

CRITICAL SUCCESS FACTORS FOR E-SERVICE: AN EXPLORATORY
STUDY OF WEB-BASED INSURANCE BUSINESS

by

Teuta Cata

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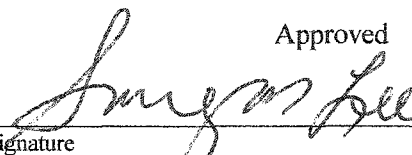
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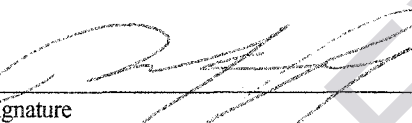
STUDY OF WEB-BASED INSURANCE BUSINESS


BY
TEUTA CATA

SUPERVISORY COMMITTEE:

Approved  _____ Signature	Date <u>8-12-03</u>
SANG M. LEE _____ Typed Name	

 _____ Signature	<u>8/12/03</u>
LESTER DIGMAN _____ Typed Name	

 _____ Signature	<u>8/12/03</u>
KENG SIAU _____ Typed Name	

 _____ Signature	<u>8/12/03</u>
SEBASTIAN ELBAUM _____ Typed Name	

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CRITICAL SUCCESS FACTORS FOR E-SERVICE: AN EXPLORATORY STUDY OF WEB-BASED INSURANCE BUSINESS

Tenta Cata, Ph. D.

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Advisor: Sang M. Lee

Implementation of new technology in organizations is a never-ending process that attempts to secure the best available tools to accomplish organization goals.

Implementation of new technology is considered as a process that needs not only technological adjustments, but also organizational transformation to support the changes made to technical systems. Previous studies on technology adoption and implementation discuss the technology adoption process and the multiple factors and issues that are important for successful technology adoption.

This study focused on the adoption of web-based applications in the insurance industry. An in-depth investigation of relevant literature on the technology adoption process and related issues and the data collected from insurance companies identified many factors that affect whether or not insurance companies decide to adopt Internet technology. Relevant factors include infrastructure flexibility, website availability, the degree of integration across departments, and company age. Other results of this study are related to online performance (in terms of both tangible and intangible benefits). Website availability, organizational support, customer pressure, degree of business

integration, an operational an e-business plan, and organizational size were identified as critical factors for online performance.

A Delphi study and industry survey were used as research methodology. Data collected in both stages were analyzed using different statistical tests that allowed drawing important conclusions for this study:

First, insurance companies are trying to follow up with the general trend of many industries and sectors on web-based Internet application to better serve their customers, and to conduct business efficiently.

Second, the decision on whether or not to adopt Internet-based applications is affected by a number of factors, which are related to the infrastructure that organizations have built, and organizational factors.

Third, the success of web-based activity is related to different critical success factors found in the three main environments: technological, organizational and external. This study indicates that web-based activity factors are very important in financial and non-financial performance as well; therefore it should be integrated with the rest of the organization.

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PREVIEW

CHAPTER I

INTRODUCTION

Online business is now considered to be a very important business strategy for sales and customer services. A website does not only represent a company, but also provides new product/service information, online transaction capability, 24/7 customer support, and access to a broader range of products and services. A website presence lends greater benefits when the products and services offered by an organization are intangible and frequently purchased, as is the case of financial and insurance services (Phau & Poon, 2000).

Digital trends in the economy are having significant impacts on the financial industry. New technology is driving the firms in this industry to new digitally networked models where strategic transformation processes have taken place (Meerts, 2002). E-finance institutions are moving towards “extended companies” where small-networked companies can freely serve their chosen customers and communities of interest. The Internet created the possibility to reach more customers and communities of interest and transcend geographic boundaries.

Web-enabled technology has changed the mentality of conducting business in the financial markets. On the one hand, customers are pushing for faster, better, and more convenient service from their financial service providers. At the same time, the Internet has lowered the barriers of entry into the industry. New online financial intermediaries (e.g., myciti.com) have made it possible to connect customers to financial services and

prices that best fit their needs (Meerts, 2002). Virtual financial companies have made it possible to offer financial services mainly on the Internet without the need for traditional brick-and-mortar activities. Web-based financial firms have reduced transaction costs by eliminating the traditional expenses, and conveniently delivering their products and services to customers via the Internet.

