’s with each other for further interpretation, as management has more experience with the first CM than with the second one. However, the results indicate that the respondents are very comfortable with their selections of CC’s for both CM’s and makes the comparison impossible.

Therefore, there are several drawbacks that might implicitly come with the “selection” format and should be addressed by the organization. These possible issues include:

(1) Is it possible to encourage the user to leave an essay question unanswered? *(Most did not provide text statements as an attempt to identify the new CC that is not on the list.)*

(2) Is it possible to make the user feel overconfident about his/her selection, if most of the CC’s are easier to understand and interpreted in his/her own way? *(Most felt confident but many financial competencies are missing for the second CM.)*

(3) Is it possible for every CC in the list to get selected, if many people are involved in selecting the CC’s? *(The results indicated that every CC is selected and the frequency for the least selected CC is 2 and 3 for the first and second CM respectively.)*

These issues are not technically related to the design of the SDIS as the selection function can easily be incorporated into the system design. Therefore, regardless of the drawbacks discussed above, with respect to the system design, the findings suggest that selection is a better format for the system users and should be adopted as a part of the system interface design as it is easier for users to operate the system. This finding is somehow consistent with the literature of Computer Science, in which the interface design is one of the topics discussed in relation to the efficiency of the system operation as uses' behavior is one of the significant elements affecting the system's functionality (Rowson & Sangiovanni-Vincentelli,1997; Passerone, 1998). This finding is also consistent with the MIS literature in which it suggests that a good interface design can help users operate the system easily, especially in the topic of electronic commerce, and thus can improve the interaction between humans and systems (Shaw, 1999).

Another finding that might be implicitly implied by the results of the data analysis is the selection format. If "a list" is a good format for the interface design of the system, from where does the information on the list come from? It seems to indicate that the system should have a place that can store these CC's so that the list of CC can be provided for use. Therefore, it is suggested that the SDIS should include a database that can store all possible CC's.

The next topic that will be discussed followed by the understanding of the feasibility of designing an IS to facilitate the IF-C is the "who" issue. As to what has been discussed in the previous sections, other than the smooth data transmission, another important point is to assign the tasks of selection (i.e., selecting the right CC) and implementation (i.e., implement these CCs to execute the CM) to the right person(s). These two tasks are very important and have been discussed in the strategy literature in Chapter 2 in relation to strategy implementation. In the interview, these topics were discussed in Question 10 and Question 11 and their results were reported in Table 4.4.4

and 4.3.2 respectively in Chapter 4. For easier interpretation, these results are analyzed and summarized in the table below (Table 5.6).

Table 5.6 – "Who" for the Information Flow-C (IF-C)

% (N)	*"Who" for the Information Flow-C (IF-C)*
"Who" for IF-C on the issue of selecting the CC's:	
46.7% (7)	The same VD team comprises Division Heads
33.3% (5)	A new team includes people with the right expertise or all decision makers
20.0% (3)	A new team comprises Division Heads but is different than the VD team
"Who" for IF-C on the issue of implementing CC's to execute CMs:	
33.3% (5)	A sub-committee of the CC team (a new team) comprises right experts
20.0% (3)	The same CC team
20.0% (3)	Resort management office or the City Manager
13.3% (2)	A team comprises Division Heads and their supporting staff
6.7% (1)	Director
6.7% (1)	Director's Assistants

The table above clearly presents the idea of "who should be doing the selection and implementation" from the perspectives of the respondents. Most interviewees believe that the same VD team (i.e., the team that is accountable for identifying the VD's) formed by the Division Heads should continue working on the CC's (46.7%). The major reason for this comment as reported in Table 4.4.6 is that a combination of various CC's has direct linkages to different divisions and the Division Heads certainly know better about their own knowledge and capabilities. In addition, if necessary, new people who

possess the right expertise can be added into the old VD team to form a new CC team that will be handling the task of CC selection (33.3%).

As for the task of implementing the CC's to execute the CM's, most respondents think that the same VD team that comprises the Division Heads is still suitable. That is, the VD team is the CC team in this case. As mentioned, the term "CC team" is meant to express the team that is handling the CC selection from the list provided. Given the fact that this CC team is almost no different from the VD team, it is evident that most respondents (96.6%) believe that the Division Heads should work together, with some supporting people if necessary, to handle both of the VD and CC issues suggested in the co-alignment model.

Overall, the respondents have expressed their concerns and consider that strategy implementation should be done in a collaborative way crossing different divisions. Division Heads naturally are responsible for the whole task. However, the respondents also indicate that, when working as a team, the team members should elect someone from the team to be the team leader to oversee the whole process and this leader is accountable to the Director.

These findings suggest that while designing the SDIS, one should remember that "multiple users with multiple accesses for multiple tasks" is a scenario that will happen in the real case. In other words, it implicated that the SDIS should include a user account system that supports the "multiple access" scenario. Because the way the respondents described the "who" issue implies that the responsibilities and tasks are likely to overlap for a small organization like a CVB, certainly an IS should have the flexibility and functionality for managing various types of users at the same time.

The findings that suggest strategy implementation is a cross-functional activity are supported by strategy literature where resource allocation is a core concept.

Furthermore, the findings about various types of users with multiple and overlapping responsibilities indeed are broadly discussed in the literature of MIS and Computer Science. Therefore, the implementation and development of a powerful database is required for the SDIS in order to enable the organization to stay competitive.

Information Flow-D (IF-D)

Starting point: Evaluation
End point: Evaluation

Refer to Figure 5.1 at the beginning of this chapter, the information flows, other than what have been discussed, shown in the whole alignment process, are in general expressed as Information Flow-D (IF-D). IF-D starts from the last box with a recursive design and ends at the last box in the information flow chart (Figure 5.1). The route for this information transmission can be dissected and studied in different segments, which include "the segment between CC and Evaluation" and "all segments in which the reverse flows occur." The return flow is for the purpose of control, review, and edit until the quality of data identified is good enough to show the causality of the boxes (i.e., FDC, VD, CM, P&S, and CC). Before then, the alignment process will still be in progress.

As discussed in the previous chapters, *Evaluation* is different from the construct *Firm Performance* defined in the co-alignment model. It is an important device for the process of building the co-alignment table as it is meant to increase the accuracy and validity of data gathered. Its function has been discussed in detail in the previous chapters and will not be redundantly stated again in this section. In general, with respect to *Evaluation*, the important issues related to the considerations for the design of the SDIS that need to be addressed in this section fit into three broad topics:

(1) Who should supervise and manage each step of the alignment process?

(2) Who should conduct the task of evaluation and why?

(3) When and how should the iterative flow start and end?

Each of the above topics was discussed in the interview and the results were reported in Table 4.5.1, 4.5.2, and 4.5.3 in Chapter 4. Based on the discussions so far, it is found that, with the help of the appropriate designed SDIS, the information flow can be facilitated and the co-alignment process can be improved. This means that the information flow, IF-A → IF-B → IF-C, is complete. However, even if the information can proceed forward from one point to another point, how the next person or team interprets the data transported from the previous step is still beyond what a system can do. In other words, the best way to improve the quality of data is still in a human's hand. For this reason, the device *Evaluation* was proposed and included in this research. The stage of evaluation is very important and the party involved in this task has the power to bring the whole alignment process to a closure and produce the final result (i.e., the co-alignment table). On the basis of the data collected, Table 5.7 summarizes the key results for IF-D.

Table 5.7 – "Who" & "When" for the Information Flow-D (IF-D)

% (N)	*"Who" & "When" for the Information Flow-D (IF-D)*
"Who" for IF-D on the issue of Supervising and Managing each step of the process:	
53.3% (8)	Director's Assistant(s)
26.7% (4)	Director and the someone who is assigned to work with him
13.3% (2)	The same CC or VD team that comprises Division Heads
6.7% (1)	A team comprises division representatives; not necessary Division Heads

"Who" for IF-D on the issue of Evaluating the data in each step of the process:

40.0% (6) Director and his staff, and the 3rd party who has/have the right expertise or the same interests

33.3% (5) Director an Director's Assistant(s) (No outsiders)

20.0% (3) Director and all teams that have been involved in the process

6.7% (1) The Team Leader and should perform the evaluation in each step

"When" for IF-D on the issue of Reviewing and Updating the data:

46.7% (7) Semiannually (as often as possible but at least semiannually)

26.7% (4) Quarterly (as often as possible but at least quarterly)

13.3% (2) Depending on how the CM works

13.3% (2) Annually (at least)

It is the researcher's observation that although they all agree with the design of evaluation, the respondents were very cautious about the first two topics (i.e., the "who" topic) above during the interview discussions. One of the possible explanations might be the way the questions were asked. Because these questions imply the issues of authority, power, and responsibility, most respondents replied to these questions with a quick answer in reference to people in the top positions and a short explanation. For example, 53% of the respondents believe that the Director's Assistant(s) should be supervising and managing each step of the co-alignment process. The same story goes to the issue of evaluating the data. Apparently, evaluation is like *inspection* in the respondent's eyes. It is like *the moment of truth* and should be done by someone who can either push the process forward or bring an end to the process. Interestingly, in the case of evaluation, 40% agree to hire a 3rd party from outside of the organization to work with someone in the executive office.

For the review and update question, after the whole information flow is complete, the re-examination of the data should be done twice per year (semiannually; 46.7%) or quarterly (26.7%). These responses were given under the understanding that although "as often as possible" is the better way to keep data fresh enough to reflect the dynamic environment, in reality it is unlikely to happen (see Table 4.5.3). In addition, some respondents also recognized that the timing for the review and update to occur should depend on how well the CMs pan out.

Overall, the findings derived from the discussions of the IF-D can be summarized in one key point: finding the right the person(s) to oversee the information flow (i.e., IF-D). The "who" issue is the most important issue simply because (1) machines cannot think in the way a human does and (2) the person in charge of the evaluation will be in the top position and has the power to determine what to do next.

From the perspective of designing the SDIS, the user account system again is a critical issue as discussed in the earlier sections. Given the fact that outsiders might be involved in the IF-D (43%), the system needs to allow an external access from outside of the organization. If this is true then when designing the SDIS the system needs to be able to handle several technical issues that are commonly seen in today's network systems, such as remote and/or local access control, data and system protection, data confidentiality, log management (for tracking), data transportation prototype for remote access, etc. The six-level system design proposed in Figure 2.4 in Chapter 2 seems to be able to handle these issues as it inherits the design and concept of the long-standing international standard OSI Reference Model (1978, 1984).

As for the timing design for data review and updating in the system, as long as the SDIS is fully functioning and works in the way the organization desires, this issue becomes minor. A stable system with a right database management will support any data update as frequent as possible at any time. In other words, "finding the right people with

the right expertise in the right position" is more important than "thinking about when should the data be updated." This statement can also be used to highlight the discussions for the IF-D since the major aspects regarding the evaluation are more on the human side than on the technical side.

Conclusions

This section draws conclusions for this research. It brings up the dimensions along with the key issues, revised framework, recommendations, and propositions as the considerations for the design of the SDIS. In the future, if a system designer can adopt these considerations to design the SDIS, then the information flows associated with the co-alignment model will be improved so will the utility of the use of the model. This section also discusses the contribution of this research and the future study.

Dimensions

For discussion purposes, the entire information flow of the alignment process was dissected into four segments (IF-A, IF-B, IF-C, and IF-D) representing the interrelationships between each two points/steps in the process. Through the analysis of the data collected in the interview, the information flows associated with the co-alignment model have been considered feasible. This section is an attempt to uncover the dimensions for further developing the recommendations and propositions for the SDIS design and the directions for the future study.

The results of the data collected raised seven key issues that establish the linkages to the research questions (see Table 4.6 & 4.7) as well as to the major elements (i.e., FDC, VD, CM, P&S, and CC) of the co-alignment model. Therefore, if the interrelationships among the data, the co-alignment model, the information flows, and the

seven key issues are discovered, then the dimensions that outline the major concerns as a part of the considerations for the design of the SDIS can be achieved.

Table 5.8 below is the matrix that presents the possible dimensions that recapitulate the major elements for the design of the SDIS. The seven key issues are reorganized into the five dimensions – WHAT, WHO, HOW, WHY and WHEN. Each of these dimensions coincides with the information flows associated with the co-alignment model as well as with the corresponding data gathered in the interview. The matrix is created in a very similar format as that of Table 4.7, the summary table that reported the results of the data in Chapter 4.

Table 5.8 – Matrix of the Dimensions for the Design of the SDIS

Dimensions & The Seven Key Issues	***The Co-alignment model & Information Flows***			
	Environment Event	***Strategy Choice***	***Firm Structure***	***Evaluation***
	IF-A	***IF-B***	***IF-C***	***IF-D***
	Corresponding Data: Part I	*Corresponding Data: Part I, Part II. & Part III*	*Corresponding Data : Part II & Part III*	*Corresponding Data Part IV*
WHAT (1) The data & information flows associated with the co-alignment model	• FDC & VD • FDC → VD	• VD & CM & CC • [VD] → CM → P&S	• CM & CC • [CM → P&S] → CC	• Evaluation Results (e.g., comments & suggestions) • Return and/or Iterative Flow

WHO (2) Knowing who should be assigned for each task (3) Knowing who should be assigned for task supervision and be responsible	• Division Heads work as a team • A project leader elected by the team of the division heads should supervise the progress and be responsible for the result	• Not sure because this is completed in the workshop but it should be done by a team as well • An administrative team led by the Director	• Division Heads and the Director and Someone who knows the CM best • The Director or the Director's assistant should be in charge of the whole process	• The Director or the Director's assistant • The 3rd party from outside, such as the consultants, the city managers, people in private sectors, experts in the specific areas, etc.
HOW (4) Understand what are the challenges (5) Provide solutions to these challenges	• Terminology used should be simple and understandable; avoid the academic language • Descriptions and Definitions of FDC • Examples or Scenarios of how would a FDC link to the VDs; the perspective for the VDs • Regular discussion of the co-alignment model • A list of FDC for selection • Information sources for FDC • Definition of VD	• The implementation is an issue closely linking to the management. How people work together is more important. The organizational structure is the key for the implementation.	• The selection is good but should also allow users to input the new CC. • Research people should help establish the list of CC. • Be more specific on the language used; avoid the general terms • Definition of CC • The expectation of the CC. What do we expect to see when these CC's are used for the specific CM.	• The party who conducts the evaluation task is the one who starts or ends the iterative process and is responsible for the quality of the data obtained in each step of the co-alignment process. • Budget is an issue if bringing in the consultants and experts to the team for this task • Time-line is critical for the evaluation process
WHY (6) Understanding the additional information, other than those in the issue (1), needed to be included in the system	• The gap between academia and industry • Hard to grasp the co-alignment model	• Need various knowledge, expertise, and experiences from different kinds of divisions. You need to have sufficient support from everyone.	• The environment changes and the organization should always know what kinds of new CCs should be added.	• The iterative process can increase the accuracy and validity of the data

WHEN (7) The timing and time-line of the task assigned	• Depends on the change of the environment	• Whenever the Director thinks there is a need for a new strategy plan	• N/A • This should be a follow-up process.	• Quarterly or Semiannually; Sometimes it's just pure competitive pressure

The seven key issues identified from the data results are reorganized into the five dimensions as shown in the table above. These dimensions comprise these key issues with respect to the constructs of the co-alignment model and the model's information flows. The first three rows on top of the table demonstrate how the model's constructs and their concepts are discussed through their corresponding segments of information flows and corresponding parts of interview data.

