

DEVELOPING AN e-BUSINESS STRATEGY FOR LESS-MATURE ORGANIZATIONS

A Design Research Approach

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Abstract: This research applies a Design Research lens in developing a generic, yet customizable, set of tools to guide less-mature organizations to start their transformation into e-Business: so called e-Business Strategic Planning System (EBSPS). The EBSPS was developed through an extensive review of the e-Business and strategic planning literature that established the parameters for the design of the system specifically for less-mature organizations. The paper describes the use of the EBSPS in developing an e-Business strategy for a large Thai commercial printer. The result was successful, with some improvements suggested for the next round of EBSPS.

1 INTRODUCTION

e-Business is a term developed by IBM in 1990's for commercial purposes (Li, 2007). Despite many definitions of e-Business, it can be simply described as "all electronically mediated information exchanges, both within an organization and with external stakeholders supporting the range of business processes" (Chaffey, 2002). While interest in e-Business wound down during the 'dot-com crash' because of the over-expectation of investors, e-Business is still continues to grow (Li, 2007) and becomes a way of doing business.

e-Business is a much broader concept than e-Commerce or even Information Technology (IT) because e-Commerce focuses only on using the Internet to carrying out business transactions over the Internet, and IT strategy focuses upon using IT to support business processes, but e-Business aims to transform business process to perform well in the network economy. E-Business allows organization to improve their efficiency through 'speed of light' value creation from collaboration both internally and externally to reach potential customers globally at low cost (Leibold et al, 2005). Also, a new Internet-based business model could generate additional revenue (Farhoomand, 2005). New demand can also be created using a Value Innovation process (Kim et al, 2005) in which e-Business could be an enabler. Therefore, the potential for e-Business to generate business value is huge.

As more people and businesses are connected to the Internet, the potential of e-Business will be significant. The survey conducted by Internetworldstat.com (2008) confirmed that the Internet population has grown substantially applies a Design Research lens in developing a generic, yet customizable, set of tools to guide less-mature organizations to start their transformation into e-Business: so called e-Business Strategic Planning System (EBSPS). The EBSPS was developed through an extensive review of the e-Business and strategic planning literature that established the parameters for the design of the system specifically for less-mature organizations. The paper describes the use of the EBSPS in developing an e-Business strategy for a large Thai commercial printer. The result was successful, with some improvements suggested for the next round of EBSPS. since the start of the millennium. A similar trend is seen on the value of e-Commerce not only in the U.S. but worldwide (UNCTAD, 2002). The future of business is moving away from the traditional off-line mode. However, in the Internet world, early adopters of e-Business, for example, Yahoo!, eBay, and Google, usually gain a long-term advantage from brand awareness and a leading position in the early development of innovation. Therefore, there can be pressure to become an e-Business quickly and correctly the first time.

Although e-Business is seen in many organizations, the development of e-Business

strategy is still far from standard. With the rising cost of mistake made in a highly competitive business environment, there is a need to develop a systematic approach to e-Business strategic planning. Furthermore, as e-Business is indeed a business transformation exercise, using strategic planning framework is one approach that could lead the more successful development of e-Business.

Strategic planning has been a much-interested management tool since 1950s. While the interest seemed to decline in the late 1980s because of the disappointment with the business result (Marx, 1991), its benefits from the 'strategic thinking' exercise were clear. Whilst the business landscape is changing more rapidly, the need for such a planning exercise to avoid the cost of failure is increasing as well. As a result, the Bain & Company survey (2007) found that strategic planning has consistently been the most used management tool since 1996.

There are different approaches to strategic planning, such as vision-focused approach (Kaplan and Norton, 2008), stakeholders-focused approach (Poister and Streib, 2005; Kenny, 2005; Lewis, 2004), organization-focused approach (Rigsby and Greco, 2003), fit-focused approach (Thompson et al, 2008), analytical-focused approach (American Management Association 1995; Lake, 2006; Wootton et al, 2001), alignment-focused approach (Reading, 2002). Different approaches can be used appropriately in different organizations and situations.

