

Research on the Relationship between the Internet Usages and the Organizational Performance in the Taiwanese E-commerce Business Organizations

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Abstract

The purpose of this research was to explore the possible relationship between the Internet usage and the organizational performance in the Taiwanese e-commerce business organizations. The hypothesis for this research was: There was a significant relationship between the Internet usage and the organizational performance in the Taiwanese e-commerce business organizations. The method employed quantitative research method in conducting this study was measure the use of Internet in various Taiwanese e-commerce business organizations and provided an overview of the method of Internet use in e-commerce business organizations' organizational performances. The research participants were 50 owners/managers in Taiwanese e-commerce business organizations. The Spearman Rank Correlation Coefficient and descriptive statistics were used to test the research hypothesis. Research result supported the research hypothesis that there was a significant relationship between the Internet usage and the organizational performance in the Taiwanese e-commerce business organizations. Research result also indicated that this relationship between the Internet usage and the organizational performance was positive. Results showed that Taiwanese e-commerce business organizations' owners/managers were agreed and strongly agree for there was significant impact of Internet usage and organizational performance in their e-commerce business organizations in following:

1. Through the use of Internet, e-commerce transactions can reduce the cost of operation in Taiwanese e-commerce business organizations.
2. Through the use of Internet, e-commerce transactions can enhance a competitive position in industry.
3. Through the use of Internet, Taiwanese e-commerce business organizations can reduce expenses of printing.
4. Through the use of Internet, Taiwanese e-commerce business organizations can reduce personnel expenses.
5. Through the use of Internet, Taiwanese e-commerce business organizations can reduce the need for fax.

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6. Through the use of Internet, there is frequent interaction in Taiwanese e-commerce business organizations.
7. Through the use of Internet, Taiwanese e-commerce business organizations' organiza-

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tional goals are consistently met or exceeded.

8. Through the use of Internet, Taiwanese e-commerce business organizations are efficient.

Keywords: E-commerce Business Organization, Internet Usage, Organizational Performance

Introduction

Purpose of the Research

The purpose of this research was to explore possible relationship between the Internet usage and the organizational performance in the Taiwanese e-commerce business organizations.

Research Hypothesis

The hypothesis for this research was: There was a significant relationship between the Internet usage and the organizational performance in the Taiwanese e-commerce business organizations.

Significance of Research

Internet is an invaluable tool in nearly every organization (Shi, 1996, p.109). An organization that cannot utilize Internet both as productivity tool and as a marketing tool may have a tremendous disadvantage compared to its competitors. This exploratory study investigated the possible relationship between the Internet usage and the organizational performance of particular e-commerce business organizations. This study may offer important information about the impact of Internet use and organizational performance for e-commerce business organizations.

Literature Review

This chapter will discuss the history of the Internet and utilizing Internet in the organization. What is known as the Internet today has its roots in a network setup by the U.S. Department of Defense in the early 1970s. In that early form, it was called the Arpanet, established by the Advanced Research Projects Agency (ARPA). It connected various military and research sites, and was itself a research project in how to build reliable networks - in particular, about how to build networks that could withstand partial outages in the event of a war and still function. It was designed to require the minimum of information from the computer clients. Beginning in the late 1980s, the National Science Foundation (NSF), a federal agency, started expanding its own NSFNET, using the technology developed by Arpanet. This was done to allow campuses and research centers to use NSF's supercomputer sites. But the sharing of supercomputers also allowed the connected sites to share other things not related to the supercomputer centers. As people started to discover the benefits of the Internet, such as e-mail, and as NSF started to promote universal educational access by funding college networks, Internet traffic and its popularity increased at an exponential level. Today, you cannot open a newspaper without finding some reference to the Internet. You cannot listen to the radio without hearing a company's web address announced as part of the advertisement. The Internet is becoming a major, multibillion-dollar, integral part of e-commerce business, and is estimated to have at least 200 million people e-commerce, as well as 14 million web sites. In Taiwan there are many leaders of medium- and small-sized companies who never use any information technology tool to manage their companies.

This situation may become the obstrucater for Taiwan economic development. The Internet Society shows that by the end of 2000, 186 countries had already connected to the Internet (Chen, 2001), Compared with only 153 countries at the end of 1995, the number of countries connected to the Internet has increased more than 25 percent.

D'Aveni (1994) believed that "to use Internet applications and resources, one must have a connection to the Internet. This may appear as an overly simplistic statement, but there are several levels of increasingly complex connectivity to be considered" (p.53). This section will highlight the opinions of several researchers (ex. Semich, 1995; Yang, 1995; Mao, 1998) to describe the types of Internet connections and Taiwan's position concerning Internet connections. In the late 1960s, the Department of Defense (DOD) was confronted with the Cold War and the survivability of their bases after a possible nuclear attack. The DOD commissioned one of their agencies (the Advanced Research Projects Agency—ARPA) to create a computer network that could survive local outages but still permit communications among the nodes that survived such a catastrophe. At that time, computer manufacturers were delivering systems that implemented strictly proprietary communications protocols. So ARPA first developed a set of communications protocols that would permit many different systems to communicate. One outcome was the development of the TCP/IP (Transmission Control Protocol/Internet Protocol) suite, which was eventually implemented into every manufacturer's computer system, thus enabling any computer to talk to any other computer.