There are two reasons pushing insurance companies to expand their online activities. First, online access increases revenue and reduces costs by providing a less expensive delivery channel, expanding existing geographic network agencies and branches, eliminating paper work, and decreasing the level of personal interaction that institutions provide through call centers and branch offices. Second, online access increases customer perception of the level of customer service, creating and enhancing loyalty (Manning, 2003). While taking into consideration the fact insurance products are considered both difficult and time consuming to sell, the ability to sell insurance over any other carrier is highly desired (Keck et al., 1995).

Attempts to use the Internet as a sales vehicle are still in its early stage. Internet is used primarily as a communication tool in the life insurance sector ("Web news," 2003). Surveys conducted on Internet usage by insurance organizations show some promising results. Insurance sold via the Internet has reached \$5 billion in 2002 and is expected to grow to \$12 billion in 2005 (Jackson, 2003). Insurance customers are considering online shopping as another alternative to search and shop for insurance products. Forester Research estimates that for every customer who purchases insurance online, five customers have previously surfed online indicating that the number of online customers might have reached 120 million in 2002 (Jackson, 2003).

The importance of learning the critical success factors (CSF) for Internet adoption in the insurance industry is also increasing, as the number of insurance companies planning to implement the Internet technology is increasing. Awareness of the most CSFs will allow firms to concentrate their efforts on resources considered important to the industry and will allow them to achieve success. This study will explore the success factors of Internet-based business in the insurance industry in terms of financial and non-financial performance.

1.1 Purpose of the Study

This study discusses organizations' technology adoption behavior (at the organizational level and not the individual level). The overall objective of this study is to identify 1) the factors that lead to Internet adoption, and 2) CSFs of effective web-based services in the insurance industry. These objectives will help provide a better understanding of this industry and suggest the resources on which the industry should concentrate on to achieve better performance and create competitive advantage.

This study focuses on the insurance industry as part of the brand financial industry. This is an information-intensive industry, where technology adoption has a significant impact not only on products and services offered, but also on business strategies and the process of business core redesign (Dos Santos & Peffers, 1995). In the financial services sector, IT applications are considered very important in enhancing the services and expanding them beyond geographic boundaries.

The insurance industry has not reaped all the benefits that the development of digital technology and its home-developed application have generated in the last decade.

A variety of reasons are responsible for the slow development of online insurance.

Reasons include the perception of insurance as an individual product (“Insurers look,” 1999), complexity of the product (Lystak, 2001), lack of a clear e-business strategy (Kim, 2001; “Insurance Online,” 2000), and an ongoing concern about the ability of e-business applications to handle the back-office (Silver, 2001). The pricing process that this industry applies remains a mystery and is in the best interest of the insurance industry to maintain their pricing procedures and not lose their profit (Trembly, 2001-b).

Managerial issues impeding the successful adoption of Internet technology can be divided into legal, customer service, marketing, and quality issues (Chou, 2000); speed, security, and maintenance (Chen et al., 2001); organizational fear of doing business over the Internet (Borenstein, 1998); lack of the firm’s experience in doing e-business (Stahl, 1997); and an ambiguous or hostile legal or regulatory environment for e-commerce (Aalberts et al., 1997).

This study considers the Internet technology to be another form of technology advancement, or a new innovation, in an organization. Discussion of technology will overcome the boundaries of the Internet technology by discussing the issues, impediments, and concerns faced by technology development generally. Research conducted on other technology adoption is generalized in a conceptual framework (Figure 1.1) with the main factors being technology, organization, and the environment (see Table 1.1). This framework will help identify the CSFs of Internet adoption, within the insurance industry, which lead to successful performance. Successful performance is based upon tangible (financial) and intangible (non-financial) benefits. CSFs will be detected for each type of performance.

Another objective is to contribute to the understanding of the effect of technology adoption in the insurance industry. Much research has been done in other financial sectors such as banking (ATM, online banking), mortgage, etc. To date, little research has been done in the insurance sector.

