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Motivations for Engaging in e-Business

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ABSTRACT

This study seeks to identify the reasons organizations implement e-business applications. Nineteen such motivations were identified from the literature. A survey was constructed to evaluate the importance of these motivations as well as their level of satisfaction with the results achieved in each area. Four hundred and fourteen responses were obtained. Factor analysis revealed four factors (motivations). They were labeled marketing, communication, e-profitability, and research. A psychometric assessment of the questionnaire revealed satisfactory results, but did identify areas were further refinements are warranted. The relative importance and satisfaction with performance in each of these five factors are analyzed. Implications for research and practice are discussed.

Keywords

Electronic Business, Motivations for adopting e-business, Family-owned Businesses.

INTRODUCTION

Organizations have often ventured into the e-business world blindly or with limited guidance with many organizations being uncertain or divided on how effective e-business is to their organizations (Bush et al., 1998). Some have developed a web presence to be merely "fashionable" while others have invested heavily on the promise of fantastic rewards. While e-business offers tremendous potential, the bursting of the dot-com bubble clearly demonstrates the need for organizations to better understand how to leverage this technology. Investment in e-business is just that – an investment that must be thoroughly evaluated to determine costs, risks and value.

While there is anecdotal evidence of the value of adopting e-business applications, few studies have focused on the business drivers, or motivators of such activity. The few that have addressed the question of motivations have done so only tangentially. This study focuses on motivations for engaging in e-business activities. The purpose is to identify specific motivations as well as the underlying constructs that they represent.

REVIEW OF LITERATURE

At the strategic level, technological innovation and strategic use of the Internet have been frequently cited as means for achieving competitive advantage (Alva, 1999; Berthon et al., 1996; Elfrink, Bachman, and Robideaux, 1997; Geiger and Martin, 1999; Hadjimanolis, 2000; Lederer et. al, 2001; Levenburg and Dandridge, 2000; Sheth et al., 2001; Zank and Vokurka, 2003). Companies implement e-business initiatives in order to meet or beat competition (Access Markets, 2001; Pratt, 2002), to respond to requests from trading partners, and for other reasons, including experimental ones (Zank and Vokurka, 2003). As reported in the literature, business firms' motivations for engaging in e-business can be classified along six major dimensions: (1) building relationships; (2) increasing sales; (3) providing customer service; (4) improving financial performance; (5) marketing; and (6) obtaining information.

Several researchers have identified the desire to develop and strengthen relationships with key constituents (e.g., suppliers and customers) as an e-business driver (Access Markets, 2001; Barua et al., 2001; Chordas, 2001; Zank and Vokurka, 2003). As one example, Zank and Vokurka found a significant difference between manufacturers' and customers' perceptions of the impact of e-business on their relationships, with higher assessments of improved relationships among manufacturers, possibly as a result of more direct relationships (2003).

A second e-business motivation identified in the literature is the firm's desire to increase sales (Access Markets, 2001; Griffith and Krampf, 1998; Levenburg et al., 2002). More specifically, Pratt found that e-business is implemented to attract new customers, both domestically and abroad, and new types of customers (2002). To achieve and complement online sales, it often becomes necessary to provide customer service online, a third e-business motivation (Griffith and Krampf, 1998; Smith, 1998; Surjadjaja et al., 2003). Related to this, e-business motivations also result from a desire to improve customer

satisfaction (Chordas, 2001) and improve customer retention (Zank and Vokurka, 2003). "If an organization has a presence on the Internet and is selling products or supplying information, customers expect to get service through the same channel" (Carlson, 2000). Even if the sale is not consummated online, a growing body of literature documents the importance of the Internet in other phases of customers' buying processes that occur prior to or post-purchase, including search for sources, evaluation of alternatives, and customer support (Carlson, 2000; Kolesar and Galbraith, 2000; Burke, 2002; Zeithaml, 2002).

