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Antecedents and consequences of electronic distribution channel strategies in the United States lodging industry: Operator’s perspectives

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ANTECEDENTS AND CONSEQUENCES OF ELECTRONIC DISTRIBUTION
CHANNEL STRATEGIES IN THE U.S. LODGING INDUSTRY:
OPERATOR’S PERSPECTIVES

by

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A dissertation submitted in partial fulfillment
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Antecedents and Consequences of Electronic Distribution Channel Strategies in The U.S. Lodging Industry: Operator's Perseptives

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ABSTRACT

Antecedents and Consequences of Electronic Distribution Channel Strategies in the U. S. Lodging Industry: Operator's Perspectives

by

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This study investigated hotel operators’ perception of electronic distribution channel strategies and antecedents and consequences of those strategies. The study was launched in an attempt to examine if there is an empirical linkage between these antecedents and consequences of electronic channel distribution strategy in the U.S. hotel industry.

While there are plenty of issues around distribution channel management, four research questions were formulated based on marketing and organizational theories: 1) contingency theory, 2) diffusion of innovation theory, and 3) channel power theory.

Several organizational and environmental determinants were posited from these overarching theories, including organizational slack, top management involvement, investment level, and innovativeness of the organization. The proposed consequences of electronic distribution channel strategies comprise negotiation power and performance.
As a preliminary attempt to apply these theories in the hotel electronic context, the scope of the research was limited to empirically test the model with the data collected from U.S. hotel operators.

Adopting a holistic view for model development, the current study proposed twelve hypotheses. The data was collected via web-based survey. An ordinary path analysis using composite score revealed that eight proposed hypotheses hold true in hotel electronic channel strategy. The finding of study implies that some proposed organizational determinants do not work in the same way as in other business organizations. For example, slack resource did not have a significant impact on a company’s organizational innovativeness or investment level. The result was in line with the disagreement among researchers from the school of innovation adoption, in that the relationship between slack and innovativeness might not be substantial or could be non-linear. Slack resource is assumed to result in more investment in technology-related studies, but is hardly tested in the data. The results of this study imply these issues cannot be overlooked and further investigation should occur in this area. Another groundbreaking discovery from this study was that top management involvement in managing channel distribution does not necessarily enhance the effectiveness of the management in hotel electronic context. Managing electronic distribution channels requires a number of choices and decisions to be made in a fast moving environment. The finding explains why hotel executives should hire experts to manage their electronic channels, rather than trying to control and manage channels for themselves. The study identified positive effects of proposed antecedents on Internet distribution strategy and its consequences.
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CHAPTER 1

INTRODUCTION

Distribution channels are undergoing continual transformation due to changes in market forces and technology. During recent decades, technology has improved at a faster rate than ever before, causing enormous change in the market. One of the most eminent changes in electronic distribution is that hotels are no longer only a product provider, but also a distributor of the product.

Hotel room inventories have traditionally been distributed through intermediaries such as travel agencies, tour operators, or incentive houses (O’Connor & Frew, 2002). However, the popularity of the Internet has enabled traditional third party agencies to transform into online intermediaries, providing hotels with additional channels of distribution. Further, hotel distribution is becoming more competitive due to new business models, such as “merchant” and “opaque” distribution, which offers lower rates to those who book online. Additionally, customers are becoming more proficient at using the Internet to search for the best rates. Altogether, these forces have caused fundamental changes in the way hoteliers conduct their business.

Now the competition is not just between specific companies within the same industry. As Robert (1990) stated, this means alternative ways for the consumer to obtain the desired result. In hotel distribution, the emergence of web-based distribution channels turned hotels into non-direct competitors of third-party distributors; and the availability
of online booking engines also made traditional intermediaries (wholesaler, brick and mortar travel agencies, etc.) more directly available to the end consumer. As a result, many intermediaries have turned their focus to improving their presence on the Internet, and driving more traffic to their Websites.

For operators, the problem is more complicated. They are now forced to play dual roles as both a supply chain service provider and a distributor. This requires operators to place greater importance on the jobs of managing inventories on the web, assessing the profitability of the various channels, and maintaining consistency and accuracy in the way their property information is presented.

While competing in this fast moving environment, continual strategic choices should be made in order to ensure the best return possible for their investment in available resources. Management that can successfully overcome these challenges will obtain the competitive advantage and will survive in today’s environment. It is not necessary to say that today’s dynamic markets are forcing hotels to design increasingly complex channel strategies involving multiple channels of distribution (Olsen, Tse, & West, 1998).

Online travel distribution currently represents a substantial portion of the total market, and it is still growing quickly. The online proportion will reach half of the travel market by 2006 (PhoCusWright, online), totaling 115 billion U.S. dollars. Considering the fact that hotel room sales were 20% of the travel segment in 2001 (Carroll, 2002), the need to investigate hotel electronic distributions is of high importance.

Simultaneous to the substantial growth in business volume through online, offline channels such as call centers and traditional travel agencies are diminishing in their dominance. According to the projection made by PhoCusWright (Carroll, 2002), between
the years of 2004 and 2006 business volume via call centers will drop from 45% to 38%, while offline travel agency business will decrease from 13% to 9%. However, the online travel agency is expected to generate an increase in volume from 17% to 23% in the same period, while hotel Website bookings are expected to see a jump of 13% to 18%.

As a result, electronic channels are gaining more importance to all parties involved in distribution; hoteliers, intermediaries, and consumers. More online bookings are made than ever before. This phenomenon, however, has had its share of evils. This includes price wars, slimmer margins with the newer business models that online travel agencies use, and “trained” customers who shop for the lowest price on the Web. For hotels, little data has been compiled about the real profitability of online booking as well as the control over the way that their inventory was sold. Hotel operators have begun to give more thought to where their inventories are placed and at what rates the room inventory should be sold. Whether or not the bookings are coming from a hotel’s own website or third party sites, it is important for hoteliers to gain insight and formulate effective Internet channel strategies.

Problem Statement

In today’s turbulent environment, hotel operators need to make effective strategic choices with their limited resources. These choices should be designed to maximize their competitive advantage and add significant value to the firm. The goal of every organization is to gain sustainable competitive advantage by establishing a well-designed strategy (Olsen, et al., 1998).
In the lodging industry, achieving a sustainable competitive advantage is very difficult, as competitive methods, regardless of how unique, can be easily copied by other hotels (Olsen, et al., 1998). In terms of hotel distribution, the profitability of each individual channel should be identified before formulating the yield management strategy; however, the fast pace of change makes managers' decisions more difficult than ever. An effective Internet distribution strategy will assist decisions on managing distribution and the corresponding revenue. However, modest research has been completed on web-based distribution, and of the research that has been done little has focused on the area of channel distribution in the lodging industry.

Hotel operators, through professional associations, show a consistent concern about these fast moving changes in the area of hotel electronic channels. Although calls have been made for more attention to the distribution channel strategy in electronic context, there has been limited empirical research examining antecedents and consequences of electronic distribution strategy in hospitality business and service academia. Academia has been neglecting the generation and application of theory in this important area. It is obvious that a number of theories can be applied to the current situation to better predict and explain the modern phenomenon experienced by the hotel industry. Thus, hotel operators' voices must be heard and reflected in the academic research.

This study was initiated by two factors: the rapidly growing electronic distribution market, and the lack of theory to explain the phenomenon. This research will focus on exploring the various Internet distribution strategies and the perspectives of the hotel operators.
Purpose of Study

The purpose of this dissertation is to explore the hotel operators' perception of Internet distribution channel strategies and the antecedents and consequences of those strategies. In this study, the researcher will examine the current status of hotel distribution channels; examine the impact of electronic distribution (Internet and web-based channel will be interchangeably used in the place of electronic distribution channel) in relation to the outcome performance and its precedents; and test if there is an empirical linkage between these antecedents and consequences. This research will be the first attempt of this kind, relating the electronic context and service context. The scope of the research is limited to the hotel operators' perception (in other words, the service provider portion of the supply chain) and does not examine these issues from the retail (intermediary) perspective. This will exclude the perception of customers on channel usage. Also, the researcher is more concerned about room distribution to the end customer (B2C), and not placing weight on the B2B channels; therefore, corporate business travel sites or franchise groups will be mentioned briefly, but are not the focus of this dissertation.

Research Questions

From the problem statement and purpose of the study, the following research questions are drawn:

1) What is the relationship between electronic distribution strategy and its antecedents (slack, investment, innovativeness, top management involvement)?
2) Do the empirical linkages between determinants of performance (operational efficiency) found in previous research on distribution channel management hold up in the electronic context?

3) Is the impact of innovativeness on performance mediated by the electronic distribution strategy?

4) Does intraorganizational power have a mediating effect on the performance?

*Note: Research questions will be addressed through three organizational theories; contingency theory, channel power theory, and diffusion of innovation theory.

Significance of Study

This study will contribute to the hotel industry and academia by formulating grounded theory and validating empirical links. These links are suggested by theories that relate to various hotel distribution channels. This dissertation will suggest an appropriate path model and empirically test associated effects of antecedents of electronic channel strategy and its linkage to the channel performance in distribution channel literature.

Definition of Terms

Booking engine: A technology need to power the booking section of a website so visitors can make a hotel reservation.

Brick and mortar travel agencies: Traditional travel agencies. Face with eliminated airline commissions, agencies are charging fees for service to customers. Facing financial
pressure, they are using GDS connections as a cost-saving and service extending tool. They are replacing commissions with inventive payments from hotels and these payments most times include GDS fees (Carroll & Siguaw, 2003).

CRS: Central Reservation System is a system that is used by hotels in one chain or organization. These systems are used to maintain hotel information, inventories, and rates and to manage the reservation process for the chain or individual hotels belong to the chain.

Extranet: The functionality used by some large online agencies that is accessible by a Web browser to allow a hotel reservation department to update its hotel information, room inventory, and rates. It looks like a website but it is password restricted to authorized hotel users and only allows information entry and updating.

GDS technology: Global Distribution Systems are large reservation systems originally designed for airlines and now widely in use by travel agents only to book all forms of travel. These systems generally use older technology and are not connected through the Internet, however most of the GDS vendors also have related websites for various customer groups.

Intermediary: An intermediary is an independent third party involved in the marketing and distribution of hotel room inventory from the service provider to the end customer. Travelocity, Expedia, and Orbitz are travel agencies that fulfill this role.
Merchant model: The business model used by online travel agencies that solicits net rates (non-commissionable and discounted) from hotels that are then marked up and sold online. The affected hotel may or may not know the rate that is ultimately posted and sold. In other words, the rate the hotel sold to the online travel agency is not posted on the guest folio. This model was traditionally used by offline wholesalers who normally marked rates up and sold them through packaging to retail agents.

PMS: A Property Management System is a software used onsite at individual hotels to allow for guest check-in and check-out. These systems vary but most have functionality for room inventory tracking and assignment, making internal reservations, generating guest billing, flagging rooms that are not available, and guest messaging, among other features.

Online travel agencies: This refers to the large websites offering travel agency services online and offering wide ranges of hotel offerings (usually thousands) using wholesale and retail pricing models. Many were initiated as online only however some also offer traditional offline service. These agencies are also referred to as third party intermediaries (TPI) or third party website.

Opaque (auction and price-driven sites): Opaque sites are online channels that hide product information until the purchase is finalized. Usually hotels use such sites when they want to sell distressed inventories, sacrificing potential profit by deep discounts in
the exchange of immediate non-refundable payments. There are two kinds of opaque websites: brand opaque and price opaque. The brand opaque products protect hotels’ rates by omitting the name or location of the product until the customers have made a purchase (e.g. Hotwire). The price opaque sites display the names of the supplier but the price is hidden in the bundled offerings (e.g. Travelworm). Opaque models can also occur in an auction or ‘name-your-own-price’ situation (e.g. Priceline). One negative aspect of opaque was that the property diminishes its ability to differentiate itself (Carroll, 2002). It can also commoditize hotel selection, as the consumer choice emphasis is on price rather than amenities or services. The recent emergence of a third kind of opaque moderates this effect by the use of opaque with travel packages, hiding elements of an individual portion of the total price of a package.

Rate Integrity: This term refers to consistency of rate throughout different systems so the same rate and availability option will be displayed in the different distribution methods: on the hotels’ websites, third party travel agency call centers, etc.

Rate Parity: This term refers to the strategy to maintain consistency of rates between channels. Rate parity is enforced through contractual agreements between hotel and third party vendors. Hotels ensure that rates available for any given time period will be consistent, usually by preventing a third party vendor from offering “better deals” to customers than the hotel’s direct channel for any given time period.
REP (sometimes called CRS as well): Representative Company is a company that is created by a third party vendor to support many unrelated independent hotels and small chains. They often develop a system to maintain hotel information, inventories, and rates and to manage reservations process for the hotels in the system.

Retail model (TA via GDS): This is a pricing model used by online and offline travel agencies to sell a hotel rate as provided by a hotel and they expect the hotel to pay a commission on the sale, usually 10% (Green, 2005).

RevPar (revenue per available room): is a metric used to assess the effectiveness of inventory and rate management decisions. It is calculated by dividing total room revenue by the total number of available guest rooms, for a given period.

Revenue management: This is the science of managing room inventory and rates in order to optimize hotel revenue given the constraints of competitive supply in the marketplace with the flow of demand at every rate level.

Search engines: Yahoo, Google, and MSN provide a function where a user can find information using key words by sending queries which return a list of related websites for reference.

Search Engine Optimization: is the process advertisers use to gain prominence in the listing from query returns (entered as key words). Appropriate use of copywriting and
links from and to relevant and complementary sites can improve the likelihood of ranking high on a listing. Websites can also pay for listings in response to a specific keyword (Pay Per Click).

Switch Company: ensures hotel CRS and PMS are getting connected to GDS. There are two major switch companies in the United States, Cendant’s Wizcom and Pegasus (originally known as THISCO). Except Micros operating systems, most PMS systems should go through these two switches to get connected to the GDS. Most hotel CRS (except Marriott, Hilton, and Starwood) maintain connectivity to GDS using one or both switches. REP companies such as Synixis and TRUST (Cendant) also use switches as do CRSs.

*Note: Several terms are followed the definition provided by HSMAI report (Green, 2005).
CHAPTER 2

REVIEW OF RELATED LITERATURE

Distribution Channels

Distribution channels are also referred to as marketing channels. A marketing channel is defined as a set of legally independent organizations performing all of the functions necessary to make a product available for the consumers or industrial users (Kotler, Armstrong, Linden, & Adam, 1998; Stern & El-Ansary, 1992). More specifically, in a managerial decision-making viewpoint, Rosenbloom (1999) defines a marketing channel as the external contractual organization that management utilizes to achieve its distribution objectives. Rosenbloom pays special attention to four objectives in this definition: external, contractual, organizational, operational, and distributional.

Product, price, and promotional strategy are three of the four so-called "Ps" in the marketing mix. Place, in marketing channel strategy, offers greater potential for gaining a competitive advantage than the others because it is more difficult for competitors to copy in the short run (Rosenbloom, 1999). Rosenbloom (1999) accounts for this because channel strategy is long-term, usually requires a structure, and is based on relationships between people.

There are two general research areas with regard to marketing channels (Frazier, Sawhney, & Shevani, 1990). One relates to the structure of a channel, answering the question of how the channel is generally organized to fulfill its basic purpose of creating value for a firm's customers; while the other is related to the behavioral dimensions of the
channel, addressing the question of how channel members perceive, build, and deal with inter-firm relationships that exist within the channel. The former argues that a specific structure is more efficient such as structure of vertical/horizontal channels, number of distribution points in each level, number of players in a channel’s structure, and the physical distances and locations of distribution points. The latter examines the impact of relational issues on performance such as power, conflict, control, interdependence, cooperation, commitment, and opportunism (Rohm, 2001).

Both marketing and operations management research are concerned with the analysis of management mechanisms to control distribution, as well as the relationship of distribution policy to the firm’s competitive environment. In industrial marketing, interests have focused on the analysis of distribution channel management, which is concerned with the selection of actions and mechanism to supply customers. Unlike manufacturing, the service industry does not consider the operations perspective of the control of material flow through physical distribution of goods. Therefore, in the service industry when we refer to a distribution system, the length of a channel structure becomes much shorter than channels for product and the physical point of a network of stock control (logistics management) does not comprise channel system management. According to De Lesser (1997), more concern should be placed on the target market issues associated with service channel design; such as where to locate service facilities (geography), how large the facilities should be to meet demand (market size), and whether sufficient numbers of customers will be within range of the service (market density), as well as when, where, how, and who will use the services (market behavior).
Channels in Service Marketing

A great deal of attention has been focused on services in recent years. The service sector of the U.S. economy is more than twice the size of the manufacturing sector. Moreover, services account for more than half of all consumer expenditures, and created almost 80 percent of all new jobs in 1980’s. (Lovelock, 1993).

Rosenbloom (1999) asserts that service marketing differs from product marketing in its approach and emphasis, and that the four basic strategic components of the marketing mix (product strategy, price strategy, promotional strategy, and distribution strategy) should be treated differently.

Service has been distinguished from product in marketing literature by five characteristics: intangibility of service, inseparability of service from service provider (production and consumption), heterogeneity (difficulty of standardizing of service), high degree of customer involvement in service, and the perishability of service. In many cases the five characteristics have significant implications for channel management, especially in the formulation of channel strategy - designing the channel, managing the channel, and evaluating channel member performance (Lamb & Crompton, 1985; Light, 1986).

Rosenbloom (1999) further provides additional characteristics of service marketing that are important in developing and operating marketing channels for service. These are shorter channels, franchised channels, customization of services, and channel flows. In prevailing cases, the service channel is direct from the service provider to the end-user, and may not require intermediaries (Branoff & Donnelly, 1970; Rathmell, 1974; Stern & El-Ansary, 1992). Conversely, in the marketing literature for goods, theories for channel
structure assumes that production, distribution, and consumption are separated, and that decisions regarding resource allocation and output levels within the channel are influenced by the services as well as the levels desired by consumers (Bucklin, 1966).

The most important characteristic of franchised channels is the close relationship developed between the franchisor and franchisee, involving trademark, marketing strategy, training, merchandising management, operating manuals and standards, quality control, and continuing two-way communications. Real estate, automotive repairs, lodging, recreation, rentals, educational services, restaurants, dry cleaning, business services, and hospitality use franchise channels. Real estate sales, hotels, education, and upscale restaurants can provide highly customized services. There is actually no physical flow of the products through the channel in most service channels.

Whether or not the service is delivered “directly” by a service provider or “indirectly” through the use of intermediaries, in the service delivery system, production occurs mostly at the end of the service network. Hence, when service intermediaries are utilized by service firms wishing to spin-off the distribution function, they quite often end-up producing as well as distributing the service, a situation that is very different from the marketing of goods (Lewis, 1985).

Electronic Marketing Channels

The traditional manufacturer-to-intermediary-to-consumer channel structure is being radically altered by the use of multiple channel strategies and the growing popularity of the Internet, resulting in a much more complex channel environment. The use of multiple channel strategies, in which the manufacturer or service provider employs more than one sales and distribution channel to serve homogeneous markets, has grown recently. This
has been mostly due to technology developments such as the Internet, and its consequences including increased market segmentation and heightened competition (Frazier, 1999). The Internet has evolved as a viable marketing channel for the firms that wish to expand their market penetration, reduce costs, increase revenues, and strengthen customer loyalty through its use.

The increased use of the Internet provided additional channels. Literature supports the claim that the primary motivations for supplier firms establishing multi-channel arrangements are the desire to increase market share and to reduce costs (Frazier & Antia, 1995). The reason for hoteliers employing multiple channels, including electronic ones, is no different; to maximize exposure and market share, and reduce costs. This increasingly prevalent trend is referred to as a hybrid distribution strategy and it has dramatically altered the demand placed on channel managers (Webb & Hogan, 2002).

Frazier and Antia (1995) observed while the use of multiple channels enhances market coverage, it can also reduce sales through any single channel because different market segments usually overlap. While Internet-based/web-based technologies provide opportunities for multiple channels, segmentation-overlap or cannibalization could prove problematic.

a. Still, there are many advantages to using Internet-based channels. The Internet facilitates the globalization of business relations. The relatively low costs of the use of electronic networks make it easier to trade with existing and new business partners and to use information systems to customize trading relations.
Generally speaking, electronic intermediaries are aimed at bridging the gap between the sellers' offers and the customers' wishes and requirements during the trading process. Internet-based technology extends the functions traditionally provided by intermediaries (Rosenbloom, 1999). Electronic intermediaries play an increasingly important role in supporting the trading process between buying and selling organizations, yet it is not clear which functions are viable or add value in a given situation. There is a continuing discussion about the viability and the disappearance of intermediaries in the literature. However, the advancement of technology has raised the capabilities of distributors at such a rapid pace that a reallocation of certain tasks from hoteliers to distributors is inevitable (Narus & Anderson, 1986).