Despite the long development of strategic planning concept, there is a lack of a unified and systematic process for developing an e-Business strategy (Barua et al, 2008) in particular for a less mature organization (Czuchry and Yasin, 2003).

The following parts of this paper will discuss the special characteristics of less mature organizations. Then the Design Research methodology will be explained and linked into how e-Business Strategic Planning System (EBSPS) is designed. Each element of EBSPS will be discussed. A demonstration of EBSPS in a less mature organization will be elaborated. The result will be discussed and compared against suggested Design Research evaluation criteria. Lastly, conclusion will be drawn.

2 e-BUSINESS IN LESS MATURAL ORGANIZATIONS

Because of these benefits of e-Business, global trend of e-Business and relatively low cost of entry, e-

Business has the potential to level the competitive landscape between large and small players. Despite the fact that e-Business does not require many financial resources, it requires e-Business knowledge, and e-Business strategic planning in particular, which is still not an established discipline as there is no unified textbook on this discipline. Less-mature organizations seem to be at disadvantage because of their lack of experiences in e-Business planning. Also, they usually face mixed recommendations from e-Business vendors that have biases towards the solutions. Even though they seek advice from e-Business consulting firms, which is usually costly, based on author's years of consulting experience, they still receive a generic roadmap not tailor-made to their situation and needs.

3 USE OF DESIGN RESEARCH

Formally known as Design Science, the Design Research methodology is chosen to develop EBSPS. As a new discipline in the academic community, the design research first appeared in 'The Science of the Artificial' by Simon (1996) is providing a new research perspective complementing positivist and interpretive perspectives (Vaishnavi and Kuechler, 2004/5).

The design research aims to develop theoretical knowledge from the action of designing and field testing an artifact (Hevner et al, 2004; Van Aken, 2005). Artifacts consist of construct, model, method, instantiation, or better theories (Vaishnavi and Kuechler, 2004/5). While the discipline of the design research is young and its community is still small, design research has been well accepted in the Information System community, such as Association of Information System (AIS).

However, there is less interest in design research in the management discipline (Gregor and Jones, 2007), despite the potential to solve utility problems of the management system as design research aims at application of artifact to solve real-world problem. While most prominent ideas on Design Research are similar, some would put more emphasis on artifact and its utility (Hevner et al, 2004) and believe that the knowledge will be create as a result. Another would put more emphasis on the research process to justify the created knowledge is justifiable (Gregor and Jones, 2007) which can be seen in their proposed Design Research evaluation guideline. In this research, the two viewpoints were combined to satisfy both goals of Design Research.

Table 1: Philosophical Assumptions of Three Research Perspectives.

Research Perspective			
Basic Belief	Positivist	Interpretive	Design
Ontology	A single reality Knowable, probabilistic	Multiple realities, socially constructed	Multiple, contextually situated alternative world-states Socio-technologically enabled
Epistemology	Objective;dispassionate Detached observer of truth	Subjective (i.e., values and knowledge emerge from the researcher- participant interaction)	Knowing through making: objectively constrained construction within a context Iterative circumscription reveals meaning
Methodology	Observation;quantitative, statistical	Participation; qualitative. Hermeneutical, dialectical Understanding: situated and description	Developmental Measure artifactual impacts on the composite system
Axiology what is Of value	Truth: universal and beautiful; prediction	Understanding: situated and description	Control; creation; progress (i.e; improvement); Understanding

Source: Vaishnavi, V. S., & Kuechler, W. (2008). Design Science Research Methods and Patterns: Innovation Information and Communication Technology. Boca Raton, FL: Auerbach Publication.

Table 2: Design Research Rigor Guideline Comparison.

Hevner et al. (2004)	Gregor and Jones (2007)
1. Design as an artifact 2. Problem Relevance 3. Design Evaluation 4. Research Contributions 5. Research Rigor 6. Design as a Search Process 7. Communication of Research	1. Purpose and scope 2. Constructs 3. Principle of form and function 4. Artifact mutability 5. Testable propositions 6. Justificatory knowledge (Additional components) 7. Principles of Implementation 8. Expository instantiation

Next, the e-Business strategic planning process was designed to be appropriate for these parameters. The tools and techniques were selected according to the issues and power structure.