A fourth motivation for engaging in e-business is a desire to improve financial performance. This e-business goal has been found in the literature in terms of reduced accounts receivable (Zank and Vokurka, 2003); reduced transaction costs (Surjadjaja et al., 2003); reduced costs of sales and delivery fulfillment (Access Markets, 2001); reduced direct or administrative costs (Levenburg et al., 2002); reduced inventory (Zank and Vokurka, 2003); across-the-board cost reductions (Chordas, 2001; Pratt, 2002); and increased profits (Levenburg et al., 2002; Pratt, 2002). The goals of streamlining processes (Access Markets, 2001) and reducing cycle time (Zank and Vokurka, 2003) might also be appropriately classified as performance-related e-business drivers.

Marketing-related motivations provide a fifth reason for engaging in e-business. Griffith and Krampf (1998) found the dual goals of providing information and accomplishing advertising, promotion, and public relations online to be salient e-business drivers. Elfrink et al. (1997) found that using the Internet to enhance the firm's image also served as an e-business driver. Finally, the sixth motivation for engaging in e-business is to obtain information (Access Markets, 2001).

Based on this review of the literature, 19 specific motivations were identified (Table 6).

DATA COLLECTION

A questionnaire was developed as part of a larger effort to study the motivations of family-owned businesses. The questionnaire included the nineteen specific motivations identified from the literature. The respondents were asked to indicate, on a five-point Likert scale, the level of importance of each item in motivating them to adopt e-business applications. In addition, they were asked to indicate, on another five-point Likert scale, how satisfied they were with the results obtained.

Nine thousand three hundred sixty-five surveys were sent to family-owned businesses in the United States with revenues under \$25 million. Four hundred and thirty nine responses were returned for a response rate of 4.7%. The low response rate was of concern and a sampling (1,262) of the non-respondents was contacted to determine reasons for not participating. Of these 191 (15.5%) were determined to be no longer in existence. Excluding 15.5% of the all the surveys sent (defunct businesses), the reesponse rate is 5.5%. In addition, contacting the non respondents resulted in an additional 62 responses. Responses from early and late responders were compared using t-tests and no significant differences were found between them. This suggests a low likelihood of non-response bias. However, the data were analyzed for additional explanations of the low response rate. Of the respondents, 82% had revenues of greater than \$1 million and 18% had revenues ranging from under \$100,000 to \$1 million (Table 1). Arguably, small businesses are less likely to engage in e-business activities, simply because their size may not justify the cost associated with even setting up for electronic mail or access to the web. These small family owned businesses are likely to be one-person or "mom and pop" operations and may not engage in e-business activities.

RESULTS

Descriptive statistics

The firms in the sample represent a wide range of industries including manufacturing, services, wholesale/distribution, construction, and retail. The manufacturing section is slightly over represented (Table 2). They serve both the industrial and consumer sectors (Table 3), and produce both goods and services (Table 4). They serve local, regional and national markets, and to a much lesser extent, international markets (Table 5).

Motivations for engaging in e-business

Table 6 lists the importance and satisfaction ratings of the nineteen specific motivations for adopting e-business applications. The five most important motivations for pursuing e-business (highlighted in Table 6) are improve communications with customers, enhance company image / brand, distribute product / company information, provide or improve customer support, and generate sales leads. The respondents are most satisfied with achievements in four of these five areas. All these are customer-related.

The nineteen motivations were analyzed to identify the underlying factors. Two separate analysis were conducted, one using the importance rating and one using the satisfaction rating. The results of the analysis using the importance rating are discussed first.

Analysis using the importance rating

A principle components analysis using a varimax rotation identified four factors with eignevalues greater than one. The results of this analysis are displayed in Table 7. The four factors were labeled Marketing, Communication, e-Profitability, and Research. The questions were evaluated for reliability and validity. The factor analysis provides evidence of construct validity, that is, the questions are indeed measuring the constructs they are intended to measure. Only one of the loadings is below the conventional 0.50 - #11, Market Intelligence. Sixteen of the remaining 18 loadings were at least 0.60. The four factors explained 60.20% of the variance. The reliabilities of the four factors were measured using Cronbach's alpha. The reliabilities (alpha) of the four factors were 0.84, 0.80, 0.78 and 0.72, all above generally acceptable levels. The results of the factor analysis provide strong evidence of construct validity.