In many industries, the emergence of the Internet has led to more direct channel approaches (Forrester Research, 2000; Ghosh, 1998; Roberts, 2000). This may result in disintermediation, in which the manufacturer bypasses the existing retail base and seeks to deal with the end-customer directly.

Theoretically, disintermediation should improve supply chain efficiency, by allowing upstream parties better visibility into market demand (Tsay & Agrawal, 2004). Intermediaries by tradition efficiently create and satisfy demand, through activities that include building brand and product awareness through advertising and customer education, providing market coverage, gathering market information, providing breadth of assortment, processing orders, customer support, etc, collectively called “sales effort” (Tsay & Agrawal, 2004). If a manufacturer or service provider (hotels) decides to eliminate intermediaries, they should attend to these functions efficiently; otherwise the decision may cause an erosion of profits, market share, or both. Stern, El-Ansary, and
Coughlan (1996, p. 115) noted that "It is an old axiom of marketing that it is possible to eliminate wholesalers (or middlemen) but impossible to eliminate their functions".

Retaining direct and intermediated channels is a compromise alternative which may enable greater market penetration than using either one alone. However, this establishes the manufacturer as a direct competitor to its intermediary partner, potentially leading to tension referred to as "channel conflict." In general, channel conflict can undermine attempts to develop cooperative relations in the intermediated channel, which may lower the profits of all parties. The desire to use both channel types may compel a manufacturer or service provider to redefine its relationship with its intermediaries, with careful attention to the division of labor and any associated financial terms.

Recent empirical and conceptual research (Alba, Lynch, Weitz, Janiszewski et al., 1997; Iacobucci, 1998; Peterson, Balasubramanian, & Bronnenberg, 1997; Pitt, Berthon, & Berthon, 1999) emphasizes marketers' enhanced abilities to build and maintain relationships with the end-customer, due in part to the information and communication capabilities offered by the Internet.

Blattberg and Deighton (1991) cite the potential of interactive marketing and individual customer addressability as a source of competition. Related to the use of the Internet, Alba et al. (1997) and Peterson, Balasubramanian, and Bronnenberg (1997) discuss several characteristics of the Internet that offer potential competitive advantages to the manufacturer over traditional marketing channels. These characteristics include manufacturer-consumer interactivity, one-to-one consumer addressability, and the ability to distribute digital goods instantaneously.
Pitt, Berthon, and Berthon (1999) contend that the Internet will significantly influence distribution processes and possibly eliminate existing distribution channels. The authors suggest three major effects of the Internet on traditional distribution channels. The first is that the Internet will render the critical role of distance and buyer-seller separation within distribution channels irrelevant. The second is that the nature of time will become homogeneous or uniformly consistent for both buyer and seller. No longer will buyers be dependent on limited retailer hours: buyer and sellers will be able to conduct business over the Internet simultaneously. The third effect is that location will no longer remain a critical channel element, as buyer-seller transactions move from physical marketplaces to virtual market spaces that are not dependent on physical location for success.

Iacobucci (1998) states that distributed networks such as the Internet are structured in terms of one-to-many, many-to-one, and many-to-many types of connections, whereas traditional channels are characterized by mass marketing and manufacturer-or retailer-centric connections. Networked communication and informational systems such as the Internet potentially allow for greater reach and manufacture-consumer interactivity, sometimes initiated through consumer-centric hubs.

Additional manufacturer benefits resulting from the use of the Internet as a commercial and informational channel alternative include the potential for higher profit margins and greater control over the exchange process. The Internet makes it possible for manufacturers and service providers to interact effectively with individual consumers, primarily through the availability of powerful informational tools that allow the efficient capture, storage, search, filtering, and profiling or personalization of information.
The characteristics of the Internet described here may foster or exacerbate relational issues among channel partners (e.g. manufacturer or service-provides and their intermediaries). The literature examining the impact of the Internet on marketing activities has also identified several moderating factors proposed to influence the firm’s adoption of the Internet as a sales and distribution channel. These moderators include intrafirm and environmental factors (Alba et al, 1997; Light, 1986), which is the theoretical foundation of this dissertation.

Electronic Distribution Channels in the Hotel Industry

Hotel electronic distribution systems have in recent years reached a state of rapid evolution since the emergence of web-based channels. Before the emergence of the electronic channels, hotel rooms were sold through the traditional methods listed below.

Traditional Distribution Methods

a. Direct hotel to customer sales.

b. Hotel sells to a travel agent who then re-sells to the customer.

c. Hotel sells to both travel agent and a customer.

d. Hotel sells to a tour operator who then resells to travel agents who eventually sell to the customer.

e. Hotel sells to customer through its own central reservation office.

f. Hotel sells to travel agents through a central reservation office, and the travel agent then resells to the customer.

The Internet acts as an advertising vehicle where potential customers can obtain information from a brochure or guidebook, as well as an interactive medium - where they can make reservations, complete financial transactions. Now room inventories are
marketed primarily through electronic intermediaries, which are independent organizations that support buyers and sellers to coordinate their activities using information technology in distribution networks.

Web-based travel services provide customers with “one-stop shopping”, and reduce time, expense, and inconveniences required by traditional booking methods. Additionally, it guarantees the hotel exposure to potential guests 24 hours a day. Furthermore, the prospect of selling distressed rooms inventory with short lead times and the potential of immediate nonrefundable payments made many jumped on board without anticipating the consequences of not having a deliberate strategy.

Development and Background

The concept of hotel electronic distribution channel management traces back to the 1970s when the USA transportation deregulation enabled airlines to change their routes and fares as frequently as desired. This generated a demand for efficient and effective internal and external communication with all airline stakeholders. It stimulated the development of CRS as central planning administration and commerce platforms for airline. CRSs enabled airlines to communicate with travel agencies, consolidators, and other distributors and to update routes, availability and prices constantly. Following the deregulation “fare wars” multiplied the fares structure and increased computing and communication needs. The sophistication of CRSs expanded in order to distribute up-to-date information to all potential customers worldwide, and to support the operation and administration of the airlines. Additionally, CRSs were effectively developed into marketing and distribution systems, and contributed significantly to the competitiveness of vendor/host airlines (Buhalis, 2004).
CRS introduced three major financial benefits for vendor airlines; specifically a wide distribution network and CRS services, revenues generated from services to third parties, and incremental benefits through directional selling to the parent carrier. Fare wars complicated the fare structures and increased the computing and communication needs (Buhalis, 2004).

For the first time travel agents were given direct, real-time access to the availability and rate of participating hotel properties through switch and Global Distribution Systems (GDS). GDS was initially developed for the airline industry in the 1960s (Das, 2002) as a way to keep track of flight schedules, availability, and prices. Prior to this, travel agencies had to manually enter a client’s reservation, then telephone or send a telex to the airline company in order to reserve a client's trip. By the end of the 1970s the travel agency channel used this legacy GDSs provided by airlines. Travel agencies found electronic booking less costly to their operation and began to insist that all products be available for them through these channels. Hotel booking capability was added along with car rental. It was nothing but an addition to the airline GDS for the convenience for the travel agencies at that time. In order to accommodate the travel agents’ demands and be where the bookings were, hotel chains had to build expensive interfaces to each of the major GDS systems and ultimately joined together to build the THISCO switch (now called Pegasus) to gain GDS access. Later, Wizcom by Cendant offered similar GDS connectivity to hotel industry (Green, 2005). This movement was initiated in late 1990s as the cost of booking using GDSs and travel agents increased. Currently, many of hotel CRS systems (except Marriott, Hilton, and Starwood) utilize a “switch” to connect to the four GDSs. This saves monies for hotels by eliminating the need to maintain separate
connectivity to four individual GDS vendors. When hotel CRSs are connected to one of the switch companies (Wizcom or Pegasus), the switch maintains all four connections to the GDS system on their behalf.

Hotels also began to looking to web-based systems as an alternative way to distribute their products. The industry's effort to reach customers directly, without a travel agent, was initiated by TravelWeb (by THISC0) in 1994. The website featured five major hotel chains by 1996 (Hyatt, Marriott, Hilton, Starwood, and Intercontinental along with Pegasus). Hotels that were part of the TravelWeb network managed their rates and inventory through their own CRS, then through TravelWeb. Thus, hotels that used TravelWeb did not need to pay GDS fees.

By 2000, most of the GDS companies were spun off from the legacy GDS (primitive GDS for airlines) and they provide Web capability, such as corporate intranets, for the agents to replace the legacy GDS technology. There are currently four major GDS systems in the United States: Amadeus, Galileo, Sabre, and Worldspan. In addition, there are several smaller or regional GDSs, including SITA's Sahara, Infini (Japan), Axess (Japan), Tapas (Korea), Fantasia (South Pacific), and Abacus (Asia/Pacific) that serve interests or specific regions or countries (Das, 2002).

Websites like Travelocity and OneTravel started to provide customers with the ability to book all travel products (air, hotel, car, etc.). The traditional function of travel agency and GDS, such as maintaining customer relationships and providing a connection between hotels and travel agencies, began to be provided by same vendor on Internet.

Orbitz recently adopted the TravelWeb model. Hotels manage their inventory through SRP’s in the CRS, and then forward them to Orbitz. The merchant model within the
Orbitz group allows hotels to upload rates and inventory via an extranet site, thus circumventing the cost of distribution partners. Hotwire is the largest distribution partner for Orbitz having some owners in common with Hotwire.

**Hotel Electronic Distribution Structure**

As mentioned earlier, hotels began to utilize GDSs in order to ensure retail intermediaries' (travel agents) access to their room inventories. As airline GDSs transformed to (Travelocity and Orbitz) or aligned themselves with (Priceline) Internet travel retailers and sell inventories to the public on their websites, they become direct competitors to travel agents and hotel sales. The proliferation of these public portals, coupled with the increase of awareness on the customer side, has made it more difficult for operators to manage channels. These companies started to evolve into something more likely to resemble a third party website (Green, 2005). In other words, these websites provide travel agency services and functions, on the Internet, as traditional travel agencies did before the Internet emerged. They are available directly to the customers, many times utilize merchant or opaque models, and collect service charge from the travel agencies who are connected to their GDS systems, and sometimes collect fees from customers for services. More recently, these companies employ dynamic net rate strategy (net rate is decided as a percentage of hotel rack rate) or negotiate flat amount with hotels. Figure 1 presents an inclusive vertical structure of hotel electronic channels based on business models utilized.
There are literally thousands of Internet sites that sell hotel rooms (Green, 2005). Information flows that these sites receive (hotel availability, hotel information and rates) can be consolidated to the following four nodes (also see Figure 2):

a. Transfer through GDS (node A): This is a simple transfer of hotel information from the GDS to the Internet site. For example, Travelocity.com (Sabre), Hotels.com (Worldspan and Sabre), and OneTravel.com (Amadeus) utilize GDSs to populate their websites with hotel information, room types, room rates, and availability.
b. Direct transfer through Switches without GDS (node B): Sites (such as Travelweb.com, Orbitz.com, Expedia.com, lastminute.com, and Hotwire.com) receive information of participating hotels from the switches (Pegasus and Wizcom) directly.

c. Direct transfer through Extranet (node C): Expedia* wholesale and other larger online travel agencies use direct connection with individual hotel properties PMS through special web-based tool, extranet. These extranets are systems that resign outside of website but feeds directly only to property management system.

d. Manual Transfer using other methods (node D): Some Internet sites receive information from and pass reservations to hotels, manually through e-mail or fax.

* Expedia is migrating some chain hotels to a two-way interface directly with CRS or PMS systems through IAC’s Newtrade subsidiary. This will reduce the need for extranet usage by individual properties.
Internet sites\textsuperscript{a}, also referred as online travel agencies or online intermediaries can be broken down into five groups depending on their customers (B2B or B2C) and their business practice; Merchant model, Opaque, Retail travel websites (commission-based), Branded sites, and Alternative Distribution System (ADS).

a. **Merchant Model (Online wholesale travel agencies): Hotels.com, Expedia.com**

Merchant sites pay net wholesale rates. They operate as a traditional wholesaler in terms of rate and mark-up, but they communicate and transmit reservations entirely online. Hotels offer net rate (discounted by 20-35\%) and the merchant site post rates on their website. Some hotels negotiate mark-up for room types and seasons. This business model receives much attention as the use and volume continue to increase and hotels are asked to pay taxes on the full rate.

\textsuperscript{a} Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
b. **Opaque: Priceline.com, Hotwire.com**

Opaque sites are online channels that hide product information until the purchase is finalized. Customers make commitment to purchase based on general location and rate range that they are willing to pay. There are two kinds of opaque used in websites; brand opaque and price opaque. The brand opaque products protect hotel’s rates by omitting the name or location of the product until the purchase is consummated (e.g. Hotwire). The price opaque sites display the names of the supplier but the price is hidden in the bundled offerings (e.g. Travelworm). Customers indicate how much they are willing to spend and the vendor matches the request to a hotel in the specified destination based on the meeting price. Opaque models can also occur in an auction or ‘name-your-own-price’ situation (e.g. Priceline).

c. **Retail (brick and mortar and online travel agencies): Carlson Wagonlit Travel, Opodo, Orbitz, Golf.com**

Retail websites includes online only and brick and mortar travel agencies. Hotels provide retail rates and commission in the 10% range (Green, 2005) based on room rates booked. Merchant and retail sites become more and more hybrids. Many travel agencies deploy both models. For example, Orbitz and Travelocity previously began with retail model, but now also offer merchant inventory (net rates) for airline seats. Orbitz continues to sell retail rooms and receive commission from hotels.
d. **Hotel/Branded sites** : Hyatt.com, Marriott.com, Hilton.com

Branded sites are usually offered to individual properties by a large scale brand. These are considered a direct and more profitable channel (Green, 2005; Kang, Brewer, Baloglu, 2005). Therefore, a more deliberate design and strategic management of this channel is required. Currently in search engine queries (e.g. using destination name and “hotel”) does not list individual properties in the branded site highly, due to the way in which the text on the site is written and their approach to seeking links from other sites (Green, 2005). Many individual properties and independent hotels develop highly functional websites as a part of their distribution strategy.

e. **Alternative Distribution System (Destination sites, Niche sites)**

These sites include specialty websites designed to attract specific market, such as skiers, fisherman, hunters, golfers, outdoorsman, and the spa market. Convention and visitor bureaus are included in this category. Destination directories such as these charge operators a commission or fee for their listing.

Many spin-off airline travel agencies and traditional agencies who traditionally sold hotel rooms on the basis of commissions (8-10%) have more and more utilized merchant model or a hybrid because of the potential for healthier margins (20-30%). Merchant sales (mostly hotels) represented 55% of Expedia’s net revenues for the first six months of 2002 (Green, 2005). Hotels.com had always operated under the merchant model, and it
had been profitable for years before other online agencies went into the black (Carroll, 2002). IAC reportedly conducted almost 90% of its volume via the merchant model compared to Travelocity and Orbitz that started in the retail model and recently added merchant programs (Green, 2005). Travelocity has been lagging behind competitors in revenue and profit growth (Carroll, 2002).

**Hotel Electronic Distribution Market**

The growth rate of the online travel market is exceeding that of the total travel market. PhoCusWright (2005) projected that more than half of travel will be purchased online by 2006, totaling 115 billion U.S. dollars. This figure is an almost twofold increase from $58.2 billion in 2003, as shown in Table 1.

<table>
<thead>
<tr>
<th></th>
<th>2003</th>
<th>2006*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Travel</td>
<td>$189.8</td>
<td>$213.8</td>
</tr>
<tr>
<td>Total Online</td>
<td>$58.2</td>
<td>$115.0</td>
</tr>
<tr>
<td>Penetration</td>
<td>31%</td>
<td>54%</td>
</tr>
</tbody>
</table>

* Projected


Various travel products are sold online. These products are broken into 6 major segments: airline seats, hotel rooms, car rentals, cruises, vacation package, and international travel. In 2001, hotel room reservations ranked second, taking 20% of the online travel market, following the largest market - airline seats (Figure 3). As online travel agencies focus on higher margin hotel sales, the percent of online travel sales
generated by hotels is forecasted to increase to 23% in 2005 according to the PhoCusWright projection (Carroll, 2002).

![Pie chart showing the composition of the U.S. Online Travel Market.]

Note: From Hotel & Lodging Commerce 2002-2005 (p.3.4), by W. J. Carroll, 2002, Sherman, CT:PhoCusWright, Inc. Copyright 2002 by PhoCusWright Inc. Adapted with permission.

Figure 3. Composition of U.S. Online Travel Market.

More importantly, the growth rate of online channels began to excel. As shown in Figure 4, the volume generated by online travel agencies and hotel sites are growing while the use of offline channels (call center, offline travel agencies, and walk-ins) is shrinking. Much of the volume on third party sites has been due to the fact that there were lower rates available on the site (Green, 2005).
Figure 4. Comparison of Channel Breakdown, 2004 versus 2006.
The use of online channels (online travel agency and hotel’s website) are increasing whereas that of offline channels (call center and offline travel agencies) were declined in 2006.

While accurate industry-wide statistics are still difficult to gather, and different reports provide a number of figures, the consensus is that it is clear the combination of direct and third party booking is growing at a rapid pace. For example, PhoCusWright and AH& LA project that total hotel room revenue will increase steadily and the proportion of online room revenue will grow fast as shown in Figure 5 (Green, 2005). Offline room revenue, however, is projected to be downward.
PhoCusWright report a similar trend that electronic booking revenue is increasing rapidly. More importantly, the reports forecast escalated use of hotel-branded sites, running close with third party travel agent sites by 2006 (Figure 6). Branded sites will comprise about half of the electronic booking revenue in 2006 according to their projection. This fast moving wave advances as hotels and chains work to develop marketing strategies to take advantage of the benefits and protect them from the risk. These risks include turning over rates and inventory to third parties and the trend of consumers relying so heavily on search engines to guide them through the densely populated travel options on the Internet (Green, 2005).
Figure 6. Comparison of Room Revenue though Internet, Branded and Third Party Sites.

As of 2003, the four GDS systems comprised about one-third of all electronic volume through their travel agency networks (Green, 2005). Of those four GDS vendors, as shown in Figure 7, Sabre (47%) has the largest market share, followed by in order as Galileo (29%), Worldspan (13%), and Galileo (11%).

Note: From “De-Mystifying Distribution: Building a Distribution Strategy One Channel at a Time (A TIG Global special report)”, by C. E. Green, HSMAI report, p. 17. Copyright 2005 by HSMAI. Adapted with permission.

Figure 7. Market share of four GDS companies in 2003 based on the number of bookings.

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Third party online travel agencies have had many shakeouts over the last five years.

In 2003, the nine sites presented in Table 2 represents well over 90% of the non-branded hotel volume (Green, 2005). It is notable that while the merchant model generates the highest volume, operators still think of these channels as low profit (but highly viable) channels compared to other types of electronic channels (Kang, Brewer, & Baloglu, 2005). The study from Kang et al. (2005) reported that merchant and opaque sites were anticipated to stay by hotel operators nevertheless both are though of not driving much profit to the hotels. Table 2 below presents the market share of these 9 online intermediaries by brand.

Table 2

<table>
<thead>
<tr>
<th>Online Travel Agencies/ Intermediaries</th>
<th>2003 Hotel market Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>IAC(Expedia, hotels.com, Hotwire)</td>
<td>58%</td>
</tr>
<tr>
<td>Travelocity</td>
<td>14%</td>
</tr>
<tr>
<td>Orbitz*</td>
<td>11%</td>
</tr>
<tr>
<td>Cendant* (Cheap Tickets and Lodging)</td>
<td>8%</td>
</tr>
<tr>
<td>Priceline and Travelweb</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>97%</strong></td>
</tr>
</tbody>
</table>

In 2004, Cendant entered into an agreement to acquire Orbitz that will move them up to the number 2 player in online travel for hotel sales.

*Note:* From “De-Mystifying Distribution: Building a Distribution Strategy One Channel at a Time (A TIG Global special report)”, by C. E. Green, HSMAI report, p. 20. Copyright 2005 by PhoCusWright, Inc. Adapted with permission.