Finally, some participants were interviewed after the workshop to evaluate the EBSPS in the area of usability, usefulness, and acceptability.

4 DESIGN OF e-BUSINESS STRATEGIC PLANNING SYSTEM

EBSPS is designed with the belief that there is no standard planning system for every organization under any circumstances. Therefore, the EBSPS must start by assessing design parameters which is

collected based on the literature review in the area of strategic planning and e-Business. As design is a search process (Hevner et al, 2004), design parameters are selected based on relevance and importance in the eyes of the designer.

EBSPS design parameters can be divided into Macro and Micro levels. Macro-design parameters are factors that describe the environment of the organization, such as Information and Communication Technology (ICT) infrastructure, government policy towards e-Business, and national culture. Micro-design parameters are factors that describe the organization, such as organization maxim, current issues, vision, organization culture, organization and power structure, organization readiness for strategic planning, organization readiness for e-Business, and organization readiness for changes. Macro-design parameters are used for designing EBSPS while micro-design parameters are used for customizing the EBSPS for each organization.

The architecture of the EBSPS is shown in figure 1 with the following explanation.

Define participants: It is important to identify the right people who craft strategy as well as execution people (Reid, 1980; Nagel, 1984). The group size between five to ten people tends to be effective (Andrews and Johnson, 2002).

Organizational assessment provides Micro-parameters for designing EBSPS for each organization.

Organization Power: It is necessary to understand the structure and its six basic components (Mintzberg, 2003), four dimensions of

cooperation (Bai et al, 2003) and determine where the power in the organization is.

Pressure: Organization always faces various forces, both externally and internally, that would drive the action (Lewis, 2004). Pressure can also be described in term of Maxim which is a “short simple statements of the business’s positions” (Broadbent and Weill, 1997)

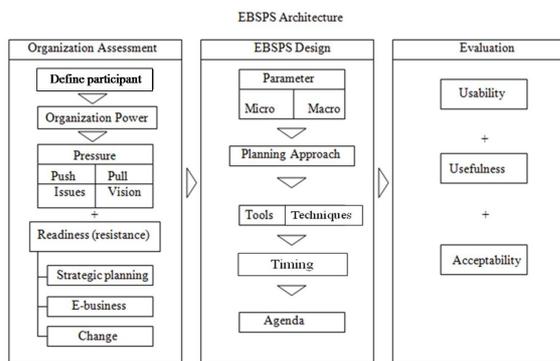


Figure 1: Architecture of EBSPS.

Readiness: Organizations have different level of readiness. Therefore, the crafted strategy should be different. Readiness can be viewed as capability to perform or resistance. Organizational readiness in aspects related to e-Business strategy will determine the right strategy which is executable. Three areas are considered in this research: Strategic Planning readiness (Russell et al, 2005; Napier et al, 1998), e-Business readiness (Czuchry and Yasin, 2003; Ravichandran and Lertwongsatien, 2005), and Change readiness (Hackbarth and Kettinger, 2000)

Macro parameters are those related to the environment of the country. It is not company-specific parameters. While there is an extensive list of environmental factors to consider, three are selected: ICT infrastructure, Government policy (Chen, 2005) and Culture (Aladwani, 2001; Holdstede, 1980; Komin, 1990)

Planning approach: Planning is one of many ways to craft strategy (Mintzberg, 1998). Though most planning approaches would fit into POWER planning framework (Lewis, 2004), there are distinct variation in focus and sequence of planning activities. They can be categorized into six approaches as mentioned earlier and one approach will be selected.

Planning tools: Planning tools are used to frame the content of discussion on certain areas. Extensive list of planning tools was established as a toolbox to choose from. Examples of planning tools are SWOT analysis, Vision development, Corporate governance

model, Strategic issues, Strategic risk, Industry analysis, Benchmarking, Gap analysis, etc.