The data results outlined in each cell of the table are an attempt to show the interrelationships among the co-alignment model, the information flows, and relative key issues. The statements displayed in Table 5.8 indeed are the sources for developing the ideas for the design of the SDIS as discussed in the above sections. They are also the foundation for recommendation and proposition development.

Revised Research Framework

The discussions so far focus on the analysis of the data results and attempt to deduce some findings for the development of the propositions, which will be a part of considerations for the design of the SDIS. The five dimensions and key issues can be viewed as a summary that outlines the relationships between the co-alignment model and the interview data. Since the proposed research framework (see Figure 2.3) is constructed using the co-alignment model and its information flows, the matrix of dimensions above (Table 5.8) offers some criterion to inspect the coordination strategy framework again.

The coordination strategy framework (see Figure 2.3) is an integrated setup that synthesizes the co-alignment model and the SDIS. If such a framework can be obtained, then the utility of the use of the co-alignment model can be improved and the more effective way for an organization to conduct strategic management can be found. On the basis of the analysis and discussions above, this section will look into the research framework again with necessary modifications accordingly.

In order to demonstrate the relationship between the co-alignment model's constructs and its information flows and the findings obtained for the design of the SDIS, Table 5.9 summarizes the major findings derived from the data analysis that have been discussed so far in this chapter. The technical issues were not discussed directly in the interview but they were expressed in the respondents' comments. There are several books giving overview of the different methods of qualitative analysis to deduce the meanings from the interview data (Miles & Huberman, 1994; Silverman, 1993; Tesch, 1990; Wolcott, 1990, 1994; Steinar, 1996). According to the authors, the form of the results will mainly be in words in meaning condensation, interpretation, and narrative analyses. The researcher should do his/her best to read into these forms. In addition to the researcher's background and capability, in order to explore the true meanings beyond these forms, the prior research that addressed the similar topics becomes helpful. Therefore, while listing the findings deduced from the analysis of the data gathered, Table 5.9 below also lists the literature support in the fields of MIS and Computer Science (CS) with respect to the design of the SDIS.

Table 5.9 – Major Interpretations Deduced for the Design of the SDIS

<table>
<tr><th>Coordination Strategy Framework</th><th>Interpretations Deduced to be Taken into Consideration for the SDIS Design</th><th colspan="2">Relative Key Literature in MIS & Computer Science(CS)</th></tr>
<tr><td rowspan="2">Environment Event

Data: FDC & VD
Information flow: IF-A</td><td rowspan="2">A database to store FDC
A database to store VD's
Direct Internet connection to the information sources
Security features for the Internet connection
A place to store other environmental information
A place to store additional & supportive information
Multiple access to the system</td><td>MIS</td><td>CS</td></tr>
<tr><td rowspan="4"><u>Interface:</u>

Baets, (1996), Broadbent & Weill, (1991), Nath (1989), Shaw (1999)*

<u>Security:</u>

Cheung & Lee (2001), Sabherwal & King (1995)*, Furnell & Karweni (1999)*, Bélanger (2002)*

<u>Teamwork:</u>

Baets (1996), Kilmann (1995), Broadbent & Weill (1991), Nath (1989)

<u>Database & Assets:</u>

Boynton et al. (1994), Sabherwal (1999), Nonaka (1991, 1994), Spender (1994), Grant (1996), Amit & Schoemaker (1993)*, Negroponte (1995)*, Cortada (1996), Tapscott (1996)*, Clemons et al. (1993), Rayport & Sviokla (1995)

<u>Network:</u>

OSI Reference Model (1978, 1984), Baden-Fuller & Volberda (2001)*, Kanter (1994)*</td><td rowspan="4"><u>Database design:</u>*

Peckham et al. (1995), Teorey & Fry (1980), Tuttle (2002), Derr et al. (1994), Teorey et al. (1986), Katz (1990), Hull & King (1987), Pons & Aljifri (2003)

<u>System design:</u>*

Mano et al. (1986), Feghhi et al. (1991), Tsang & Brissaud (1989), Lennard et al. (2000), Keutzer et al. (2000), Hemani et al. (2000)

<u>Interface design:</u>*

Rowson & Sangiovanni-Vincentelli (1997), Passerone (1998)</td></tr>
<tr><td>Strategy Choice

Data: CM and P&S
Information flow: IF-B</td><td>A database to store CM and its P&S
A place to store additional & supportive information
Multiple access for multiple division users</td></tr>
<tr><td>Firm Structure

Data: CC
Information flow: IF-C</td><td>A database to store CC
A place to store additional & supportive information
Multiple access for multiple division users
"List" design as the friendly system interface
Synchronization function to handle multiple users with multiple accesses for multiple tasks</td></tr>
<tr><td>Other: Evaluation

Data: Eva. results
Information flow: IF-D</td><td>A database to store evaluation results and comments
Remote access for outsiders to the system
Networking</td></tr>
</table>

** The literature not included in Chapter 2*

As discussed, Table 5.9 above presents the major findings deduced from the interview data (Miles & Huberman, 1994; Silverman, 1993; Tesch, 1990; Wolcott, 1990, 1994; Steinar, 1996). They should be taken into consideration for the system design. Because these findings are more related to the technical issues, they were not explicitly expressed by the respondents directly in the interview. However, they are revealed in their responses and are supported by the literature presented.

Other than these system-designing issues, some other topics are also implied and required for strategic planning, once the SDIS is functioning. These topics are more close to the management domain and are important for an IS to operate effectively. The next few sections will bring all of these technical and managerial topics together to demonstrate an overall view as to what the coordination strategic framework should look like.

For example, when an organization adopts the co-alignment model, it is conducting *strategic management* in the hopes of beating competition and gaining competitive advantage in the future. As suggested by the co-alignment model, environmental scanning is necessary, as the way the respondents did in the strategic workshop, even if this was not performed in the interview. The information gathered from this performance is indeed the data that starts the entire information flow of the alignment process. Obviously it is necessary for strategic planning.

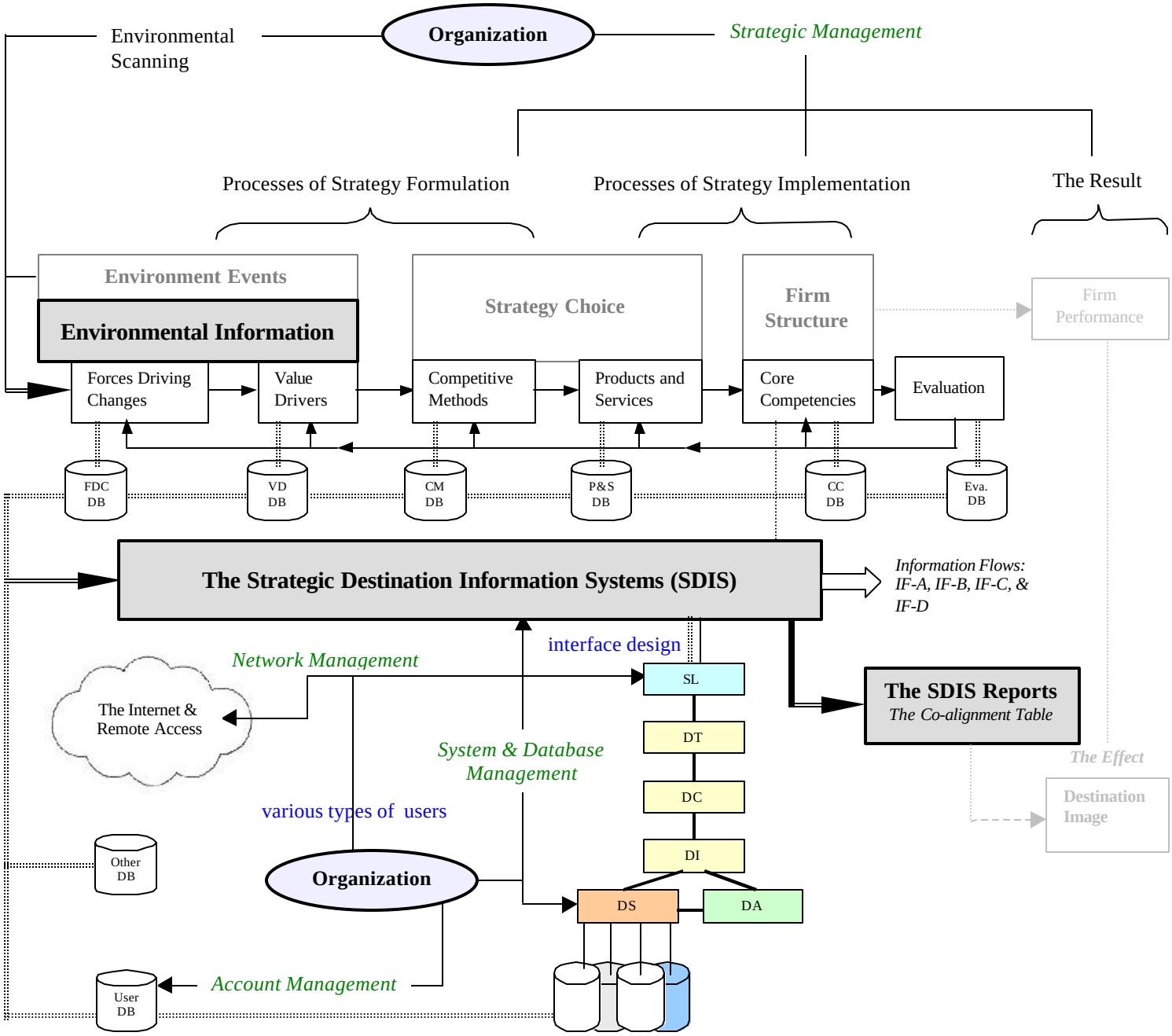
When designing the SDIS, as discussed in previous chapters, taking care of the information flow in the alignment process is the way to improve the utility of the use of the co-alignment model. This idea has been well addressed up to this point and the feasibility for the information to go forward from one step to another step has been tested in the interview and well discussed in the earlier sections.

One has to recognize the fact that once using an IS for management (any kind of management), the organization needs to engage in *system management* to ensure that the system operates in the best way. The data results indicated that multiple users would be involved in the usage of the IS for various tasks in the process of strategic management. Therefore, managing and setting up appropriate accounts for system users are important. The organization needs to have the capability for system *account management*.

In addition, these tasks indeed are about information processing that deals with the data issues, such as data collection, editing, access, etc. and thus *database management* becomes critical for an organization to effectively handle various types of data. Once the above key aspects are put to work, the whole organization is having an IS that links various people in different places at any time for the specific task assigned. Hence, the *network management* for the Intranet and Internet becomes significant.

These technical and managerial aspects – *strategic management*, *system management, database management*, *account management*, and *network management* – are drawn from the findings of the data analysis and are required in order for the SDIS to work effectively for strategic planning. Therefore, the proposed coordination strategic framework (see Figure 2.3) is revised to cover all of these five aspects in the figure below (Figure 5.2).

Figure 5.2: Revised Coordination Strategy Framework



The " ┈┈┈ " denotes the database (DB) connections. The " ⟶ " associated with "Organization" and the aspects denoted in *Italic* indicate what topics are required for the organization in order to implement this framework. Other denotations are the same as those presented in Fig. 2.3 & Fig. 2.4 in Chapter 2.

Figure 5.2 above illustrates the overall view of the revised coordination strategic framework. Clearly, in order to achieve the state of "coordination", the co-alignment model and the SDIS need to be integrated with each other. The five aspects written in Italic are the key points to synthesize them as discussed earlier. The following sections will discuss this revised framework and develop the propositions accordingly as a part of the conclusions of this study. The dimension matrix (Table 5.8) and the major interpretations for the design of the SDIS listed in Table 5.9 will be used together along with the discussions as well.

Recommendations

The *strategic management* aspect, including environmental scanning, is well discussed in the strategy literature. Since the co-alignment model is the one adopted for strategic management, the relative topics in this aspect are defined by the model accordingly. These topics are shown in the dimension *WHAT*, the first dimension in the matrix, which defines the types of data and information flows associated with the co-alignment model. There are five types of data (FDC, VD, CM, P&S, and CC) and four types of information flows (IF-A, IF-B, IF-C, and IF-D) included in this dimension. As discussed, these types of data and information flows and their relationships are actually derived from the concepts suggested in the co-alignment model. Although the information flow per se is not discussed in the model, the co-alignment model indeed implies the way data moves from one construct to the next construct.

For instance, in theory construction, each construct defined in a model should have the interrelationship(s) with other construct(s) and this interrelationship can be denoted as a one-way or bilateral relation. If it is a one-way association, it represents a clear "antecedent – consequence" relationship. In other words, it defines the "before – after" relationship of two constructs.

The interrelationship defined between each two constructs in the co-alignment model is very clear and is a one-way relation as the model emphasizes the causality between two constructs. Thus, the "before – after" relationship between constructs or between the construct's elements is also very clear. As the data goes forward from one step to the next step, this "before – after" notion indeed illustrates the "starting point – end point" and the "direction" for the data to move. This is why information flow is implied in the co-alignment model and how it occurs. According to the model, conducting environmental scanning is necessary and is the first task for the organization to gather the data (FDC & VD) and start the information flow. Obviously, the organization needs to have the capability to do so in order to use any IS with the co-alignment model for strategic management.

As the SDIS is to improve the utility of the use of the co-alignment model, dealing with the types of data and information flows associated with the model are necessary. The definitions and discussions about these five types of data and four types of information flows have been reported in the previous sections and chapters. Theoretically, if the data is accurate, the entire information flow in and for the alignment process will be smooth and fast – because each of them is logically built upon each other as defined in the co-alignment model – and the organization's strategic planning will be more effective.

- **Recommendation 1:** The SDIS users have to have a good grasp on the co-alignment model, so that the data quality can be good enough to facilitate the information flows in the alignment process.

- **Recommendation 2:** The organization should develop a keen sense about its dynamic environment where it operates. Someone needs to be in charge of conducting environmental scanning in order to react to the changes in the environment.

The coordination strategy framework synthesizes the concepts in strategic management and IS. In addition to what have been discussed above, in order for the SDIS to function properly, the organization needs to involve in other management aspects related to the technical issues, such as *system & database management*, *account management*, and *network management* as shown in the framework. These aspects are indeed the topics defined in the rest of dimensions in the matrix including *WHO, HOW, WHY,* and *WHEN*.