Table 3 depicts the breakdown of online booking penetration by the type of property - luxury vs. economy. Limited service properties and brands, such as economy and mid-scale, are more likely to be booked online than luxury properties. Online penetration rates could be 100-200% higher for such properties and brands (Carroll, 2002).
### Table 3
**Distribution of Properties by Type, 2001**

<table>
<thead>
<tr>
<th>Type</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luxury</td>
<td>2.4</td>
</tr>
<tr>
<td>Upscale</td>
<td>5.8</td>
</tr>
<tr>
<td>Midscale with F/B</td>
<td>25.6</td>
</tr>
<tr>
<td>Midscale without F&amp;B</td>
<td>40.9</td>
</tr>
<tr>
<td>Economy</td>
<td>22.5</td>
</tr>
<tr>
<td>Extended Stay</td>
<td>2.8</td>
</tr>
</tbody>
</table>


In summary, hotel rooms will continue to be purchased online. In 2004, hotel online reservations constituted 20 percent of all hotel revenue booked, totaling $15.5 billion (PhoCusWright, 2005). This figure will reach $24 billion by 2006, which will reflect 27 percent of all hotel revenue booked. These numbers are average representations. There are independent hotels and smaller chains that regularly report that more than 50 percent of their volume comes from electronic sources. With their predictions already exceeding the overall estimates for 2003 and 2004, it is likely that their online volume will continue to grow into a significant majority of their business (Green, 2005).

Thus, it is critical for hotel operators to understand their options and capabilities relative to their distribution strategy, and to formulate strategies to cope with these prominent trends. Organizational structure and technology is an underlying need for the new distribution networks to be comprehended by all interrelated departments, such as operations, finance, marketing and senior executives. The details of this technology and distribution strategy will make the difference in a hotel’s success in this environment.
Theoretical Background of Research

Over the past decade marketers have adopted increasingly complex channel strategies in response to shifts in consumer shopping behavior, the globalization of markets, intensified market competition, and the advent of the Internet. The execution of Internet-enabled channel strategies by service providers such as hotels may significantly alter existing channel strategies and business processes. Despite the emerging concerns and issues associated with this evolutionary distribution method have yet to be addressed, the fundamental and generic foundation of past marketing channel strategy should contribute to the understanding of Internet-based distribution channel strategy.

The theoretical foundation of antecedents and consequences of electronic distribution channel strategy is drawn from three theories in this dissertation: contingency theory, channel power theory, and innovation adoption theory. The integration of major perspectives can provide a more thorough understanding of business settings (Brush & Artz, 1999; Burke, 2002; Xia & Patterson, 2004). While contingency theory provides an explanation for the link between strategy and environment, a recent stream of research indicates that this link is mediated by innovation (Atuahene-Gima, 1996; Hurley & Hult, 1998; Han, Kim, & Shrivastava, 1998). Also, the power dynamics among channel members brought by an Internet-enabled environment should be explained by the long-established channel power theory (Rohm, 2001).

In the following section, the historical development of the strategy definition will be discussed, and then the general development of three theories will be followed with special reference to the business strategy. Accordingly, the antecedents and consequences
will be drawn from the three theories, and the hypotheses will be presented. As a final point, the model will be proposed.

**Definition of Strategy**

Strategy derives its meaning from the Greek word *strategos*, the art of the general (Hart, 1967). In an effort to adapt strategy to organizations, researchers have presented a wide range of definitions over the years.

One of the first on record that relates the concept of strategy to organizations from a business perspective traces back to Van Neumann and Morgenstern's (1947) work. They defined strategy as a series of actions by a firm that are decided according to the particular situations, the key contributor to the concept of strategy.

Other researchers who contributed to the development of the organizational strategy include Chandler (1962), Drucker (1954), Andrews (1971), and Ansoff (1965). Chandler’s concept of strategy is widely served and accepted by most other studies. It focused on the need to develop basic long-term objectives of an organization and the courses of action and allocation of resources accordingly. The focus was oriented toward growth and product/market. Other researchers, such as Hofer (1975), Mintzberg (1979), Miles and Snow (1978), and Chakravarthy (1982), defined strategy as a pattern/stream of decisions taken to achieve the most favorable match between the external environment and organizational capabilities, in an effort to achieve goals and objectives set by a firm.

Drucker (1954) also placed emphasis on objectives in every area where performance and results directly affect the survival and prosperity of the business. Management is required to constantly analyze the present situation, reformulate the objectives, and make changes accordingly. Ansoff (1965) also adapted this view of the concept of strategy.
According to Ansoff (1965), strategy allows management to guide the firm and would enable outsiders to perceive the firm's future direction. His definition of strategy is decision rules that define the scope and growth direction of the firms. He also identified the complementary components of strategy as the product-market scope, the growth vector which indicated the direction in which the current product-market is moving, competitive advantage, and synergy. Hofer and Schendel (1978) expanded the concept of strategy to four components: scope (product-market and geographic territories), resource deployments and distinctive competencies, competitive advantage, and synergy. 

Another important definition was proposed by Andrews (1971). He defined strategy as a pattern (objectives, purposes, goals and major policies, along with a plan for achieving the firm intended goals) within the organization. He proposed four components that the firm should be decided on; market opportunities, corporate competencies, resources, personal values, and obligations to segments of society other than stockholders. These early views of strategy, though somewhat different, shared a common view of strategy as a process.

Porter's (1980) view, taken dominantly in the 80s, described strategy as coping with competitive forces, and believed that firms must take offensive or defensive actions to create a defensible position in an industry. In his later article, Porter (1996) defused strategy as the creation of a unique and valuable position involving different sets of activities. His definition is more in line with current definitions that view strategy as a way to achieve and sustain competitive advantage (Aharonim, 1993).

More recent definitions use strategy interchangeably with the policy (Rumelt, Schendel, & Teece, 1994). Current definition is referred to as the process though which
strategies are chosen and implemented, including the analysis of the internal and external environment, the formulation of strategies, and the implementation and measurement of the firm performance.

Despite the different definitions, strategy is generally an attempt by a firm to achieve and sustain competitive advantage over other firms (Aharonim, 1993). According to Tse and Olsen (1999), the differences are found in three primary areas: the breadth of the concept of business strategy, the component of strategy, and the inclusiveness of the strategy-formulations process. The similarities lie within the recognition that business strategy is an environmental analysis used to determine a firm position and that the firm resources are used to reach its major goals. Table 4 summarizes various definitions of strategy proposed by multiple researchers.

**Levels of Strategy**

Researchers (Miles & Snow, 1978; Porter, 1980; Segev, 1989; Barnett, Grieve, & Park, 1994) have developed different typologies of types of strategies firms must use to outperform their competitors. Understanding how to gain competitive advantage to outperform competitors has been the focus of many researchers in the field of strategic management (Barney, 1991; Porter, 1985). Lado, Boyd, and Wright (2000) found two competing models. There are models that deal with industrial organizations (Bain, 1959; Hill, 1988; and Porter, 1980, 1985) and others that focus on the resource-based view (Barney, 1991; Lippman and Rumlet, 1982; Reed and DeFillipi, 1990; Collis and Montgomery, 1995).
<table>
<thead>
<tr>
<th>Author</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Van Neumann and Morgenstern (1947)</td>
<td>A series of actions by a firm that are decided on according to the particular situations.</td>
</tr>
<tr>
<td>Drucker (1954)</td>
<td>Analyzing the present situation and changing it as necessary. 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.</td>
</tr>
<tr>
<td>Chandler (1962)</td>
<td>The pattern of objectives, purposes or goals and major policies and plans for achieving these goals.</td>
</tr>
<tr>
<td>Andrews (1971)</td>
<td>Concerned with long-range objectives and ways of pursuing those that affect the system as a whole.</td>
</tr>
<tr>
<td>Ackoff (1974)</td>
<td>A unified, comprehensive, and integrated plan designed to assure that the basic objectives of the enterprise are achieved.</td>
</tr>
<tr>
<td>Glueck (1976)</td>
<td>The match between organization resources and skills and the environmental opportunities and the risk it faces and the purposes it wishes to accomplish.</td>
</tr>
<tr>
<td>Hofer and Schendel (1978)</td>
<td>A pattern or stream of major and minor decisions about an organization possible future domains. Consistent patterns in streams or organizational decisions to deal with the environment.</td>
</tr>
<tr>
<td>Miles and Snow (1978)</td>
<td>Coping with competition. A general program of action of major importance with an implied commitment of emphasis and resources to achieve a basic mission.</td>
</tr>
<tr>
<td>Porter (1980)</td>
<td>The creation of a unique and valuable position involving different activities.</td>
</tr>
<tr>
<td>Olsen, Tse, and West (1998)</td>
<td></td>
</tr>
</tbody>
</table>
In an overview of the strategic management process, Hofer and Schendel (1978) proposed four hierarchical levels of strategy: enterprise strategy at the top, corporate, business, and functional strategy. Later, the four levels of strategy were modified by Thompson and Strickland (1996) to three levels: corporate, business, and functional. The level is dependent on where it is applied.

a. **Corporate Strategy:** At the corporate level, a strategy refers to the overall plans and portfolio of business units under the control of an organization. The essential part of corporate strategy is integrating diverse businesses into a manageable portfolio. The main question faced in this strategy is what businesses to enter, divest, or strengthen. Sociopolitical and cultural factors also need to be considered in this level of strategy. The focus is on the influence of these factors at the industry level rather than at the broader society level. Product market decisions are made at this level of strategy, as are technology development and use decisions.

b. **Business Strategy:** A firm's business strategy involves the optimum allocation of this resource in order to achieve competitive advantage. At the business level, a strategy can be described as a pattern of collective decisions made at various functional levels that reflects the overall intentions of a firm to compete effectively with others involved in the same industry or strategic group. In addition, this level of strategy focuses on integrating the functional areas such as accounting and marketing into the business. In other words, a particular business strategy adopted by a company has the purpose of helping it become an effective competitor. This business strategy is reflected in the pattern of the combination of
plans and decisions at the various functional levels such as marketing, production, distribution, and technology. Therefore, the issue here is not whether to enter or to exit a business, but how to compete effectively.

c. **Functional Strategy**: This integrates the sub-functional areas of the firm into the functional areas. Coordination is the key focus in a functional strategy; for example, the advertising plan for a new product launch is coordinated with personal selling and sales promotion. Coordination is not limited to one department within the firm. Electronic distribution strategy, therefore, can be considered as a functional strategy if the management of Internet channel requires coordination of multiple departments. However, it can be also the business strategy and corporate strategy depending on the management focus.

These strategy levels are hierarchical and each level is constrained by the one above it. That is, a functional strategy would be constrained by a firm’s business strategy and a higher level of strategy drives all the other levels. Yet, the strategy process is not unidirectional, despite this hierarchical structure. Just as a firm can embrace business use of technology at the corporate level, it is possible that the influence of technology can occur at lower levels of strategy. For instance, consider a large hotel corporation which has not included use of electronic distribution system as part of its mission statement. One of their operating properties, however, is facing external pressure to change its reservations system to a more efficient one. Suppose the senior managers of this property realize that a proactive approach to the technological change will ensure the business’s survival and long term profitability, and decide to take appropriate action. In this case corporate strategy has emerged from the business strategy level. Importantly, the positive
consequences of such a strategy could have a feedback effect on the corporate strategy of the firm, whereby the firm arrives at the realization that its survival and legitimacy in industry may depend on its business level strategy.

**Definition of Marketing Channel (Distribution) Strategy**

Kotler (1988) defines marketing strategy as the broad principles by which the business unit expects to achieve its marketing objectives in a target market. Marketing channel strategy can be viewed as a special case of the more general marketing strategy. Rosenbloom (1999) defined it as principles or guidelines for achieving the firm’s distribution objectives for its target markets. The definition focused specifically on place aspect of marketing strategy, rather than on its general marketing objectives of marketing mix, product, price, and promotional strategy (Cravens, 1986). Rosenbloom (1999, pp 164-165) content that in order for a firm achieves its distribution objectives, from a marketing channel management perspective, the following six decisions should be addressed:

1. What role should distribution play in the firm’s overall objectives and strategies?
2. What role should distribution play in the marketing mix?
3. How should the firm’s marketing channels be designed to achieve its distribution objectives?
4. What kinds of channel members should be selected to meet the firm’s distribution objectives?
5. How can the external contractual organization (marketing channel) be managed to implement the firm’s channel design effectively and efficiently on a continuing basis?
6. How can channel member performance be evaluated?

An Integrative View - Contingency, Innovation Adoption, Channel Power Theory

In relation to the aforementioned definitions of strategy, three theories in the area of organizational and external environment will be discussed in the following session; contingency theory, innovation adoption theory, and channel power theory.

Contingency Theory

The original structural contingency frameworks developed within organizational theory. In the 1960's, theorists challenged the long-standing notion of the existence of a single “best way” to organize and manage (Lawrence & Lorsch, 1967; Burns & Stalker, 1961). Theorists such as Burns and Stalker (1961), Perrow (1970), Thompson (1967), Lawrence and Lorsch (1967), and Galbraith (1973) drew work on investigating the importance of environment, technology, structure, and size.

Lawrence and Lorsch (1967) first initiated an open systems theory of how organizations adapt to meet the demands of their environments. They suggested that organizations that achieve a high degree of sub-unit differentiation while maintaining high integrations between sub-units are best equipped to adapt to environmental changes. In addition, they suggested that organizations must balance differentiation and integration to be successful. They thought up the term “contingency theory” to address factors that need to be balanced. Basically, contingency theory suggests that firms can reduce the uncertainty through better planning coordination, often by rules, hierarchy, or goals.

It is generally thought that strategic contingency theory began with Chandler’s (1962) work on strategy and structure. Strategic contingency theories build upon contingency theory constructs in suggesting that managers have some choice. For example, Child
(1972) argues that decisions are constrained, but not absolutely determined, by technical and environmental conditions.

Nevertheless, the external environment is a powerful contextual variable that is at the foundation of contingency-based research. Even though uncertainties do not provide a comprehensive description of the environment, the majority of the traditional researches on external environment were focused on the effects of uncertainty on organization structure (Burns & Stalker, 1961; Galbraith, 1973; Lawrence & Lorsch, 1967; Perrow, 1970).

Uncertainty is embedded in either environment or technology and mediates their effects on organizational structure (Pennings, 1975). The feelings of uncertainty about the state of the environment and technology underlie decision makers' attitude change toward the existing structure and prompt to devise a new one. According to Bell, Raiffa, and Tversky (1988) uncertainty is a characteristic of situation and the decision maker confronts an array of states-of-the-world, one of which will prevail, and he must choose an action. According to this definition, uncertainty does not reflect a decision maker's feelings, attitudes, or behaviors elicited by these situational characteristic. In other words, a situation is considered uncertain when the relevant decision makers do not have information about environmental factors, and when they have difficulty predicting external changes (Duncan, 1972; Galbraith, 1977). The level of uncertainty is a function of the changes in the environment and not a function of how the decision makers perceive them and feel about them (Burns & Stalker, 1961; Duncan, 1972; Emery & Trist, 1965; Hage & Aiken, 1969).
Researches such as Khandwalla (1977), Duncan (1972), Waterhouse and Tiessent (1978), Ewusi-Mensah (1981), Ouchi (1979), Daft and Macintosh (1981) provided a useful taxonomy of environmental variables as summarized in Table 5.

Table 5

<table>
<thead>
<tr>
<th>Author</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duncan (1972)</td>
<td>Complex and dynamism</td>
</tr>
<tr>
<td>Khandwalla (1977)</td>
<td>Turbulence, hostility, diversity, complexity</td>
</tr>
<tr>
<td>Waterhouse and Tiessent (1978)</td>
<td>Simple-complex and static-dynamic</td>
</tr>
<tr>
<td>Ouchi (1979)</td>
<td>Ambiguity</td>
</tr>
<tr>
<td>Daft and Macintosh (1981)</td>
<td>Equivocality</td>
</tr>
<tr>
<td>Ewusi-Mensah (1981)</td>
<td>Controllable and uncontrollable</td>
</tr>
</tbody>
</table>

Since 1980 it is apparent that the key variables have been confirmed as descriptors of fundamental, generic elements of context. Many recent studies focus on contemporary aspects of the environment, technologies, and structural arrangement. They draw on the original organizational theorist to develop arguments that help explain how the effectiveness of business strategy and management depends on the nature of contemporary setting. Contemporary researchers identified the most important new stream of literature has been that related to the role of strategy (Chenhall, 2002).

This has been assimilated within the traditional organizational model in ways that suggest important links between strategy, the environment, technology, and the organizational structure. Likewise, Scott (1988) asserts that effective organizational structure is determined by its technology, task environment, and strategy. Some define strategy to include the goals and objectives of the organization, but others suggest a
narrower definition limited to its plans and activities. Such differentiation aside, strategy involves positioning the organization relative to the environment and competitors, to meet organizational goals and ensure survival (Shortell & Zaja, 1990). Expanding on the purpose of strategy, Daft suggests that deciding on strategy is a primary function of top management in responses to the internal and external environments (Daft, 1998). Day and Wensley (1988) supported this proposition that there is a need to include the relationship of the marketing function of the firm with both internal and external factors.

In turn, strategy determines organizational design. A feedback loop exists between strategy and organizational design, further influencing the development of strategy. Consequently, strategy and organizational design determine organizational effectiveness and outcomes. These relationships are depicted in Figure 1, an adapted model from Daft (1998).

Strategic contingency theorists also identify the important influence of power and coalition interests on the structural choices organizations make (Hickson, Hinings, Lee, Schneck, Pennings, 1971). The primary source of organizational power is environmental uncertainty, since those who deal with it more successfully gain the most influence in the organization. Figure 1 also depicts the influence of power in determining strategy. Figure 8 delineates the relationship of determinants.
Some seminal works of hospitality researchers applied contingency theory, focusing on strategy and the environment (West, 1988; Dev, 1988; Crawford-Welch, 1991), strategy and structure (Schaffer, 1986; Tse, 1988) and strategy and implementation (Schmelzer, 1992; Parsa, 1994). More recently, researchers (Murthy, 1994; Connolly, 1999), have investigated different areas within the business strategy in their quest to answer the question on a firm's success. For instance, Connolly (1999) investigated investment in information technology in hotels decision-making. He explained the resource allocation process using the co-alignment principle with respect to information technology and global distribution systems. The commonality in aforementioned studies in hospitality is the relationship between strategy and performance. Each researcher chose different avenues to prove this relationship (Taylor, 2002).
In summary strategic contingency theory suggests that there is no one best way to organize and it depends on the nature of the environment in which the organization operates. High uncertainty in the environment affects a component of the organization, but not all parts are affected equally. In addition, strategic contingency theory suggests the role of management and power in influencing the design, or structure, of the organization.

*Note: The causal link between strategy and structure will not be tested in this dissertation due to the difficulty of operationalization and contradicting view. For example, the process perspective suggests that an organization’s strategy is conditioned by its internal structure (Bower, 1970). In this view, managers are constrained in their decision-making process by how the firm is organized (Hall & Saias, 1980; Prahalad & Doz, 1981). Conversely, the some contingency perspectives suggest that structure follows strategy (Chandler, 1962; Ozsomer & Prussia, 2000).

**Innovation Adoption Theory**

The preceding sections have been a discussion, drawn from a view of the literature, of the position of business strategy in the strategic marketing process of the firm. While the business strategy can be understood in the organizational environmental context, the impact of technology innovation plays an important role in the implementation of channel management (Bamber & Lansbury, 1988; Dewan, Freimer, & Seidmann, 2000; Johnston & Vitale, 1988; Kimber, 2001).

The concept of information technology (IT) competence was first addressed in the 1980s in articles that categorized IT as a competitive advantage. During the period, literature examined how applying technology provides a corporate technical advantage
A recent stream of research indicates that the link between market environment and strategy-performance is mediated by innovation, and innovation is contingent (Atuahene-Gima, 1996; Hurley & Hult, 1998; Han, Kim, & Shrivastava, 1998; Jones, 1996).

The focus on organizational innovation adoption seeks to understand the determinants of adoption in the organizational setting, so organizational determinants are the most commonly evaluated. However, organizational innovativeness is viewed as a joint function of innovation determinants, organizational determinants, and environmental determinants (Rodgers, 1995) as depicted in Figure 9.

![Figure 9. Determinants of Innovation, suggested by Rodgers (1995).](image)

Previous innovation research has shown that several organizational determinants are consistent predictors of innovation adoption, across innovation or industry types. These predictors are 1) relative advantage and compatibility, 2) management support and
composition, 3) strategic orientation, 4) slack, 5) information processing, and 6) communication.