PREVIEW

Figure 1.1 Theoretical Framework of Internet Adoption Factors on Web-based Insurance Companies (Revised)

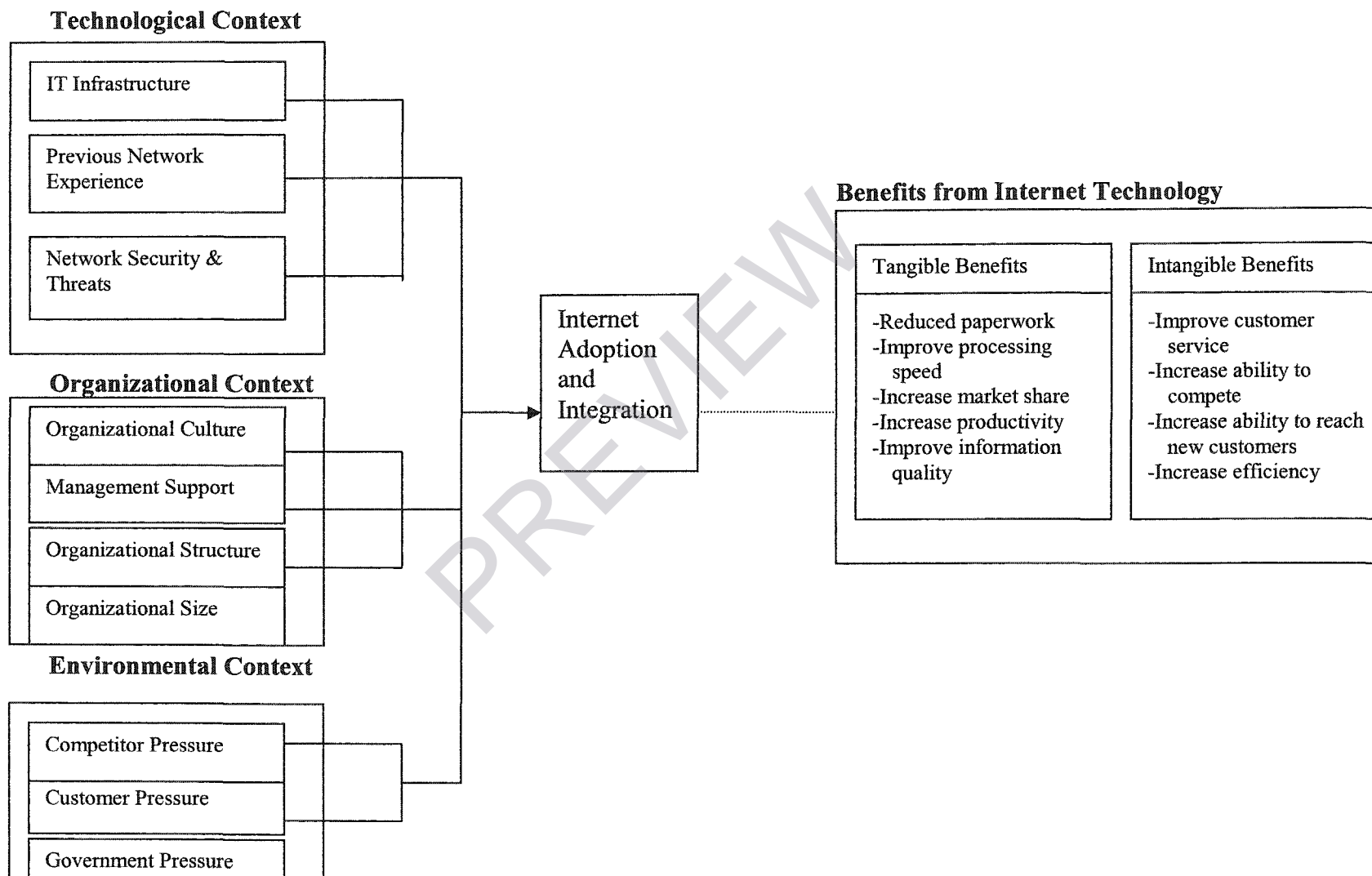


Table 1.1 Factors Identified by Previous Research on New Technology Adoption

Author	Source	Context	Tech. Context	Org. Context	External Pressure
Armstrong & Sambamurthy (1999)	Information System Research	IT assimilation	X	X	
Beatty et al., (2001)	Information & Management	Adoption of web tech.	X	X	X
Chau & Tam (1997)	MIS Quarterly	Adoption of open systems	X	X	X
Chengalur-Smith & Duchessi (1999)	Information & Management	Client/server application	X	X	X
Iacovou et al., (1995)	MIS Quarterly		X		X
King & Gribbins (2002)	HICSS	Internet technologies	X	X	X
Kuan & Chau (2001)	Information & Management	EDI adoption in small business	X	X	X
Li & Ye (1999)	Information & Management		X	X	X
Mehrtens et al., (2001)	Information & Management	Internet adoption by SMEs		X	X
O'Callaghan et al., (1992)	Journal of Marketing	EDI adoption in insurance industry	X	X	X
Premkumar & Ramamurthy (1995)	Decision Sciences	IOS adoption	X	X	X
Srinivasan et al., (2002)	Journal of Marketing	E-business adoption	X	X	X
Thong (1999)	Journal of MIS	IS adoption in small business	X	X	X
Tornatzky & Fleischer (1990)	Book	Technology in general	X	X	X
Truong & Rao (2002)	DSI Conference	E-commerce adoption	X	X	X
Yang et al., (2002)	DSI Conference	Online brokerage	X	X	X

1.2 Definitions of Terms

Rogers (1995, p. 12) defines technology as “a design for instrumental action that reduces the uncertainty in the cause-effect relationships involved in achieving the desired outcome. A technology has usually two components: 1) a hardware aspect consisting of the tool that embodies the technology as a material or physical object, and 2) a software aspect, consisting of the information base for the tool.”

Technological Context is related to the internal and external technologies applied by a firm, the firm’s ability to adopt new technologies, and the likelihood of the firm fitting the new technology with its current technologies and infrastructure (Tornatzky & Fleischer, 1990). Technological context has been found to be an important factor on new and