WHO is the second dimension that defines the user's tasks and responsibilities. The task in each step of the co-alignment process is huge and complex. Finding the right person to do the job is always very important and challenging. In general, the right person should have a strategic mind with the necessary knowledge, experiences, and expertise. Since there are five types of data (FDC, VD, CM, P&S, and CC), theoretically there are at least five tasks – each task is to identify the respective data – needed to be done in order to complete the entire co-alignment process.

The co-alignment model does not specify the party or the number of people required for performing each of the tasks and thus "the number of people and who they are to complete the whole alignment process" is not specifically defined. However, according to the results returned, most respondents think that these tasks should be done in a collaborative manner by the same or similar team. They believe that teamwork is necessary for each of the tasks and the team members should be the division heads who possess different expertise and are accountable for different businesses. Most suggest that the team must elect a team leader to manage and oversee the working progress and to be held accountable for the result.

This teamwork concept as discussed earlier indeed is supported by an MIS scholar who has found that teamwork is required for an organization to develop a holistic approach for business development (Kilmann, 1995). This concept somehow is also

consistent with some strategy literature in the filed of RBV where scholars have suggested that knowledge creation should result from teamwork and integration processes (Nonaka, 1991, 1994; Spender, 1994; Grant, 1996).

If teamwork is required, given the consideration of the size of the organization (Appendix 6), then it is likely that each of division head will have to handle more than one task. This suggests that the SDIS needs to be able to handle multiple tasks conducted by different people at various locations. It also indicates that the user's information needs to be stored in the system. The user database denoted as "User
the framework with the connection to the system's main database in the level of DS (see Figure 2.4 and 5.2). Only when the right team is in position can the alignment process start and complete.

- **Recommendation 3:** Teamwork is required for the whole alignment process. The team members should be across divisions and the team leader elected by the team is accountable for the result.

- **Recommendation 4:** If various types of users are involved in the system, the SDIS should have an account system (which can be viewed as a sub-system) that enables the organization to setup user's accounts and privileges for multiple tasks. The organization should have the capability to manage the user's system accounts.

In relation to the "who" issue, one of the important tasks is to evaluate the quality of the data identified in each step. The importance of evaluation was addressed earlier and it is different from the method suggested in the co-alignment model that uses cash flow streams as the evaluation criteria (see Chapter 2). Given the importance and the purpose of having this task, the person(s) handling it should be carefully selected as well.

According to the respondents' comments, the evaluation should be conducted by other people outside of the organization (see Table 4.5.2).

- **Recommendation 5:** The evaluation process needs to be included in the alignment process and should be performed by the 3rd party from outside of the organization.

If the outsiders are involved in the system, it is likely that these people will not be physically at present all the time in the organization. Therefore, how these people access the system remotely becomes an important issue for the system design. This issue indeed includes many other significant topics discussed in *database management* and *network management* and might be out of the research scope of this study. However, as suggested in Chapter 2, the SDIS will adopt the concept of the OSI Reference Model (1978, 1984) with a six-level design (see Figure 2.4) and is expected to take care of this aspect.

- **Recommendation 6:** If outsiders are involved, the SDIS should support the remote access with proper security function to protect the data and the system.

Another major concern reported in the data collected is the challenges encountered by the respondents. Understanding the co-alignment model is *a must* as stated in the Recommendation 1 but the respondents also reported that the terminology used to compose the statements is hard to understand and if necessary additional information should be provided to help conduct the tasks. This issue is closer to the aspect of *database management* as additional information will not appear from nowhere. Apparently, the system needs to be able to store all necessary kinds of data, including the required types of data defined in the *WHAT* dimension earlier.

These data will be stored in the system's databases and can be provided in the format of "list" to make the users perform their tasks easier as expressed by the

respondents. *Database management & design* is a complicated issue discussed in Computer Science (Teorey & Fry, 1980; Derr et al., 1994; Teorey et al., 1986; Hull & King, 1987; Katz, 1990; Peckham et al., 1995; Tuttle, 2002; Pons & Aljifri, 2003) and is necessary for the system design. There are many ways to design a complex database and this topic is beyond the research scope of this study but regardless, various types of databases seem to be required as suggested in the framework and is embedded in the system design in the fifth level (see Figure 2.4).

- **Recommendation 7:** Because data is the major element for the alignment process, the organization should have the capability to identify and collect *all* necessary kinds of data and the SDIS should have the places (i.e., databases) to store them appropriately.

Overall, the challenges and their solutions are described in the dimension *HOW*. The solutions are the key for the alignment process to progress effectively as they help facilitate the information flows. In other words, when the users are working with the SDIS, if the system can provide help to reduce the challenges, the users can carry out their tasks in a better way and the alignment process can be completed in a more effective manner. As a matter of fact, this is the best state the coordination framework should be able to achieve. As the respondents are not in the area of computer engineering, they were not asked to express their ideas about the system design. However, according to their responses, some challenges can be taken care of without any technical expertise.

- **Recommendation 8:** The wording used to describe the data stored/presented needs to be clear and easy to understand.

- **Recommendation 9:** When the system users are not familiar with the concepts or statements in the alignment process, they should be able to receive a “help” from the system. The SDIS should store all necessary kinds of

supportive information, such as the concepts and definitions related to the co-alignment model, examples, explanations, etc., and make them easily to be retrieved by the users during the whole alignment process.

- **Recommendation 10:** If the supportive information is offered on other web sites, such as the information sources, the system needs to have a direct connection to the Internet in a secure mode.

Once the alignment process is complete, the data should be stored in the system. In order to ensure the validity of the data, the organization needs to go back to review the data periodically. This task is related to the functionality of update and edit of the system with the focus on *system & database management*. This issue is presented in the last dimension *WHEN*, which deals with the time-line and timing for data review and update. If the recommendations above are sustained, this topic becomes simple and clear as the system can allow the users to retrieve the data for review and update at any time from any location. If this is the case, then the data will always be kept in good shape and the databases storing the data become important assets to the organization (Wernerfelt, 1984; Rumelt, 1984; Barney, 1986; Amit & Schoemaker, 1993; Rayport & Sviokla, 1995). As a matter of fact, some scholars termed today's economy as "digital economy" also recognized that the "digital data" is valuable and demands more attention from management (Clemons et al., 1993; Negroponte, 1995; Cortada, 1996; Tapscott, 1996;).

- **Recommendation 11:** If the entire information flow associated with the co-alignment model is complete, various types of data will be successfully stored in the system. The organization is building up its databases through every completion of information flow, i.e., every alignment process, each time.

The above recommendations are developed via the findings deduced from the results of the data gathered. The five aspects in management – *strategic management*,

system management, *database management*, *account management*, and *network management* – were not explicitly discussed in the interview but they were expressed by the respondents in their comments as the analysis showed in the above sections. These recommendations are clearly correlated to each other and together construct a complex strategy framework. Because they are all linked with the SDIS, they are expected to work together as long as the system is functioning in the way the organization desires. When it comes to this state, the coordination strategy framework that synthesizes the co-alignment model and IS will be achieved.

Contribution of the Research

Given the fact that this is an exploratory research effort, the contribution of this study is seen in *the dimension matrix* (Table 5.8), *the revised coordination framework* (Figure 5.2), and *the recommendations* above. They delineate some important topics and provide the evidence for some issues that have or have not been discussed in the literature of various fields.

First of all, with respect to the co-alignment model, this study used a different approach to study the model's performance. It identified and thoroughly discussed the information flows associated with the co-alignment model and used information flow to link with the literature studies in other fields. The study found that information and its quality is critical for strategic management. This aspect is consistent with the discussions about environmental information in the strategy literature (Chandler, 1962; Thompson, 1967; Andrews, 1980; Schaffer, 1987; Hofer & Schendel, 1978; Miles & Snow, 1978; Mintzberg, 1978; Porter, 1980; Leontiades, 1982; Bower, 1982; Intermediary & Prescott, 1990; Murthy, 1994; Olsen et al., 1992; Fuchs et al., 2000). The different perspective offered by this research is that the study illustrated that the quality of the information can likely be improved if the way the information transports can be managed and controlled, and thus improve the process of strategic management.

Secondly, the co-alignment model generally suggests that "managers" are responsible for strategic management but does not define "who should be in charge of what" in the alignment process. As this study used information flows to analyze the model and dissected it into different segments and found that the "who doing what in what step" is very important for the completion of the alignment process. It suggested that "teamwork" is the best format to implement the co-alignment model as the tasks defined in the model are complicated and require great mind processing to collect and analyze various types of information (Olsen et al., 1998).

Thirdly, because the study used information flow to analyze the co-alignment model and suggest that managing the information flow associated with the model carefully can improve the alignment process for strategic planning, the IS was brought into the study for the purpose of handling the information flow. The study found that using "list and selection" as the interface to design the IS is a better choice, because this format is simple and easy for users to operate and in turn it can smooth the interaction between humans and systems. This finding is consistent with the MIS literature where the scholars address the fact that the relationships between the organization and the system can enable a more synergistic integration of IS and business knowledge (Boynton et al., 1994; Sabherwal, 1999). However, it also found that although the "list and selection" is a better interface design to encourage the users to operate the system, it does not necessarily improve the accuracy of data provided (see Table 4.4's and Table 5.5 and their discussions). This separates "the ease of using the system" from "the quality of the data" stored in the system's databases. Data quality is a well discussed topic in both the literature of MIS (Kilmann, 1995; Furnell & Karweni, 1999) and Computer Science (Teorey & Fry, 1980; Derr et al., 1994; Teorey et al., 1986; Hull & King, 1987; Katz, 1990; Peckham et al., 1995; Tuttle, 2002; Pons & Aljifri, 2003) and is believed to be an important issue for an organization to compete in today's information world.

Organizations should pay attention to this aspect and realize that a friendly system can please the users but it might also have some drawbacks.

Finally, as this study adopts the concept of the co-alignment model to address the importance of information for strategy formulation and implementation for an organization, it is also an attempt to improve the utility of the use of the co-alignment model by using an IS. The study found a way for IT to work with a strategy model in the process of strategic management. This combination is meant to synthesize the co-alignment model with IT applications. As the co-alignment model has been recognized and adopted in the field of hospitality and tourism (see Table 2.2) and the SDIS proposed in the research does not alter any setting of the model, the reliability and validity of the result of the coordination framework should be sustainable. This means that the research framework has demonstrated that it is possible for a strategy model and an IS to effectively work together. In other words, IT can be integrated into the process of co-alignment for strategic management.

The topic of implementing IT for strategic planning is commonly studied in the MIS literature (Wiseman & MacMillan, 1984; Weill & Olsen, 1989; Floyd & wooldridge, 1990; Chan & Huff, 1993; Brown et al., 1995; Choe, 2003) but was rarely seen in the hospitality and tourism management. This study demonstrated the way an IT application can be used directly in the process of strategic management, not via the increase of productivity or the saving of business costs to show IT's strategic role. In other words, the study gives "strategic IT" a different meaning and hopefully the term "strategic IT" can thus be illustrated and be studied more in the field of hospitality and tourism.

Overall, this study is an attempt to investigate importance considerations for the design of an IS design that can improve the utility of the use of the co-alignment model and it has found a way to design such a system. This system is called SDIS (Strategic

Destination Information System) as it is expected to work with the co-alignment model seamlessly for the purpose of strategic management for DMO's. The study proposed a coordination strategy framework (Figure 5.2) at the end to show this synthesis. Table 5.10 offers the final remarks of this study in relation to its research question and objectives.

Table 5.10 – Final Remarks of the Research

Research Question and Objectives	***Remark***	***Key References***
Research Question *(How should an IS be designed to improve the information flows associated with the co-alignment model?)*		
(1) What are the essential elements (i.e. information) in or associated with the co-alignment model that need to be addressed by the IS for strategic management?	Answered	System design (Figure 2.4) and Revised Coordination Strategy Framework (Figure 5.2); also see the key issues identified (Table 4.6) and the Recommendations
(2) How does the IS work with the alignment process suggested by the co-alignment model?		
Research Objective *(Investigate important considerations for the design of an IS that can improve the utility of the use of the co-alignment model)*		
(1) An IS should be utilized to help management identify forces driving change, value drivers, competitive methods, products and services, and core competencies.	Achieved	Found the feasibility to manage and control the information flows associated with the co-alignment model to achieve this objective (Figure 3.2, 5.1, and 5.2); also see the dimension matrix (Table 5.8)
(2) The integration of the co-alignment model and an IS should present the synergy or coordination that makes strategic management more effective without interrupting the sequential information flows of the co-alignment model and achieve the co-alignment table.	Achieved	Revised Coordination Strategy Framework (Figure 5.2) and the Recommendations

Propositions

Based upon the recommendations, contributions, and all other analyses presented, this section lists some propositions as a part of the conclusions of this study:

- **Proposition 1:** While utilizing an IS for strategic management purposes, the efficiency of using such a system depends on the level of knowledge and experience the users possess with respect to strategic management.

- **Proposition 2:** When adopting the co-alignment model for strategic management purposes, the understanding of the causal relationships among the model's constructs will depend upon the quality of information/data and how it is organized for use in decision making.

- **Proposition 3:** When adopting the co-alignment model, teamwork is preferred to identify the major information (e.g., FDC, VD, CM, P&S, and CC) defined in the model. A team leader should be elected by the team to be accountable for the results of the information identified.

- **Proposition 4:** The quality of the information/data can likely be improved if the way the information/data transmits can be managed and controlled, and thus the process of strategic management can be improved as well.

- **Proposition 5:** Effective database management is associated with organizations that are able to successfully gain competitive advantage. Organizations that employ database management correctly are more likely to achieve competitive advantage than those that don't.

- **Proposition 6:** Knowing "who is doing what in what step" is associated with effective information flow and successful completion of the co-alignment process.

- **Proposition 7:** Addressing both the managerial and technical issues underlying the five aspects – *strategic management, database management, system management, account management, and network management* is associated with successful adoption of the coordination strategy framework.

- **Proposition 8:** Implementation of the coordination strategy framework portrays the integration of a strategic model and an IT application for the purposes of strategic management as well as illustrates the meaning of "strategic IT".

- **Proposition 9:** Effective implementation of the coordination strategy framework over time is associated with enhanced system databases and developed and accumulated organizational resources and capabilities.

- **Proposition 10:** An effective implementation of the coordination strategy framework is likely to be embedded in the organizational structure; is difficult to duplicate, transfer, and replace; thus allowing the organization to gain and sustain competitive advantage.

Future Study

As one of the findings suggested, selecting the right person(s) to conduct the tasks defined in each step of the co-alignment process is very important. The coordination strategy framework indicated that the alignment process starts with the environmental information obtained via environmental scanning suggested by the co-alignment model. In other words, having someone to conduct environmental scanning is necessary. This person is termed "boundary spanner" in the strategy literature (Connolly, 1999). Further

study might be necessary as to the formal definition and position of this role in the organizational structure, how to improve the process of environmental scanning, and the quality evaluation of the information sources.

This research found that having the third party from outside of the organization to perform the data evaluation is the most effective approach. However, who are these people? Are they consulting firms, specific group of people, or a group of stakeholders? Research with respect to the search of these outsiders can articulate who they are and further identify their relationships with the organization. These relationships might provide significant perspectives about investment projects undergoing in the tourist destination.