Convergent validity is the extent to which each measure correlates with measures in the same construct or factor. High correlations indicate convergent validity. Table 8 presents correlations among the nineteen motivation items. All correlations were significant at alpha = 0.001. For the Marketing factor, all 10 correlations are greater than 0.4; for the Communication factor, 11 of 15 are greater than 0.3; for e-Profitability nine of 10 are greater than 0.3; for Research all three are greater than 0.3. This provides limited evidence of convergent validity.

Internal consistency is determined by assessing item-total correlations. Fifteen of 19 item-total correlations were greater than 0.5. Marketing Intelligence (#11) had the lowest item-total correlation of 0.37, and eliminating it from the factor increased the Cronbach's alpha from 0.72 to 0.82. Thus, the variable Marketing Intelligence is problematic.

Discriminant validity is the extent to which each measure differs from measures in other factors and is determined by counting the number of times a measure has a higher correlation with a measure from another factor than with a measures in its own factor. Only 40 of 281 correlations are higher, providing strong evidence of discriminant validity.

Analysis using the Satisfaction rating

The results of the factor analysis using the satisfaction rating are provided in Table 9 and the correlation matrix is in Table 10. Once again four factors resulted with eignevalues greater than one. The factor loadings are similar to those with the importance ratings. The factors were assigned the same labels. All loadings were greater than 0.50 with 17 of 19 greater than 0.60. The four factors explained 66.7% of the variance. The reliabilities (alpha) were 0.87, 0.80, 0.86, and 0.77. This is strong evidence of construct validity, stronger than the evidence for the importance rating.

Evidence of convergent validity is much stronger when using the satisfaction rating. All correlations were significant at alpha = 0.0001. For the Marketing factor, 14 of 15 correlations are greater than 0.4; for the Communication all six are greater than 0.4; for e-Profitability 14 of 15 are greater than 0.4; for Research all three are greater than 0.4.

All 19 of the item-total correlations were greater than 0.5 with 14 greater than 0.60 indicating providing strong evidence of internal consistency. When using the importance rating, internal consistency was problematic.

Finally, 38 of 281 correlations used to evaluate discriminant validity were higher, indicating marginally better results than for the analysis using importance ratings.

Thus, the results using the satisfaction ratings provide superior results.

DISCUSSION

The literature review had identified six categories of motivations – building relationships, increasing sales, providing customer service, improving financial performance, marketing, and obtaining information. This study found four factors that are similar to the à priori classification of the literature. Marketing involves promoting products and services and the organization in an effort to increase sales and market share and, ultimately, obtain a competitive advantage. The Research factor in our study is concerned with obtaining information – about the industry, competitors, etc. A key ingredient in building relationships with various constituents is Communication, which is one of the factors found in this study. This factor is concerned with effective communication with various constituents including customers, employees, suppliers and other channel partners. The factor e-Profitability encompasses two of the à priori categories, increasing sales and improving financial performance. The e-Profitability factor includes selling online and decreasing a variety of costs, thus improving financial performance.

The only à priori category of motivations that did not present itself as a factor in our study is customer service. The only item in our questionnaire in this area (provide and enhance customer service) loaded on the Marketing factor. In retrospect, the questionnaire should have contained other items in this area, such as those relating to customer satisfaction and customer retention. Given the importance attributed to customer service as a motivation for e-business, additional items in this area are warranted to strengthen this research.

Marketing intelligence was a problematic item, especially in the analysis involving the importance rating. It is possible that the term may be interpreted differently. Marketing intelligence refers to obtaining information about competitors. It could have been misinterpreted to mean something related to marketing or about collecting information about customers, perhaps even in a surreptitious manner. In any case, this item must be re-worded in future versions of the questionnaire.