Access from the home (and to the consumer) will be a driving force for Internet technologies. Any home PC owner with a modem can connect to the Internet simply by subscribing to an Internet service provider. But there will be many more ways to connect, and at much higher speeds. Cable companies, long distance companies, computer companies, and local telephone companies are all bringing the Internet to homes (Lin, 1995).

There will be more nationwide initiatives concerning the Internet. There are already established protocols for a national e-mail address. Several companies provide "Digital IDs" or a "certificate" which guarantees that they are who they say they are. The Vice President's call to make the Internet accessible in every school is quickly becoming a reality. Government agencies at every level, from local to Federal, are working on some aspect of the Internet, from regulation and taxation to consumers selling their own services on the Internet. There are several ways to connect to the Internet: (a) regular telephone line; (b) ISDN; (c) cable; or (d) dedicated leased lines.

In Taiwan, the Internet user is an important index of the national computerizing (Chen, 2000). After The Republic of China Designation for Certain Public Offices of Executive, chief of NIT (National Information Infrastructure), declaring 3 million users over 3 years which is the goal of the information technology user, the development of the national information infrastructure will be the same as the information technology (p.13). Information Technology has become more powerful under the fast development of information technology and may become an enterprise's competitive advantage (Peng, 1997). Increased attention on information technology has stemmed largely from market demands (Baumann, 1997).

With appropriate security planning, a company can connect field staff to its corporate information systems through the Internet. Company field staff can make a local telephone call from their remote locations, start the browser on their PCs and access the company's information systems, without the company having to install any custom software on the remote PCs (Kalakota & Whinston, 1996). The packaged software vendors who are making their programs Internet capable are facilitating this vision. Until the software that is used for corporate systems is Internet capable, a company can build front-end Internet capable programs that act as a gateway to its existing systems. This approach, already widely used today in thousands of companies, allows companies to leverage quickly the power and standardization of the Internet without replacing existing company systems (Krol, 1992). No matter what the type of business, the Internet, as a pioneer, locates the global customers, assistant factories, and cooperative partners in negotiating surroundings and equal opportunities. By designing the home page in the Internet, a company can set up its own image as an advertisement, including introduction for products, foundation of brands, after-sale service, and some information about a competitive price, and accept credit cards for on-line orders. That is, the more transmission ways a business enterprise has, the more extensive the opportunities are for connecting with customers or assistant factories (Wallys, 1997).

Generally speaking, the Internet is an intermediary for information exchange and can store vast amounts of information. It has powerful searching capabilities and can organize and disseminate information interactively, and facilitate the transaction of information-based products. For sellers and buyers, all these functions can be achieved with a lower cost than by traditional means. The Internet can provide 1) faithful reproduction of descriptive and experiential product information, 2) greatly expanded universe of offerings relative to what can be accessed now through local or catalog shopping, 3) an efficient means of screening the offerings to find the most appealing options for more detailed consideration, and 4) unimpeded search across stores and brands and memory for past selection, which simplifies information searching and purchase decisions (Lin, 1997).

Methodology

The purpose of this research was to explore possible relationship between the Internet usage and the organizational performance in the Taiwanese e-commerce business organizations. The study employed survey research to determine whether an impact exists between the dependent variable—Internet usage—and the independent variable—organizational performance in the Taiwanese e-commerce business organizations, measured by the Survey of the Impact of Internet Use in the Organization.

Research Design

The method employed quantitative research method in conducting this study was measure the use of Internet in various Taiwanese e-commerce business organizations and provided an overview of the method of Internet use in e-commerce business organizations' organizational performances. The goal of this study was to help e-commerce business organizations' owners/ managers understand how important it was to integrate Internet into their business.

A correlation research design was utilized to test the research hypothesis. The hypothesis for this research was: There was a significant relationship between the Internet usage and the organizational performance in the Taiwanese e-commerce business organizations. The independent variable in this hypothesis was organizational performance of the Taiwanese e-commerce business organizations and the dependent variable in this hypothesis was Internet usage.

Sample and Participants

The research samples were 50 Taiwanese e-commerce business organizations in U.S.A. The participants of this research were one owner/manager from each sample Taiwanese e-commerce business organization.

Data Collection

In this research, the author was use survey instrumentation to collect the research data. This research was focus on the Taiwanese e-commerce business organizations. The data collected from Taiwanese e-commerce business organizations' owners/managers from each sample e-commerce business organization.