The relative advantage is the degree to which it is considered better than the idea it supersedes (Rodgers, 1995). Variables representing relative advantage include the gain or maintenance of organizational status, improvement of financial performance and obtaining higher market share (Wilson, Ramamurthy, & Nystrom 1999). Compatibility is the degree to which an innovation is perceived as consistent with needs, values and beliefs, and past experiences (Rodgers, 1995). The relative advantage and compatibility suggest a “fit” among organizational goals, organizational context, and the technology adopted (Chau & Tam, 2000; Tornatzky & Klen, 1982). Management support and composition refers to leadership characteristics and composition of the organization. These affirm the influence of having a champion for a particular technology at a high organizational level and further espouse the power of position (Amar, 1998; Premkumar, Ramamurthy, & Crum, 1997; Lai & Guynes, 1997; Ramamurthy & Premkumar, 1995). Regarding management structure, the Gartner Group found that “leading edge” adopters of IT are often structured with the Chief Information Officer (CIO) reporting directly to the Chief Executive Officer (CEO) (Porter, 2001). Placing the CIO at the executive level sends a visible and implicit signal to other organizational actors of the value of IT. Equally important, the direct report to the CEO further aligns IT considerations with the business model of the organization. Such a structure of course places the CIO in a position of considerable power. Organizational power has been shown to be a predictor of innovation adoption in organizations (Baldrige & Burnham, 1975). In the similar line, revenue managers reporting general managers directly, or general managers involved
with channel management directly, espouse the power of position and the direction of the leadership.

*Strategic orientation* refers to the actions organizations take in response to environmental change. Research findings consistently have shown that proactive organizations are more likely to adopt innovations.

*Management slack* refers to unused resources or the degree to which an organization has uncommitted resources (Rodgers, 1995). Slack is considered essential to smooth operations and positively related to innovation adoption (Lai & Guynes, 1997; Damanpour, 1991; Scott, 1998). Using size as a proxy measure of slack is general practice since size indicates the organization's capacity to adopt technology (Rodgers, 1995). For example, size has been found to be significant in the adoption of integrated services digital networks, open system technology, and electronic data interchange technology (Chau & Tam, 2000; Premkumar et al, 1997; Lai & Guynes, 1997; Ramamurthy & Premkumar, 1995).

*Information processing* refers to the information needed to produce goods or services. Theories argue that increased task uncertainly, diversity, and interdependence require more information processing among decision-makers to achieve a given level of organizational performance (Galbraith, 1974; Li & Ye, 1999). Organizational structure that is reflected in increased information processing includes: 1) complexity: the degree to which and organization's members have relatively high knowledge and expertise; 2) specialization: the number of products or services that use a high level of expertise; and 3) functional differentiation: the degree to which an organization is divided into sub units (Rodgers, 1995; Kimberly & Evnaisko, 1981). Complexity and specialization have
been identified as predictors in a meta-analysis of organizational innovation adoption (Damanpour, 1991). Finally, several organizational studied have identified internal and external communication as predictors of innovation adoption (Bobrowski & Bretschneider, 1994). Similarly, inter-organizational networks were associated with the adoption of computer-aided production technology (Robertson, Swan, & Newell, 1996).

Table 6 summarizes these research findings, categorized by determinant and indicator direction.

<table>
<thead>
<tr>
<th>Determinants</th>
<th>Direction</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative Advantage</td>
<td>+</td>
<td>Chau and Tam (2000)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wilson, Ramamurthy, and Nystrom (1999)</td>
</tr>
<tr>
<td>Compatibility</td>
<td>-</td>
<td>Chau and Tam, 2000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ramamurthy and Premkumar (1995)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tomatzky and Klein (1982)</td>
</tr>
<tr>
<td>Management Support and Composition</td>
<td>+</td>
<td>Amar, 1998</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Friedman and Goes (2000)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lai and Guynes (1997)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Premkumar, Ramamurthy, and Crum (1997)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Baldridge and Burnham (1975)</td>
</tr>
<tr>
<td>Strategy</td>
<td>+</td>
<td>Tabak and Jain (2000)</td>
</tr>
<tr>
<td>Slack Resources</td>
<td>+</td>
<td>Damanpour (1991)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Glandon and Counte (1995)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lai and Guynes (1997)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tabak and Jain (2000)</td>
</tr>
<tr>
<td>Slack (measured by Size)</td>
<td>+</td>
<td>Chau and Tam (2000)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Friedman and Goes (2000)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kimberly and Evnaisko (1981)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lai and Guynes (1997)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Premkumar, Ramamurthy, and Crum (1997)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ramamurthy and Premkumar (1995)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rodgers (1995)</td>
</tr>
<tr>
<td>Information Processing</td>
<td>+</td>
<td>Damanpour (1991)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kimberly and Evnaisko (1981)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Li and Ye, 1999</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rodgers (1995)</td>
</tr>
<tr>
<td>Communication and Organizational</td>
<td>+</td>
<td>Bobrowski and Bretschneider (1994)</td>
</tr>
<tr>
<td>Relationships</td>
<td></td>
<td>Damanpour (1991)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dos Santos and Pfeffers (1998)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tabak and Jain (2000)</td>
</tr>
</tbody>
</table>
Organizational studies have evaluated the influence of environmental determinants, also referred to as market factors, on innovation adoption. Environmental determinants are factors of the organization's geographical location that have been posited to influence innovation adoptions. This includes demand, competition, and market competition.

Several aspects of the environment may influence innovation adoption, among them demand, regulation, and competition. Environmental uncertainty, comprised of two measures, turbulence and competition has been identified as predictors of innovation adoption. Table 7 summarized the finding of research on environmental uncertainty, categorized by determinant and indicator direction.

Table 7
Determinants reflecting Environmental Uncertainty

<table>
<thead>
<tr>
<th>Determinant</th>
<th>Direction</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turbulence</td>
<td>+</td>
<td>Friedman and Goes (2000)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Germain (1996)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rai and Bajwa (1997)</td>
</tr>
<tr>
<td>Competition</td>
<td>+</td>
<td>Kimberly and Evnaisko (1981)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Premkumar, Ramamurthy, and Crum (1997)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Raider (1998)</td>
</tr>
</tbody>
</table>

Some hospitality researchers examined innovations in relations to the organizational strategy and structure (Jones, 1996; West & Olsen; 1989). Jones (1996) proposed 15-step process for innovation development, contending that well-designed strategy and closer relationships between allied departments enhance the effectiveness of innovation effort. He asserts that innovation itself as well as the size of the company are contingent factors and the degree of innovation adoption can vary according to the environmental factors. West and Olsen (1989) also found in their investigation of high performers and low
performers of food service industry, that higher performers significantly utilize innovation in facilities and equipment than its counterpart.

Overall, diffusion of innovation literature suggest both external and internal environments influence the adoption of innovation decision and technology innovation should be considered as a key contextual factors, which have an moderating effect on firm’s strategy. In the following session, the theoretical development of organizational relationship and the impact of Internet on the relationship among channel members will be discussed. The special attention will be place on the channel power amongst other relational issues.

Channel Power Theory

Academia provides a proliferation of scholarly information and writing on channel member’s relationships, from a channel power framework (Beirer & Stern, 1969; Hunt & Nevin 1974; Lusch & Brown, 1982; Gaski, 1984). Researches in distribution channels unanimously agree that technology innovation such as the Internet confer more power to the customers and brought about upheaval in the manufacturer distributor relationship. Yet few studies, if any, have investigated the role and direct impact of the Internet on channel relations and channel strategy. While the little has been done in examining the ways in which firms transition from existing to Internet-enabled channel strategies and structure, the hotel’s execution of Internet-enabled marketing channel strategies may be understood using traditional channel power theory.

The definition of power has been consistent in the marketing channel context. The most acceptable definition of power was provided by El-Ansary and Stern (1972): The power of a channel member is his ability to control the decision variables such in the
marketing strategy of another member in a given channel at a different level of distribution. For this power to qualify as power, it should be different from the influenced member’s original level of control over his own marketing strategy (El-Ansary & Stern, 1972).

However, the origin of power theory traces back to time when Dahl (1957) and Emerson (1962) defined power as a property of a social relationship. They viewed power not as an attribute of a person or group, but as an attribute of the interaction among people or groups.

Since then, most discussions of channel power was explained in the relationship between two channel members (Dahl, 1957; Emerson, 1962; Nagel, 1975). Emerson (1962) has called attention to the relationship between power and dependency between two organizations. According to Emerson (1962), the level of power of one organization is inversely proportional to the dependence of the other. Both Emerson (1962) and Frazier (1983) viewed dependency from the perspective of goal attainment. They hypnotized that the more important the other party is to the organization’s goals, the higher the dependence, and the lower the power of the organization. Pfeffer (1981) looks at the ability of the organization to provide needed resources and to absorb uncertainty. Because the other party is dependent on the organization for these abilities, the organization’s power increases. Minzberg (1979) discusses inter-organizational relationships using a model whereby the interaction between firms is the influence of “associates” and the desire to gain access to the external coalition. The power relationship between “associates” and the organization is determined by three key factors: essentiability, substitutability, and concentration. These means the more essential the
resource supplied to the organization, the more power the supplier has. Griesinger (1984) suggest that to change stakeholder power, one can control information or the processes by which decisions are made, substitution of common for scarce resource, market domination, negotiation of contracts, or merger or acquisition.

Most traditional channel research has not assessed power directly. Rather the discussion was focused on the perceived bases or source of power. The French and Raven typology (1959) has been heavily utilized. The five bases of power are described as reward, coercive, legitimate, referent and expert. Reward and coercive power are distinguished from one another by the respective positive and negative valence; the dynamics of their use is different. Legitimate power is not always dependent on the role of relations (i.e. Authority), but can come from some other code or standard.

Disappointingly, French and Raven (1959) typology has not been supported empirically in most cases, leading dichotomized examination of power. For example, Hunt and Nevin (1974) used coercive (punishment) and non-coercive (reward) sources of power as the bases. The other approach considers the bases as economic or non-economic (Etgar, 1978). However, the dichotomization is criticized as overly simplistic (Brown, Lusch, & Muehling, 1983; Brown & Stoops, 1982). It is suspected that the actual exercise (as opposed to mere possession) of the coercive and non-coercive power sources might make a difference (Nevin & Reukert, 1982; Gaski, 1984). Furthermore, the causality has found among the 5 bases, reward and coercive power impact on the expert, referent, and legitimate power sources (Gaski, 1986; Howell, 1987). Therefore, the utility of French and Raven's topology is degraded. Their topology is in controversy in that they did not provide a cogent theoretical framework because the categories overlap.
While Lusch and Brown (1982) attempted to modify and extend the Hunt and Nevin (1974) model, their finding was contradictory. They found non-coercive power sources to be inversely related to power, but reduce intrachannel conflict while coercive power increases it. The motivational force to yield power is viewed as a function of the evaluation of the importance of the assistance in their study. This modified model did not increase the predictive ability of the modified model.

The empirical development of the power measure and related findings is summarized in Table 8. Table 8 includes research design, measures, and findings. Although there is abundant research in power theory, much of it is criticized for poor methodology and erroneous conduct to contribute to the findings and understandings of power. Therefore, the presented table only includes studies which were considered substantial additions to the body of power theory.


Particularly the connection between power and conflict has been recognized by some researchers, although with differing perspectives (Gaski, 1984). Some viewed the power as a result of conflict (Dahl, 1957) while others (Bacharach & Baratz, 1969; Nagel, 1975) claimed power requires the pre-existence of conflict. However, there is fairly widespread acknowledgement that the causal sequence between power and conflict can proceed in either direction (Stern & Gorman, 1969, Gaski, 1984).
<table>
<thead>
<tr>
<th>Author &amp; Sample Size</th>
<th>Construct and Measurement</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>El-Ansary and Stern (1972)</td>
<td>Power: control over marketing strategy items, score weighted by item's importance. Dependence: perceptual, 3 items. Source of power: perceptual, 17 issues.</td>
<td>Correlations and multiple regression. No relationship found between power and dependence or power and power sources.</td>
</tr>
<tr>
<td>Hunt and Nevin (1974)</td>
<td>Power: perception of franchisor control over 7 decision areas (6 point scale). Power sources: Non coercive-quality of franchisor assistance (5 point, 14 items). Coercive-potential for franchisor to impose punishments (3 variables, 5-6 point scale). Satisfaction: whether or not franchisee &quot;would do it over again&quot;.</td>
<td>Multiple classification analysis. Weak positive relationship between non coercive sources and power, moderate positive relationship between coercive sources and power.</td>
</tr>
<tr>
<td>Etgar (1976)</td>
<td>Mail survey of 53 direct-writing insurance dealers (coordinated channel), 63 independent agents (noncoordinated channel). Robust design. High in central coordination, independent agent channel assumed low. Performance: Nine technological exchange and behavioral indices: Contact intensity, duplication of activities, activity standardization, product line specialization, speed of flows, communication quality, risk, adoption of advanced technologies, productivity, (premium volume per employee).</td>
<td>Multiple regression, discriminant analysis, t-test. Comparison of coordinated and non coordinated channels within the same industry. Found positive relations between power and performance.</td>
</tr>
<tr>
<td>Lusch (1976b)</td>
<td>Mail survey of 567 auto dealers.</td>
<td>Simple and multiple regression. Found a inverse relation between channel conflict and operating performance (measured return on assets and asset turnover).</td>
</tr>
</tbody>
</table>
The first to explicitly incorporate conflict into the analysis of channel power was Lusch (1976a). Lusch found coercive sources of power increase conflict in the channel, while non-coercive sources reduce conflict. Likely, conflict was found to be positively related to the non-coercive sources of power in both Hunt and Nevin (1974) and Wilkinson (1981).

Wilkinson (1981) was a first attempt to examine the channel power theory (power-conflict) in a hotel environment (the beer supplier’s perception of their influence on hotel decision making), however, the study is often attacked due to small a sample size and week validity. Wilkinson later suggested that much of the presumed casual sequencing of sources of power and power constructs may be erroneous.

Likewise, the empirical findings of a relationship between conflict and other channel constructs, such as a channel member’s satisfaction and performance, was not consistent. For example, while Lusch (1976b) and Kelly and Peters (1977) found channel conflict tends to reduce dealer operating performance (measured return on assets and asset turnover), Pearson (1973) was unable to provide evidence of any relationship between conflict and performance (order-filling success and turnover). On the contrary, Walker (1972), in a laboratory setting, found power to be evocative of dissatisfaction on the part of those who are subject to it. He revealed that powerful bargainers were capable of securing agreements unfavorable to less powerful bargainers. This finding suggests the inverse relationship between conflict and satisfaction. Dwyer’s (1980) reported the same essential relationship as Walker’s study. However, in a laboratory setting, Assael (1969), claimed that in the presence of special conditions, conflict may have a salutary effect on dealer satisfaction and channel performance. In addition, Lusch (1978) later
acknowledged that the causal direction found in the 1976 study could have been the opposite.

As the power literature exhibits, the study of channel power demonstrated considerable semantic and conceptual confusion (Austin, 1989; Gaski, 1984; Wilkinson, 1981). Gaski (1984) argued that the construct of power should have been distinguished from exercised power and the sources of power. Despite these conceptual problems, extant power research consistently shows a positive impact of power on resolving intra-firm conflicts, and thus a firm’s performance (Etgar, 1976; Wilkinson, 1979). The research by Ganesan (1993) found a positive effect of relative channel power on problem-solving. In other words, the research suggests that the ability of a channel member to get its intermediaries to conform to its decisions can be of benefit to both parties.

Figure 10 below summarizes the research findings in channel power and related constructs.

Figure 10. The Theory of Channel Power and Performance.
While interim power between manufacturer and retail intermediaries is a topic of growing interest, the literature offers mixed perspectives on the potential influence of the Internet channel on channel power. Marketing literature, exploring relational issues between the manufacturer and the retail intermediary in the context of Internet-enabled channel strategies, suggests two opposing views.

The first thought is based upon the characteristics and relative strengths of the Internet as a direct sales channel versus traditional bricks-and-mortar outlets. Channel intermediaries' power may be reduced and manufacturer or service-providers' power may be enhanced due to the direct access from/to the end customers. Firms may potentially be able to provide heightened levels of product and service to the end-customer, and better control the marketing mix (breadth of product offering, mass customization of products, and targeted communication). This thought suggests that manufacturers may be able to succeed in shifting manufacturer-intermediary power, using the Internet, in their favor by nature of their enhanced ability to communicate efficiently to the end-customer (Rohm, 2001).

On the other hand, the literature regarding channel power suggests that retail intermediaries' power may be strengthened through technology and industry consolidation, and the use of the Internet as a direct channel may have a negative effect as retailers retaliate and attempt to maintain or grow their current level of channel power at the manufacturer's expense (Rohm, 2001).

Table 9 summarizes some of the relational issues that might be influenced by the use of the Internet as sales channel.
Table 9

*The Internet's Impact on Channel Relational Issues (Adopted from Rohm, 2001)*

<table>
<thead>
<tr>
<th>Issue</th>
<th>Bricks and Mortar Channels</th>
<th>The Internet Channel</th>
<th>Proposed impact on manufacturer who has Internet channel strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Channel Control</strong></td>
<td>Manufacturer delegates decision-making and control to the intermediary in order to reach, sell to, and service the end-consumer due to retailer proximity.</td>
<td>Manufacturer gains greater control over marketing elements such as reach and market penetration, breadth of product offerings, and brand communication.</td>
<td>Manufacturers may increase their current levels of channel control because of their enhanced abilities to communicate with the end-consumer and offer more personalized marketing output.</td>
</tr>
<tr>
<td><strong>Channel Power</strong></td>
<td>Power shift to the intermediary occurs because of retailer consolidation and buying power, growth in private label products, and information technologies such as electronic data interchange.</td>
<td>Power shift to the manufacturer occurs because of increased information availability and enhanced ability to communicate with, and address, the end-consumer one-to-one with rich levels of information.</td>
<td>Manufactures may potentially be able to shift the current manufacturer-intermediary power-dependence balance, or structure, through increased access to their target consumer as well as heightened levels of information, customization, and customer reach.</td>
</tr>
<tr>
<td><strong>Channel Conflict</strong></td>
<td>Manufacturers avoid direct selling in order to reduce potential of channel conflict.</td>
<td>Potential for channel conflict increases because of the viability of the Internet channel to supplant traditional intermediary functions.</td>
<td>Manufactures may increase the level of channel conflict with their retail intermediary partners because of the potential of the Internet channel to supplant the traditional retail functions.</td>
</tr>
</tbody>
</table>

**Relationship with Environment, Organization, Power, and Performance**

Strategic contingency theory furnishes appropriate guidance in suggesting that organizations can respond to the turbulent and complex environments in which they operate, and it draws attention to the reasoning behind the choice of contextual factors suggested by the diffusion of innovation theory. Constructs from strategic contingency theory can also suggest the components of the three measures posited to reflect the influence of the environments to the electronic distribution strategy; size, top management support, and the resource (investment). The theory also can suggest the model direction with respect to the performance associated with the measure of electronic distribution strategy. The relational aspects should take account of performance of
distribution channels. In short, core tenets from strategic management contingency theory, diffusion of innovation theory, and channel power theory are combined to form a new theory that guides development and directorial flow of the model proposed in this dissertation. Particularly, the previous overview of literature in organization theory provides a foundation for several interdependent contextual variables drawn as the forces driving organizational changes in strategy and its consequences. The proposed framework includes antecedents of electronic distribution strategy such as innovativeness, direct management (of top management), slack (size), and investment and consequences of electronic distribution strategy such power and performance.

Antecedents and Consequences of Internet Distribution Strategy

A number of organizational and environmental determinants may have influence on and/or be influenced by the electronic distribution channel. Typical organizational factors include management support and slack (determined by size); and a typical environmental factor is technological innovation. The mediating factor is an operator’s power. The outcome variable from a distribution strategy is hypnotized to be connected to power and performance.

Based on the three theories discussed above, a number of hypotheses are proposed and presented in Table 10.
Table 10

Proposed Hypothesis

<table>
<thead>
<tr>
<th>Hypothesis</th>
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</thead>
<tbody>
<tr>
<td>H1a</td>
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<tr>
<td>H1b</td>
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<tr>
<td>H1c</td>
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<tr>
<td>H2a</td>
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<td>H5a</td>
</tr>
<tr>
<td>H5b</td>
</tr>
<tr>
<td>H6</td>
</tr>
</tbody>
</table>

These hypotheses are represented by the path diagram shown in the Figure 11.

Figure 11. The Framework of Proposed Model.
**Slack**

Slack resources refer to the degree to which a pool of resources is perceived to be in excess (Joo & Kim, 2004). There are two typical measures of slack; financial slack (financial resource) and the human resource slack (Joo & Kim, 2004).

Adoption of innovation theory argues that the organizations with *slack resources are more likely to adopt innovations* (Bourgeois, 1981; Nohria & Gulati, 1996).

A contingency theory also supports the use of slack can predict the adoption of the *structural change* in accordance with environmental change (Child, 1972, 1975; Leatt & Schneck, 1982; Paulson, 1980).