Table 11 presents the mean importance and satisfaction ratings of the four factors. As can be seen, Marketing is considered the most important reason for adopting e-business applications. This is consistent with the fact that four of the top five individual items (Table 6) are marketing related. The second most important motivation is Communication, presumably aimed at strengthening relationships with key constituents. Profitability (online sales, reducing costs) was the least important motivation and is the only factor rated on the unimportant (< 3.00) side of the 5-point Likert scale. This is noteworthy and the reasons for this must be investigated. It is likely that the applications involving sales and costs reduction are more sophisticated and expensive, and require a higher level of technical expertise than is likely to be available in small firms. Thus these may be applications for more mature organizations. It is possible that this finding might be different across industries, or firms providing products vs. services. Future studies may include an analysis of motivations based on the stage of e-business evolution or other variables such as industry.

While Marketing is clearly the primary motivation in terms of importance, the respondents appear to be but only slightly satisfied, with the results obtained in the areas of Marketing, Communication and Research. They were neutral in their rating of performance in the area of Profitability. Clearly organizations must be more satisfied with their investment in e-business for them to continue to view this as worthwhile. It is necessary, therefore to understand the factors influencing organizational satisfaction with e-business applications. These factors may include the nature of the specific applications implemented and the tasks they support, as well as the characteristics of e-business applications such as ease of use and usefulness. Additionally, the influence of user characteristics (e.g., experience) and organizational characteristics (e.g., choice of strategy) must be investigated.

CONCLUSIONS

This study presented the first known attempt to develop a measure of e-business motivations. The questionnaire has reasonable psychometric properties. However, it needs to be assessed in other environments with improvements made in the sections focused on customer service and the Research factor. Additionally, in order to strengthen all factors, the list of e-business motivations should be expanded and refined. Finally, this study is limited by the nature of the population sampled – small, family-owned businesses – and the low response rate, and must be replicated in other environments before the findings can be generalized.

Nonetheless, the questionnaire provides researchers with a tool to assess motivations for engaging in e-business applications. This is useful in understanding the impact of various user characteristics (e.g., leadership style) and organizational characteristics (e.g., industry) on motivations.

For practitioners who are uncertain of reasons for engaging in e-business, this study provides a starting point. Many organizations are going online without sound business reasons and may be doing so simply to be "fashionable" or for fear of being left behind. An understanding of potential motivations and the factors influencing their motivations will allow such organizations to better prepare for e-business and therefore be better positioned to benefit from such activities.

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	N	%
Under \$100,000	10	2.5
\$100,000 - \$499,999	31	7.8
\$500,000 - \$999,999	31	7.8
\$1.000,000 - \$4,999,999	103	25.9
\$5,0000,000 - \$9,999,999	97	24.4
\$10,000,000 or greater	125	31.5

Table 1: Annual Revenues

	N	%
Agriculture / Forestry	4	1.0
Manufacturing	127	31.8
Services	68	17.0
Wholesale / Distribution	57	14.3
Construction	49	12.3
Retail	56	14.0
Transportation	6	1.5
Other	33	8.3

Table 2: Industry

	N	%
Industrial	223	55.8
Consumer	177	44.2

Table 3: Industrial vs. Consumer

	N	%
Goods	151	37.8
Services	112	28.0
Both	137	34.2

Table 4: Goods vs. Services

	N	%
Local	128	31.8
Regional	147	36.6
National	95	23.6
International	32	9.0

Table 5: Market Served

		Importance	Satisfaction
1	Enhance company image/brand	3.96	3.57
2	Distribute product/company information	3.95	3.53
3	Identify new markets or customers	3.53	3.16
4	Generate sales leads	3.75	3.07
5	Gain an edge over competition	3.58	3.3
6	Improve communications with customers	3.96	3.71
7	Improve communications with channel partners	2.68	3.22
8	Improve communications with employees	2.49	3.16
9	Comply with requirements of a large customer or supplier	2.66	3.26
10	Sell products online	2.62	2.9
11	Improve marketing intelligence	3.08	3.18
12	Find information about new sources of supply	3.18	3.48
13	Find information on industry or other economic data	3.21	3.5
14	Reduce administrative costs	2.71	3.08
15	Reduce direct costs of creating product or service	2.38	3.06
16	Reduce shipping costs	1.98	2.93
17	Reduce advertising expenses for traditional media	2.73	3.10
18	Increase net profit	3.36	3.03
19	Provide or improve customer support	3.78	3.53
The f	five most motivations receiving the highest ratings are highlig	hted.	