different IT implementations such as Electronic Data Interchange (EDI) adoption (O’Callaghan et al., 1992; Kuan & Chau, 2001; Premkumar & Ramamurthy, 1995), client / server applications (Chengular-Smith & Duchessi, 1999), Internet adoption (Beatty et al., 2001) and, in general, new IT adoption (Armstrong & Sambamurthy, 1999; Thong, 1999; Iacovou et al., 1995; Li & Ye, 1999; King & Gribbins, 2002).

Organizational Context is described by several descriptive measures such as the organization size, centralization, formalization, managerial structure, managerial style of the leaders, etc (Tornatzky & Fleischer, 1990). Organizational Context (in the context of new technology adoption) refers to the readiness of an organization, its flexibility, organizational culture, and support from top management. Organizational compatibility refers to the ability to successfully absorb new technologies, (it was found to be significant in research conducted in the small business environment), EDI adoption, Internet adoption, and client / server applications (Table 1.1). Another component of

Organizational Context, top management support, is suggested as a factor that affects the decision to apply a new technology in an organization. The attributes of top managers such as background, IS knowledge, innovativeness, and participation in IS projects are broadly discussed as issues that smooth the progress of the adoption of a new technology (Armstrong & Sambamurthy, 1999; Thong, 1999; Beatty et al., 2001; Li & Ye, 1999; King & Gribbins, 2002; Premkumar & Ramamurthy, 1995).

Environmental Context refers to the external environment of the firm, which includes customers, competitors, business partners, and the government (Tornatzky & Fleischer, 1990). The two main sources of pressure are competition and imposition by trading partners (Iacovou et al., 1995). External pressure from customers and competitors within the sector and industry (Thong, 1999; Beatty et al., 2001; Li & Ye, 1999; King & Gribbins, 2002; O'Callaghan et al., 1992; Kuan & Chau, 2001; Premkumar & Ramamurthy, 1995) influence the decision to adopt a new technology and survive in a competitive environment.