Once a decision is made to utilize innovative channel, significant organizational resources are required to develop, implement, and maintain the technology. *Larger organizations* have more resources available. They may or not be committed to the investment of resources required for the strategy implementation. However, if they have more slack resources, they may decide to invest these available resources. Thus, the impact of slack on distribution strategy is mediated by the resource *invested* in electronic distribution channel strategy and related information technology.

Supporting the impact of slack is research that has identified *organizational size* as a predictor of information technology diffusion and proactive strategic orientation (Chau & Tam, 2000; Ginn & Young, 1992; Premkumar et al., 1997; Lai & Guynes, 1997; Ramamurthy & Premkumar, 1995). Thus, it is postulated that:

H1a: Slack has a positive effect on company’s innovation.

H1b: Slack has a positive effect on Internet distribution strategy.

H1c: Slack has a positive effect on company’s investment.
H2a: Investment has a positive effect on company’s innovativeness.

H2b: Investment has a positive effect on company’s Internet distribution strategy.

**Management support (Direct management)**

Strategic contingency theory underscores the importance of top management role in shaping strategy (Gupta, 1988; Gupta & Govindarajan, 1984; Chandler, 1977; Szilagyi & Schweiger, 1984). It suggests the influence of organizational power in developing strategy and the resulting organizational structure. Such things as the inclusion of the CIO at the executive level (placing the CIO in a position of considerable organizational influence) or direct reporting relationship to the general manager (or owner) sends a visible/implicit signal of consideration of functional technology (distribution of rooms electronically) in alignment with the overall goals of the organization (Li & Ye, 1999). Li and Ye (1999) suggest that the closer CIO/CEO ties, the higher organizational performance, which was measured as return-on-sale.

Similarly, diffusion of innovation theory identifies the organizational leader’s role and the influence of change agents, or innovation champions, at the leadership level on the adoption of innovations (Friedman & Goes, 2000; Lai & Guynes, 1997; Premkumar et al., 1997; Ramamurthy & Premkumar, 1995; Rodgers, 1995). Both theories identify the role of management in responding to and influencing the environment. When top management latitude is high the environmental constraints are relatively low.

Contingency theorists continuously researched a link between the forces driving change in the environment, strategy, organization structure, and performance. The Internet strategy should be aligned with the rest of the organization and is a function of management (Henderson & Venkatraman, 1999; Ward & Peppard, 1996).
implementation and alignment of electronic channel strategy, therefore, will have an influence on performance. For example, in a study of an Australian organization, improved *organizational performance* was associated with the information systems department's involvement in the organization's strategic planning (Sohal, Moss, & Ng, 2000). Therefore, the following hypothesis can be posed.

H3a: Top management involvement in managing electronic channels has a positive effect on Internet distribution strategy.

H3b: Top management involvement in managing electronic channels has a positive effect on performance.

**Innovation Adoption**

Contingency theories contest that leadership requires a person to use a style of behavior that matches the environmental and conditional context. The current turbulent environment where changes in demand, partially due to the Internet, competition and technology, tend to be rapid and discontinuous, and organizations need leadership that can provide the speed of response and flexibility required by this environment (Park & Campbell, 2001). Similarly, innovation theory suggests e-world leaders are forced to make strategic decisions more rapidly, representing leader's ability to collaborate and communicate their visions. Organizational leaders are also required to have a greater technical awareness of the capabilities and limitations of information technology than traditional CEOs (Frncalanci, Willcocks, & Kern, 2001).

Channel power theory also supports that risk acceptance (Bergen, Dutta, & Walker, 1992; Eisenhardt, 1989) has been suggested as factors that influence a firm's channel strategy and structure. Horner-Long and Schoenberg (2002) found from interviews with
CEOs that an aptitude for risk-taking and technological competencies were required for all types of organizations as a result of the unprecedented advances in the Internet and other digital technologies. Supporting the effect of innovativeness of a leader to the implementation of strategy, Kwon and Zmud (1987) assert that the organizational resources (both financial and human) should direct toward motivation of innovation first, then toward strategy implementation.

Therefore, the impact of environment on strategy may be mediated through innovation adoption. A leader who is willing to adopt an innovative distribution method, with an external contingency factor, should be viewed as a force that shapes organizational strategy.

The innovation and channels literature suggests that managers who are less risk-averse may be more predisposed to employ the Internet as a primary sales and distribution channel. Theses manufacturers will forego the perceived benefits of risk sharing in favor of the potential benefits resulting from increased channel control and lower transaction cost (Cybert & March, 1963). To reduce their risk, manufacturers may employ mechanisms and structure channel arrangements in such a way as to increase the likelihood that their channel partners’ actions are consistent with the manufacturer’s internal goal (Bergen, Dutta, & Walker, 1992; Eisenhardt, 1989). Similarly, transaction cost economics posit that firms will adopt certain channel strategies based upon their level of risk acceptance (Bello & Williamson, 1985). Thus, the willingness to adopt innovative technology is posited to increase the likelihood of utilization of Internet distribution strategy.
Research on innovation diffusion supports the first-mover competitive advantage. Yet it was found that the advantage may diminish when it becomes the industry norm, as the technology diffuses across the industry (Dos Santos & Peffers, 1998; Stratospoulos & Dehning, 2000; Subramanian, 1996). Strategic management researchers addressed the sustainable advantage the technology creates when the more interlocked business strategic use of information makes it difficult for others to imitate them (Henderson & Venkatraman, 1999; Porter, 1996).

H4a: Innovativeness has a positive effect on Internet distribution strategy.

H4b: Innovativeness has a positive effect on organizational power.

**Strategy and Power**

Strategic contingency theory identifies the influence of the environment, which results in the change of the organizational structure through adoption of strategies, in concert with its goals. Contingency theorist view that performance outcomes will depend on the strategy adopted by an organization (Chandler, 1962; Jennings et al., 2003) Some of the works try to explain power using strategic contingencies (Hickson, Hinings, Lee, Schneck, & Pennings, 1971; Hinings, Hickson, Pennings, & Schneck, 1974; Roth & Morrisson, 1990). In the hotel environment, Murthy (1994) identified seven strategies followed by high and low performing hotels. Jones (1996) outlined 15 action steps which include the strategy formulation. Both argued that the level of performance was based on the choice of strategy.

The channel power theory suggests that the nature of a firm’s channel relationship is critical to influencing overall company performance as well (Heide, 1994). Strategy in channel power theory is often referred to as the concept of coping/routinization (Hinnings
et al, 1974). These are thought indirectly to affect intra-organizational power either by reducing uncertainty or by increasing substitutability. Routinization is therefore either coping by prevention, which avoids the occurrence of uncertainty (Hickson et al, 1971) or coping by information or absorption which defines how the uncertainty which does occur shall be coped with (Hickson et al, 1971).

Lush and Brown (1996) found that suppliers and wholesaler or distributors use normative contracts in order to gain control in the relationship. Gassenheimer, Sterling, and Robicheaux (1989) also found that dealer dependency, based on manufacturer role performance, lead to increased levels of manufacturer power and channel control. Rohm (2001) suggests that manufacturers or service providers whose channel strategy includes the Internet may potentially gain channel control, with respect to the retailer, by nature of the manufacturer or service provider’s enhanced ability to control the marketing mix (breadth of product offerings, mass customization of products, and targeted communications).

From the above reasoning and theory, the following hypotheses can be posited.

H5a: Internet distribution strategy has a positive effect on organizational power.

H5b: Internet distribution strategy has a positive effect on performance.

H6: Power has an effect on the performance.
CHAPTER 3

METHODOLOGY

Introduction

The primary research questions that guided the framework in Chapter 2 are presented here for the convenience of the reader. They are:

From the problem statement and purpose of the study, the following research questions are drawn:

1) What is the relationship between electronic distribution strategy and its antecedents (slack, investment, innovativeness, top management involvement)?

2) Do the empirical linkages between determinants of performance (operational efficiency) found in previous research on distribution channel management hold up in the electronic context?

3) Is the impact of innovativeness on performance mediated by the electronic distribution strategy?

4) Does intraorganizational power have a mediating effect on the performance?

*Note: Research questions will be addressed through three organizational theories; contingency theory, channel power theory, and diffusion of innovation theory.

In order to answer these research questions, underpinning organizational theories have been reviewed, and the synthesis of literature provided the basis for the proposed
framework in the previous chapter. Relevant constructs were identified and 12 research hypotheses were posed.

The first section of this chapter will address the research design that is used to examine the developed hypotheses. Survey instrument development process and measurement scale will be discussed. In the second section, the sampling frame includes sample selection procedure and sample size will be presented. Following the sampling frame, data collection procedures regarding how the pilot test was conducted and how the data for analysis was collected, with special reference to the advantages and disadvantages of the use of e-mail survey. Then data analysis methods will be discussed briefly. Finally, issues surrounding the research design and data quality, such as validity and reliability of instrument, and nonresponse bias of e-mail survey, will be contented.

Research Design

It is vital to decide on the most suitable methods for the topic of study in order to obtain valid and meaningful results from research. Research methodology should be decided based on the research questions that will drive the inquiry and the current state of knowledge reported in the literature (Zikmund, 2003).

The quantitative approach to research uses statistics (inferential and descriptive) and either experimental or non-experimental. Survey is most frequently used non-experimental design and is assumed mostly suitable for theory testing. Some scholars claim that scientific maturity of a field can only be achieved through empirical quantification (Lee, Barua, & Whinston, 1997; Bakos & Treacy, 1986).
The research design in this dissertation has followed the seven-stage process of Structural Equation Modeling (SEM) proposed by Hair, Anderson, Tatham, and Black (1998). The process is presented in Figure 12.

**Survey Instrument Development**

Seven constructs were identified from extensive literature review in the domain of organizational theories in relation to channel strategy. These are slack, level of investment, management support (direct management), innovation adoption, electronic (Internet) distribution strategy, power, and finally, performance.

This survey questionnaire was originally created from an agglomeration of earlier research. It was later revised under the supervision of several experts, including professors from the University of Nevada, Las Vegas (UNLV), revenue managers from large hotel operations on the Strip, and industry experts with intensive knowledge about channel distributions in tourism and hospitality industry. The instrument was validated in two think tanks hosted by UNLV. The first think tank was held in January 2003 at the International Gaming Institute, Las Vegas, and the second in September 2003 in Washington, D.C. The attendees of the first think tank included 25 hotel operators, 25 vendors, and 4 consultants.

The questionnaire was modified based on their comments and pilot tested during the Hotel Electronic Distribution Network Association (HEDNA) annual meeting in December 2003, held in Miami, FL. The pre-test was conducted using a self administered questionnaire, and yielded 40 valid responses.
Stage 1

Develop a Theoretically Based Model
Assess role in modeling strategy
Confirmatory
Competing models
Model development
Specify theoretical model
Specify causal relationships
Avoid specification error

Stage 2

Construct a path Diagram
Define exogenous and endogenous constructs
Link relationships in path diagram

Stage 3

Convert the Path Diagram
Translate the structural equations
Determine the number of indicators
Define exogenous and endogenous constructs
Identify correlations of constructs and indicators

Stage 4

Choose the Input Matrix Type
Correlation
Variance/Covariance

Stage 5

Access the Identification of the Model
Determine the degrees of freedom
Diagnosis and remedy of identification problems

Stage 6

Evaluate Model Estimates and Goodness-of-Fit
Overall model fit measures
Structural model fit

Stage 7

Model Interpretations
Examine standardized residuals
Consider modification indices
Identify potential model changes

Model Modification
Justification for the proposed model change

Final Model
The attendees of this conference were revenue managers, general managers, information systems managers, and sales and marketing managers. In both tests for face validity and pretest, many respondents refused or were reluctant to disclose their hotels' financial information. Therefore, the decision was made to drop the financial indicators of performance and use an alternative performance indicator: effectiveness.

**Measurement Scales (Dimensions)**

**Slack**

The size of the organization represents an element of organizational environment (Meyer, 1972; Hall, 1972) and it has been used as a proxy measure of financial slack in a number of researches (Chau & Tam, 2000; Premkumar et al, 1997; Lai & Guynes, 1997; Ramamurthy & Premkumar, 1995; Rodgers, 1995). There are bodies of literature describing the size of an organization as a determinant of the strategy to be adopted (Wright, 1987; Woo & Cooper, 1981; Christensen, Cooper, & Dekluyer, 1982; Joo & Kim, 2004). The literature has used a variety of definitions of slack, but three that appear often are the natural logarithms of sales volume (in thousands of dollars), net assets (in thousands of dollars), and the number of employees in an organization (Hambrick & Channella, 2004; Kamien & Schwartz, 1982; Singh, 1986).

In this dissertation, the size was measured by 2 indicators, the number of guest rooms and the Revenue Per Available Room (RevPar) of the property that a participant represents. The number of rooms was asked via open-ended question, whereas 8 RevPar categories were provided from which the participant could select: 1 for RevPar under $30, 2 for $30 to $59.99, 3 for $60 to $84.99, 4 for $85 to $99.99, 5 for $100 to $149.99, 6 for $150 to $199.99, 7 for $200 to $249.99, and 8 for $250 or more. These categorization
ranges are used many times by Smith Travel Research (STR), one of the largest data
providers in the hospitality industry. The raw data was right-skewed due to a lower bound
on the data. The most conventional transformation methods for correcting right-skewed
data, a natural logarithm was employed to estimate both measures. As mentioned earlier,
the use of natural logarithm appears many times in literature for sales volume (in this
dissertation revenue was standardized by the number of rooms). The RvePar showed
normal distribution after the logarithm transformation was applied (mean=1.157, S.D.=
0.518; Skewness = -0.220, Kurtosis = -0.388).

*Level of investment*

The resources invested were posited to mediate the impact of slack on electronic
distribution strategy and innovativeness. Since the exact figure of the dollar amount was
difficult to obtain, the investment level was approximated by the respondent’s satisfaction
with the organization’s investment (Chau & Tam, 2000; Ginn & Young, 1992;
Premkumar el at., 1997; Lai & Guynes, 1997; Ramamurthy & Premkumar, 1995). A 5-
point Likert scale was used to rank the satisfaction with their organization’s investment
level in direct channel management and with overall channel management.

Another item to measure investment was the time invested in managing channels at
the organizational level. That amount was derived by, using open-ended questionnaire.

*Direct management*

In the preceding chapter, the literature presented asserts the role of management in
responding to the environment and in shaping strategy. When top management latitude
and commitment is high, the environmental constraints are relatively low. Things such as
direct reporting to the general manager or general manager’s involvement at the
functional level strategy may signal the implicit implication to the origination (Chandler, 1977; Gupta, 1988; Gupta & Govindarajan, 1984; Li & Ye, 1999; Szilagyi & Schweiger, 1984). In this dissertation, the same conceptualization was applied. A nominal scale of yes or no question was utilized to ask if the electronic channels were directly managed or reported to the general managers.

Innovation adoption

Literature on strategic management suggests technology becomes more difficult for others to imitate when it is used with a more interlocked business strategy (Henderson & Venkatraman, 1999; Porter, 1996). Others suggest that the innovation adoption should be included as organizational environment (Park & Campbell, 2001). These arguments imply that a leader, who is willing to adopt innovative distribution methods, which is an external contingency factor, should be viewed as a force that shapes organizational strategy. In this dissertation, the participant was asked if he/she was willing to utilize the emerging distribution technology. This technology is recently adopted by Expedia wholesales and hotels are expecting an adoption of this method will have a positive impact on company’s revenue through the reduction of cost (Carroll, 2002; Green, 2005). This item was measured by a 5-point Likert scale.

Electronic (Internet) distribution strategy

Use of Internet distribution strategy was investigated through 5 items. The reliability estimates of these 5 items will be discussed in Chapter 4. Three items ask if the organization that a participant represents has an Internet search optimization strategy (key word purchasing, sponsored link purchasing, research result position), which is suggested by an industry consultant Mark Starkov (2004). The other two items ask if the
organization has a policy to deal with its online distributors and has an overall Internet strategy (See Appendix II for actual questionnaire).

*Power*

Power has been viewed as an "ability to control", and in much research, power and control were used interchangeably (Bier and Stern, 1969; Dahl, 1957; El-Ansary & Stern, 1972; Etgar, 1978; Frazier, 1983; Hunt & Nevin, 1974; Lusch & Brown, 1982; Wilkinson, 1979, 1981). In this dissertation, the investigation is focused on operator perspectives. Hence, participants were asked directly to rank their cognitive aspect of power on a 5-point Likert scale. Researchers indicate that measuring self-perception of one’s own power makes sound conceptual sense (Gaski, 1984; Rohm, 2001). Power construct was measured by two items, asking if the participant feels they have control over the electronic distribution, and if the participant’s organization is able to negotiate with its distributors.

*Performance*

The organizational outcomes of the strategy can be divided into financial and behavioral performance. There has been a controversy surrounding which variables best measure the performance of a channel. Choices range from quantifiable variables such as contribution margin, gross profit, and cost of capital, to behavioral variables like cooperation indices. The effect of channel strategy on financial performance has shown conflicting results in the literature. More recently, emphasis has shifted to behavioral variables as opposed to financial indicators (Jeuland & Shgan, 1983, 1988). In channel literature, the most often used indicator for organizational performance is the effectiveness of distribution channel in terms of driving profit to the organization. This
has been studied at the departmental level. An example of this would be how well the information systems department is performing with respect to information technology.

Another reason that a financial index is not a reliable measure for performance of distribution technology is due to something called the “productivity paradox” (Devaraj & Kohli, 2000; Brynjolfsson & Hitt, 1998; Brynjolfsson, 1993). Reasons include mismeasurement of inputs and outputs, lags due to learning and adjustment, redistribution, and dissipation of profit and mismanagement of information and technology (Brynjolfsson, 1993). A review of top information systems journals for 1993-1998 identified measurement anomalies at the core of the paradox (Chan, 2000; Rohm, 2001).

Some critics question the organizational-level measurement of performance (Lee & Barua, 1993). They argue that performance should be measured at the operational level in an enterprise near the site of implementation. This suggests that the use of global performance measures may mask benefits gained at lower organizational levels. As a result, in this study, performance was measured by effectiveness as perceived by the managers who manage channels. The participants were asked to rank on a 5-point Likert scale on two items; how effective their customer data control and channel management were.

Sampling Frame

The sampling frame for the e-mail survey consists of hotel and motel firms in the United States. Unfortunately, it is virtually impossible to get a complete list of population. Therefore, a manageable list of hotels was obtained from the American Hotel and Lodging Association.
American Hotel and Lodging Association (AHLA) is a 95-year-old dual membership association of state and city partner lodging associations throughout the United States with some 10,000 property members nationwide, and representing more than 1.4 million guest rooms (www.ahla.com). The member property list of AHLA was the most plausible with which to conduct the research, and is reasonably accepted as a working population in most hotel-related research. With gratitude to the support from membership department, a list of 3,388 member properties was obtained. It contained contact information (contact person’s name, title, work phone number, fax number, and e-mail address), member properties name, and the location of property (city, state, Zip code). These contacts are all managers from such functional areas as sales and marketing, general management, information systems, and revenue management. Using e-mail addresses provided, an online survey was deployed as the primary means of data collection.

There is a possibility of a sampling frame error due to the exclusion of member properties not included in the list provided. A sampling frame error occurs when certain sample elements are excluded or when the entire population is not accurately represented in the sampling frame (Zikmund, 2003).

Due to the difficulty in collecting all contacts of the hotels in the United States, convenience sampling is used. The use of convenience sampling is supported, (as Zikmund, 2003 content), that can be best used for exploratory research when additional research will subsequently be conducted with a probability sample. By the exploratory nature of this dissertation, the use of convenience sampling is considered appropriate.
The possible source of bias related to the sampling methods will be discussed in this chapter.

**Unit of Analysis**

Unit of analysis is the subject of the research study. The context of this study is the hotel’s electronic distribution strategy as viewed from operator’s perspectives. Specifically, this study addresses the formulation of strategies made by hotel operators. Ideally, informants need to have some knowledge of electronic distribution channels, the degree of control and relationship with channel partners, insight on internal process of managing channels, and the performance of their management practice.

In reality these key informants may hold different positions. The ideal informant in a firm would be a general manager, revenue managers, and information systems managers, considering the scope of knowledge required to fill out the questionnaire. If the firm has resources to afford a separate department designed specifically for this function, most work in this area should be done at the department level. This includes information systems or revenue management where a certain person manages the distribution process and oversees activities of their electronic channels. However, if the hotel is operated in a relatively small scale, distribution channels are managed by general staff (such as a reservations manager and a general manager).

For both kinds of operations, general managers have higher authority when deciding a company’s strategy, including business and functional strategy. Therefore, the target respondents for this study were managers whose job is related to managing distribution channels, including general managers, revenue managers, information systems managers, sales and marketing managers, and reservation staff. Electronic distribution channel
management practiced by hotels in the United States was the focus of the study, and the unit of analysis was the hotel organizations.