Moreover, the research suggested that teamwork is required to conduct the tasks specified in each step of the co-alignment model. Will this hold for a bigger organization? If not, how would that work? If yes, can the framework proposed offer sufficient solutions for that? Will the story be the same for other business sectors in the hospitality and tourism industry, such as hotels, restaurants, airlines, etc.? Future studies need to address these issues more.

The coordination strategy framework include five important management prospects (Figure 5.2) in both strategic and technical aspects. While the strategic management issues are well defined in the co-alignment model, each of the technical issues deserves further study. For example, with respect to the data warehousing / mining, "how an organization can further utilize this concept in a more effective way to build a knowledge network (Nonaka, 1991, 1994; Kanter, 1994; Spender, 1994; Grant, 1996; Baden-Fuller & Volberda, 2001)" will be significant for the hospitality and tourism businesses. In addition, since this is an exploratory study to present the synthesis of IT and strategy, perhaps the concept of "strategic IT" can be further studied and theorized.

Hopefully more IT studies in the field of hospitality and tourism can focus more on the integration issues.

Limitations

One of the drawbacks of using case study for research is that it might not be able to understand the underlying phenomenon and formulate a theory that can be generalized to other and similar cases. Fortunately, this downside does not affect this research greatly because the purpose of this study was not to seek the generalizability of the findings but to take the first step of developing a model or a framework that could be used to better understand the underlying phenomenon in more than one situation, as well as to offer a foundation for further research. This section will discuss some of other limitations that existed during the research.

This study used interview technique to collect the research data. However, it is an extension of the yearlong strategic workshop and some steps that were completed in the workshop were skipped. These skipped parts might influence the results in some potential ways. For example, the issue of environmental scanning was not tested and the FDC was assumed understandable and clear to the interviewees but the results were not as good as expected. The poor results prevent the researcher from obtaining the two sets of information flows for the two selected CM's. This affected the approach of data analysis because the data quality cannot be fully analyzed and compared. The similar story goes to the data collection about CC's. Because the CC's were provided in the list and the respondents can easily select what they believed to be correct from the list, the respondents tended to overlook the need for entering/providing new text for new CC's. This might potentially impact the true results in the real world.

In addition, if the interview contents recorded can be listened and typed into notes by another person other than the researcher, it would help increase the data reliability. Although the researcher had shown the repetitiveness of his efforts in reviewing the tapes and notes to remedy this weakness, it would be more convincing to have a different person review the interview data taped.

Another possible limitation resulted from the change of the interview format in some of the interview sections. As discussed in Chapter 4, because the respondents met in a group that might have enforced each other's opinions and shaded his or her true answers and thus might have had a slight impact on the reliability and validity of the data. Although the researcher has made efforts to remedy this shortcomings and was able to gather individuals' answers as much as possible as discussed in Chapter 4, it is impossible to read into one's mind and discover what exactly he or she thinks.

Moreover, this study relies on the participants to have great understanding about the co-alignment model first. The challenge was immense when it came to identifying the specific information for the alignment process. This prerequisite also limits the number of research objects to be only one (i.e., the single case study) as no other organizations have been practicing the co-alignment model and are more suitable for the research at the time this study conducted.

From the perspective of strategic management, the integration of the co-alignment model and the SDIS should help achieve and sustain competitive advantage. Because this is an exploratory study, even if the coordination strategy framework obtained is feasible and demonstrates that the synthesis of the co-alignment model and SDIS can strengthen the process of strategic management, the true value(s) of the framework (that might help achieve and sustain competitive advantage) cannot be seen right away.

Another limitation comes form the shortcomings of qualitative research. A qualitative research might require spending weeks or months of time with the people who are the research objects for observations. Given the time constrained as a part of the reality in business, the interview sections had to complete in two days. Fortunately, because this research is an extension of the yearlong strategic workshop, the impact resulted from this limitation is minor.

In addition, some limitations might come from human's bias from both the respondents and the researcher. Although all efforts were made to filter out these types of biases, it still leaves areas of possible misinterpretation, misrepresentation, or misevaluation of the facts.

Summary

This study is an attempt to investigate important considerations for the design of an IS to improve the utility of the use of the co-alignment model so that an organization can formulate and implement its strategy more effectively when it adopts the model. The reason for the co-alignment model to be adopted is simply because it is an appropriate one. The contemporary phenomena resulted from the dynamic and complicated environment, which was as well reinforced by the phenomena, was discussed. The organizations' reactions or adaptations to the environment complicates the business environment even more and thus, with the support of the literature, it is believed that the co-alignment model might be the most suitable one for strategic management in order for organizations to deal with such a complicated situation.

In addition, this study took a step further to illustrate that there is a way for a strategy model and an IS to work together once such an IS can be constructed appropriately in the future. As no other prior research was found in the field of hospitality and tourism in investigating the similar topic, the challenge was great. The

study tackled this challenge from the perspective of information flows associated with the co-alignment model. An appropriate IS needs to be designed to not only take care of the information flows but also work in concert with the co-alignment model for strategy formulation and implementation. Such an IS termed SDIS was suggested and the important considerations for constructing this system were discussed and recommended (see Appendix 7 for the overall view). All together, these are the important considerations that should not be neglected when designing the future SDIS.

Because of the feasibility of designing the SDIS is illustrated, this study also suggested, once the system is constructed a coordination strategy framework can be obtained as well. This framework synthesizes the co-alignment model and an IS and for that, when an organization adopts this framework, not only can it effectively strengthen strategic management in response to the complicated environment but also gives new meaning to strategic IT.

Bibliography

Abernathy, W.J. & Utterback, J.M. (1978). Patterns of industrial innovation. *Technology Review, 80* (7), 40-47.

Ackoff, R.L. (1970). *A concept of corporate planning*. New York, NY: John Wiley and Sons, Inc.

Alba, J.W. & Hutchinson, J.W. (1987). Dimension of consumer expertise. *Journal of Consumer Research, 13,* 411-454.

Amit, R. & Schoemaker, P.J.H. (1993). Strategic assets and organizational rent. *Strategic Management Journal, 14*, 33-46.

Ander, R. (2002). When are technologies disruptive? A demand-based view of the emergence of competition. *Strategic Management Journal, 23,* 667-688.

Anderws, K.R. (1971). *The concept of corporate strategy.* Homewood, IL: Irwin.

_____ (1980). *The concept of corporate strategy*, revised edn. Richard D., Homewood, IL: Irwin.

_____ (1987). *The concept of corporate strategy*, revised edn. Richard D., Homewood, IL: Irwin.

Ansoff, H.I. (1965). *Corporate strategy.* New York, NY: McGraw-Hill.

Anyansi-Archibong, C. (1987, Autumn). Problem and challenges in using the case study method in a foreign based field research project, 1-18.

Apostolopoulos, T.K. & Pramataris, K.C. (1997). Information technology investment evaluation: Investments in telecommunication infrastructure. *International Journal of Information Management, 17* (4), 287-296.

Babbie, E. (1995). *The practice of social research, 7th ed.* Belmont, CA: Wadsworth Publishing Company.

Baden-Fuller, C. & Volberda, H. (2001). Mastering strategic renewal: Mobilising renewal journeys in multi-unit firms. *Long Range Planning, 34* (2), 159-178.

Baets, R. J. (1996). Some empirical evidence on IS strategy alignment in Banking, *Information and Management, 30*, 155-177.

Baloglu, S., McCleary, K., & Uysal, M. (1995). Destination Image Variations by Sociodemographic and Trip Characteristics. *Journal of Leisure Research, 15* (3), 219-228.

Banker , R.D., Kauffman, R.J., & Morey, R.C. (1990). Measuring gains in operational efficiency from information technology: A case study of the positron deployment at Hardee's Inc. *Journal of Management Information Systems, 7* (2), 29-54.

Barney, J.B. (1986). Strategic factor markets. *Management Science, 32*, 1231-1241.

Bélanger, F., Hiller, J. & Smith, W. J. (2002, December). Trustworthiness in Electronic Commerce: The Role of Privacy, Security, and Site Attributes. *Journal of Strategic Information Systems, 11*, 245-270.

Bellman, S., Lohse, G.L., & Johnson, E.J. (1999). Predictors of online buying behavior. *Communications of the ACM, 42* (12), 32-38.

Benbasat, I.G., David K., & Mead, M. (1987, September). The case research strategy in studies of information systems. *MIS Quarterly, 11* (3), 369-386.

Bharadwaj, A. & Konsynski, B.R. (1997, September). Capturing the intangibles. *InformationWeek*, 71-73, 75.

Borbely, C.S. & Vasudavan, T. (1999). A study of web diffusion in travel agencies. *Thirty-Second Annual HICSS Proceedings.* http://www.computer.org/proceedings/hicss.

Bonn, M.A., Furr, H.L., & Susskind, A.M. (1999, May). Predicting a behavioral profile for pleasure travelers on the basis of Internet use segmentation. *Journal of Travel Research*, 37, 333-340.

Bourgeois, L.J. (1980). Strategy and environment: A conceptual integration. *Academy of Management Review, 5*, 25-39.

_____ (1981). On the measurement of organizational slack. *Academy of Management Review, 6*, 29-39.

Bower, J.L. (1982). Business policy in the 1980s. *Academy of Management Review, 7*, 630-638.

Boynton, A. C., Zmud, R. W., & Jacobs, G. C. (1994). The influence of IT management practice on IT use in large organizations. *MIS Quarterly, 18* (3), 299-306.

Brady, T., Cameron, R., Targett, D., & Beaumont, C. (1992). Strategic IT issues: The views of some major IT investors. *Journal of Strategic Information Systems, 1* (4), 183-189.

Brian, W. (1998). Your Network's not ready for e-commerce. *Network Computing, 9* (22), 22-25.

Brinberg, D. & McGrah, J. E. (1985). *Validity and the research process.* Newbury Park, CA: Sage Publications, Inc.

Broadbent, M. & Weill, P. (1991). Developing business and information strategy alignment. *Proceedings of International Conference on Information Systems,* 299-318.

Brown, R.M., Gatian, W., & Hicks, J.O. (1995). Strategic information systems and financial performance. *Journal of MIS, 11* (4), 215-248.

Brucks, M. (1985). The effects of product class knowledge on information search behavior. *Journal of Consumer Research, 12*, 1-16.

Brynjolfsson, E. & Hitt, L.M. (1996, September). The customer counts. *Information Week, 48, 50, 52, 54*.

Buck, E. (1993). *Paradise remade, the politics of culture and history in Hawaii.* Philadelphia, PA: Temple University Press.

Burgess, J.A. (1978). Image and identity. Occasional Papers in *Geography, 23*. Upon Hull, United Kingdom: University of Hull Publications: W. S. Maney &Son, Kingston.

Cathoth, P.K. (2002). Co-alignment between environment risks, corporate strategy, capital structure, and firm performance: An empirical investigation of restaurant firms. *Unpublished doctoral dissertation.*Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Caves, R.E. (1980). Industrial organization, corporate strategy and structure. *Journal of Economic Literature, 58,* 64-92.

Chan, Y. & Huff, S. (1993). Investigating information systems strategic alignment, in: *Proceedings of International Conference on Information Systems*, 345-363.

_____, _____, Barclay, D.W., & Duncan, G. (1997). Business strategic orientation, information systems strategic orientation, and strategic alignment. *Information Systems Research, 8* (2), 125-150.

Chang, D.Y. (2003, December). Six fundamentals of strategic implementation of information systems for destination management organization. *e-Review of Tourism Research, 1*(4).

_____ & Weaver, P.A. (2003). The use of online application systems in the hospitality and tourism Industry: A satisfaction analysis. *Proceedings of Research and Academic Papers*. Eighth Annual Graduate Education and Graduate Students Research Conference in Hospitality and Tourism, Las Vegas, Nevada.

Chandler, A.D. (1962). *Strategy and structure.* Cambridge, MA: MIT Press.

Cheung, C.M.K. & Lee, M.K.O. (2001). Trust in Internet shopping: Instrument development and validation through clasical and modern approaches. *Journal of Global Information Management, 9* (3), 23-35.

Checkland, P. & Scholes, J. (1990). *Soft Systems Methodology in Action*. Chichester: John Wiley.

Cho, W. (1996). A case study: creating and sustaining competitive advantage through an informational technology application in the lodging industry. *Unpublished doctoral dissertation.* Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Choe, J. (2003). The effect of environmental uncertainty and strategic applications of IS on a firm's performance. *Information & Management, 40*, 257-268.

Choe, J.M., Lee, Y. H., & Park, K. C. (1998). The relationship model between the influence factors and the strategic applications of information systems, *European Journal of Information Systems, 7*, 137-149.

Chu, R. (2001). What online Hong Kong travelers look for on airline/travel websites? *International Journal of Hospitality Management, 20*, 95-100.

Clarke, D.S. Jr. (1973). *Deductive logic – An introduction to evaluation techniques and logical theory.* Carbondale and Edwardsville, IL: Southern Illinois University Press.

Clemons, E.K., & Kimbrough, S. (1986). Information systems, telecommunications, and their effects on industrial organization, in: *Proceedings of International Conference on Information Systems*, 99-108.

_____, Reddi, S.P., & Row, M.C. (1993, Fall). The impact of information technology on the organization of economic activity: The "move to the middle" hypothesis. *Journal of Management Information Systems, 10* (2), 9-35.

Connolly, Dan (1999, December). Understanding information technology investment decision – making in the context of hotel global distribution systems: a multiple-case study. *Unpublished doctoral dissertation.* Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Copeland, D.G. & McKenney, J.L. (1988). Airline reservations systems: Lessons from history. *MIS Quarterly, 12* (3), 353-370.

Cortada, J.W. (1996). *Information Technology as Business History.* Greenwood, Connecticut: Publishing Group, Inc.

Crawford-Welch, S. (1990). The development of an empirical topology of mature service environments and an examination of high profit strategies within those environments: The case of the lodging and restaurant industries. *Unpublished doctoral dissertation*. Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Crompton, J.L. (1979, Fall). An assessment of the image of Mexico as a vacation destination and the influence of geographical location upon that image. *Journal of Travel Research, 18*, 18-23.

Das, S. R., Zahra, S. A., & Warkentin, M. E. (1991). Integrating the content and process of strategic MIS planning with competitive strategy. *Decision Sciences, 22*, 953-982.

DeChabert, J.M. (1998). A Model for the Development and Implementation of Core Competencies in Restaurant Companies for Superior Financial Performance. *Unpublished Doctoral Dissertation.* Virginia Polytechnic Institute and State University, 1998.

Denzin, Norman K. & Lincoln, Yvonna S. (1994*). Introduction: Entering the field of qualitative research.* In Norman K Denzin and Yvonna S. Lincoln (Eds.), Handbook of qualitative research. Thousand Oaks, CA: Sage Publications, Inc.

Derr, M.A., Morishita, S., & Phipps, G. (1994). The glue-nail deductive database system: design, implementation, and evaluation. *The International Journal on Very Large Data Bases, 3* (2), 123-160.

