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Christine Alexander
Southern Illinois University, Carbondale

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AN EMPIRICAL STUDY OF E-COMMERCE ADOPTION AND USE IN SMALL AND MEDIUM SIZED FIRMS

Christine Alexander
Southern Illinois University, Carbondale
alxndrc@siu.edu

Introduction

E-commerce is fundamentally changing the way business is conducted. It allows companies to expand into new markets, restructure business processes to improve effectiveness and efficiency, and easily customize products and services to meet the needs of a diverse customer base. Some of the benefits commonly attributed to e-commerce adoption include advertising exposure, improved communication, effectiveness and efficiency gains through improved business processes, and improved product and/or service delivery. Additionally, it is claimed that the Internet levels the playing field for small businesses to compete against larger firms. The Internet can also be used for environmental scanning making it easier for competitors to see what others are doing.

There are several characteristics differentiating small- and medium sized enterprises (SMEs¹) from larger firms that may affect how well the Internet can “level the playing field.” SMEs have more limited resources, including financial resources, and so require a shorter timeline to see a return on investment (ROI). The owner/manager of an SME is more involved in the day-to-day operations of the firm. Therefore, (s)he will have much more firsthand knowledge of processes and procedures used by the firm. Because of this hands-on approach there is less time available for strategic planning. One ramification of this hands-on approach to managing is less time for strategic planning.

Problem Statement

While it is claimed that the Internet is “the great equalizer” for small and medium businesses, not all SMEs are eager to adopt this new technology. Some of the reasons cited include cost, lack of perceived benefits, lack of knowledge, and lack of industry fit. It has even been suggested that, after watching the demise of the .com industry, there may be a fear-of-failure factor in non-adoption.

On the other hand, many small businesses have chosen to implement e-business initiatives. Their reasons vary from customer expectation to pressure from the competitive environment to mandates from supply chain partners to opportunities to expand into new markets. Some of these implementations have been very successful, resulting in the expected business benefits while other may be deemed less successful because the degree of expected benefit was not fully realized. Still others may be classified as failures. This may be because the initiative was dropped due to poor performance, excessive cost, or ineffectiveness, among other reasons.

There is limited information available pertaining to reasons for adoption and non-adoption of e-business initiatives in SMEs. There have been few attempts to evaluate the role of environmental factors, organizational factors, and information technology (IT) related factors in the adoption decision and implementation of such initiatives. Therefore, there is a need to study the factors influencing the adoption decision of e-business initiatives, the implementation of such initiatives, and the degree of success achieved by firms implementing them.

¹Small enterprises are considered to be those that have less than 100 employees. Medium sized enterprises have 100-499 employees. Very Small Businesses are those with less than 10 employees.

Scope of the Study

This study focuses on small- and medium-sized enterprises that have considered an e-business initiative. The firms studied may or may not have actually implemented the initiative. Those actually implementing may or may not deem their initiatives successful.

The case study methodology will be used for this research. Case study is an appropriate methodology when theory is not well developed ((Yin, 1994)). Case studies can be used to generate, describe and/or test theory ((Yin, 1994)). In this research, the case study approach will be used to describe and generate theory.

Several SMEs across three to four industries will be studied.

The travel industry has been heavily impacted by the explosive growth of the Internet. Those travel firms that have remained in business and are still competitive can offer insights into impact of various factors in a highly competitive information intensive service industry.

Likewise, the automobile retail industry has also been highly affected by the Internet. Major changes in the supply chain and customer access to the supply chain have been made possible because of the Internet. Automobile retailers must be innovative in their use of the Internet to build their client portfolio and increase sales.

Level of Analysis

Three to four case studies within each industry will be conducted. This will allow for within-industry and across-industry comparisons to be made. There may be certain factors that are more (un)important to e-business initiatives within one industry than another while other factors may be equally (un)important across industries.

Purpose of Study

The purpose of this study is threefold. First, by looking at the reasons for adoption and non-adoption decisions, we should gain some insight into SMEs' perceptions of the Internet. As Internet usage becomes more widespread, it will be important for SMEs to have a broad and well-rounded knowledge of benefits to be gained by investing in this technology and the pitfalls to be avoided.

Secondly, in addition to understanding adoption vs. non-adoption, this study will allow us to gain some understanding of which, if any, factors are critical to the success of an e-business initiative and which, if any, factors lead to failure. We will be looking within industries to determine if there are industry specific success and failure factors. We will also be looking across industries to determine if there are general success and failure factors. This will help SMEs determine where and how to invest in e-business initiatives to gain the most benefit. It will also aid them in setting realistic expectations of their e-business initiatives.

Thirdly, we will attempt to develop an e-business model for SMEs, taking into account the adoption/non-adoption factors and success/failure factors at both the industry and general levels. The importance of having a sound e-business strategy that underscores and supports the firm's general business strategy will be an important aspect of the model. The Internet is not a strategy in and of itself. It is a tool to be used in support of a sound business strategy.

Research Questions

There are several sources from which a firm may receive pressure to adopt an e-business initiative. External environmental factors may come from customers, suppliers, competitors, or the industry in general. These factors may influence the degree of adoption or the decision to not adopt e-business. Organizational influences on the adopt/don't adopt decision may stem from organizational readiness. In other words, does the firm have the infrastructure and resources for adoption? Is there an initiative champion within the ranks of top management? Is there an understanding of benefits to be gained and degree of implementation required to attain those benefits? Information technology (IT) factors may be quite varied. These can range from the existence of IT process for

planning and budgeting purposes to existence formal function and responsibility to level of IT resources available and past experiences with IT.

1. What are the environmental, organizational, and information technology factors related to adoption and non-adoption of e-business in SMEs?

In order to label an e-business initiative a success or a failure, there must be some means of measuring what has been accomplished through implementation of the initiative.

2. How are success and failure of e-business initiatives in SMEs measured?

It may be that specific factors affect the degree of success or failure of an e-business initiative more than others.

3. a. Which factors appear to affect e-business success?
b. Which factors appear to affect e-business failure?

A comprehensive review of the literature will be conducted to determine the environmental, organizational, and IT factors that have thus been identified. Case studies will then be conducted to map these factors to adoption/non-adoption decision. The case studies will allow us to label an e-business initiative as a success or failure. The factors will then be mapped to the success/failure cases to elicit a set of factors critical to success of an e-business initiative or critical to the failure of an e-business initiative.

Need for Theory Development

This study seeks to identify critical success and critical failure factors in SMEs implementing an e-business initiative. By determining which factors are important in the adoption/non-adoption decision and how success and failure are measured, a clearer picture of e-business adoption in SMEs should evolve.

Expected Contributions

The contribution of this study is to create a clearer picture of adoption/non-adoption decisions in SMEs, which factors are critical to success and failure of an e-business initiative, and to elicit a clearer understanding of how SMEs measure the results of an e-business initiative. These results will help in creating a viable model of e-business for SMEs. This model can later be tested empirically through a quantitative study.

References

Yin, R. K. *Case Study Research: Design and Methods* (2nd ed.) (Vol. 5). Thousand Oaks: Sage Publications 1994.