Sample Size

The sample size should be carefully examined before conducting data collection since it has a direct impact on the statistical power of any statistical method. Too small or too large sample size hinder to detect the true relationships, by making the statistical significance test overly insensible (at small sample sizes) or sensitive (at very large sample sizes).

In general, the researcher needs a larger sample size to detect the true difference when the distribution of dependent variable is skewed and the effect size is small. Cohen (1977) examines power for most statistical inference tests with reference to the alpha level, sample size, and effect size. When the moderate effect size (50 percent) presents with alpha levels of 0.05, the required sample size to ensure suggested power (0.80) is 100. When the effect size becomes smaller (0.35), the required sample size to achieve a power of 0.80 becomes 130 at a 0.05 alpha level. In general, power becomes acceptable at sample sizes of 100 or more in situations with a moderated effect size (0.5) of 0.01 and 0.05 alpha levels.

Although there is no single criterion that dictates the necessary sample size in SEM, there are at least the four factors that influence the sample size requirements: model misspecification, model size, departures from normality, and estimation procedures (Hair et al. 1998). When the model includes all relevant constructs and indicators to the theory, the impact of sample size to the ability of the model to be correctly estimated to identify specification error can be minimal. As far as model size, as model complexity increases,
so do the sample size requirements. When the data meet the assumption of multivariate normality and has more than 100 observations, the typical ratio of observations for each estimated parameter is five to one, with a ratio of 10 per parameter considered most appropriate (Hair et al., 1998; Schumacker & Lomax, 1996; Tabachnik & Fidell, 1996). They noted that a ratio below 5 to 1 results in a lack of generalizability of findings, because the results are too specific to the sample of the population (Nunnally, 1978). For maximum likelihood estimation (MLE), the acceptable minimum sample size to ensure appropriate use of MLE is 100 to 150 (Ding, Velicer, & Harlow, 1995). Following the most conservative stance, the minimum number of sample size was set as 110 (10 per each observed variable for proposed 11 items) for SEM.

Even though the sample collected for the analysis met the minimum sample size requirement of 110, based on this criterion, the decision was to conduct an ordinary path analysis using composite scores due to low reliability of many measurement items. When the first CFA was conducted with 11 indicators and 7 constructs, the fit indices and the adjusted chi-square indicated a lack of model fit. Anderson and Gerbing (1988) suggested four methods for improving model fit: relate the indicator to a different factor, delete the indicator from the model, relate the indicator to a multiple factor, or use correlated measurement error. They stated that the first two methods are preferred because they preserve unidimensional measurement, whereas the other two ways do not. Following the second remedy method, four proposed indicators having low reliability loadings were eliminated. The four items were size (slack), hours (investment), Rcontrol (power), and control over the data (performance).
Data Collection and Coding

This study used online survey methodology for data collection. After running the pre-test results gathered from the annual meeting at the Hotel Electronic Distribution Network Association (HEDNA) in December 2003, the survey was modified.

The final version was electronically sent to 3,388 members of American Hotel and Lodging Association. The e-mail message contained a brief explanation about the survey, expected time duration to complete the survey, their right to refuse to participate, and the link to the interactive survey (Appendix I). Participants are forwarded to survey site by clicking a link provided in the e-mail. The beginning of the survey presented a screening question, in order to ensure the participant was part of the targeted sample. The screening question asked if the participant’s job is related to managing electronic distribution channels. The instruction asks the respondent to forward the e-mail to the right person in his/her organization if the participant’s job is not related to this subject. Each of the constructs was measured by one or two items, except for the electronic distribution strategy. Electronic distribution strategy was measured by 6 items. Both demographic profile information of participants and properties they represent were asked. Respondent demographics include department they work for, years of experience as a hotel operator, and representation of single/multiple properties. This demographic information was further used for the validation purpose and this will be discussed in next chapter.

Since the focus of study is placed on the analysis of the organizational strategy they represent, more valuable information was collected through the use of property profiles. These variables include number of rooms, occupancy rate, RevPar, operational affiliation, and major market. Appendix II presents the web-based survey sent to the participants in

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this study.

The link was opened for two months from mid-March 2004 to mid-May 2004. Of those 3,388 e-mails sent, 924 e-mails were returned as invalid. Some returned with spam warning, some with automated vacancy messages, and remaining were non-existing e-mail addresses. Over two months, 209 completed responses were returned for further analyses, yielding 8.5% of response rate.

Data was pre-coded based on the code book (Appendix III) created in advance of survey’s distribution. The coded data was downloaded from the hosting server in a spreadsheet format. The coding scheme that used was 1= strongly disagree to 5=strongly agree and a numerical value to categorical data was assigned. The ID number was assigned in accordance to the time the respondents submitted the survey.

E-mail Survey – Pros and Cons

There are numerous advantages of web surveys (Kaye & Jonson, 1999; Sills & Song, 2002; Weible & Wallace, 1998). Low cost and fast response are major among them. The characteristics of e-mail surveys are presented below, followed by a table comparing different survey methods (Table 11).

Advantages

➢ Low cost: there are no mailing expenses, such as stamps, envelopes, and printing (Ilieva, Baron, & Healey, 2002; Smisek & Veiga, 2001).

➢ Speed of data collection: turn-around time is relatively short compared to mail surveys (Ilieva, Baron, & Healey, 2002; Smisek & Veiga, 2001).

➢ Geographic flexibility: access to the online questionnaire is possible anywhere in the world with Internet access (Zikmund, 2003).
New media: supplementary audio and video materials can be used to help respondents fill out the online questionnaire (Smisek & Veiga, 2001).

Increased interactivity: respondents can get some help interactively (Smisek & Veiga, 2001).

No data entry: data can be saved in a database format that requires no further coding.

So, coding errors are minimized.

Sophisticated analysis: manipulations can be made easily to the survey instrument to conduct more sophisticated analyses than with mail surveys.

Disadvantages

There are some disadvantages of online surveys that researchers should be aware of and cautious with. Major disadvantages of online survey have been discussed in the literature as follows:

Low response rate: online surveys tend to generate a lower response rate than do a mail survey (Crawford, Couper, & Lamias, 2001; Sills & Song, 2002; Weible & Wallace, 1998).

Possible sampling error: an online survey cannot be conducted with respondents who do not have Internet access (Kaye & Jonson, 1999; Sills & Song, 2002). However, the issue becomes irrelevant as all contact e-mails of sampling frame were provided and complete. The high amount of bounced e-mail messages due to non-existing e-mail address, or the use of spam-prevention programs should be noted instead.
Table 11
*Comparison of Survey Methods (Zikmund, 2003, p.228)*

<table>
<thead>
<tr>
<th></th>
<th>Door to door personal interview</th>
<th>Mall intercept personal interview</th>
<th>Telephone interview</th>
<th>Mail survey</th>
<th>Internet survey</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Speed of data collection</strong></td>
<td>Moderate</td>
<td>fast</td>
<td>Very fast</td>
<td>slow</td>
<td>Instantaneous; 24/7</td>
</tr>
<tr>
<td><strong>Geographic flexibility</strong></td>
<td>Limited to moderate</td>
<td>Confined; urban bias</td>
<td>high</td>
<td>high</td>
<td>high</td>
</tr>
<tr>
<td><strong>Respondents cooperation</strong></td>
<td>excellent</td>
<td>Moderate to low</td>
<td>high</td>
<td>high</td>
<td>Varies; high from panels</td>
</tr>
<tr>
<td><strong>Versatility of questioning</strong></td>
<td>Quite versatile</td>
<td>Extremely versatile</td>
<td>moderate</td>
<td>moderate</td>
<td>Extremely versatile</td>
</tr>
<tr>
<td><strong>Questionnaire length</strong></td>
<td>long</td>
<td>Moderate to long</td>
<td>moderate</td>
<td>Not versatile</td>
<td>Moderate; can customize question</td>
</tr>
<tr>
<td><strong>Item nonresponse rate</strong></td>
<td>low</td>
<td>medium</td>
<td>medium</td>
<td>high</td>
<td>none</td>
</tr>
<tr>
<td><strong>Possibility for respondent misunderstanding</strong></td>
<td>low</td>
<td>low</td>
<td>average</td>
<td>high</td>
<td>high</td>
</tr>
<tr>
<td><strong>Degree of interviewer influence on answers</strong></td>
<td>high</td>
<td>high</td>
<td>moderate</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td><strong>Supervision of interviews</strong></td>
<td>moderate</td>
<td>moderate to high</td>
<td>High with central location</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Anonymity of respondent</strong></td>
<td>low</td>
<td>low</td>
<td>moderate</td>
<td>high</td>
<td>high</td>
</tr>
<tr>
<td><strong>Ease of callback or follow-up</strong></td>
<td>difficult</td>
<td>difficult</td>
<td>easy</td>
<td>Easy, take time</td>
<td>Difficult; easy if know e-mail</td>
</tr>
<tr>
<td><strong>Cost</strong></td>
<td>highest</td>
<td>moderate to high</td>
<td>low to moderate</td>
<td>lowest</td>
<td>lowest</td>
</tr>
<tr>
<td><strong>Special features</strong></td>
<td>Visual props, extended probing</td>
<td></td>
<td>Computer tech/ supervision of data collection</td>
<td>Answer at own convenience</td>
<td>Streaming media software</td>
</tr>
</tbody>
</table>

**Data Analysis Methods**

The Statistical Package for Social Science (SPSS) 12.0 and EQS 6.1 (Bentler, 1995) was utilized in the analysis of the data collected through the surveys. The statistical tools applied in this study included: descriptive statistics, two sample independent t-test, Chi-Square test, and the path analysis. The following section will explain how these statistical tools were operated to test hypotheses, and identify the pre-selected significance level.
Descriptive Statistics

Descriptive statistics, which included measures of central tendency, dispersion, and shape, examined the distribution of data values (Berenson, Levine, & Krehbiel, 2004). Means, median, and standard deviation were derived from all interval data and the histogram of each interval variable helped to explain the shape of data distribution. Demographic data was analyzed through the use of frequency tables and graphs. With the aid of frequency tables and bar charts, histograms, the frequencies of nominal data and ordinal data, such as the respondents' demographic data, were analyzed and the results will be presented in Chapter 4.

Path Analysis

Path analysis was used to investigate the direct and indirect effects among constructs. The analysis estimates a series of separate, but interdependent, multiple regression equations simultaneously by specifying the structural model used by the statistical program. It is particularly useful when one dependent variable becomes an independent variable in subsequent dependence relationships. This specific analysis is selected because the path analysis enables a researcher to test a series of relationships constituting a large-scale model, a set of fundamental principles, or an entire theory, and should contribute to the development of a more systematic and holistic view of problems (Hair et al., 1998).

As shown in the framework proposed in the prior chapter, there are several independent variables and dependent variables drawn upon aforementioned three theories and research questions. The analysis is the procedure for empirical estimation of the strength of each relationship (paths) depicted in the path diagram. It calculates the
strength of the relationships using only a correlation or covariance matrix as input (Hair et al., 1998).

Given that some of the variables in a path model are multiple indicators of a theoretical attribute, an alternative to treating the theoretical attributes as common factors is to represent them by composites (McDonald, 1996). For multi-item constructs such as investment and strategy, the composite score was calculated using equal weights and regarded as approximations to common factors. Path analysis with composite score can employ Structural Equation Modeling, but also can be done using Partial Least Squares (PLS) approach. PLS method is optimized to maximize the proportion of variance of dependent “construct” that is explained by the predictor “constructs.” SEM, by contrast, is designed to maximize and then test the degree of consistency between model and data (McDonald, 1996). In addition, the PLS method is designed to maximize prediction rather than fit. This dissertation was intended to generate a holistic view that can explain the antecedents and consequences of electronic distribution channel strategy based on three theories and did not aim to modify the proposed model based on the given dataset collected from hotel industry. Thus, in accordance with the intention of this dissertation, the path analysis with composite variables utilizing SEM approach was employed.

Test for Design Quality

In order to ensure the quality of the data and develop inference from it, validity and possible bias connected to the instrument and sampling method should be assessed.

One of the validation methods for construct validity is face validity (Carmines & Zeller, 1979). Face validity is assessed by professional agreement that a scale logically
appears to accurately measure what it is intended to measure. Through multiple verification procedures such as Delphi in two Think-tanks and a pilot test, the agreement was converged and the measurement was considered well developed.

Convergent validity examines the degree to which an indicator is similar to other measures of same construct. Discriminant validity, on the other hand, examines the degree to which the construct is not similar to other constructs to which it theoretically should be not similar. The convergent and discriminate validity of multi-item construct were evaluated by comparing item’s reliability coefficients with interconstruct correlations, and by comparing within and between construct item correlations. The result of these validity test will be discussed in Chapter 4.

Nonresponse bias is a concern when an Internet survey is used. Nonresponse error occurs when nonrespondents of the population have substantially different opinions about measurement items (Zikmund, 2003). The most commonly used means of inspecting for possible biases in response pattern is comparing the demographics of the sample with the demographic of the target population. This will also be reviewed in Chapter 4.
CHAPTER 4

ANALYSIS AND RESULTS

This chapter begins with a demographic profile of the respondents and a descriptive summary. In the descriptive summary section, four assumptions of regression analysis are discussed and tested. Following a section on descriptive statistics, several design quality issues will be discussed, including validity, reliability, and nonresponse bias. Finally, the results of the path analysis for each hypothesis will be presented.

Demographic Profile of Respondents

Of the 209 individuals who responded to the survey, the typical respondent was a general manager (60.3%) with 17 years of industry experience. Other positions included revenue managers, sales and marketing managers, and hotel owners. There were only handful respondents from corporate offices and the remaining respondents were employed in some combination of the aforementioned positions (see Table 12).

Table 12
Demographic Profile of Respondents (N=209)

<table>
<thead>
<tr>
<th>Position/Department</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Manager</td>
<td>126</td>
<td>60.3</td>
</tr>
<tr>
<td>Revenue Manager</td>
<td>24</td>
<td>11.5</td>
</tr>
<tr>
<td>Sales and Marketing</td>
<td>17</td>
<td>8.1</td>
</tr>
<tr>
<td>Ownership</td>
<td>16</td>
<td>7.7</td>
</tr>
<tr>
<td>Head Corporate</td>
<td>7</td>
<td>3.3</td>
</tr>
<tr>
<td>Combination</td>
<td>19</td>
<td>9.1</td>
</tr>
</tbody>
</table>
Among respondents, most represented a single property (72%). These respondents were fairly evenly distributed among independently owned hotels (39%), chain operations (32%), and management companies (29%). The sample mainly consisted of managers in hotels whose major market was business or leisure. As seen in Table 13, 25% identified the business traveler as their major market, 26% identified the leisure market, and 36% a combination of business and leisure (See Table 13 for property profile).

Table 13
Profile of Property

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property Type (%= 204)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single property</td>
<td>150</td>
<td>72</td>
</tr>
<tr>
<td>Multiple property</td>
<td>54</td>
<td>26</td>
</tr>
<tr>
<td>Management Type (%= 209)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent</td>
<td>81</td>
<td>39</td>
</tr>
<tr>
<td>Chain</td>
<td>67</td>
<td>32</td>
</tr>
<tr>
<td>Management company</td>
<td>61</td>
<td>29</td>
</tr>
<tr>
<td>Major Market Mix (%= 209)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>52</td>
<td>25</td>
</tr>
<tr>
<td>Leisure</td>
<td>54</td>
<td>26</td>
</tr>
<tr>
<td>Group</td>
<td>21</td>
<td>10</td>
</tr>
<tr>
<td>Business/Leisure split</td>
<td>73</td>
<td>35</td>
</tr>
<tr>
<td>Other</td>
<td>9</td>
<td>4</td>
</tr>
</tbody>
</table>

The average annual occupancy rate in 2003 of represented properties was 65%, which was a bit higher than 2003 average occupancy rate of 60.1% as reported in 2004 lodging industry profile (AHLA, 2004). The difference in average occupancy rate between sample and population may suggest that the result of this report may represent the
opinion of those who represent properties that are sold relatively well. Most of the properties (54.2%) had Revenue Per Available Room (RevPar) ranging from $30 to $84.99 (see Table 14) in contrast to $50.42 reported by 2004 lodging industry profile (AHLA, 2004).

Table 14
Size, Occupancy, and Revenue Per Available Room

<table>
<thead>
<tr>
<th>RevPar</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under $30</td>
<td>12</td>
<td>6.0</td>
</tr>
<tr>
<td>$30 - $59.99</td>
<td>56</td>
<td>26.8</td>
</tr>
<tr>
<td>$60 - $84.99</td>
<td>57</td>
<td>27.4</td>
</tr>
<tr>
<td>$85 - $99.99</td>
<td>20</td>
<td>9.5</td>
</tr>
<tr>
<td>$100 - $149.99</td>
<td>27</td>
<td>13.1</td>
</tr>
<tr>
<td>$150 - $199.99</td>
<td>17</td>
<td>8.3</td>
</tr>
<tr>
<td>$200 - $249.99</td>
<td>11</td>
<td>5.4</td>
</tr>
<tr>
<td>$250 or more</td>
<td>9</td>
<td>3.6</td>
</tr>
</tbody>
</table>

Descriptive Statistics and Assumptions

Descriptive statistics of 11 continuous variables are presented in Table 15. The table includes mean, standard deviation, and skewness indices for accessing normality of variables.

The data then were examined for assumptions of path analysis; normality, linearity, and homoscedasticity of error terms. These assumptions were tested by plotting studentized residual with identification numbers (ID), standardized predicted value with standardized residuals, residual Q-Q plots, histogram with normal curve of studentized residual, and normal probability plot.
Table 15
Mean, Standard Deviation, Skewness of Items

<table>
<thead>
<tr>
<th>Item</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ln RevPar</td>
<td>168</td>
<td>1.16</td>
<td>.52</td>
<td>-.22</td>
</tr>
<tr>
<td>Investment1</td>
<td>204</td>
<td>3.44</td>
<td>1.14</td>
<td>-.41</td>
</tr>
<tr>
<td>Investment2</td>
<td>204</td>
<td>3.46</td>
<td>.97</td>
<td>-.38</td>
</tr>
<tr>
<td>Innovativeness</td>
<td>209</td>
<td>2.64</td>
<td>1.36</td>
<td>.28</td>
</tr>
<tr>
<td>Strategy 1</td>
<td>204</td>
<td>3.29</td>
<td>1.22</td>
<td>-.59</td>
</tr>
<tr>
<td>Strategy 2</td>
<td>179</td>
<td>3.20</td>
<td>1.31</td>
<td>-.20</td>
</tr>
<tr>
<td>Strategy 3</td>
<td>179</td>
<td>2.92</td>
<td>1.26</td>
<td>.11</td>
</tr>
<tr>
<td>Strategy 4</td>
<td>179</td>
<td>3.50</td>
<td>1.15</td>
<td>-.62</td>
</tr>
<tr>
<td>Strategy 5</td>
<td>179</td>
<td>3.60</td>
<td>1.13</td>
<td>-.66</td>
</tr>
<tr>
<td>Power</td>
<td>204</td>
<td>3.50</td>
<td>1.16</td>
<td>-.75</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>208</td>
<td>3.64</td>
<td>.92</td>
<td>-.64</td>
</tr>
</tbody>
</table>

Multicollinearity was accessed using squared multiple correlations (SMC), tolerance, variance inflation factor (VIF), and condition index.

Normality assumption was tested using residual Q-Q plot (see Figure 13) and histogram with normal curve of residual (see Figure 14).

Figure 13. Normal Q-Q Plot of Studentized Residual
Residual Q-Q plot revealed that ID number 31, 51, 44, 197, and 65 display relatively large departure from diagonal line. Residual histogram (Figure 14) also discovered the data is slightly left-skewed, suggesting further investigation of influential point is necessary.

![Residual Histogram with Normal Curve](image)

**Figure 14.** Residual Histogram with Normal Curve

When strategy was regressed on the rest of independent variables proposed in the model, there were four cases (ID number 67, 100, 122, and 123) that did not meet the criteria of cutoff point, ±2 (Hair et al., 1998; Pedhazur, 1987). Figure 15 presents the plot of standardized predicted value by standardized residuals.
However, when plotting studentized residual with identification numbers (ID), no case was identified as an influential point. The criterion used for cut off point was ±3 (Hair et al., 1998; Pedhazur, 1987). As shown in the Figure 16, the dispersion of scatter plot does not form a diamond or triangle shape, exhibiting constant variance of the error terms among the independent variables.