Table 6: Motivations for engaging in e-business

	Factor →	Marketing	Communication	e-Profit	Research
1	Enhance company image/brand	.74			
2	Distribute product/company information	.76			
3	Identify new markets or customers	.69			
4	Generate sales leads	.73			
5	Gain an edge over competition	.70			
6	Improve communications with customers		.64		
7	Improve communications with channel partners		.71		
8	Improve communications with employees		.69		
9	Comply with requirements of a large customer or supplier		.73		
10	Sell products online			.65	
11	Improve marketing intelligence				.47
12	Find information about new sources of supply				.83
13	Find information on industry or other economic data				.85
14	Reduce administrative costs		.60		
15	Reduce direct costs of creating product or service			.64	
16	Reduce shipping costs			.66	
17	Reduce advertising expenses for traditional media			.64	
18	Increase net profit			.57	
19	Provide or improve customer support		.57		
	Cronbach's Alpha:	.84	.80	.78	.72
	Eigenvalue:	6.58	2.27	1.41	1.18
	Variance Explained:	34.64%	11.93%	7.45%	6.19%

Table 7: Results of the Factor Analysis (Importance Rating)

	IMP1	IMP2	IMP3	IMP3 IMP4 IMP5		1MP6	IMP7	IMP8	[MP9	IMP10	IMP11	IMP12	IMP13	IMP14	IMP15	MP16	IMP17	IMP18	IMP19
IMP1	1.00	0.57	0.44	0.41	0.61	0.16	0.26	0.25	0.04	0.22	0.25	0.01	80.0	0.26	0.22	0.10	0.17	0.40	0.25
IMP2		1.00	0.51	0.51	0.50	0.17	0.17	0.18	-0.01	0.36	0.36	80.0	0.11	0.14	0.19	0.12	0.29	0.36	0.32
IMP3			1.00	0.70	0.46	0.26	0.20	0.17	90.0	0.31	0.50	0.19	0.25	0.25	0.27	0.21	0.31	0.55	0.34
IMP4				1.00	0.50	0.24	0.23	0.23	60.0	0.32	0.37	0.17	0.18	0.26	0.18	0.16	0.22	0.51	0.30
IMP5					1.00	0.29	0.31	0.35	0.18	0.31	0.26	0.13	0.24	0.41	0.37	0.25	0.26	0.48	0.38
IMP6						1.00	0.29	0.27	98.0	0.27	0.20	0.10	60.0	0.31	0.27	0.23	0.11	0.29	0.59
IMP7							1.00	0.64	0.35	0.31	0.33	0.30	0.24	0.51	0.45	0.50	0.23	0.26	0.29
IMP8								1.00	0.45	0.30	0.31	0.30	0.25	0.58	0.57	0.53	0.23	0.28	0.23
IMP9									1.00	60.0	0.11	0.23	0.19	0.39	0.37	0.43	0.08	0.25	0.32
IMP10										1.00	0.35	0.04	0.01	0.41	0.42	0.36	0.27	0.41	0.29
IMP11											1.00	0.31	0.38	0.30	0.36	0.36	0.46	0.42	0.28
IMP12												1.00	0.31	0.38	0.22	0.28	0.16	0.12	0.09
IMP13													1.00	0.69	0.16	0.27	0.13	0.16	0.09
IMP14														1.00	0.64	0.51	0.26	0.39	0.39
IMP15															1.00	0.65	0.35	0.46	0.38
IMP16																1.00	0.42	0.35	0.27
IMP17																	1.00	0.43	0.21
IMP18																		1.00	0.44
IMP19																			1.00