Dess, G.G. & Beard, D.W. (1984). Dimensions of organizational task environments. *Administrative Science Quarterly, 29*, 52-73.

_____ & Davis, P.S. (1984). Porter ’s (1980) generic strategies as determinants of strategic group membership and organizational performance. *Academy of Management Journal, 27*, 467-488.

Dev, C. (1988). Environmental uncertainty, business strategy and financial performance: A study of the lodging industry. *Unpublished doctoral dissertation.* Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Dev, C. (1989). Operating environment and strategy: The profitable connection. *Cornell Hotel Restaurant Administration Quarterly, 30* (2), 9-14.

Diebold, J. (1987). Criteria for information technology investment. International *Journal of Technology management, 2* (5/6), 583-595.

Dierickx, I. & Cool, K. (1989). Asset stock accumulation and sustainability of competitive advantage. *Management Science, 35* (12), 1504-1511.

Dill,W.R. (1958).Environment as an influence on managerial autonomy. *Administrative Science Quarterly, 2*, 409-443.

Eisenhardt, K.M (1980). Making fast strategic decisions in high-velocity environment. *Academy of Management Journal, 32* (3), 543-576.

_____ (1989). Building theories from case study research. *Academy of Management Review, 24* (4), 532-550.

Engel, J., Blackwell, R.D., & Miniard, P., (1995). *Consumer Behavior, 8th Ed.*, Dryden, TX: Fort Worth.

Fakeye, P.C., & Crompton, J.L. (1991, Fall). Image differences between prospective, first-time, and repeat visitors to the lower Rio Grande Valley. *Journal of Travel Research, 30*, 10-16.

Fayerweather, J. (1981, Fall). Four winning strategies for the international corporation. *The Journal of Business Strategy, 2*, 25-36.

Feghhi, S.J., Marefat, M., & Kashyap, R.L. (1991). An object-oriented kernel for an integrated design and process planning system. *Proceedings of the 27th ACM/IEEE conference on Design automation*. Annual ACM IEEE Design Automation Conference, Orlando, Florida, 437-443.

Fishbein, M. & Ajzen, I. (1975). *Belief, Attitudes, Intentions and Behavior.* Reading, MA: Addison-Wesley.

Floyd, S. & Wooldridge, B. (1990, Summer). Path analysis of the relationships between competitive strategy, information technology and financial performance. *Journal of MIS, 7*, 47-64.

Fodness, D. & Murray, B. (1997). Tourist information search. *Annals of Tourism Research, 24* (3), 503-523.

_____ & _____ (1998). A typology of tourist information search strategies. *Journal of Travel Research, 37*, 108-119.

_____ & _____ (1999). A model of tourist information search behavior. *Journal of Travel Research, 37*, 220-230.

Francis, D.F. (2000, November). Despite dotcom failures, e-tail's future is bright. *Christian Science, 20*, 17.

Franz, C. R. & Robey, D. (1984, December). An investigation of user-led system design: Rational and political perspectives. *Comunications of the ACM, 27* (12), 1202-1217.

Froschl, K.A., & Werthner, H. (1997). *Informed decision making in tourism management – Closing the information circuit*. Springer-Verlag Wien. New York.

Fuchs, P. H., Mifflin, K. E., Miller, D., & Whitney, J. O. (2000). Strategic integration: Competing in the age of capabilities. *California Management Review, 42* (30), 118-147.

Furnell, S.M. & Karweni, T. (1999). Security Implications of Electronic Commerce: A Survey of Consumers and Business. *Internet Research: Electronic Networking Applications and Policy, 9* (5), 372-382.

Gartner, W.C. (1993). *Image formation process.* In Communication and channel systems in tourism marketing, Muzaffer Uysal & Daniel R. Fesenmaier (Eds.). New York, NY: The Haworth Press.

Gartner, W.C. & Hunt, J.D. (1987). An analysis of state image change over a twelve-year period (1971-1983). *Journal of Travel Research, 26* (2), 15-19.

Gitelson, R.J. & Crompton, J.L. (1983). The planning horizons and sources of information used by pleasure vacationers. *Journal of Travel Research, 21* (3), 2-7.

Glueck, W. F. (1976). *Business policy: Strategy formulation and management action.* New York, NY: McGraw-Hill.

Grant, R.M. (1996). Prospering in dynamically-competitive environments: Organizational capability as knowledge integration. *Organization Science, 7* (4), 375-387.

Grover, V., Teng, J.T.C., & Fiedler, K.D. (1998, February). IS investment priorities in contemporary organizations. *Communications of the ACM, 41* (2), 40-48.

Gursoy, D. (2001). Development of a travelers' information search behavior model. *Unpublished doctoral dissertation.* Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Hahn, H. & Stout, R. (2000). *The Internet Complete Reference.* New York, NY: Osborne/McGraw-Hill.

Hambrick, D.C. (1981). Environment, strategy and power within top management teams. *Administrative Science Quarterly*, *26*, 253-276.

_____ (1983). Some tests of the effectiveness and functional attributes of Miles and Snow 's strategic types. *Academy of Management Journal*, *26*, 5-26.

Hamel, G. (1996, July-August). Strategy is revolution. *Harvard Business Review*, 69-82.

_____ & Prahalad, C.K. (1991, May-June). Strategic intent. *Harvard Business Review,* 63-76.

Hartley, R.V. (1928). Transmission of information, *Bell System Technician Journal. 29,* 147-160.

Hemani, A., Deb, A.K.J., Postula, O.A., Lindqvist, D. & Fjellborg, B. (2000). System Level Virtual Prototyping of DSP SOCs Using Grammar Based Approach. Kluwer Design Automation for Embedded Systems, 5 (3), 295-311.

Heung, V.C.S. (2003). Barriers to implementing e-commerce in the travel industry: a practical perspective. *International Journal of Hospitality Information Technology, 22* (1), 111-118.

Hitt, L.M. & Brynjolfsson, E. (1996, June). Productivity, business profitability, and consumer surplus: Three different measures of information technology value. *MIS Quarterly, 20* (2), 121-143.

Hofer, C.W. & Schendel, D. (1978). *Strategy formulation: Analytical concepts.* St. Paul, MN: West Publishing Co.

Hull, R. & King, R. (1987). Semantic database modeling: survey, applications, and research issues. *ACM Computing Surveys (CSUR), 19* (3), 201-260.

Itami, H. (1987). *Mobilizing invisible assets.* Harvard University Press, Cambridge, MA.

Ives, B. & Learmonth, G.P. (1984, December). The information system as a competitive weapon. *Communications of the ACM, 27*, 1193-1204.

Jane, R. & Spencer, L. (1994). *Qualitative data analysis for applied policy research*. In Analyzing Qualitative Data, Alan Bryman & Robert G. Burgess (Eds.), London and New York: Routledge, 173-94.

Jenster, P.V. (1986). Firm performance and monitoring of critical success factors in different strategic contexts. *Journal of MIS, 3* (3), 17-33.

Jogaratnam, G. (1996). Environmental munificence, strategic posture and performance: An exploratory survey of independent restaurant establishments. *Unpublished doctoral dissertation.* Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Johnston, H. & Carrico, S. (1988). Developing capabilities to use information strategically. *MIS Quarterly, 12*, 37-48.

Jurkovich, R. (1974). A core typology of organizational environments. *Administrative Science Quarterly, 3*, 380-394.

Kanter, R.M. (1994). Do cultural differences make a business difference? Contextual factors affecting cross-cultural relationship success. *The Journal of Management Development, 13* (2), 5-24.

Katz, R.H. (1990). Toward a unified framework for version modeling in engineering databases. *ACM Computing Surveys (CSUR), 22* (4), 375-409.

Kerlinger, F.N. (1986). *Foundations of behavioral research, 3rd ed.* Fort Worth, TX: Holt, Rinehart and Winston, Inc.

Keutzer, K. Malik, S, Newton, A.R., Rabaey, J.M., & Sangiovanni-Vincentelli A. (2000, December). System-Level Design: Orthogonalization of Concerns and Platform based Design. *IEEE Trans. CAD, 19*, 523-1543.

Kilmann, R. (1995). Change leadership. *Executive Excellence, 16*(4), 16-18.

Kim, C.Y. (1992). Development of a framework for identification of political environmental issues faced by multinational hotel chains in newly industrialized countries in Asia. *Unpublished doctoral dissertation.* Virginia Polytechnic Institute and State University, Blacksburg.

King, W., Grover, V., & Hufnagel, E. (1989). Using information and information technology for sustainable competitive advantage. *Information and Management, 17*, 87-93.

_____ & Teo, T. (1994). Facilitators and inhibitors for the strategic use of information technology. *Information and Management, 27*, 71-87.

_____ & _____ (1996). An empirical assessment of the impacts of integrating business planning and information systems planning. *Information and Management, 30*, 309-321.

_____ & _____ (1997). Integrating between business planning and information systems planning: validating a stage hypothesis. *Decision Sciences, 28* (2), 279-308.

Konsynski, B.R. & McFarlan, F.W. (1990, September-October). Information partnerships – shared data, shared scale. *Harvard Business Review*, 114-120.

Kotha, S. & Vadlamani, B. (1995). Assessing generic strategies: An empirical investigation of two typologies in discrete manufacturing industries. *Strategic Management Journal, 16*, 75-83.

Kvale, S. (1996). *InterViews – An Introduction to Qualitative Research Interviewing.* Thousand Oaks, CA: Sage.

Lawrence, P.R. & Lorsch, J. (1967). *Organization and environment.* Cambridge, MA: Harvard University Press.

Laws, E. (1995). *Tourist destination management,* London, England: Routledge.

Leiner, B.M., Cerf, V.G., Clark, D.D., Kahn, R.E., Kleinrock, L., Lynch, D.C., Postel, J., Roberts, L.G., & Wolff, S. (2000). *A brief history of the Internet.* The ISOC Organization.

Leiper, N. (1990). *Tourism systems.* Palmerston North, New Zealand: Massey University Press.

Lennard, C.K., Schaumont, P., Jong, G., Haverinen, A., & Hardee, P. (2000, March). Standards for system-level design: Practical reality or solution in search of a question. *Proc. DATE Conference*., 576-583.

Leontaides, M. (1982). The confusing words of business policy. *Academy of Management Reviews, 7,* 45-48.

Mano, T., Maruyama, F., Kakuda, T., Kawato, N., Uehara, T. (1986). Knowledge-based expert system for hardware logic design. *Proceedings of 1986 ACM Fall joint computer conference*. Dallas, Texas, 979-986.

Mata, F.J., Fuerst, W.L., & Barney, J.B. (1995, December). Information technology and sustained competitive advantage: a resource-based analysis. *MIS Quarterly, 19,* 487-505.

Marshall, C. & Rossman, G.B. (1989). *Designing qualitative research*. Mewbury Park, CA: Sage.

Mayo, E. & Jarvis, L. (1981). *The psychology of leisure travel.* Boston, MA: CBI.

Miles, M.B. & Huberman, A.M. (1994). *Qualitative data analysis: An expanded sourcebook*. London: Sage.

Miles, R.E. & Snow, C. C. (1978). *Organizational strategies, structure and process.* New York, NY: McGraw-Hill.

Mill, R.C. & Morrison, A.M. (1985). *The tourism system*. Englewood Cliffs, NJ: Prentice-Hall.

Miller, D. (1986). Configurations of strategy and structure: Towards a synthesis. *Strategic Management Journal, 7,* 233-249.

_____ & Shamsie, J. (1996). The resource-based view of the firm in two environments: the Hollywood film studios from 1936 to 1965. *Academy of Management Journal, 39* (3), 519-543.

Mintzberg, H. (1978). Patterns in strategy formulation. *Management Science, 26* (9), 934-948.

_____ (1988). *Generic strategies: Towards a comprehensive framework.* In R. Lamb & P. Shrivastava (Eds.). Advances in Strategic Management-research annual. Greenwich, CT, JIA Press, 1-68.

_____, Ahlstrand, B., & Lampel, J. (1998). *Strategy safari: A guided tour through the wilds of strategic management*. New York, NY: The Free Press.

Montgomery, D.B. & Lieberman, M.B. (1988). First-mover advantages. *Strategic Management Journal, 9*, 41-58.

Murthy, B. (1994). Measurement of the strategy construct in the lodging industry and the strategy-performance relationship. *Unpublished doctoral dissertation.* Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Nath, R. (1989). Aligning MIS with the business goals. *Information and Management, 16*, 71-79.

Negroponte, N. (1995). *Being digital.* New York: Vintage Books.

Neo, B. (1988). Factors facilitating the use of information technology for competitive advantage. *Information and Management, 15*, 191-201.

Nonaka, I. (1991, Nov.-Dec.). The knowledge-creating company. *Harvard Business Review*, 96-104

_____ (1994). A dynamic theory of organizational knowledge creation. *Organization Science, 5* (1), 14-37.

Olsen, M.D. (1989). Issues facing multi-unit hospitality organizations in maturing market. *Journal of Contemporary Hospitality Management, 1* (2).

_____ & DeNoble, A. (1981). Strategic planning in dynamic times. *Cornell Hotel Restaurant and Administration Quarterly, 21*(4), 75-80.

_____, West, J., & Tse, E.C. (1998). *Strategic Management in the Hospitality Industry, 2nd Ed.* New York, NY: John Wiley & Sons, Inc.

Parkhe, A. (1993). "Messy" research, methodological predispositions, and theory development in international joint ventures. *Academy of Management Review, 18* (2), 227-268.

Passerone, R., Rowson, J.A., & Sangiovanni-Vincentelli A. (1998, June). Automatic Synthesis of Interfaces between Incompatible Protocols. Proc. DATE Conference, 8-13.

Pearce, J.A. & Robinson, R.B. (1988). *Strategic Management: strategy formulation and implementation, 3rd Ed.* Homewood, Illinois: IRWIN.

Peckham, J., MacKellar, B., & Doherty, M. (1995). Data model for extensible support of explicit relationships in design databases. *The International Journal on Very Large Data Bases, 4* (2), 157-192.

Penrose, E.T. (1959). *The theory of the growth of the firm*. Oxford: Oxford University Press.

Perdue, R.R. (1985). Segmenting state information inquirers by timing of destination decision and previous experience. *Journal of Travel Research, 23*, 6-11.

Pernsteiner, C. (2000). Transforming the hospitality industry into e-business. *FIU Hospitality Review, 18* (2), 43-54.

Perrow, C. (1967). *A framework for the comparative analysis of organizations. American Sociological Review, 32,* 194-208.

Pons, A.P. & Aljifri, H. (2003). Data protection using watermarking in e-business. *Journal of Database Management, 14* (4), p.13

Porter, M.E. (1980). *Competitive strategy.* New York, NY: The Free Press.

_____ (1985). *Competitive advantage: Creating and sustaining superior performance.* New York, NY: The Free Press.

_____ (1996). What is strategy? *Harvard Business Review, 74* (6), 61-78.

_____ & Millar, V. (1985). How information gives you competitive advantage. *Harvard Business Review,* 149-160.

Preble, J.F., Rau, P.A., & Reichel, A. (1989). The environmental scanning practices of multinational firms – an assessment. *International Journal of Management, 6* (1), 18-28.