Instrumentation

The instrument for this research was a valid, reliable questionnaire. The instrument of this research employed Survey of the Impact of Internet Use in the Organization made by author. The author states that this instrumentation could test the impact of Internet applied in the Taiwanese e-commerce business organization. Coefficient Alpha measured this instrument for the reliability and experts modified this instrument for validity. The information of reliability and validity will be discussed in next section of this chapter.

The survey instrument that measured the e-commerce business organizations' satisfaction with the performance of Internet consisted of 30 items, designed to ask about the impact of Internet use in the organization. This questionnaire included six scales. The questionnaire design followed the purpose of the research and the research hypothesis to explore the possible relationship between the Internet usage and the organizational performance in the Taiwanese e-commerce business organizations.

Reliability and Validity

Instrument reliability for Survey of the Impact of Internet Use in the Organization was based on the fact that the author used Cronbach to measure the reliability of his study scale. The reliability of each scale was assessed by Coefficient Alpha Cronbach over 0.6. Nunnally (1967) suggests that the minimum acceptable level of reliability is 0.5. Instrument validity for Survey of the Impact of Internet Use in the Organization, according to the author, enhances the validity by enhancing face and content validity.

Data Analysis

Statistical procedures were conducted to determine the possible existence of a relationship of Internet use and the organizational performance of e-commerce business organizations. Descriptive statistics was used to analyze the impact of Internet applied in the e-commerce business organizations. The Spearman Rank Correlation Coefficient was used to test the research hypothesis for whether there is or is not a relationship of Internet usage and the organizational performance of e-commerce business organizations.

The accepted level of significance in research has been established at the 0.05 level of significance (Fraenkel & Wallen, 1993; Popham and Sirotnik, 1992). The Statistical Package for the Social Sciences (SPSS) computer software program was used to complete the analysis of data. The results of data analysis are presented in Chapter Four and Five.

Presentations and Analysis of Data

The purpose of this chapter was to present a description of the research data and to analyze the data relating to the research hypothesis of the study. The hypothesis for this research was: There was a significant relationship between the Internet usage and the organizational performance in the Taiwanese e-commerce business organizations.

The findings in this chapter contain the raw data, and the narrative results relating to the research. The results are organized and discussed in four sections: source of data, descriptive statistics, analysis of data, and summary.

Source of Data

The research was conducted with 50 owners/managers in 50 Taiwanese e-commerce business organizations. Each participant completed the Survey of the Impact of Internet Use in the Organization.

Descriptive Statistics for Total Sample

This section provides descriptive statistics results for total sample of impact of Internet applied in the Taiwanese e-commerce business organizations. There were 50 Taiwanese e-commerce business organizations' owners/managers who (N=50) answered these questions. The descriptive statistics was employed to test the impact of the use of Internet and organizational performance in the Taiwanese e-commerce business organizations.

Results indicated that Taiwanese e-commerce business organizations' owners/managers were agree and strongly agree for there was significant impact of Internet usage and organizational performance in their e-commerce business organizations in following:

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1. Through the use of Internet, e-commerce transactions can reduce the cost of operation in Taiwanese e-commerce business organizations.
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4. Through the use of Internet, Taiwanese e-commerce business organizations can reduce personnel expenses.
5. Through the use of Internet, Taiwanese e-commerce business organizations can reduce the need for fax.
6. Through the use of Internet, there is frequent interaction in Taiwanese e-commerce business organizations.
7. Through the use of Internet, Taiwanese e-commerce business organizations' organizational goals are consistently met or exceeded.
8. Through the use of Internet, Taiwanese e-commerce business organizations are efficient.

In summary, the results found that there was a significant impact of the use of Internet and organizational performance in Taiwanese e-commerce business organizations.

Analysis of Data

This section includes an analysis of the data obtained using the research instrument. The analysis of the data for research results provides information necessary to answer the hypothesis posed.

The sample consisted of 50 Taiwanese e-commerce business organizations' owners/managers (N=50). The survey instrument, The Survey of the Impact of Internet Use in the Organization, consisted of 30 items designed to determine the impact of Internet use in the organization. The responses from the surveys were entered into the Statistical Package for the Social Sciences (SPSS) and a series of statistical tests were run using a significance level of 0.05. The hypotheses are listed below.

The study contained a major hypothesis. There was a significant relationship between the Internet usage and the organizational performance in the Taiwanese e-commerce business organizations. This hypothesis was examined as follows. The Spearman Rank Correlation Coefficient was used to examine the relationship between the Internet usage and the organizational performance in the Taiwanese e-commerce business organizations. Correlation is a statistical technique that is used to measure and describe an impact between two variables. Siegal and Castellan (1988) stated that the Spearman Rank Correlation Coefficient is used to discover the strength of a link between two sets of data. The Spearman Rank Correlation Coefficient is identified by letter ?.