*Figure 15. Standardized Predicted Value by Studentized Residual (±2)*
Influential points were assessed using leverage, Cook’s distance, and standardized DFBETA (SDFBETA). The criterion used for leverage test was $2p/n$, yielding the threshold of 0.085 for given data. No case exceeded the criterion. Next, Cook’s distance, which simultaneously captures both leverage effects and the change in residuals (Hair et al., 1998), were applied to the data. The calculated threshold of $0.025\frac{4}{(n-k-1)}$ identified 6 cases (see Figure 17).


Figure 17. Cook's Distance

Standardized DFBETA measure (using criterion of $\pm 2/\sqrt{N}$) was plotted with ID numbers and revealed several cases as possible influential points. SDFBETA measure the change in a regression coefficient when a case is omitted from the regression analysis. Finally, the Mahalanobis distance associated with each identified case was manually checked. Mahalanobis's distance generalized distance procedure computes a distance measure between objects comparable to $R^2$ in regression analysis. Mahalanobis’s distance revealed that there was no case showing substantially higher values than the remaining cases, suggesting that the identified cases were not truly aberrant nor not representative of any observations in the population (Hair et al., 1998; p 66). Even though two univariate analyses (Cook’s distance and the plot of standardized residual * predicted value)
suggested four possible influential points, the multivariate Kurtosis normality test (by EQS) did not identify any case that displays significant departure from normalized multivariate kurtosis (the largest estimates were 168, 89, and 82, and so forth). Therefore, a path analysis was conducted including these four cases.

Multicollinerarity among variables were accessed using squared multiple correlation (SMC), tolerance value, variance inflation factor (VIF), and condition index. Tolerance is the amount of variability of the selected independent variable not explained by the other independent variables (Hair et al., 1998; Pedhazur, 1987; Ththam & Black, 1992) and VIF is the inverse of the tolerance value (VIF=1/tolerance). Thus small tolerance values (less than 0.1) and the large VIF values (10 or higher) denote high multicollinerarity (Hair et al., 1998).

The given data set yielded tolerance ranging from 0.871 to 0.941 and VIF ranging from 1.063 to 1.148. Condition index ranged minimum of 1.00 to maximum of 13.45, which meets the most conservative threshold value of 15 (Hair et al., 1998; Pedhazur, 1987). No SMC value exceeded 0.304, suggesting there is no existence of multicollinerarity in the regression among independent variables (None of $R^2$ value exceeded .90).

Reliability, Convergent and Discriminant Validity

The reliabilities of multi-item constructs were assessed by Cronbach’s alpha. The alpha reliability of investment measures was .574 whereas that of electronic distribution strategy was 0.796. The reliability level for electronic distribution strategy exceed the critical level of .70 as suggested by Nunnaly (1978). This means that 5 measurements
together explain over 50% of variance in the construct of electronic distribution management strategy. The two scales that measure satisfaction on the organizational investment was newly developed as a multi-scale measure in the area of the electronic distribution channel management, therefore the reliability level suggested investment measure were usable for further analysis (Churchill, 1979).

The convergent and discriminate validity of these two construct were evaluated by comparing reliability coefficients with interconstruct correlations and by examining within and between construct item correlations (see Table 16). For these two multi-items constructs, the reliability scores were higher than interconstruct correlations. Moreover, the within item correlations were higher than between item correlations. The exogenous variables had different effects on endogenous variables (innovativeness, strategy, and performance), providing supports for discriminant validity. The constructs shows satisfactory level of convergent and discriminant validity.

Table 16
**Reliability, Convergent and Discriminant Validity of Multi-item Variables**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Investment</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cronbach's alpha</td>
<td>.574</td>
<td>.796</td>
</tr>
<tr>
<td>Item-to-total correlation (range)</td>
<td>.402</td>
<td>0.653 to 0.748</td>
</tr>
<tr>
<td>Within-item correlations (range)</td>
<td>.402</td>
<td>0.503 to 0.703</td>
</tr>
<tr>
<td>Between-item correlations (range)</td>
<td>0.180 to 0.385</td>
<td>0.173 to 0.484</td>
</tr>
</tbody>
</table>

**Nonresponse Bias**

Nonresponse bias was assessed in two-ways: by comparing the demographic profile of survey respondents with that of the population, and by grouping responses into two groups.
AHLA compiled lodging industry profile annually (member hotels') and made this information available to public. While the survey was conducted in early 2004, the respondents were asked about their property profile based on 2003 results. The demographic information included: 1) if the property that the respondent represents is single or multiple properties; 2) the total number of rooms of the property he/she represents; 3) 2003 occupancy rate of the property (as a percentage); 4) RevPar of the property he/she represents; 4) respondent’s department; 5) majority customer segment (business, leisure, group, combination); 6) business affiliation (chain, independent, management company); and 7) respondent’s experience as a hotel operator (in years).

The result was compared with the 2004 lodging industry profile provided to the members of AHLA. This report is based on the figures compiled in year 2003 (www.ahla.org). The Chi-square statistics of three selected variables (number of rooms, major customer segment, and average occupancy rate) revealed that there were no statistically significant differences between population and sample; (Chi-square rooms = 4.92 , p<1; Chi-Square segment = 0.18 , p<1; Chi-Square occupancy = 0.08 , p<1)

50% of the sample’s average RevPar ranged between $30 to $84.99, where the industry average was $50.42. The sample collected for this dissertation exhibits a similar distribution to the industry profile in terms of the number of rooms, the major customer segment, and average RevPar. The sample’s average occupancy rate (65%), however, was a little higher than the industry average (60.1%). The comparison of property profile between population and sample, including Chi-square tests is presented in Table 17.

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Table 17
*Comparison of Property Profile (Based on 2003 figures)*

<table>
<thead>
<tr>
<th>Industry profile</th>
<th>Survey respondent’s profile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
</tr>
<tr>
<td>Number of rooms</td>
<td></td>
</tr>
<tr>
<td>Under 75 rooms</td>
<td>1,144,753</td>
</tr>
<tr>
<td>75-149 rooms</td>
<td>1,523,999</td>
</tr>
<tr>
<td>150-299 rooms</td>
<td>560,983</td>
</tr>
<tr>
<td>300-500 rooms</td>
<td>407,038</td>
</tr>
<tr>
<td>Over 500 rooms</td>
<td>478,923</td>
</tr>
<tr>
<td>N</td>
<td>4,415,696</td>
</tr>
</tbody>
</table>

*Chi-Square (df) = 4.92, p<1*

<table>
<thead>
<tr>
<th>Major customer segment</th>
<th>Percentage (%)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business</td>
<td>52</td>
<td>49</td>
</tr>
<tr>
<td>Leisure</td>
<td>48</td>
<td>51</td>
</tr>
</tbody>
</table>

*Chi-Square (df) = 0.18, p<1*

Average Occupancy Rate

60.1% vs. 65.0%

*Chi-Square (df) = 0.08, p<1*

Average RevPar

$50.42 vs. $30 - $84.99 (54.2%)

The second method used to test nonresponse bias was comparison of early responses and late responses (Armstrong & Overton, 1977). Excluding the responses that were gathered for the pre-test, the total number of responses (180) was divided into two groups: early responses and late responses. The first group includes 90 respondents who responded by April 16, 2004, and the latter includes 90 respondents who replied between April 17 to May 9, 2004. Afterwards, a t-test and cross tabulation were conducted using list-wise deletion.

An independent two-sample t-test was conducted using selected demographics variables such as number of rooms, 2003 occupancy rate, RevPar, hours devoted to managing electronic distribution channels, and experience as an hotel operator in years. The results of t-test presented in Table 18 show that there is no significant nonresponse bias in the dataset.
Chi-square was utilized to test the difference between early respondents and late respondents. Variables regarding respondent’s organization were tested including 1) whether or not the organization have written strategy regarding electronic distribution channel management, 2) whether or not the organization utilized revenue management systems, 3) major customer segment, and 4) business affiliation. The results of Chi-square test are presented in the Table 19. The summary table (Table 19) shows no significant difference between early respondents and late respondents at the 0.05 level of significance on 4 variables selected for Chi-square test.

**Results of Path Analysis**

Using EQS 6.1 software, the path coefficients between exogenous and endogenous variables were estimated (Asher, 1983; Davis, 1885; Pedhazur, 1987). Before conducting data analysis, missing variables were analyzed using SPSS Missing Value Analysis 7.5, an add-on module. SPSS Missing Value Analysis fill in missing data using univariate, listwise, pairwise, EM algorithm, and regression algorithm. The separate t-test table confirmed no differences between missing and non-missing groups for all variables when listwise method and Expectation-Maximization algorithm (EM algorithm) were applied.
Table 19  
Nonresponse Bias Assessment (Chi-square test)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Early Respondents</th>
<th></th>
<th>Late Respondents</th>
<th></th>
<th>Chi-square</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
<td>Frequency</td>
<td>Percentage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategy</td>
<td>Yes</td>
<td>34</td>
<td>37.8</td>
<td>31</td>
<td>34.4</td>
<td>.217</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>56</td>
<td>62.2</td>
<td>59</td>
<td>65.6</td>
<td></td>
</tr>
<tr>
<td>Revenue Mgt.</td>
<td>Yes</td>
<td>31</td>
<td>34.4</td>
<td>35</td>
<td>38.9</td>
<td>.383</td>
</tr>
<tr>
<td>System</td>
<td>No</td>
<td>59</td>
<td>65.6</td>
<td>55</td>
<td>61.1</td>
<td>.</td>
</tr>
<tr>
<td>Business</td>
<td></td>
<td>18</td>
<td>20.7</td>
<td>17</td>
<td>20.5</td>
<td></td>
</tr>
<tr>
<td>Leisure</td>
<td></td>
<td>32</td>
<td>36.8</td>
<td>17</td>
<td>10.5</td>
<td></td>
</tr>
<tr>
<td>Group</td>
<td></td>
<td>6</td>
<td>6.9</td>
<td>12</td>
<td>14.5</td>
<td></td>
</tr>
<tr>
<td>Customer Combination</td>
<td></td>
<td>31</td>
<td>35.6</td>
<td>37</td>
<td>44.6</td>
<td>7.06</td>
</tr>
<tr>
<td>Chain Management Company</td>
<td></td>
<td>26</td>
<td>28.9</td>
<td>27</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Affiliation</td>
<td>Independent</td>
<td>39</td>
<td>43.4</td>
<td>34</td>
<td>37.8</td>
<td>.658</td>
</tr>
</tbody>
</table>

The result of path analysis also did not make much difference in terms of statistical significance and magnitude of the path coefficients, when these two treatments were utilized. Thus listwise deletion was applied to treat missing values, yielding 164 cases for path analysis. The correlation matrix among the variables used for path analysis is provided in Appendix IV.

A path analysis with composite variables was estimated using EQS 6.1 and the result revealed a poor fit between the hypothesized model and the empirical covariance provided by the sample: Chi-square of 41.42 on 9 degrees of freedom, p<.001, Comparative Fit Index (CFI) of 0.76, Normed Fit Index (NFI) of 0.74, Bollen IFI indent of 0.79, GFI of 0.94, and Root Mean Square Error of Approximation (RMSEA) of 0.15.

The results show several nonsignificant structural paths. A path coefficient, approximating the standardized regression coefficient (beta), shows the direct effect of an independent variable on a dependent variable in a path model. A path coefficient was
considered significant at the 0.05 level.

The multivariate Wald test and t-test indicated that two hypothesized parameters were statistically nonsignificant: slack to innovativeness and top management involvement to strategy. The multivariate LM test denoted that two residual covariance were significant: slack to top management involvement, and top management involvement to investment. Significant and nonsignificant paths were analyzed to see which theory was supported/not supported in hotel electronic distribution channel management. The final model with the standardized path coefficients on the significant paths is provided in Figure 18.

Note: Figure shows significant path coefficients at the 0.05 or better level of significance. * significant at the .05 level ** significant at the .01 level *** significant at the .001 level.

*Figure 18*
Statistical Relationships among Model Variables (N=209).
From the result of data analysis, the following five structural equations were generated as a result of decomposition of model variables.

\[ Y_{\text{Investment}} = P_{21} \text{(slack)} + e_2 \]
\[ Y_{\text{Innovativeness}} = P_{41} \text{(slack)} + P_{42} \text{(investment)} + e_4 \]
\[ Y_{\text{Strategy}} = P_{51} \text{(slack)} + P_{52} \text{(investment)} + P_{54} \text{(innovativeness)} + P_{53} \text{(top mgt.)} + e_5 \]
\[ Y_{\text{Power}} = P_{64} \text{(innovativeness)} + P_{65} \text{(strategy)} + e_6 \]
\[ Y_{\text{Performance}} = P_{76} \text{(power)} + P_{75} \text{(strategy)} + P_{73} \text{(top mgt.)} + e_7 \]

Among 5 proposed structural equations, 4 were supported by the data. Contrary to conventional assumptions that previous researchers took for granted, the data did not support the idea of slack having a significant effect on investment \((\beta = 0.08, p=0.32)\). Thus, the first structural equation was dropped. Another contingent variable, the general manager's involvement in managing the electronic distribution channel, did not have a significant effect on strategy \((\beta = -0.01, p=0.88)\) and performance \((\beta = 0.05, p=0.43)\) in this data. These issues will be discussed in detail in the conclusion session.

Effect of slack

Contrary to the assumption of many contingency theories, the hotel's slack did not have an effect on the investment level. The data shows that a hotel's size is not proportionate to a hotel's investment in managing electronic distribution channels. In other words, a large hotel does not necessarily invest more in electronic distribution strategy than a small hotel. However, slack had a direct effect on the Internet distribution strategy \((\beta = 0.17, p<0.05)\), indicating that the practice of larger hotels using electronic distribution strategies was more likely to be successful.
Effects of investment

A hotel’s investment level had a significant direct effect on the innovativeness of the organization ($\beta = 0.23, p<0.01$). A hotel who is highly investing in electronic channel management is more likely to be sensitive to innovation and to adapt innovative technology.

The level of investment has a significant direct ($\beta = 0.40, p<0.001$) and indirect ($\beta = 0.05, p<0.05$) association with the electronic distribution strategy. The results of data analysis indicated investment level had significant indirect effect both on power ($\beta = 0.17, p<0.001$) and performance ($\beta = 0.17, p<0.001$). The effect size of these indirect effects were strong and statistically significant at the conservative level. The amount of money and time that an organization devotes indirectly through an organization’s innovativeness and strategy, positively affected the organization’s negotiating power with intermediaries, and its actual strategy performance.

Effects of innovativeness

Innovation adoption of the hotel had direct association with Internet distribution strategy ($\beta = 0.23, p<0.05$). When an organization was adaptive to new technology, it had a higher chance of having an Internet distribution strategy. Innovativeness also had an impact on intraorganizational power, both directly ($\beta = 0.21, p<0.01$) and indirectly ($\beta = 0.06, p<0.01$). When an organization was receptive to innovation, the organization was more likely to gain greater negotiating power over its intermediaries.

Hotels with higher innovation adoption reported more effective strategy implementation, even though the size of the effect was small ($\beta = 0.10, p<0.01$). The effect of innovation on performance was mediated by strategy and power.
Effects of Internet strategy

Internet distribution strategy had significant direct effects on both power (\( \beta = 0.29, \ p < 0.001 \)) and performance (\( \beta = -0.31, \ p < 0.001 \)). It also had an indirect effect on the performance (\( \beta = 0.06, \ p < 0.01 \)) mediated by power. The results show that organizations with electronic distribution strategy have more power to negotiate with their online intermediaries and their distribution channels perform better than those who do not have such strategy.

Effects of power

Intraorganizational power has a significant direct effect on the performance of the distribution strategy (\( \beta = 0.20, \ p < 0.05 \)). Hotels with considerable negotiation power would be more likely to experience effective distribution channels.

Table 20 is a summary table that examines direct, indirect, and total effects, in addition to explaining variance (\( R^2 \)) and residual path coefficients.
Table 20

*Direct, Indirect, and Total Effects of Variables*

<table>
<thead>
<tr>
<th>Effect</th>
<th>DE</th>
<th>IE</th>
<th>TE</th>
<th>Residual path coeff.</th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>On innovativeness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>of investment</td>
<td>0.23**</td>
<td>0.00</td>
<td>0.23**</td>
<td>.97</td>
<td>.054</td>
</tr>
<tr>
<td>On strategy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>of slack</td>
<td>0.17*</td>
<td>0.00</td>
<td>0.17*</td>
<td>.86</td>
<td>.266</td>
</tr>
<tr>
<td>of investment</td>
<td>0.40***</td>
<td>0.05*</td>
<td>0.45***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>of innovativeness</td>
<td>0.23*</td>
<td>0.00</td>
<td>0.23*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On power</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.92</td>
</tr>
<tr>
<td>of investment</td>
<td>0.00</td>
<td>0.17***</td>
<td>0.17***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>of innovativeness</td>
<td>0.21**</td>
<td>0.06**</td>
<td>0.27**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>of strategy</td>
<td>0.29***</td>
<td>0.00</td>
<td>0.29***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.91</td>
</tr>
<tr>
<td>of slack</td>
<td>0.00</td>
<td>0.07*</td>
<td>0.07*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>of investment</td>
<td>0.00</td>
<td>0.17***</td>
<td>0.17*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>of innovativeness</td>
<td>0.00</td>
<td>0.10**</td>
<td>0.10**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>of strategy</td>
<td>0.31***</td>
<td>0.06**</td>
<td>0.37***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>of power</td>
<td>0.20*</td>
<td>0.00</td>
<td>0.20*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: The significance of indirect effects were decided based on the Sobel test. For brevity, only those independent variables with either significant direct or indirect effect were listed in this table. DE=Direct effect, IE=Indirect effect, TE=Total effect. *significant at the .05 level, **significant at the .01 level, ***significant at the .001 level.*

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From the analysis of path and the discussion above, some of proposed hypotheses were supported and some were not. A summary of hypothesis testing is presented in table 21.

Table 21

*Summary of Hypothesis Testing*

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1a Slack has a positive effect on company’s innovation.</td>
<td>N.S</td>
</tr>
<tr>
<td>H1b Slack has a positive effect on Internet distribution strategy.</td>
<td>Supported</td>
</tr>
<tr>
<td>H1c Slack has a positive effect on company’s investment.</td>
<td>N.S</td>
</tr>
<tr>
<td>H2a Investment has a positive effect on company’s innovativeness.</td>
<td>Supported</td>
</tr>
<tr>
<td>Investment has a positive effect on company’s Internet distribution strategy.</td>
<td>Supported</td>
</tr>
<tr>
<td>H2b Top management involvement in managing electronic channels has a positive effect on Internet distribution strategy.</td>
<td>N.S</td>
</tr>
<tr>
<td>H3a Top management involvement in managing electronic channels has a positive effect on performance.</td>
<td>N.S</td>
</tr>
<tr>
<td>H4a Innovativeness has a positive effect on Internet distribution strategy.</td>
<td>Supported</td>
</tr>
<tr>
<td>H4b Innovativeness has a positive effect on organizational power.</td>
<td>Supported</td>
</tr>
<tr>
<td>H5a Internet distribution strategy has a positive effect on organizational power.</td>
<td>Supported</td>
</tr>
<tr>
<td>H5b Internet distribution strategy has a positive effect on performance.</td>
<td>Supported</td>
</tr>
<tr>
<td>H6 Power has an effect on the performance.</td>
<td>Supported</td>
</tr>
</tbody>
</table>

*Note: N.S= Not supported.*
CHAPTER 5

SUMMARY AND CONCLUSION

Discussion of Results

This dissertation proposed a comprehensive model applicable to hotel electronic distribution management. It was guided by three well-founded theories: contingency theory, information-adoption theory, and channel-power theory. Environmental and organizational determinants of electronic distribution strategy and their relationship with its consequences were evaluated using the linear structural path modeling. Among 12 posited hypotheses, 8 were supported by the sample. The data analysis revealed that some of the constructs included in the model hold true in hotel electronic distribution, whereas some do not. For example, a well-known and long-existing determinant - in both contingency theory and in innovation-adoption theory, management support and composition, was found insignificant in the context of hotel electronic distribution channel strategy. Another construct supported by both theories, slack, turned out to be insignificant in determining the innovativeness of the organization. This finding was consistent with contradictory research findings in the school of innovation adoption. Even thought most of innovation adoption researchers hypothesized the effect of slack on organizational innovativeness in their conceptual model, a number of researchers failed to prove it in their data (Joo & Kim, 2004; Nohria & Gulati, 1996). One possible explanation for this finding may be found from Noharia and Gulati’s study (1996). They found that slack resources and innovativeness of organization has a U-shaped relationship.