Rayport, J.F. & Sviokla, J.J. (1995). Exploiting the Virtual Value Chain, *Harvard Business Review* (Nov.–Dec.), 75-85.

Roehl, W.S. (1990, Fall). Travel agent attitudes toward China after Tiananmen Square. *Journal of Travel Research, 29* (2), 16-23.

Rowson, J.A. & Sangiovanni-Vincentelli A. (1997, June). Interface Based Design. in Proc. *DATE Conference*, 178-183.

Rugman, A.M. & Verbeke, A. (2002). Edith Penrose's contribution to the resource-based view of strategic management. *Strategic Management Journal, 23* (8), 769-780.

Rumelt, R.P. (1984). Towards a Strategic Theory of the Firm. Competitive Strategic Management, Englewood Cliffs, NJ: Prentice Hall.

Sabherwal, R. (1999). The relationship between information system planning sophistication and information system success: an empirical assessment. *Decision Sciences, 30* (1), 137-167.

Sabherwal, R. & King, W. (1991). Towards a theory of strategic use of information resources. *Information and Management, 20,* 191-212.

_____ & _____ (1995). An empirical taxonomy of the decision-making process concerning strategic applications of information systems. *Journal of MIS, 11* (4), 177-214.

Saunders, C.S. & Jones, J.W. (1992). Measuring performance of the information systems function. *Journal of Management Information Systems, 8* (4), 63-82.

Schendel, D.E. & Hofer, C.W. (Eds.) (1979). *Strategic Management: a View of Business Policy and Planning.* Boston, MA: Little Brown.

Schertler, W., Schmid, B., & Tjoa, A.M., Werthner, H. (1994). *Information and communication technologies in tourism*. New York, NY: Springer-Verlag Wien.

Schul, P. & Crompton, J.L. (1983). Search behavior of international vacationers: travel-specific lifestyle and sociodemographic variables. *Journal of Travel Research, 22* (3), 25-31.

Segars, A. H. & Grover, V. (1998, June). Strategic information systems planning success: an investigation of the construct and its measurement. *MIS Quarterly, 22*, 139-163.

Selznick, P. (1957). *Leadership in administration*, Berkeley, CA: Harper and Row.

Semich, J.W. (1994, January). Here's how to quantify IT investment benefits. *Datamation*, 45-46, 48.

Sethi, N.K. (1982). Strategic planning system for multinational companies. *Long Range Planning, 15* (3), 80-89.

Schaffer, Jeffrey D. (1987). Competitive strategies in the lodging industry, *International Journal of Hospitality Management, 6* (1), 33-42.

Schmelzer, C.D. (1992). Case study investigation of strategy implementation in three multi-unit restaurant firms. *Unpublished doctoral dissertation*. Virginia Polytechnic Institute and State University, Blacksburg.

Shannon, C.E. (1949). *Communication in the presence of noise,* Poc. IRE. 37, 10-21.

Sharma, A. (2002). Co-alignment Framework for Evaluating the Implementation of the Tourism Satellite Accounts – A Case Study of Tanzania. *Unpublished doctoral dissertation*. Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Shaw, M. (1999). Electronic Commerce: Review of Critical Research Issues, *Information Systems Frontiers, 1* (1), 95-106.

Sheldon, P.J. (1997). *The tourism information technology*. Wallingford, Oxon, U.K.: CAB International.

Silverman, D. (1993). *Interpreting qualitative data.* Thousand Oaks, CA: Sage.

Snepenger, D., Meged, K., Snelling, M., & Worrall, K. (1990). Information search strategies by destination-naive tourists. *Journal Travel Research, 29* (1), 13-16.

Snepenger, D. & Snepenger, M. (1993). *Information search by pleasure travelers.* In Kahn, M.A., Olsen, M.D., & Var, T. (Eds.). Encyclopedia of Hospitality and Tourism. New York, NY: Van Nostrand Reinhold.

Spender, J.C. (1994). Organizational knowledge, collective practice and Penrose rents. *International Business Review, 3* (4), 353-367.

Stabler, M.J. (1990). *The image of destination regions: Theoretical and empirical aspects.* In B. Goodall and G. Ashworth (Eds.), Marketing in the Tourism Industry: The Promotion of Destination Regions. London: Routledge.

Tapscott, D. (1996). *The digital economy: Promise and peril in the age of networked intelligence.* New York: McGraw-Hill.

Taylor, M.H. (2002). A Test of the Co-alignment Principle in Independent Hotels: A Case Study. *Unpublished doctoral dissertation.* Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Teo, T. & King, W. (1996). Assessing the impact of integrating business planning and IS planning. *Information and Management, 30*, 309-321.

_____ & _____ (1997). Integration between business planning and information systems planning: an evolutionary – contingency perspective. *Journal of MIS, 14* (1), 185-214.

Tesch, R. (1990). *Qualitative research: Analysis types and software tools.* London: Falmer.

Thompson, J.D. (1967). *Organizations in action*. New York, NY: McGraw-Hill.

Thompson, A.A. Jr., & Strickland, A. J. III (1996). *Strategic management, 3rd Ed.*, Chicago, Il: Richard D. Irvin.

Teorey, T.J. & Fry, J.P. (1980). The Logical Record Access Approach to Database Design. *ACM Computing Surveys (CSUR), 12* (2), 179-211.

_____, Yang, D., & Fry, J.P. (1986). A logical design methodology for relational databases using the extended entity-relationship model. *ACM Computing Surveys (CSUR), 18* (2), 197-222.

Tsang, J.P. & Brissaud, D. (1989, August). A Feature-Based Approach to Process Planning. *ASME International Computers in Engineering Conference,* Anaheim, California.

Tse, E.C.Y. (1988). An exploratory study of the impact of strategy and structure on the organizational performance of restaurant firms. *Unpublished doctoral dissertation.* Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Tse, E. (1988). The Role of the Entrepreneur in the Mature Stage of the Life Cycle in the Hospitality Industry. *Proceedings of the International Conference on Entrepreneurship in the Hospitality Industry*. Edinburgh, Scotland. 550-584

_____ & Olsen, M.D. (1988). The impact of strategy and structure on the organizational performance of restaurant firms. *Hospitality Education & Research Journal, 12* (2), 265-276.

Turnbull, D. (1996). The Influence of Political Risk Events on the Investment Decisions of Multinational Hotel Companies in Caribbean Hotel Projects. *Unpublished doctoral dissertation.* Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Tushman, M.L. & Anderson, P. (1986). Technological discontinuities and organizational environments. *Administrate Science Quarterly, 31* (3), 439-465.

Tuttle, S.M. (2002). Practical lessons from experience with the database design course project. *The Journal of Computing in Small Colleges, 18* (2), 32-42.

Tweney, D. (1997). Making money on the web: what is really working? *InfoWorld, 19* (36), 64-64.

Uysal, M., Chen, J.S., & Williams, D.R. (2000). Increasing state market share through a regional positing. *Tourism Management, 21*, 89-96.

Van Neumann, J. & Morganstern, O. (1947). *The theory of games and economic Behavior, 2nd Ed.*, Princeton, NJ: Princeton University Press.

Venkatraman, N. & Prescott, J. E. (1990). Environment-strategy co-alignment: An empirical test of its performance implications. *Strategic Management Journal, 11*, 1-23.

Vogt, C.A. & Fesenmaier, D.R. (1998). Expanding the functional information search. *Annas of Tourism Research, 25* (3), 551-578.

Warner, T.N. (1987). Information technology as a competitive burden. *Sloan Management Review, 29* (1), 55-61.

Weber, K. & Roehl, W.S. (1999). Profiling people searching for and purchasing travel products on the World Wide Web. *Journal of Travel Research, 37,* 291-298.

Webster, M. & Hudson, T. (1991). *Strategic management: A theoretical overview and its application to the hospitality industry*. In R. Teare, & A. Boer (Eds.), Strategic hospitality management: Theory and Practice for the 1990s (pp. 9-30). London: Cassell Education.

Weill, P. (1991). The information technology payoff: Implications for investment appraisal. Australian Accounting Review, 2-11.

_____ & Broadbent, M. (1998). *Leveraging the new infrastructure: How market leaders capitalize on information technology.* Boston: Harvard Business School Press.

_____ & Olson, M.H. (1989, March). Managing investment in information technology: mini case examples and implications. *MIS Quarterly, 13*, 1-17.

Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal, 5* (2), 171-180.

Werthner, H. (1996). *Design principles of tourist information systems.* In Klein, S., Schmid, B., Tjoa, A.M., Werthner, H. (Eds.). Information and communications technologies in tourism. New York, NY: Springer-Verlag Wien.

_____ & Klein, S. (1999). *Information technology and tourism – A challenging relationship.* New York, NY: Springer-Verlag Wien.

West, J.J. (1988). Strategy, environmental scanning, and their effect upon firm performance: An exploratory study of the food service industry. *Unpublished doctoral dissertation.* Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

_____ & Olsen, M.D. (1988). Environmental scanning and its effect upon firm performance: an exploratory study of the food service industry. *Proceedings of the Council of Hotel, Restaurant and Institutional Educators Annual Conference.*

_____ & Anthony, W. (1990). Strategic group membership and environmental scanning: Their relationship to performance in food service industry. *International Journal of Hospitality Management, 9* (3), 247-268.

Williamson, O.E. (1985). *The economic institutions of capitalism.* New York, NY: Macmillan.

Wiseman C. & MacMillan, I. (1984). Creating competitive weapons from information system. *Journal of Business Strategy,* 42-49.

Wolcott, H.F. (1990). *Writing up qualitative research.* Newbury Park, CA: Sage.

_____ (1994). *Trasnforming qualitative data.* Thousand Oaks, CA: Sage.

Yin, R. K. (1989). *Case study research: Design and methods.* Newbury Park, CA: Sage Publications.

_____ (1994). *Case study research: Design and methods.* Newbury Park, CA:Sage Publications.

Zhao, J. (1994). The Antecedent Factors and Entry Mode Choice of Multinational Lodging Firms: The Case of Growth Strategies Into New International Markets.

Unpublished doctoral dissertation. Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

_____ & Olsen, M.D. (1997). The antecedent factors influencing entry mode choices of multinational lodging firm. *International Journal of Hospitality Management*, 16 (1), 79-98.

Appendix 1 – The Visioning Strategic Workshop

In the two-day workshop, a broad and diverse group of tourism industry stakeholders gathered together and focused on the future of tourism in the Virginia Beach area. The objective of this workshop was to identify the general forces driving change in the near term future of tourism. The workshop was divided into three groups. Participants functioned in a nominal group setting led by facilitators to begin the first step in developing a strategic plan for the Convention and Visitor Development Department (i.e., the DMO) of the City of Virginia Beach. The plan is to lay out objectives that will build a vibrant community that benefits from the impacts of tourism and meets the needs of investors seeking to invest in the growth of the area.

The process used to reach the strategic plan for the Virginia Beach Convention and Visitor Development unit of the City of Virginia Beach was designed to lay the ground work for future management decisions. The actual planning process consisted of four steps: (1) environmental scanning, (2) identification of competitive methods, (3) developing and maintaining core competencies, and (4) the development of an implementation plan. Based on all participants' perceptions, the key issues considered extremely important to the future strategic development of tourism in the region were obtained. In comparison with the constructs of the co-alignment model, these four steps are closed to the information flows suggested by the co-alignment model. Each will be introduced in the paragraphs to follow.

Step 1: ***Environmental scanning*** represents a process that alters organizational leaders to the forces that drive change in an organization's operating domain. These forces can be expected to have significant impact upon an organization in both the short and long runs. The goal of the leader is to identify which forces will provide the greatest opportunities for the future and to avoid those that present significant threats. Scanning is not a process that can be left to a few for the environment of tourism today is complex

and dynamic. Therefore, the environmental scanning exercise conducted at the outset of this planning process included a broad cross section of the citizens of Virginia Beach who will be referred to as stakeholders in the future of tourism and the Beach. This process was a two-day nominal group workshop session that ultimately resulted in a consensus as to the forces that drive change.

These forces broadly termed include: 1) assets and capital, 2) marketing, distribution and capacity management, 3) new management and human capital, 4) safety and health, 5) social responsibility, 6) sustainability, and 7) technology. Participants engaged in active dialogue regarding these forces and sought to understand how they will impact the future of tourism in the Beach area. A clear consensus was reached on the variables within each force that deserved priority attention and action. Attempts were also made to try to understand the timing of each force so that a better long-term view of the future would be developed.

Step 2: The next phase of the planning process was a second two-day workshop with the same stakeholders that participated in the environmental scanning exercise. This step was designed to ***identify competitive methods*** or strategic actions that would be required to respond to the threats and opportunities inherent in the forces driving change. Competitive methods are broadly defined as portfolios of unique products and services that enable an organization to lead an industry sector in order to achieve sustainable competitive advantage. Each competitive method must be thought of as an investment that will add significant and lasting value to the organization.

The competitive methods chosen by the participants at the end of the two days were: 1) an attractive and friendly investor environment, 2) a unique and aggressive business development function, 3) customer experience management, 4) effective and comprehensive distribution system based upon E-marketing, and 5) customer centered transactions interfacing with the customer through technology. Each of these competitive

methods was selected based upon a thorough deliberation of the forces driving change and were deemed essential to the short and long term future of tourism in Virginia Beach. Each contains several more specific products and services. All stakeholders agreed that these competitive methods offered the greatest potential long-term value to the customer, tourism employees and the community.

Step 3: The next step in the process was to ***develop core competencies*** that will insure the proper delivery of the competitive methods just identified. The imperative here is that no competitive method will succeed unless management allocates resources to the development and maintenance of core competencies. The competencies will need all the available resources of the DMO if long term sustainable value creation will succeed. Another way to look at core competencies is to consider competitive methods as generating the demand curve for the destination and thus important revenue generators for businesses and government and core competencies as the skills and capabilities necessary to insure a consistent and high quality delivery of each competitive method. This step in the process involved only the key management and decision making members of the DMO leadership team and involved two, two-day workshops and considerable work in between each. The leadership team had to examine current resources and capabilities and match those against the needs of the newly identified competitive methods.

The core competencies identified as being most important to value generating competitive methods are:

- Database marketing capability
- Management information systems to link tourism providers (i.e., suppliers), CVD (i.e., the DMO), customers
- Data warehousing and mining
- Standards measurement and enforcement

- Research regarding customer expectations
- Assessing and monitoring service delivery issues
- Service audit & standards
- Customer service training
- Provision of resort amenities
- Effective transportation system
- Provide safe secure environment
- Research methods and data gathering
- Master planning process/capabilities
- Stakeholder communication/education
- Investment standards maintenance
- Investor Acquisition team
- Investment/reinvestment incentive packages
- Leadership and vision
- Building teamwork and alliances
- Source of capital
- Financial management know-how

The essential requirement in the strategy process with respect to core competencies is that management allocates resources to those core competencies that will assure proper and successful implementation of the competitive methods chosen.