These analyses were based on research data and compiled from the responses to the Survey of the Impact of Internet Use in the Organization. Correlation between the Internet usage and the organizational performance in the Taiwanese e-commerce business organizations, Spearman had a value of 0.534 ($p = 0.000$) for the total sample. This result supported the research hypothesis that there was a significant relationship between the Internet usage and the organizational performance in the Taiwanese e-commerce business organizations. The result also indicated that this relationship between the Internet usage and the organizational performance was positive.

Summary

The Spearman Rank Correlation Coefficient results were used to test the primary research hypothesis: There was a significant impact of the Internet use on the organizational operations in Taiwanese e-commerce business organizations. The Spearman Rank Correlation Coefficient results supported the following research hypothesis: There was a significant relationship between the Internet usage and the organizational performance in the Taiwanese e-commerce business organizations. Chapter Four contained the interpretation and presentation of the data in narrative, tabular, and statistical form. Chapter Five contains conclusions, and recommendations.

Conclusions and Recommendations

The purpose of this chapter is to present and discuss the results of the study. The chapter is divided into the following major categories: finding, conclusions, and recommendations.

Findings

This section describes the finding of this research. All findings are based on descriptive statistics and the Spearman Rank Correlation Coefficient. The descriptive statistics indicated that most Taiwanese e-commerce business organizations' owners/managers agree or strong agree that the Internet usage could have important impact on their organizational performances. Therefore, the analysis supported the research hypothesis: There was a significant relationship between the Internet usage and the organizational performance in the Taiwanese e-commerce business organizations.

The major focus of the study was to determine if there was relationship between the Internet usage and the organizational performance in the e-commerce business organizations. Research hypothesis was examined. Specifically, the research hypothesis stated that there was a relationship between the Internet usage and the organizational performance in the e-commerce business organizations. Research participants were surveyed and tested scores to determine the relationship. A Spearman Rank Correlation Coefficient was conducted to determine if relationship existed between the Internet usage and organizational performances of e-commerce business organizations. The data revealed there was a significant relationship between the Internet use and organizational performances of e-commerce business organizations ($p= 0.000$). The two variables, the Internet use and organizational performances of e-commerce business organizations, were shown to have a significant and positive relationship ($r= 0.534$). This positive relationship suggested that as the use of Internet increased, the impact of organizational performance increased. Therefore, there was a positive significant relationship between the Internet usage and the organizational performance in the Taiwanese e-commerce business organizations. The finding supported the research hypothesis: There was a significant relationship between the Internet usage and the organizational performance in the Taiwanese e-commerce business organizations.

Conclusions

The goal of this study was to help owner and manager in Taiwanese e-commerce business organization understand how important it is to integrate Internet into their stores. The study showed the existence of a significant positive relationship between the Internet usage and the organizational performance in the Taiwanese e-commerce business organizations. What are the implications of these findings? The results substantiated the existence of relationship between the Internet usage and the organizational performance in the Taiwanese e-commerce business organizations.

Overall, the study accomplished the task of establishing the relationship between the Internet usage and the organizational performance in the e-commerce business organizations. The results of this research supported the research hypothesis: There was a significant relationship between the Internet usage and the organizational performance in the Taiwanese e-commerce business organizations.

Recommendations

The study provided a starting point for investigating the relationship between the Internet usage and the organizational performance in the Taiwanese e-commerce business organizations. While providing useful information, further research should be conducted to obtain more concise information in the use of Internet. For some of the e-commerce business organizations involved in the study, it would be interesting to investigate further with larger groups of participants, focusing on different kind of e-commerce business organizations around the world. The future research also could focus on the impact of Internet usage in the any kinds of e-commerce business organizations around the world.

The impact has been established in this study. The challenge now is to assist Taiwanese e-commerce business organizations plan for the use of Internet to exceed organizational goals in their stores. However, with the following recommendations, the e-commerce business organizations in Taiwan can effectively utilize Internet to gain competitive advantages:

1. Determine the types of resources that the Taiwanese e-commerce business organization intends to utilize and the services that the e-commerce business organization will be providing using Internet.
2. Determine what types of Internet connection best suits the Taiwanese e-commerce business organization's needs.
3. Determine what types of hardware and software are needed for use of Internet in the Taiwanese e-commerce business organization.
4. Train e-commerce business organization's owners/managers and employees on the proper use of Internet applications.
5. Emphasize the nature of Internet and the importance of Taiwanese e-commerce business organizational operation and organizational performance.

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Research result also indicated that this relationship between the Internet usage and the organizational performance was positive. Results showed that Taiwanese e-commerce business organizations' owners/managers were agreed and strongly agree for there was significant impact of Internet usage and organizational performance in their e-commerce business organizations in following: Do you want to read the rest of this conference paper?