Planning techniques: Planning techniques are used to guide the discussion of the planning tools. Similar to planning tools, extensive list of planning techniques with description was established as a toolbox. Examples of planning techniques are Brainstorming, Buzz group, Case study (Russell et al 2005), Affinity diagram, and Las Vegas voting (Napier et al, 1998).

In the cases where the tools and techniques required pre-work - for example, data gathering - to improve process efficiency and effectiveness, a pre-work request was sent to the participants well ahead of time. Then an agenda for a planning workshop, built around the chosen techniques, was developed.

Evaluation reflects the performance of the design, leading to the discovery of knowledge from the design, and can be used to improve the artifact. EBSPS, as an artifact, was evaluated on three dimensions: Usability (Ramanujam et al, 1986), Usefulness (Grover and Segar, 2003; Wang and Tai, 2003), and Acceptability (Lewis, 2004). The learning from evaluation was collected and analyzed in order to improve the EBSPS.

EBSPS would be beneficial to less-mature organizations in e-Business which are defined as organizations that have no process to handle e-Business strategic planning. They may or may not already have some e-Business applications in their organizations already, but usually not the process. EBSPS provides simple guideline to follow with a small set of only important design parameters, yet powerful result. It would help a less-mature organization to start thinking about e-Business in a systematic way. Even when used by an outside consultant, EBSPS provides a guideline to tailor-made the process to each customer easily.

5 A FIELD EXPERIMENT IN A LARGE THAI COMMERCIAL PRINTER

A field experiment is an essential part in Design Research. Not only has it provided a test for usability of the artifact, but also a feedback for improvement which will continue to fine-tune the artifact when many rounds of field experiments are conducted. Therefore, it is important to expect that the first field experiment would result in no perfect result but plenty of areas for improvement.

The first field experiment was conducted on

“Alpha”, which is a large Thai commercial printer with a reputable brand name in the Thai market. Alpha was established many decades ago when Thai printing industry was just started by focusing on textbook printing. It has grown continuously since then. Currently, Alpha provides high quality printing services for major domestic and international clients. As a second generation organization, Alpha possessed many old people who do not realize a need to change. Its business started to face quality problem as well as losing its competitiveness. On e-Business, Alpha has a limited Information System (IS) capability as well as supporting financial resources. However, the Managing Director has a strong commitment to transform the organization by applying modern management concepts.

After a series of interview with seven executives which last between 30-60 minutes, the result provided the big picture of the organization and the EBSPS design parameters as follows.

Power structure: The power is centralized at the Managing Director who is also the owner. The board of director is his family members who do not have involvement.

Maxim: Unclear. Its vision of ‘to be one of the top five most profitable printing companies in Thailand’ is vague with no specific directions on how to achieve it. It was also found that determining a maxim was hard to do by the management team.

Pressure: Organization always faces various forces, both externally and internally, that would drive the action (Lewis, 2004)

Organization readiness for strategic planning

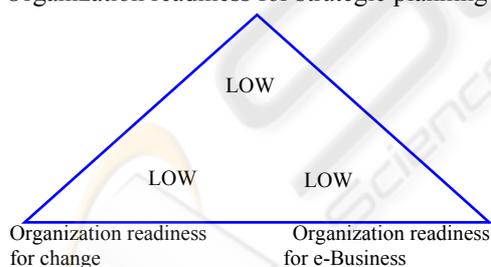


Figure 2: Organization readiness for Alpha.

Alpha has low Organization readiness for strategic planning. It has never done a proper strategic planning. While it has documented vision, mission, and strategies, they are formulated from group discussions among Top Management Teams (TMT) without strategic analysis. Moreover, most TMT members have no business management educational background.

Alpha has low Organization readiness for e-Business. The Management Information Systems (MIS) department consists of three people and mainly supports day-to-day operation of IT equipment and the printing software. They are not familiar with IS development work since they hardly have anything beyond the Alpha website which was developed by an outsider. Alpha has no experience in IT outsourcing at all. The MIS team can only support the existing system. Alpha’s IS infrastructure is quite old, especially the system that run the printing software because the version that Alpha uses requires Window 98, which new hardware does not support.