Step 4: ***Implementation*** of any strategy requires processes that insure the proper allocation of resources, on a consistent basis over time, to competitive methods and core competencies that insure long term value. In many cases, newly identified competitive methods require resources that will take time to develop or acquire. Current professionals may need re-orientation and training, new professionals may have to be employed and processes for insuring resource allocation revised and evaluated. Consequently, implementation may take time as in this case since many of the competitive methods are

new to the presently employed professionals. In addition, many will take time to develop and evolve. The leadership team carefully developed an implementation planner that addresses these key dynamics and needs.

Appendix 2 – Preparation for the interviews

Following factors preceded the actual interviews. They help the researcher prepare the interviews, although the order of the listing does not necessary represent a sequential procedure. Dr. Olsen, the Research Committee Chair, and the management in Virginia Beach assisted in the coordination.

1. A protocol for an interview needs to be identified and followed prior to the field interviews. The primary contact needs to be identified and can be reached by phone, e-mail, or fax for further steps.

2. If necessary, an introduction via phone or e-mail about the purpose of interview will be provided to the contact person.

3. Provide a quick review of the co-alignment model to ensure the understanding of the co-alignment concept and objectives of the study.

4. Prepare a formal presentation about the research framework and the purpose of the interviews to increase the interest and confidence of the participants.

5. If necessary, provide the related-information about the Visioning Strategic Workshop to refresh the participants' memory.

6. Preference for identifying contact person for the organization is the Executives or Director in-charge of the operation.

7. Preferred and ideal interviewees are those who had participated in the Visioning Strategic Workshop.

8. Pre-select two competitive methods from the six competitive methods identified in the Visioning Strategic Workshop. One of them should be what the management is most familiar with and has been developing and implementing; the other is the management has the least experience.

9. Define the interview questions including the "talking points" and "listen questions.

10. The interview questions and the format of the questionnaire need to be finalized and printed. Other supportive items like notepads, tapes, a recorder, etc. need to be ready as well.

11. All attempts were made to cover the relevant topics in the time allotted for the interview. Because Virginia Beach has expressed its interest and willingness to participate the research, the interviews are expected to receive the full cooperation. In the event that additional discussion needed to be conducted, a follow-up or telephone interview will be requested.

12. All attempts are made to follow professional and social protocols to appropriately conduct the interviews.

13. All attempts need to be made to restrict interviews to a maximum of one hour or the allotted time, which ever is greater.

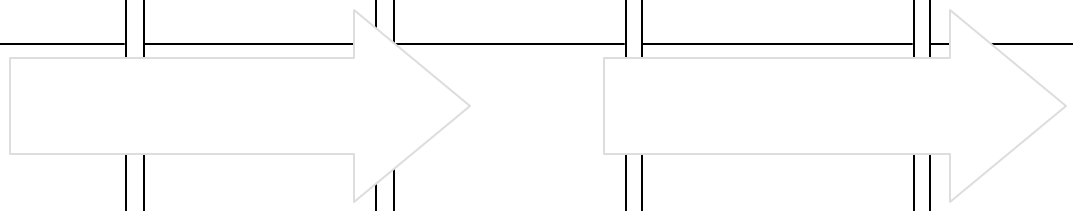
14. Given that the nature of the research topic is conceptual, any comments, thoughts, and challenge encountered during the interviews are welcome and will be incorporate into the study if they are relevant to the research objectives.

15. An attempt needs to be made to thank the contact persons and interviewees by telephoning or by email.

Appendix 3 – The Co-alignment Table

This table is built column-by-column, from left to right. Any skip would disrupt the information flow for formulation and won't be able to build a complete table. However some cells might be left blank intentionally in some cases. Regardless, the number of blank cells indicates the degree of the co-alignment: the less blank cells, the better co-alignment.

Forces Driving Change	Value Drivers	Competitive Methods	Products and/or Services	Core Competencies



The information in each column above also contains the information below. The data needs to be ready before being filling into the cells of the table above.

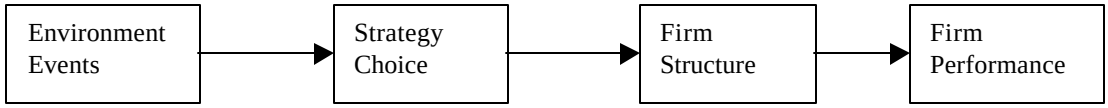
Appendix 4 – Open-ended interview questionnaire

The focus of interviews is to collect the absent information that was not identified in the Visioning Strategic Workshop and other relevant concerns as presented in the gray boxes in Figure 3. Since the interviewees' feedback are important, questions might not necessary be repeated verbatim but are instead used as an anchor to communicate the essential aspects of the inquiry without losing the focus of the interviews. If the interviewees encounter any difficulties in answering these questions, the researcher will discuss with them and record the discussion as specific as possible.

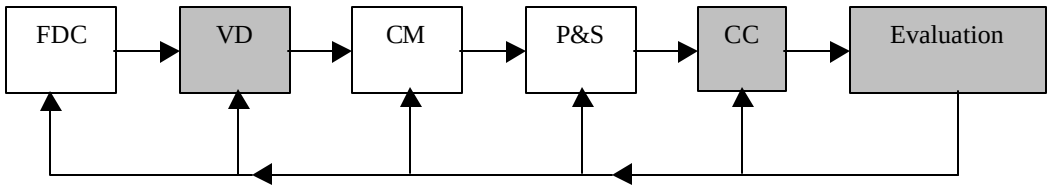
Procedure and Presentation

1. Introduction – the purpose of the interview
2. Presentation and review – the Visioning Strategic Workshop, the co-alignment model and the information flows associated with the co-alignment model
3. Providing explanation to the interviewee that the interview is being recorded and the confidentiality is assured
4. Interview – data collection and feedback

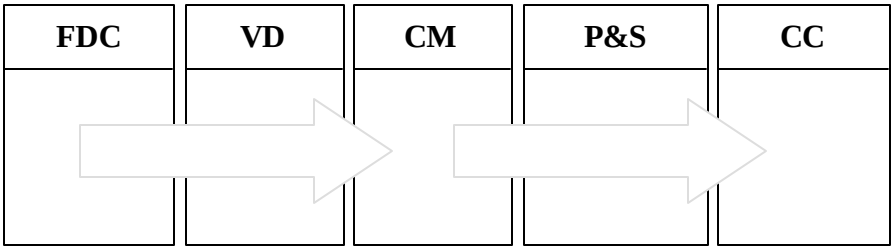
The Co-alignment Model



Information Flows and Data Collection



Building the Co-alignment Table



Interviewee's Name/Position: _____

Date/Time: _____

Section I. Data Collection of Value Drivers

Q1: Please use the information in the left column "Forces Driving Change" and provide the Value Drivers that are believed to be associated with these forces in the right column.

Q1-1:

Forces Driving Change	*Value Drivers*
Technology • Information creates instant transparency regarding quality of goods and services offered from a destination • Quality standards are increasingly driven by third party validators • Changing customer relationship paradigm	

Q1-2:

Forces Driving Change	*Value Drivers*
Assets and capital • Global capital market imperatives • Tourism a low return industry • Tourism a high risk industry • New innovative attractions • A portfolio approach to financing high risk projects • Public and Private partnerships	

Q2: Do you have any difficulties in identifying the *Value Drivers* using the Forces Driving Change provided?

Yes_____ (go to the sub-questions: Q2-1, Q2-2, and Q2-3)
No _____ (go directly to the question Q3)

- Q2-1: If yes, what is/are the difficulty/difficulties?
- Q2-2: If yes, in your view, what are the reasons that cause the difficulty?
- Q2-3: If yes, in your opinion, how should/can this difficulty be reduced?
- *(Please skip Q3 and go to Q4)*

Q3: If you answered "No" in Q2, are you confident with the accuracy of the Value Drivers that you identified (1 = poor confident; 5 = very confident)? Why?

Q4-1: You know that the Value Drivers are important for management to seek Competitive Methods. Other than the *Value Drivers*, in your opinion, what other information is needed or important and should also be included to help determine the right *Competitive Methods*?

Q4-2: According to your business structure, what position(s), i.e., who, do you think should be in charge of determining the *Competitive Method* and its *Products and Services*? Why?

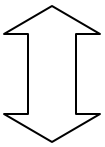
Q5: According to your business structure, what position(s), i.e., who, do you think should be in charge of performing this task (of identifying the *value drivers*)? Why?

Section II. Data Collection of Core Competencies

Q6: Please refer to the information in the fist two columns ("Competitive Method" and "Produces & Services") and identify the specific *Core Competencies* that are believed required to implement the competitive method in the first column. Please do so by (1) selecting the core competencies from the table "The General Organizational Core Competencies" below (You may just write down the number of that core competency as your answer.), or (2) identifying the new core competencies that are not listed.

Q6-1:

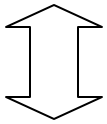
Competitive Method	*Products & Services*	*Core Competencies*
An effective comprehensive distribution system that is based upon the latest in E-marketing thinking	• Marketing cooperatives • Marketing to locals • Data warehousing and data mining capabilities • Permission marketing tactics • New approaches to reaching the customer and new messages to do so	*If not listed, identify the new core competencies here:*



The General Organizational Core Competencies	
1. Database marketing capability 2. Management information systems to link tourism providers (i.e., suppliers), CVD (i.e., the DMO), customers 3. Data warehousing and mining 4. Standards measurement and enforcement 5. Research regarding customer expectations 6. Assessing and monitoring service delivery issues 7. Service audit & standards 8. Customer service training 9. Provision of resort amenities 10. Effective transportation system	11. Provide safe secure environment 12. Research methods and data gathering 13. Master planning process/capabilities 14. Stakeholder communication/education 15. Investment standards maintenance 16. Investor Acquisition team 17. Investment/reinvestment incentive packages 18. Leadership and vision 19. Building teamwork and alliances 20. Source of capital 21. Financial management know-how

Q6-2:

Competitive Method	*Products & Services*	*Core Competencies*
An attractive and friendly investor environment	• Investment in a balanced portfolio of attractions to match the needs of a heterogeneous demand profile • Investment in demand generators that are anticipatory of future customer needs • The generation of a variety of sources of capital to invest future attractions • Creation and maintenance of an environment that is low risk from the investors perspective • An investment acquisition team capable of generating the investment funds necessary • An investor communication team capable of communicating on an ongoing basis with investors to assure a complete and friendly investor relations environment	*If not listed, identify the new core competencies here:*



The General Organizational Core Competencies	
1. Database marketing capability 2. Management information systems to link tourism providers (i.e., suppliers), CVD (i.e., the DMO), customers 3. Data warehousing and mining 4. Standards measurement and enforcement 5. Research regarding customer expectations 6. Assessing and monitoring service delivery issues 7. Service audit & standards 8. Customer service training 9. Provision of resort amenities 10. Effective transportation system	11. Provide safe secure environment 12. Research methods and data gathering 13. Master planning process/capabilities 14. Stakeholder communication/education 15. Investment standards maintenance 16. Investor Acquisition team 17. Investment/reinvestment incentive packages 18. Leadership and vision 19. Building teamwork and alliances 20. Source of capital 21. Financial management know-how

Q7: Do you have any difficulties in selecting the *Core Competencies* from the list (i.e., the General Organizational Core Competencies) provided?

Yes_____ (go to the sub-questions: Q7-1, Q7-2, and Q7-3)
No _____ (go directly to the question Q8)

- Q7-1: If yes, what is/are the difficulty/difficulties?
- Q7-2: If yes, in your view, what are the reasons that cause the difficulty?
- Q7-3: If yes, in your opinion, how should/can this difficulty be reduced?
- *(Please skip Q8 and go to Q9)*

Q8: If you answered "No" in Q7, how confident you are with the accuracy of the *Core Competencies* that you just selected (1 = poor confident; 5 = very confident)? Why?

Q9: Other than the *Core competencies*, in your opinion, what other information is needed or important and should also be included for implementation?

Q10: According to your business structure, what position(s), i.e., who, do you think should be in charge of performing this task (of selecting or identifying the *core competencies*)? Why?

Q11: According to your business structure, what position(s), i.e., who, do you think should be in charge of implementing these *core competencies* that you just selected to carry out the competitive methods? Why?

Section III. Data Collection of Evaluation

Q12: According to your business structure, what position(s), i.e., who, do you think should be in charge of supervising and managing each step of the co-alignment process? Why?

Q13: According to your business structure, what position(s), i.e., who, do you think should be in charge of evaluating the data obtained in each step of the co-alignment process? Why?

Q14: Once the necessary information is collected and the co-alignment process is complete, how often do you think that management needs to re-examine or update the information? Why?

Appendix 5 – Value Drivers Added through New Information & Discussions

The First Force: Technology

Forces Driving Change	*Original Value Drivers Identified*
Technology • Information creates instant transparency regarding quality of goods and services offered from a destination • Quality standards are increasingly driven by third party validators • Changing customer relationship paradigm	*Interview(4)* • Fully integrated systems • High-tech advertising agency • Quality research regarding customer data • Relationships-ability to forge with service providers • Skillful technical staff *Interview(5)* • Availability of new technology to general public, e.g., live pictures of the destination • The acceptance of technology as being real (i.e., Will the public believe what they are seeing?) *Interview(7)x2* • More than 75% know about Virginia Beach on the Internet • More than 26% of sales was sold online *Interview(9)* • Flexibility of technology spending (i.e., the CVB can redirect funds to a typical technology or to different vendors.) • Technology vendors

Value Drivers Added through New Information & Discussions

- ***Interview(1)x2***

- Ease of use of the electronic data
- Consistent understanding of technology (Understanding of the technology is various for different service providers in different levels)
- Capability of acquiring technology is various for different service providers
- Number of Mom-and-Pop operations
- Limitation of technology implementation
- Number of Large & Small service providers
- Descriptions of products & services
- Time saving in the process of buy-and-sale
- Labor saving in the process of buy-and-sale
- Traveler's demographic information
- Flag standards (issued by the corporation / validators)

- Quality standard inspectors (by the corporation)
- List of standard items in the hotel rooms
- Standard menu items for the restaurants

▪ ***Interview(2)*** → know less about this topic

- Marketing R&D
- E-mail systems
- Attractive web site
- Customer database
- The third party to ensure the quality

▪ ***Interview(3)x3***

- 24/7 information provided
- A Website-related issue (expertise, designers, host, etc.)
- Electronic information
- Accessibility of electronic information (distribution systems)
- Product & Service database
- Customer database
- Expertise for data mining
- Various database systems and their integration → data warehousing
- Accessibility to the data warehouse
- Clear information offered on the website
- Capability of e-marketing (information distribution)
- Traveler's demographic (e.g., spending pattern, consumption preference, gender, education level, from where, income, etc.)