Table 8: Correlations among motivation variables (Importance Scale)

	Factor →	Marketing	Communication	e-Profit	Research
1	Enhance company image/brand	.81			
2	Distribute product/company information	.88			
3	Identify new markets or customers	.69			
4	Generate sales leads	.68			
5	Gain an edge over competition	.63			
6	Improve communications with customers		.61		
7	Improve communications with channel partners		.83		
8	Improve communications with employees		.65		
9	Comply with requirements of a large customer or supplier		.70		
10	Sell products online			.62	
11	Improve marketing intelligence				.57
12	Find information about new sources of supply				.81
13	Find information on industry or other economic data				.75
14	Reduce administrative costs			.76	
15	Reduce direct costs of creating product or service			.77	
16	Reduce shipping costs			.68	
17	Reduce advertising expenses for traditional media			.64	
18	Increase net profit			.61	
19	Provide or improve customer support	.52			
	Cronbach's Alpha:	.87	.80	.86	.77
	Eigenvalue:	8.07	2.215	1.36	1.07
	Variance Explained:	42.47%	11.34%	7.17%	5.62%

Table 9: Results of the Factor Analysis (Satisfaction Rating)

	SATI	SATI SAT2 SAT3 SAT4 SAT5 SAT6	SAT3	SAT4	SAT5	SAT6	SAT7	SAT8 SAT9	SAT9	SAT10	SAT11	SAT12	SAT13	SAT14	SAT15	SAT16	SAT17	SAT18	SAT19
SAT1	1.00	0.73	0.48	0.46	0.50	0.38	0.18	0.16	0.17	0.30	0.39	0.15	0.19	0.25	0.19	0.08	0.37	0.34	0.45
SAT2		1.00	0.56	0.54	0.51	0.47	0.15	0.22	0.10	0.35	0.44	0.22	0.25	0.20	0.17	0.13	0.40	0.36	0.45
SAT3			1.00	0.70	0.51	0.38	0.19	0.25	0.22	0.49	0.48	0.25	0.29	0.27	0.32	0.26	0.36	0.48	0.33
SAT4				1.00	0.55	0.43	0.26	0.31	0.26	0.47	0.54	0.27	0.35	0.27	0.31	0.32	0.47	0.52	0.42
SAT5					1.00	0.44	0.22	0.22	0.23	0.42	0.38	0.15	0.37	0.39	0.42	0.30	0.43	0.48	0.53
SAT6						1.00	0.51	0.48	0.47	0.35	0.42	0.31	0.35	0.37	0.33	0.33	0.36	0.35	0.61
SAT7							1.00	0.59	0.57	0.18	0.32	0.35	0.25	0.33	0.32	0.42	0.22	0.22	0.35
SAT8								1.00	0.41	0.21	0.36	0.40	0.38	0.47	0.39	0.49	0.26	0.31	0.33
SAT9									1.00	0.36	0.30	0.28	0.34	0.39	0.33	0.41	0.24	0.23	0.38
SAT10										1.00	0.40	0.20	0.30	0.46	0.38	0.49	0.50	0.50	0.42
SAT11											1.00	0.48	0.49	0.33	0.33	0.29	0.41	0.45	0.40
SAT12												1.00	0.62	0.33	0.31	0.30	0.28	0.26	0.25
SAT13													1.00	0.39	0.33	0.33	0.36	0.36	0.31
SAT14														1.00	0.65	0.52	0.47	0.56	0.49
SAT15															1.00	0.58	0.51	0.44	0.42
SAT16																1.00	0.41	0.29	0.34
SAT17																	1.00	0.57	0.46
SAT18																		1.00	0.50
SAT19																			1.00

Table 10: Correlations among motivation variables (Satisfaction Scale)

	Importance	Satisfaction
Marketing	3.67	3.35
Communication	3.17	3.28
e-Profit	2.56	2.99
Research	3.05	3.33

Table 11: Mean Importance and Satisfaction Ratings of the Four Factors