Alpha has low Organization readiness for change. Half of Alpha’s staff are old and have a tendency to resist change. With a current financial liquidity issue, which causes a decline in staff morale, it is hard to provide any incentive for change. Besides, a cross-functional team to lead change is not a part of the current work practice.

Based on these input parameters, the EBSPS was designed for Alpha to use the vision-focused approach for these three main reasons. First, Alpha’s vision needs to be clarified before translating into e-Business strategies. Secondly, as Alpha is a family business with centralized power, it grows from the vision of the leader. Once the vision is established, the alignment should not be a problem. Lastly, Alpha is not familiar with information gathering for strategy formulation and not focusing on competition.

In the workshop design, tools and techniques were selected to fit with the planning approach and duration, also considering Alpha strategic planning readiness and e-Business readiness. For Alpha, five tools are selected: SWOT analysis, vision development, e-Business initiative menu, prioritization, and road mapping. The proposed again was the first application on EBSPS which needs to be improved in further rounds of application in the future.

These tools were used in a workshop with eight participants and one observer participant for one full day.

Evaluation was conducted one week after the workshop by interviewing four selected people, including the managing director. List of questions were asked to assess usability, usefulness, and acceptability. The overall result was satisfactory, as shown in figure 3.

EBSPS has performed well in the area of usability and acceptability, while has lower score in the area of usefulness. Minor concerns, such as lack

of action planning and short working time on each session, were mentioned and would be taken into account into the next round of field experiment.

Table 3: Alpha’s EBSPS agenda.

Start	Topic	Duration	Finish
8:30	Prep session for MD on opening		
9:00	MD opening	0:10	9:10
9:10	Agenda	0:10	9:20
9:20	SWOT discussion – post it & round table	0:50	10:10
10:10	SWOT summary	0:10	10:20
10:20	Break	0:15	10:35
10:35	Vision	0:15	10:50
10:50	Vision drawing at corporate level	0:15	11:05
11:05	Vision sharing and identify keywords	0:30	11:35
11:35	Craft vision statement	0:25	12:00
12:00	Lunch	1:00	13:00
13:00	Printing industry situation update	0:15	13:15
13:15	E-business knowledge sharing	1:00	14:15
14:15	Additional brainstorming on e-Business initiatives	0:15	14:30
14:30	Break	0:15	14:45
14:45	Prioritization	0:20	15:05
15:05	Conclude prioritization	0:10	15:15
15:15	Sequence initiatives	0:20	15:35
15:35	Conclude roadmap	0:10	15:45
15:45	Q & A	0:15	16:00

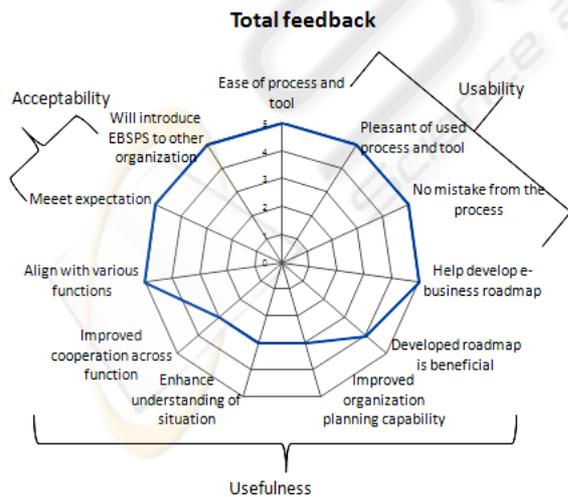


Figure 3: Results of the evaluation of the EBSPS for Alpha.

6 CONCLUSIONS

In this research, the EBSPS was developed to assist less-mature organizations in developing an e-Business strategy. A simple yet powerful set of design parameters was used to assess the organization, so guiding the development of a suitable process to develop the e-Business strategy. They were pressures, organizational power, and readiness. The review of strategic management tools and techniques also provided a toolbox for practitioners.