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The study found that too much slack and too little slack were detrimental to the organizational innovativeness and called for the future study to determine a proper amount of slack resource for different organization. Singh (1986) also suggested that type of slack (absorbed and unabsorbed) should have different impact on the organizational innovativeness. He found that absorbed slack was related to the risk taking of the organization, but unabsorbed slack was not. The sample selected from hotel operators for this dissertation also failed to support the linear effect of slack on hotel’s innovativeness.

Another interesting finding of this dissertation was the enlightenment over the long-lasting assumption in the relationship of slack and investment- the belief that the more resources an organization has, the more the organization will invest in distribution channel strategy. The conventional assumption that researchers in organizational theory and innovation adoption took for granted, was scarce-tested empirically. The data used in this dissertation could not reject the null hypothesis that organizations with different slack sizes do not vary in terms of investment.

The results of the data analysis show that slack, investment, and innovativeness have a significant effect on the Internet distribution strategy. While the analysis shows that several constructs that previous researchers identified as antecedents did not hold true in the hotel electronic channel context, constructs identified as consequences of the electronic distribution channel strategy were confirmed by the data.

One of the proposed determinants, organization’s investment level, was a significant predictor of organizational innovativeness and electronic distribution strategy. A hotel whose investment level in electronic channel management is high is more likely to adopt innovative technology. The investment level was also found to be a significant
determinant of Internet distribution strategy. The results also show that an innovative organization is more likely to have an electronic distribution strategy in place in the organization, and it has more power over its third party intermediaries, regardless of its size (slack resource). However, the effectiveness of the strategy seems to be affected by all of its antecedents, except top management involvement in managing the distribution channel; slack, innovativeness, strategy, and power. Of these antecedents, strategy has the most impact on the effectiveness of managing electronic distribution channel, followed by the intraorganizational power. The magnitude of strategy on power and performance implies the importance of having strategy on which the focus is placed on electronic context of the distribution in this fast moving environment. Another new finding from the data is that the intraorganizational power, which was mentioned multiple times in marketing channel literature but never tested in the electronic channel of the hotel industry, held true in the electronic channel distribution.

Conclusions and Recommendations for Future Study

In the beginning of the dissertation, four research questions were formulated:

1) What is the relationship between the electronic distribution strategy and its antecedents (slack, investment, innovativeness, top management involvement)?

2) Do the empirical linkages between determinants of performance (operational efficiency) found in previous research on distribution channel management hold up in the electronic context?

3) Is the impact of innovativeness on performance mediated by the electronic distribution strategy?
4) Does intraorganizational power have a mediating effect on the performance?

These four research questions were answered through the data gathered from hotel operators in the United States, as described below.

1) Three antecedents had significant effects on the electronic distribution strategy: Slack (DE only $\beta = 0.17$, $p<0.05$), Investment ($\beta = 0.45$, $p<0.001$), and Innovativeness ($\beta = 0.23$, $p<0.05$).

2) Eight out of 12 hypotheses were supported. Slack had no significant effect on innovativeness and to investment at the 0.05 level. Top management involvement turned out as an insignificant determinants when examined in the hotel electronic context.

3) Yes. There is an indirect effect of innovativeness on performance mediated by the electronic distribution strategy, $\beta = 0.10$, $p<0.01$.

4) The Sobel test was utilized to test the indirect effects mediated by power. Sobel test is represented as following equation:

$$z-value = \frac{a b}{\sqrt{b^2 s_a^2 + a^2 s_b^2}}$$

The power was hypothesized to mediate the effect of innovativeness and strategy on performance. For indirect effect of innovativeness on performance mediated by power, two paths were generated: Innovativeness->power->performance and innovativeness->strategy->power-> performance. Since the second path obviously would be too weak it was not tested. Using $a=0.18$ (unstandardized regression coefficient), $b=0.13$, $s_a = 0.06$ (standard error), $s_b = 0.05$, the Sobel test revealed that the indirect effect of innovativeness on performance mediated by power was insignificant ($z = 1.94$, $p>0.05$).
The indirect effect of strategy performance mediated by power, on the contrary, was significant at the 0.05 level, $z = 2.12, p = 0.03$ ($a = 0.33$, $b = 0.13$. $s_a = 0.08$, $s_b = 0.05$). Therefore, intraorganizational power has a mediating effect on the performance from strategy even though the effect size is very small ($\beta = 0.04$, $p < 0.05$).

Even though some of the antecedents posited were not statistically significant, implying that organization structure of the hotel industry might not be the same to the other industry due to its service characteristics, the importance of the innovativeness of the organization, electronic distribution strategy, and organizational power became eminent.

The hotel industry is undergoing great changes as mentioned in Chapter 2. The industry employed numerous strategies, but did not always turn out to be beneficial to hotels - i.e. third-party room dumping, suppliers joining to form Travelweb, best-rate guarantee program, and third-party websites launching their own loyalty program. All of these changes together make it more difficult for hotels to differentiate themselves from competitors. Moreover, as hotels compete by discounting rates and copying strategy, hotels strive to differentiate themselves from their competitors. Assessing the impact of having a strategy in place for managing online distribution should be done and the current study can serve as a guide. The results of this dissertation show that the hoteliers think a well-formed electronic distribution strategy would provide a safety barrier for commoditization of their rooms and an opportunity to differentiate themselves from competitors.

The most important contribution of this study may be that it has compiled hotel operators’ view on the electronic distribution channel and related grounded theories were
tested in an electronic service context. While operators’ opinions were heard through this dissertation, vendor’s perspectives should be examined in order for the academia and the industry to make well-balanced decision and attempt to predict the future. There are multiple new forms of vendors in the hotel electronic channels and they are perceived as a threat to the hotel operators. An analysis of their opinions should be undertaken as an initial step to bridging this gap between operators and vendors. Future studies may also analyze the gap between customer’s views and operators’ perspectives.

While the current study tested if three well-researched theories hold true in hotel electronic distribution context, one of the limitations was the use of single item measure to test the model. SEM requires precise operationalization of variables and only valid when instrument are well-tested (Hair et al., 1998; McDonald, 1996), therefore future study must develop multiple measures and test the instrument empirically in the first place.

The research finding also suggests further examination on possible non-linear relationship among proposed variables, especially between slack resources and hotel’s innovativeness. A future study may investigate the nonsignificant relationships that current study identified, such as top management involvement and its consequences.

The preliminary findings in the hotel electronic distribution of the current study can be expanded by controlling variables that might have a group invariance. For example, future research can proceed to separate property type (single or multiple property) or incorporate other confounding factors that could influence a company’s electronic distribution strategy.
Limitations

The study has some limitations. Since the respondents were self-selected, there is a possibility that the study could be influenced by self-selection bias. To access external validity and non-response bias of the study, a number of indices of the sample were compared with population indices, which were provided by the 2004 Lodging Industry Profile. Except for average occupancy rate, other indices, such as the number of rooms in categories and the proportion of major customer segment (see Table 18 on page 105) show similar distribution with the population. The average occupancy rate shows that the sample may represent those hotels that outperform the industry in that the average occupancy rate of population was 60% whereas that of the sample was 65%.

Even though the most appropriate sample must be drawn from a pool of revenue managers, it is not possible to identify such a list. A list of AHLA member's was the most realistic alternative. The sample profile shows it was reasonable to use this sampling frame since 60% of the sample was general managers, followed by revenue managers, and sales and marketing managers (see Table 12 on page 93). All of these managers typically evaluate yield and are responsible for the profitability of the operation.

General managers are assumed to make final decisions on most hotel functions including managing channel distribution. Considering that 40% of sample properties were independently owned, where general managers are assumed to have the responsibility of managing channels distribution, using the AHLA list would not reduce the validity of the study. Moreover, 60% of respondents stated that their electronic channels are managed by general managers, and 50% answered that this function is
handled by revenue managers. Thus the findings ensure certain degree of external validity.
APPENDICES
Dear American Hotel and Lodging Association member,

The College of Hotel Administration, University of Nevada, Las Vegas, is conducting a study to identify the challenges that hotel operators face in managing electronic distribution channels and to discover how operators manage multiple channels in this fast moving environment.

We would like to invite you to participate in this study. Please take a few minutes (approximately 15 minutes) to complete the survey. In the survey, you will be asked to provide your opinion about electronic distribution channel management and your organization’s channel selection strategy.

Your participation in this study is completely voluntary. Your responses will remain confidential and your privacy will be protected as each survey will be assigned a random code to which no reference will be made. You may elect to receive a summary of the final result by providing us with your address at the end of the survey.

If you have any questions, you may contact us at (702) 895-4458. For questions regarding the rights of research subjects, you may contact the UNLV Office for the Protection of Research Subjects at (702) 895-2794.

We appreciate your consideration and thank you for your assistance in completing this survey. To begin the survey, please Click Here.

Sincerely,

Bomi Kang
Doctoral Student
kangb2@unlv.nevada.edu

Kathleen Pearl Brewer
Director of Graduate Studies
brewer@ccmail.nevada.edu
APEENDIX II
SURVEY QUESTIONNAIRE

Hotel Electronic Distribution Channel Management

In your job are you involved in managing or making decisions concerning the use of electronic distribution channels such as managing Central Reservation Systems (CRS), hotel's website, or dealing with a switch company, Global Distribution Systems (GDS) company, travel sites, consolidators, etc. for your organization? Proceed only if your answer is "Yes". If "No", please forward this link to appropriate person in your organization. Thank you.

1. Please indicate the electronic booking methods that your organization employs. (Check all that apply)
   - Direct call to the hotel
   - Hotel's Website
   - CRS though chain
   - Online travel agencies (Expedia, Orbitz, Travelocity, Hotels.com, TravelWeb)
   - Third party Website/ADS (PlacetoStay.com, HDN.com)
   - Opaque
   - Traditional travel agent through GDS
   - Other, Please Specify

2. Below are some statements that describe how electronic channels affect your organization. Please rate your agreement with each statement on a scale of 1-5 where (1) means "strongly disagree" and (5) means "strongly agree."

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Opinion/Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic distribution channels are important to the profitability of a hotel.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adding channels will improve RevPar.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What's good at a property level in terms of profitability is also good for the brand.

There is a loss of control over room inventory when using multiple channels.

My organization maintains a satisfactory level of control over customer data.

My organization loses some control over marketing materials (hotel descriptive content) that are presented on the third party website.

The current electronic channel management employed by my organization is effective.

The level of investment in my hotel's website is satisfactory.

The level of investment of my organization in managing electronic distribution channels is satisfactory.

I feel the need to take back online distribution.

My organization has a policy in place to provide inventory to third-party distributors.

My organization is able to negotiate contract terms with third-party distributors.

I am willing to connect our PMS directly to the travel site. (E.g. Expedia, Orbitz, Travelocity, Hotels.com, TravelWeb)

I expect the emergence of Next Generation Seamless (NGS) sooner or later.

My organization is actively involved in keyword purchase with major search engines.

My organization is actively involved in sponsored link purchase with major search engines.

My organization checks the result of search (position) regularly.
My organization has strategy in place to maximize our Internet presence.

3 Please evaluate each channel in terms of the profitability for your hotel. (1: Extremely Unprofitable, 5: Extremely Profitable)

<table>
<thead>
<tr>
<th>Channel</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct call to the hotel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hotel’s website</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRS through chain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online travel agencies (Expedia, Orbitz, Travelocity, Hotels.com, TravelWeb)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third party website/ADS (PlacetoStay.com, HDN.com)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opaque (Priceline.com, Hotwire.com)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traditional travel agent through GDS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traditional wholesaler/tour operator</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

4 On a scale of 1-5 (1=Fail, 3=Stay, 5=Thrive), please indicate how you feel the following channels will fare over the next three years.

<table>
<thead>
<tr>
<th>Channel</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct call to the hotel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hotel’s website</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRS through chain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online travel agencies (Expedia, Orbitz, Travelocity, Hotels.com, TravelWeb)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Channel Type</td>
<td>Rating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>--------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third party Website/ADS (PlacetoStay.com, HDN.com)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opaque (Priceline.com, Hotwire.com)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traditional travel agent through GDS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traditional wholesaler/our operator</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. How effective do you think each of the following measurements are in evaluating channel selection? (1: Very ineffective to 5: Very effective)

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR</td>
<td></td>
</tr>
<tr>
<td>Occupancy</td>
<td></td>
</tr>
<tr>
<td>RevPar</td>
<td></td>
</tr>
<tr>
<td>Gompar</td>
<td></td>
</tr>
</tbody>
</table>

Please go to next page for short demographic questions.
DEMOGRAPHIC INFORMATION
Please check the answer that best describes you and your organization.

6 I represent (If you are not representing a single property, please go to # 10)
   • A single property
   • Multiple properties
   • Other, Please Specify

7 Total number of rooms of property

8 Last year’s occupancy rate of property (As a percent %)

9 RevPar
   • Under $30
   • $30 ? $59.99
   • $60 ? $84.99
   • $85 - $99.99
   • $100 - $149.99
   • $150 - $199.99
   • $200 - $249.99
   • $250 or more

10 The department I work for is:
   • Information systems/MIS
   • Revenue Management
   • Sales & Marketing
   • Reservations
   • Accounting
   • Combination of above
   • Head Corporate
   • General Manager
   • Ownership
   • Other, Please Specify
11 The majority of my business is considered
- Business
- Leisure
- Group
- Split of Business/Leisure
- Other, Please Specify

12 My organization is

13 Approximately how many hours per week does your organization devote to managing electronic distribution channels at the property level? (In Hours)

14 My experience as a hotel operator (In Years)

15 At the property level, the electronic distribution channel is managed by (Check all that apply)
- Information systems/MIS
- Revenue Management
- Marketing
- Reservations
- General Staff
- General Manager
- Managed above the property level
- There is no management of distribution channels
- Other, Please Specify
16 In your organization, how do you evaluate the effectiveness of channel management strategy? (Check all that apply)

- ADR
- Occupancy
- RevPar
- GorPar
- No evaluation currently in place.
- Other, Please Specify

17 Does your organization utilize an electronic revenue management system?

If your answer is "Yes", please specify the brand

18 What is the major issue surrounding the selection of channels used by the hotel?

1
2
3
4
5

19 Does your organization have a documented strategy or action plan to manage electronic distribution channels including the Internet?

If your answer is yes, please briefly describe your current strategy to manage electronic distribution channels including the Internet
Are you interested in receiving the result of this survey?

If yes, please enter your name and contact information:

Name:
Company:
Address:
City:
State: 
Zip:

Thank you for your participation.
APPENDIX III

CODE BOOK

1. Please indicate all the electronic booking methods that your organization employs. (Check all that apply)

   Call Direct call to the hotel
   Hotel Hotel’s Website
   CRS CRS through chain
   Travel Online travel agencies (Expedia, Orbitz, Travelocity, Hotels.com, TravelWeb)
   ADS Third party Website/ADS(PlacetoStay.com, HDN.com) including CVB.
   Opq Opaque
   GDS Traditional travel agent through GDS + Wholesaler online
   Other Other, Please Specify

PERCEPTION

2. Here are some statements that describe how electronic channels affect to your organization. Please indicate your agreement or disagreement by circling the appropriate number to indicate whether you:

   Data My organization maintains a satisfactory level of control over customer data.
   Effect The current electronic channel management employed by my organization is effective.
   Policy My organization has a policy in place to provide inventory to third-party distributors.
   S1 My organization is actively involved in keyword purchase with major search engines.
   S2 My organization is actively involved in sponsored link purchase with major search engines.
   S3 My organization checks the result of search (position) regularly.
   S4 My organization has strategy in place to maximize our Internet presence.
   Power My organization is able to negotiate contract terms with third-party distributors.
   R_Control I feel the need to take back online distribution.
   Invest1 The level of investment in my hotel’s Website (direct channel) is satisfactory.
   Invest2 The level of investment of my organization in managing electronic distribution channels (overall) is satisfactory.
   Innovat I am willing to connect our PMS directly to the travel site.
PROFITABILITY
3. Please evaluate each channel in terms of the profitability for your hotel. (1: Extremely Unprofitable to 5: Extremely profitable, 6:N/A)

PrCall       Direct call to the hotel
PrHotel      Hotel’s Website
PrCRS        CRS though chain
PrTrave      Online Travel Agencies (Expedia, Orbitz, Travelocity, Hotels.com, TravelWeb)
PrADS        Third party Website/ADS (PlacetoStay.com, HDN.com)
PrOpq        Opaque
PrGDS        Traditional travel agent through GDS
PrTrad       Traditional wholesaler/tour operator

SURVIVALITY
4. On a scale of 1-5 (1-Fail, 3-Stay, 5-Thrive), please indicate how you feel the following channels will fare over the next three years.

SvCall       Direct call to the hotel
SvHotel      Hotel’s Website
SvCRS        CRS though chain
SvTravel     Travel site
SvADS        Third party Website/ADS
SvOpq        Opaque
SvGDS        Traditional travel agent through GDS
SvTrad       Traditional wholesaler/tour operator

EFFECTIVENESS
5. How effective are each of the following measurements in evaluating channel selection? (1: Very Ineffective to 5: Very Effective)

EffADR: a. ADR
EffOcc: b. Occupancy
EffRev: c. RevPar
EffGor: d. Gorpar

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DEMOGRAPHICS

6. Rep (1-3)
I represent
Single   A single property
Multiple Multiple properties (If you are not representing a single property, please go to Q.5)

7. Size (Whole number, Infinitive)
Total number of rooms of property
_______ Rooms

8. Occ (Whole number, Infinitive)
Last year’s occupancy rate of property
_______ %

9. Revpar (1-8)
RevPar
1: Under $30
2: $30 - $59.99
3: $60 - $84.99
4: $85 - $99.99
5: $100 - $149.99
6: $150 - $199.99
7: $200 - $249.99
8: $250 or more

10. Dept (1-6)
The department I work for
1: Information systems/MIS
2: Revenue Management
3: Sales & Marketing
4: Reservations/ Operations
5: Accounting
6: Combination of above
7: Head Corporate
8: General Manager
9: Ownership
10: Other

11. Type (1-3)
The majority of my business is considered
1: Business
2: Leisure
3: Group
4: Combination of business/leisure/group

12. Affiliation (1-4)
My organization is
1: Chain
2: Management Company
3: Independent

13. Hour (Whole number, Infinitive)
Approximately how many hours per week does your organization devote to managing electronic distribution channels?

__________ Hours

14. Yrs (Whole number, Infinitive)
My experience as a hotel operator

__________ Years

15. Mgt
At the property level, the electronic distribution channel is managed by (Check all that applies)
1: Information systems/MIS
2: Revenue Management
3: Sales & Marketing
4: Reservations
5: General Staff
6: General Manager
7: Managed above the property level
8: There is no management of distribution channels
9: Other

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16. Evaluation (1-6)
In your organization, how do you evaluate the effectiveness of channel management strategy? (Check all that apply)
1: ADR
2: Occupancy
3: RevPar
4: GorPar
5: No evaluation currently in place.
6: Other ________________________

17. RevSys
Does your organization utilize an electronic revenue management system?
1: Yes _________________________
2: No ___________________________

18. Issue
What is the major issue surrounding the selection of channels used by the hotel?
1: ______________________________
2: ______________________________
3: ______________________________
4: ______________________________
5: ______________________________

19. Strat
Does your organization have a documented strategy or action plan to manage electronic distribution channels including the Internet?
1: Yes ____________________________
2: No ______________________________

20. Receive
Are you interested in receiving the result of this survey?
1: Yes
2: No

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APPENDIX IV
CORRELATION MATRIX AMONG PATH MODEL VARIABLES

<table>
<thead>
<tr>
<th>Variable</th>
<th>LnRevPar</th>
<th>Invest</th>
<th>Innovative</th>
<th>GM</th>
<th>Strategy</th>
<th>Power</th>
<th>Effective</th>
</tr>
</thead>
<tbody>
<tr>
<td>LnRevPar</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Invest</td>
<td>.079</td>
<td>1</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Innovative</td>
<td>-.016</td>
<td>.230**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GM</td>
<td>-.201**</td>
<td>.187*</td>
<td>.094</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Strategy</td>
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<td>.456**</td>
<td>.270**</td>
<td>.048</td>
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<tr>
<td>Power</td>
<td>.099</td>
<td>.231**</td>
<td>.259**</td>
<td>-.075</td>
<td>.339**</td>
<td>.295**</td>
<td>1</td>
</tr>
<tr>
<td>Effective</td>
<td>.106</td>
<td>.477**</td>
<td>.249**</td>
<td>.070</td>
<td>.381**</td>
<td>.295**</td>
<td>1</td>
</tr>
</tbody>
</table>

*Correlation significant at the .05 level (2-tailed)
**Correlation significant at the .01 level (2-tailed)
REFERENCES


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Dissertation Examination Committee:
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Graduate Faculty Representative, Dr. Eunsook Hong, Ph. D.