

APPLICABILITY OF A STRATEGY-BASED E-COMMERCE PLANNING MODEL FOR CANADIAN ORGANIZATIONS: AN EXPLORATORY STUDY

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ABSTRACT

Although e-commerce has been recognized as an opportunity for business growth, there has been little guidance provided for planning an e-commerce venture. A strategy-based e-commerce planning model might provide assistance for practitioners who are initiating an e-commerce venture. In order to explore the potential usefulness of such a model, a survey of Canadian organizations that have incorporated e-commerce was conducted. The results of the survey are reported in this paper.

INTRODUCTION

Kao and Decou [2] suggested that lack of attention to planning in the development of e-commerce ventures could contribute to e-commerce failures. Subsequently, a strategy-based e-commerce planning model was developed to provide guidance in planning e-commerce ventures (Figure 1). This paper describes research undertaken to explore the potential value of the e-commerce planning model.

FIGURE 1 – THE STRATEGY-BASED E-COMMERCE PLANNING MODEL -
Adopted from Kao & Decou (2003)



METHODOLOGY

A Web-based questionnaire was used to survey the opinions of e-commerce practitioners concerning the dimensions of the planning model. The study focused solely on e-commerce involving the Internet. Organizations approached either existed only online or also had a bricks-and-mortar presence, and had

physical offices located in Canada. They were drawn from a database belonging to a Canadian university and the 2003 Canadian Trade Index. The statements presented in the survey related dimensions of the model to e-commerce planning practice. Data were collected to compare respondents' beliefs when they began their venture to their current beliefs, relevant to the model dimensions. It also contained questions about their organizations and provided space for respondents to include comments and opinions.

ANALYSIS

Data were analyzed by median, mode and the Wilcoxon Ranked Signs Test. Qualitative data were themed according to the dimensions of the planning model.

The survey instrument was e-mailed to 978 practitioners on the database provided by the university and 4884 practitioners listed in the 2003 Canadian Trade Index. Of that number, 2066 addresses were undeliverable. Of 3816 surveys that were believed to have reached target practitioners, 81 responses were received, suggesting a response rate of 2.1 percent.

Quantitative Analysis

Seven classifications for the organizations were selected [1]. The respondents represented manufacturing (42%), retail (10%), wholesale trade (7%), finance and insurance (5%), information (7%), educational (1%) and other (28%) industry classifications. Fifteen (15) percent operated solely online and 85 percent operated both bricks-and-mortar and online (clicks-and-mortar) organizations. Of the clicks-and-mortar organizations, 90 percent were originally operating as bricks-and-mortar entities, while 5 percent began as online organizations and moved to clicks-and-mortar. The remainder began as clicks-and-mortar organizations.

Medians and modes were analyzed as measures of central tendency. With one exception, the values for the medians and modes were either "agree" or "strongly agree" with the statements relating to the model dimensions. The median value of the statement "You provided extensive staff training, i.e., more than 10 hrs per employee" was neutral. The results of these tests indicated that respondents considered issues that appeared in each dimension of the planning model to be important in planning a new e-commerce venture.

The Wilcoxon Ranked Signs Test was conducted on the entire data set and on selected variables using paired statements comparing beliefs when starting the venture and current beliefs. While the significance levels of the tests were determined using a two-tailed test, the results for the "lessons learned" statements were more strongly supported, suggesting that the strategy-based e-commerce planning model would be useful for e-commerce planning.

When using the entire data set, significant results were found, with three exceptions,. The three statement pairs that did not show significant results related to the acquisition of products, the delivery of products and the need to accommodate users with slower Internet access. All of the dimensions in the planning model were represented by statement pairs that were found significant.

Business types of business-to-business (69), business-to-consumer (31) and government-to-consumer (17) were analyzed. The tests conducted on data selected for the business-to-business and business-to-consumer variables did not return significant results for the statement pairs concerning acquisition,

delivery of products, warehousing arrangements, or consideration for the access speed of target users in website development. The test conducted on data selected for the business-to-consumer variable did not return significant results for the statement pairs concerning e-marketing to diverse cultures and representing the product on the Web. The test conducted on data selected for the business-to-business variable returned significant results in all model dimensions except the logistics dimension. The test conducted on data selected for the business-to-consumer variable returned significant results in all model dimensions except logistics and marketing. The test conducted on data selected for the business-to-government variable returned significant results in the model dimensions of finance, security, and technology. All three tests returned significant results for the statement pairs representing strategy.

Tests were conducted on the e-business models of online storefront (31), information provider (31), flat ad (32), search agent (8), intermediary (10), content provider (12) and online mall (5). Significant results were returned, in all e-business models, for the two statement pairs relating to the finance dimension. The test conducted on data selected for the flat ad e-business model variable returned significant results for statements in all of the planning model dimensions. The tests conducted for data selected for the online storefront and information provider variables returned significant results for all planning model dimensions except logistics and marketing. Along with the finance dimension, the test conducted on data selected for the search agent variable returned significant results in the legality and security dimensions and the test conducted on data selected for the content provider variable returned significant results in the marketing and technology dimensions. The test conducted on the data collected for the online mall variable returned significant results only in the finance dimension.