The evaluation of the first organization suggested that the EBSPS was successful. The success was a result of excellent corporation from all participants. Since this project was valued by the Managing Director and he was the person arranging interviews and workshop by himself, it shows the important of top management support in strategic consulting work.

According to the evaluation criteria, EBSPS was rated very high in all subcategories within Usability and Acceptability. However, its Usefulness only was rated between medium to high. Interview with selected participants revealed that they preferred to see Action Plan being developed in the workshop to enhance confidence and commitment of execution – hence usefulness of EBSPS. From Design Research, the design of EBSPS has met research rigor criteria as well.

Another lesson-learned from the organizational assessment is that Maxim is not easy to describe while Current Issues have been very useful in both selection of strategic planning approach as well as tools and techniques to be used in the workshop.

The learning at Alpha was used to improve the EBSPS. While this paper being written, the workshop for the second company, Beta – a large Thai asset management company and Gamma – a small Thai engineering consulting firm are completed and being documented.

REFERENCES

- Aladwani, A. M. (2001). IT planning effectiveness in a developing country. *Journal of Global Information Technology Management*, 4 (3), 51-65.
- American Management Association, (1995), *Strategic Planning Leader’s Guide*, New York, NY. (Internal document)
- Andrew, D. K., & Johnson, K. R. (2002). *Revolutionizing IT: The Art of Using Information Technology Effectively*. Wiley.