▪ ***Interview(5)***

- The acceptance of technology as being real (will the public believe what they are seeing) → the trustworthiness of the results of the technology implementation
- Technology innovation
- Traveler's perception of technology quality & utilization
- Customer's expectation and satisfaction (e.g., don't expect to traditional key for a hotel room) → if others can do it, you should be able to do that as well; if paying $200, expect the same level of service quality
- # of sport events utilizing the technology

▪ ***Interview(6)***

- Customer's perception
- Customer's acceptance about the 3rd party's validations

- ***Interview(7)x2***

- More than 75% of the visitors know about VB on the Internet → # of online shoppers
- More than 26% of the visitors, close to national average, bought online → # of travelers bought online
- # of competitors
- Business relationships
- Customer database / demographic information
- Competitor from the 3rd party (Expedia, TravelOcity, etc.)
- Ease of booking / website design

- ***Interview(8)x3***

- # of hit on website
- # of booking through the Internet (hotels, restaurants, attractions, etc.)
- # of booking through agencies (all businesses)
- Method of payment
- Customer demographic information
- Internet technology
- Quality assurance by 3rd party

- ***Interview(9)***

- # of Mom-and-Pop business that implements the technology → hard form them to measure up with other big corporations
- Partner's (Mom-and-Pop) perceptions
- Partner's (Mom-and-Pop) ability to use the same technology
- Integration with CVB
- Capability of integration held by the private sectors
- Rating system for technology implementation
- A website as the gateway provides all P&S online

The Second Force: Assets and Capital

Forces Driving Change	*Original Value Drivers Identified*
Assets and capital • Global capital market imperatives • Tourism a low return industry • Tourism a high risk industry • New innovative attraction • A portfolio approach to financing high risk projects • Public and Private partnerships	*Interview(4)* • Knowledge of cultural variances • Data to explain actual returns vs. perceived low returns • Ability to offset high risk factors or perceptions • Master plans (regional or local) to attract quality attractions • Redevelopment policy • Strategy and incentives to develop partnerships • Good corporate ethics and reputation *Interview(6)* • Labor costs • Quality of employees *Interview(7)x2* • Customer's demand / expectation / satisfaction / perception / preference • Quality & type of the P&S • Economic condition • Competition • Price of P&S • Tax rates • Gas prices • Terrorist attacks • Record of tourism growth *Interview(9)* • Interest rate • Political atmosphere

Value Drivers Added through New Information & Discussions
▪ ***Interview(1)x2*** • ROI vs. ROI in different destinations • Visitation volume • Seasonal changes (peak and slow seasons); price variation • Improvement of the infrastructure • Uncertainty of mother nature • Uncertainty of environmental events (e.g., gas price, terrorist attack, etc.)

- Spending on the advertising campaign
- Diversification of landscape development (office, residential, hotel, restaurant) → to support/consume in the restaurants → Year-around destination → diversify the risks
- Residential density
- Number of service providers in the private sector
- The local government

▪ ***Interview(2)***

- Economic indices
- Specific economic indicators for tourism overall
- # of investors
- The quality & reputation of the developers (who build the infrastructure)
- Research capability
- Supporting businesses (to support the new attraction)
- Supporting resources (e.g,, labor forces)
- Labor costs
- Land costs
- Who are the risk takers (governments like federal, state, city and the private corporations, etc.)

▪ ***Interview(3)x3***

- Descriptions of all stakeholders (e.g., the city, committees, investors, service providers, attraction developers, etc.)
- Stakeholders' historical performance / performance
- Interest rate
- Investment money
- Quality of P&S
- Descriptions of human capital (e.g., income, salary, a.k.a., labor cost)
- Travelers preference (satisfy the greed)
- Year-around attractions
- Human capital (who, quality & desired salary)
- Sustainability of attractions; the Wow
- Cutting-age attractions / excitement

▪ ***Interview(5)*** → know less about this topic

- Overall investment environment
- Land costs
- Labor costs
- Potential ROI; Investor's perception

▪ ***Interview(6)***

- # of investment projects
- # of developing projects
- Quality of investment projects
- Quality of P&S
- Capacity of P&S
- Economic indices
- Political climate
- Wage / Salary / Benefit of employees
- # of Mom-and-Pop operations

▪ ***Interview(7)x2***

- Increase of investment products
- # of ongoing investment projects
- Investor's perception of investment return
- Volume of visitation – want to be year-round destination
- $ of investment capital

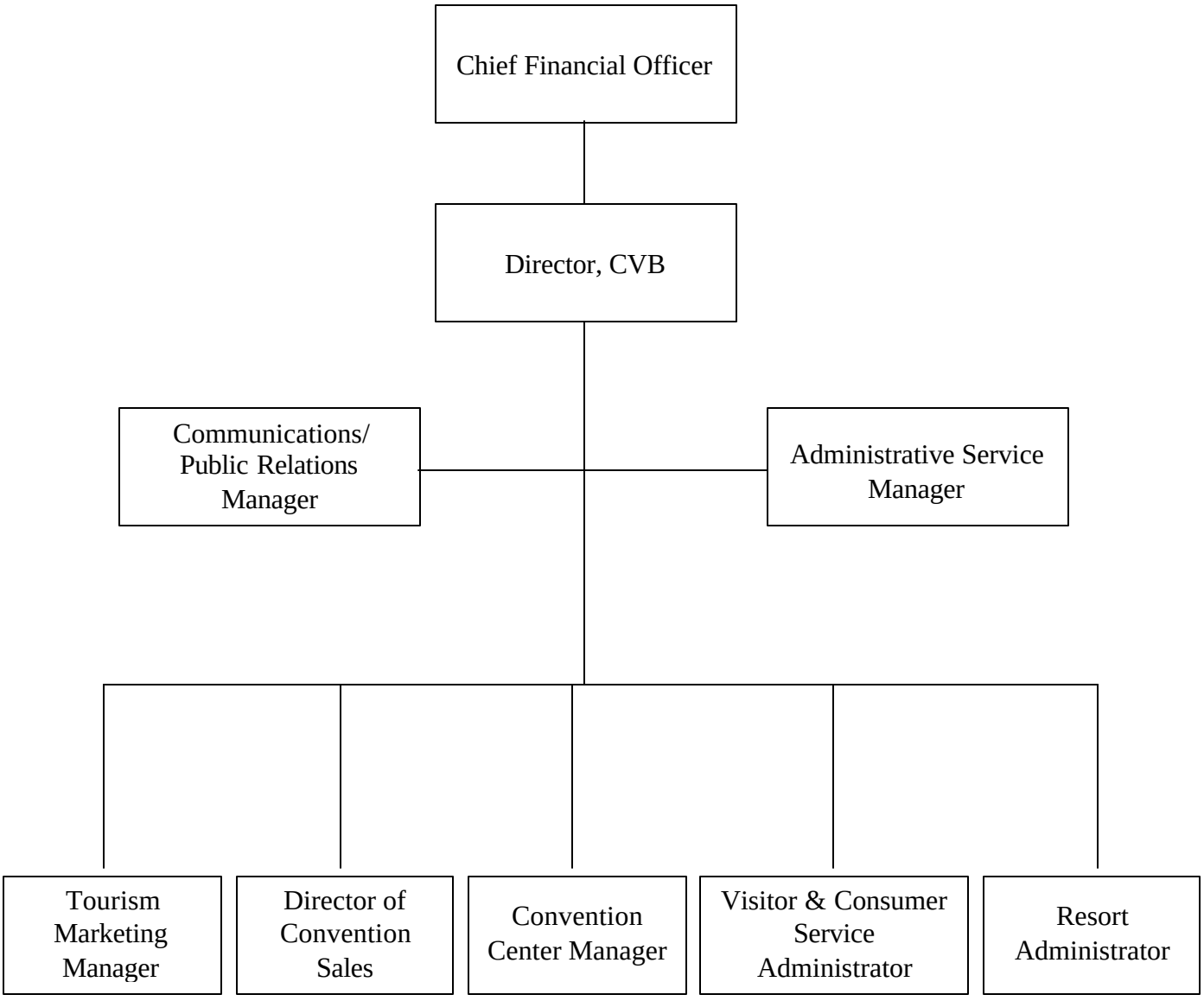
▪ ***Interview(8)x3***

- # of subscribers
- Investment indicators (e.g., ROI, risk rate, etc.)
- Occupancy rate (current & future)
- Asset liquidity
- Business revenue
- Expect return

▪ ***Interview(9)***

- Controversial public funding resources
- Not a year-round destination → Visitation volume
- Not a year-round destination → Investment projects
- Various of visions of service providers → everyone has his own
- Leadership that can politically bring everyone together heading the same direction

Appendix 6 – Structure of Convention &Visitors Bureau (CVB), Virginia Beach



Appendix 7 – The Contribution of the Study: The Overall View of the Important Considerations for the Design of the SDIS and the Coordination Strategy Framework

Five Dimensions & Seven Key Issues	Five Management Aspects	Eleven Recommendations	Ten Propositions
▪ **WHAT** (1) The data & information flows associated with the co-alignment model ▪ **WHO** (2) Knowing who should be assigned for each task (3) Knowing who should be assigned for task supervision and be responsible ▪ **HOW** (4) Understand what are the challenges (5) Provide solutions to these challenges	▪ **Strategic Management:** the concept of the co-alignment for strategic panning ▪ **Account management:** multiple accesses for multiple tasks at any location ▪ **System management:** the maintenance and management of the six-level design and the overall management of the whole system ▪ **Database management:** managing and control the quality of the data and the issues in information processing ▪ **Network management:** security for the Intranet and Internet implementation and system access	▪ **Recommendation 1:** The SDIS users have to have a good grasp on the co-alignment model, so that the data quality can be good enough to facilitate the information flows in the alignment process. ▪ **Recommendation 2:** The organization should develop a keen sense about its dynamic environment where it operates. Someone needs to be in charge of conducting environmental scanning in order to react to the changes in the environment. ▪ **Recommendation 3:** Teamwork is required for the whole alignment process. The team members should be across divisions and the team leader elected by the team is accountable for the result. ▪ **Recommendation 4:** If various types of users are involved in the system, the SDIS should have an account system (which can be viewed as a sub-system) that enables the organization to setup user's account and privileges for multiple tasks.	▪ **Proposition 1:** While utilizing an IS for strategic management purposes, the efficiency of using such a system depends on the level of knowledge and experience the users possess with respect to strategic management. ▪ **Proposition 2:** When adopting the co-alignment model for strategic management purposes, the understanding of the causal relationships among the model's constructs will depend upon the quality of information/data and how it is organized for use in decision making. ▪ **Proposition 3:** When adopting the co-alignment model, teamwork is preferred to identify the major information (e.g., FDC, VD, CM, P&S, and CC) defined in the model. A team leader should be elected by the team to be accountable for the results of the information identified. ▪ **Proposition 4:** The quality of the information/data can likely be improved if the way the information/data transmits can be managed and controlled, and thus the process of strategic management can be improved as well.

▪ **WHY** (6) Understanding the additional information, other than those in the issue (1), needed to be included in the system ▪ **WHEN** (7) The timing and time-line of the task assigned		▪ **Recommendation 5:** The evaluation process needs to be included in the alignment process and should be performed by the 3rd party from outside of the organization. ▪ **Recommendation 6:** If outsiders are involved, the SDIS should support the remote access with proper security function to protect the data and the system. ▪ **Recommendation 7:** Because data is the major element for the alignment process, the organization should have the capability to identify and collect *all* necessary kinds of data and the SDIS should have the places (i.e., databases) to store them appropriately. ▪ **Recommendation 8:** The wording used to describe the data stored/presented needs to be clear and easy to understand. ▪ **Recommendation 9:** When the system users are not familiar with the concepts or statements in the alignment process, they should be able to receive a "help" from the system. The SDIS should store all necessary kinds of supportive information, such as the concepts and definitions related to the co-alignment model, examples, explanations, etc., and make them easily to be retrieved by the users during the whole alignment process.	▪ **Proposition 5:** Effective database management is associated with organizations that are able to successfully gain competitive advantage. Organizations that employ database management correctly are more likely to achieve competitive advantage than those that don't. ▪ **Proposition 6:** Knowing "who is doing what in what step" is associated with effective information flow and successful completion of the co-alignment process. ▪ **Proposition 7:** Addressing both the managerial and technical issues underlying the five aspects – *strategic management, database management, system management, account management, and network management* is associated with successful adoption of the coordination strategy framework. . ▪ **Proposition 8:** Implementation of the coordination strategy framework portrays the integration of a strategic model and an IT application for the purposes of strategic management as well as illustrates the meaning of "strategic IT". ▪ **Proposition 9:** Effective implementation of the coordination strategy framework over time is associated with enhanced system databases and developed and accumulated organizational resources and capabilities.

		▪ **Recommendation 10:** If the supportive information is offered on other web sites, such as the information sources, the system needs to have a direct connection to the Internet in a secure mode. ▪ **Recommendation 11:** If the entire information flow associated with the co-alignment model is complete, various types of data will be successfully stored in the system. The organization is building up its databases through every completion of information flow, i.e., every alignment process, each time.	▪ **Proposition 10*:*** An effective implementation of the coordination strategy framework is likely to be embedded in the organizational structure; is difficult to duplicate, transfer, and replace; thus allowing the organization to gain and sustain competitive advantage.

VITA

Yao-Jen Chang is the son of Che and Sue-I C. Chang. He was born on February 29, 1968 in Kaohsiung, Taiwan. He earned his Bachelor of Management degree in Business Administration from Feng Chia University in Taiwan in 1991. He served in the Air Force for his country and worked in the hospitality and tourism industry before coming to the United States in August 1994.

In 1995, Mr. Chang, known as David Y. Chang in the United States, received his first Master of Science degree in Hospitality and Tourism Management with concentration in management information systems from Florida International University (FIU) in Miami, Florida. After working in the industry for two years, he returned to FIU and earned another Master of Science degree in Computer Science with concentration in database management and system design in 1998. During his graduate study, Mr. Chang also worked as one of the leading system designers in the Multimedia Computing & Database System Lab, an affiliation of the High Performance Database Research Center in the School of Computer Science at FIU. Later, he joined the Hemispheric Center for Environmental Technology in Miami, Florida, as a Project Manager and Senior Programmer Analyst.

In order to integrate all of his learning across different disciplines, Mr. Chang advanced his academic training and earned his Ph.D. degree with concentration in strategic management, information technology, and finance in Hospitality and Tourism Management at Virginia Polytechnic Institute and State University in August 2004.

Mr. Chang's primary research, teaching, and consulting interests focus on strategic applications of information systems while not contradicting the concepts in finance. The knowledge and experience that he possesses in strategic management particularly lays out a solid foundation for him to integrate technology and finance with

other managerial topics. He taught courses like database management, Internet technology & implementation, and finance at the junior and senior levels and published in journals and proceedings and made his appearances at several international conferences.

While pursuing his academic career, Mr. Chang continuously provides consulting services that he started in 1998 to the businesses in the United States and in Taiwan. He was a certified software engineer and has designed several information systems in the past years for businesses in private and public sectors, including two core systems for the State of Florida and a design of database architecture for the National Aeronautics and Space Administration (NASA).