Sixty-nine (69) respondents indicated that their organizations had been online for more than one year, 49 respondents indicated that their organizations had been online for more than three years and 18 respondents indicated that their organizations had been online for more than five years. The tests conducted on data selected for the more than one year and more than three years variables returned significant results for the same statement pairs, with one exception. The exception was for the test conducted on data selected for the more than one year variable and the statement pair about representation of products using Internet technology. Tests conducted on data selected for the more than one year and more than three years variables returned significant results for all dimensions of the planning model except logistics. The test conducted for data selected for the more than five years variable returned significant results for all dimensions of the planning model except logistics and marketing.

Twelve (12) respondents indicated that their organizations operated solely online and 58 respondents indicated that their organizations originally had a bricks-and-mortar presence. The test conducted on data selected for the organizations that were online only variable returned significant results for statement pairs representing the planning model dimensions of finance, legality, operations and technology. The test conducted on data selected for the organizations that were originally bricks-and-mortar variable returned significant results for statement pairs representing each of the model dimensions except logistics.

Ten (10) respondents indicated that their organizations had a bricks-and-mortar presence for one to five years before going online and 44 respondents indicated that their organizations had a bricks-and-mortar presence for more than five years before going online. The test conducted on data selected for organizations that were bricks-and-mortar for one to five years were significant for statement pairs in the model dimensions of legality and security. The test conducted on data selected for the organizations that

had been bricks-and-mortar organization for more than five years before going online variable returned significant results in statement pairs representing all model dimensions except logistics.

Of the sectors analyzed, respondents indicated that they represented manufacturing (34), retail (8), wholesale trade (6), information (6) and other (6) organizations. The test conducted on data selected for the manufacturing organizations variable returned significant results for all planning model dimensions except logistics; and the test conducted on data selected for the other organizations variable returned significant data for all planning model dimensions except marketing. The test conducted on data selected for the information organizations variable returned significant results in the dimensions of legality and technology; and the test conducted on data selected for the wholesale trade organizations variable returned significant results for a statement pair representing the security model dimension. The test conducted on data selected using the retail variable did not return any significant results.

Qualitative Analysis

Twenty-seven (27) respondents out of the 81 surveyed (33% of the sample) provided additional comments about their e-commerce experiences. While the comments related to the dimensions of the model, the content of some of the comments exposed unconsidered facets of the dimensions. Grouping the comments by themes indicated that the model was both useful and comprehensive for planning purposes.

LIMITATIONS OF THE SURVEY

1. It was necessary to collect a convenience sample.
2. In the current study a 2.1% response rate was realized, possibly due to spam blocking.
3. In order to have a survey of reasonable length, many questions that could have been useful to the better understanding of the relevance of the model were not included.
4. The study did not look at organizations that attempted ventures and failed.

DISCUSSION

Measures of Central Tendency

Measures of central tendency demonstrated that respondents had either carefully considered the issues represented by the statements or felt that they were important to be considered, supporting the suggestion that the model is relevant for practitioners. In addition, the statement pair reflecting the respondents' opinions about providing extensive staff training when adopting e-commerce suggested that the importance of training may have been underestimated. Prior to launching their venture, the median value for the statement was "neutral". After launching the venture, the median value was "strongly agree", demonstrating a recognition of the importance of staff training after the venture was launched.

Wilcoxon Signed Ranks Tests

By phrasing survey statements in a before and after structure, the relevance of the model dimensions was examined using Wilcoxon tests. While the tests conducted did not return significant results for all of the statement pairs, tests on at least one statement pair representing each dimension returned significant results, suggesting that the model is relevant. The test results for the entire data set indicated that the respondents showed significantly more agreement with most of the "lessons learned" statements.

When the Wilcoxon tests were performed on selected portions of the sample, inconsistent results were observed. However, if the size of a selected portion of the sample was above 20, the results were reasonably consistent across variables.

Qualitative Analysis

The responses to the request for further information concerning the respondents' experiences in moving into or entering into an e-commerce environment were themed using the strategy-based e-commerce planning model dimensions. The experiences were classified under the model dimensions and some of the comments reflected concerns that were not mentioned in the examples provided by Kao and Decou [2]. The fact that both the planning issues that had been anticipated by the model developers and some that had not been considered could be categorized under the dimensions of the model suggested that the model may be both a flexible and comprehensive tool for e-commerce planning.

CONCLUSIONS

The research presented in this paper demonstrated the importance of planning in e-commerce ventures. Respondents indicated that they felt it was important to consider a number of issues related to specific dimensions of the strategy-based e-commerce planning model prior to embarking on an e-commerce venture. Their responses suggested that the model may be a useful tool for planning the launch of an e-commerce venture. Further research needs to be conducted in order to better predict the practical applications of this model.

REFERENCES

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