- Bai, R., & Lee, G. (2003). Organizational factors influencing the quality of IS/IT strategic planning process. *Industrial Management + Data Systems*, 103 (8/9), 622-632.
- Bain & Company. (n.d.). www.bain.com/management_tools/Management_Tools_and_Trends.pdf. Retrieved May 7, 2008.
- Barua, A., Konana, P., Whinston, A. B., and Yin, F., (2008), *Managing E-Business Transformation: Opportunities and Value Assessment*, Center of Research in Electronic Commerce, McCombs School of Business, The University of Texas at Austin, <http://cism.mcombs.utexas.edu>, Accessed 19 May 2008.
- Broadbent, M., & Weil, P. (n.d.). Management by Maxim: How Business and IT Manager Can Create IT Infrastructures, <http://sloanreview.mit.edu/smr/issue/1997/spring/6/>. Retrieved Sep 19, 2008, from <http://sloanreview.mit.edu>.
- Chaffey, D. (2002). *E-business and E-commerce Management: Strategy, Management and Applications*. Prentice Hall.
- Chen, S. (2005). *Strategic Management of e-Business*. (2nd, Ed.) England: John Wiley & Sons Ltd.
- Czuchry, A. J. & Yasin, M. M. (2003), *Improving E-Business with a Baldrige-Based Methodology*, Information Systems Management, Summer 2003, pp. 29-38.
- Farhoodmand, A. (2005). *Managing (e)Business Transformation: A Global Perspective*. New York, NY: Palgrave Macmillan.
- Gregor, S., & Jones, D. (2007). The Anatomy of a Design Theory. *Journal of the Association of Information Systems*, 8 (5), 312-335.
- Grover, V., & Segars, A. H. (2005). An Empirical Evaluation of Stages of Strategic Information Systems Planning: Patterns of Process Design and Effectiveness, *Information & Management*, 42, 761-779.
- Hackbarth, G., & Kettinger, W. J. (2000). Building and E-Business Strategy. *Information Systems Management*, 78-93.
- Hevner, A. R., March, S. T., & Park, J. (2004). Design Science in Information Systems Research. *MIS Quarterly*, 28, 75-105.
- Hofstede, G. (1980). *Culture's consequences: International differences in work-related values*. Beverly Hills, CA: Sage Publications.
- Kaplan, R. S., & Norton, D. P. (2008, January). Mastering the Management System. *Harvard Business Review*, 63-77.
- Kenny, G. (2005). *Strategic Planning and Performance Management: Develop and Measure a Winning Strategy*. Butterworth-Heinemann.
- Kim, W. C., & Mauborgue, R. (2005). *Blue Ocean Strategy: How to Create Uncontested Market Space and Make the Competition Irrelevant*. Boston, MA: Harvard Business School Publishing Corporation.
- Komin, S. (1990). Culture and Work-related Values in Thai Organizations. *International Journal of Psychology*, 25, 681-704.
- Lake, N. (2006), *The Strategic Planning Workbook*, 2nd Edition, Kogan Page, London, UK.
- Leibold, M., Probst, G., & Gibbert, M. (2005). *Strategic Management in the Knowledge Economy: New Approaches and Business Applications* (2nd ed.). Publicist.
- Lewis, E. J. (2004). System Planning Toolbox. URL: <http://seal.itee.adfa.edu.au/~ejl/Portal/>, Accessed 3 March 2009.
- Li, F. (2007). *What is E-Business? : How the Internet Transform Organizations*. Malden, MA: Blackwell Publishing.
- Marx, T. G. (1991). Removing the Obstacles to Effective Strategic Planning. *Long Range Planning*, 24 (24), 21-28.
- Mintzberg, H., Ahlstrand, B., & Lampel, J. (1998). *Strategy Safari*. New York, USA: Free Press.
- Mintzberg, H., Jampel, J., Quinn, B. J., & Ghoshal, S. (2003). *The Strategy Process: Concepts and Cases*. 4th Edition, Prentice Hall.
- Nagel, A. (1984). Organizing for Strategic Management. *Long Range Planning*, 17 (5), 71-78.
- Napier, R., Sidle, C., & Sanagham, P. (1998). *High Impact Tools and Activities for Strategic Planning: Creative Techniques for Facilitating Your Organization's Planning Process*. New York, NY: McGraw-Hill.
- Poister, T. H., & Streib, G. (2005). Elements of Strategic Planning and Management in Municipal Government: Status after Two Decades. *Public Administration Review*, 65, 45-56.
- Ramanujam, V., Venkatraman, N., & Camillus, J.C. (1986). Multi-Objective Assessment of Effectiveness of Strategic Planning: A Discriminant Analysis Approach, *Academy of Management Journal*, 23 (2), 347-372.
- Ravinchandran, T., & Lertwongsatien, C. (2005). Effect of Information Systems Resources and Capabilities on Firm Performance: A Resource-Based Perspective. *Journal of Management Information Systems*, 21 (4), 237-276.
- Reid, D. M. (1990). Where Planning Fails in Practice. *Long Range Planning*, 23 (2), 85-93.
- Reading, C. (2002). *Strategic Business Planning: A dynamic system for improving performance & competitiveness* (2nd ed.). London, UK: Kogan Page.
- Rigsby, J. & Greco, G. (2003). *Mastering Strategy: Insights from the World's Greatest Leaders and Thinkers*. McGraw-Hill, New York, NY.
- Russell, J., & Russell, L. (2005). *Strategic Planning Training*. Alexandria, VA.
- Thompson, A. A., Strickland, A. J., & Gamble, J. E. (2008). *Crafting and Executing Strategy: The Quest for Competitive Advantages* (15th ed.). NY: McGraw-Hill/Irwin.
- UNCTAD. (2002). *E-Commerce and Development Report 2002*, URL: http://r0.unctad.org/ecommerce/ecommerce_en/edr02_en.htm, Accessed March 3, 2009.
- Vaishnavi, V. and Kuechler, W. (2004/5). *Design Research in Information Systems* January 20, 2004,

- last updated June 29, 2007. URL: <http://www.isworld.org/Researchdesign/drisISworld.htm>
- Van Aken, J. E. (2005). Management Research as a Design Science: Articulating the Research Products of Mode 2 Knowledge Production in Mangement. *British Journal of Management*, 16, 19-36.
- Wang, E. T., & Tai, J. C. (2003). *Information & Management*, 40 (4), 287.
- Wootton, S. and Horne, T., (2001), *Strategic Thinking: a step by step approach*, 2nd Edition, Kogan Page, London, U.K.
- www.internetworldstat.com, Retrieved March 1, 2008.



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