The Perceived Benefit refers to “the level of recognition of the relative advantage” that an organization obtains by the adoption of a new technology (Kuan & Chau, 2001, p. 509). These benefits can be classified as *direct benefits*, and include cost savings from reduced transaction costs, improved cash flow, reduced inventory levels, efficiency, and higher information quality. The other category, *indirect benefits*, refers to the impact on business processes and relationships such as increased operational efficiency, better customer service, and the increased ability to compete (Iacovou et al., 1995).

1.3 Research Methodology

This study will use the following research methods: a theoretical framework, descriptive statistics, logistic regression, multiple regression, T-test and non-parametric statistics. The technology-organization-environment type theoretical framework will condense the previous research conducted in the MIS area to identify the technology adoption factors that are perceived as important for organizational performance. Logistic regression identifies the factors that significantly impact organizations' decisions whether or not to adopt the Internet technology. Multiple regression distinguishes how CSFs show up as more or less significant, not only at high-performance vs. low-performance web-based companies, but also in the context of small vs. large and new vs. old companies. Descriptive statistics and non-parametric tests help identify the importance of different factors included in the Delphi study of the web-based insurance firms.

Two data collection methods were used in this study. Firstly, insurance experts helped in data collection in the preliminary phase. The Delphi study made it possible to enrich the literature findings with real life insight and to reduce the factors identified from literature. A questionnaire was the primary data collection method used in this study. The questionnaire was distributed to the insurance firms within the United States. The questionnaires provided data concerning factors that impact internet-based activities and perceived benefits from Internet technology adoption.

1.4 Organization of the Study

This dissertation will continue (Chapter II) with a discussion of relevant literature on factors affecting new technology adoption and Internet technology adoption in the

financial industry. After a short introduction on the concepts of electronic business, financial industry, and insurance sector, three main groups of factors are discussed: technology, organization and environment.

Chapter III continues the discussion of literature by looking in-depth at the different factors for Internet adoption in the insurance industry. Based on the discussion, propositions are constructed.

Chapter IV discusses the research design and methods. A justification of the theoretical method is given, and adjustments are made to the theoretical model proposed by Tornatzky and Fleischer (1990). As an exploratory study, this research is based on data collected from a Delphi study and a survey. The questionnaire was sent to insurance companies in United States. The research process discussed includes identification of research variables, construction of instruments, and data verification. The verification processes, include tests for the reliability of the instrument used and internal, external, statistical, and construct validity.

Chapter V presents the results obtained from both stages of data collection: Delphi and survey. The data collected during the first stage helped in enriching and reducing the factors identified from literature. The data collected from the survey were analyzed by using logistic regression, multiple regression, and T-test.

The last chapter VI presents the conclusions of the study including a summary, limitations of the study, and future research needs.

CHAPTER II

REVIEW OF RELEVANT LITERATURE

This chapter presents a review of literature relevant to this research. It will first focus on the definition of electronic commerce, and then e-commerce in the context of online financial services. The discussion will continue with a description of electronic commerce in financial industry overall, and specifically on the brokerage and banking sectors. Special attention is given to issues and problems that the insurance sector, the focus of this study, is currently facing with regard to adoption of the Internet technology.

The chapter also includes discussion of technology adoption issues raised by previous studies. Three primary environments proposed by Tornatzky and Fleischer (1990) will be the focus of discussion. The study will investigate factors introduced by Tornatzky and Fleischer (1990) and other research focused on technology adoption. This chapter presents only an introduction of the factors that affect adoption of new technology. The in-depth investigation of the factors is provided in Chapter III. Other issues related to technology adoption will be discussed as well.

2.1 Introduction to Electronic Commerce

There is an ongoing debate on defining what electronic commerce is and what this concept includes. Some researchers define electronic commerce as any economic activity conducted via electronic connections (Wigand, 1997), or simply as doing business without paperwork (Raman, 1996, cited in Segovia et al., 2002). Latest research