

**“Analytic Hierarchy Process Model
for Global Competitiveness of Local Companies :
A Case for Thai Banking Business”**

*Asst. Prof. Dr. Boonmark Sirinaovakul

Abstract- Advances in information technology radically impact all organizations, especially, in providing effective tools to integrate their operations more effectively, respond to market needs more flexibly, and serve their customers globally. This research aims to answer how the local companies survive in the global competitiveness. Using Analytic Hierarchy Process (AHP) method, variables relevant to strategic management and information technology have been developed with the application-based model, based on the Mc Kinsey framework. Results show that long term vision of leader gives the highest contribution to the success of local companies. Appropriate management of leadership and information technology significant enhances the competitiveness of local companies. Results of this evaluation of the proposed model with four local Thai Banks is in accordance with those of international credit rating agencies including Standard & Poors and Moody's Invertors Service.

I. Introduction

Comprehensive review of related literature in strategic management indicated that companies responded to globalization through the utilization of information technology, competitive strategy, and organization structure (Bartlett and Ghosal 1998; Bradley Hausman, and nolan 1993; Chakravarthy 1997; Dawar and Frost 1999; Drucker 1992; Hamel and Prahalad 1994; Hammer and James 1993; Hesselbein, Goldsmith, and Beckhard 1997; Peters and Waterman 1982; Porter 1985; and Porter 1998). However, recent findings indicated that it was not enough to think about the success of a company as a matter of only strategy and structure. The emphasis places on strategy and vision might create a mistaken belief that the right strategy was that all was needed to succeed (Kaplan and Norton 1996; Ernst and Young 1998; Kaplan and Norton 2001). These researchers concluded that the ability to execute strategy could be more important than strat-

*Assistant President for Technology Development, Dean of Engineering, Dhurakijpundit University :
Ph.D. (Industrial Engineering), Wichita State University, Kansas, USA.

egy itself. Waterman (1982) also noted that successful implementation of strategy required that the internal organization be supportive of the strategy. Beer and Eisenstat (2000) found that successful companies developed a good strategy, and then appropriately realigned structure, systems, leadership behavior, human resources policies, cultures, values, and management processes. Current emphasis on strategic management issues are then placed on variables that contribute to successful implementation of strategy.

Strategic information technology planning was consistently identified as the most critical issue facing the information systems community (Brancheau and Wetherbe 1991; Watson and Brancheau 1991). It was increasingly critical to an organization technology planning and take advantage of changing technology. The result was a shift from a formal but general perspective information technology planning approach to a more strategically focused one.

II. Model development

The frameworks proposed by Bradley, Hausman, and Nolan (1993); Kaplan and Norton 1996; 1998; Ernst & Young 1998; Waterman (1982); and Beer and Eisenstat (2000) were comprehensively incorporated for the strategic intent of an organization into action. These frameworks were originally developed in 1979 by Mc Kinsey and Company as a way of thinking more broadly about the problems of organizing effectively. This framework was later known as Mc Kinsey 7 s.

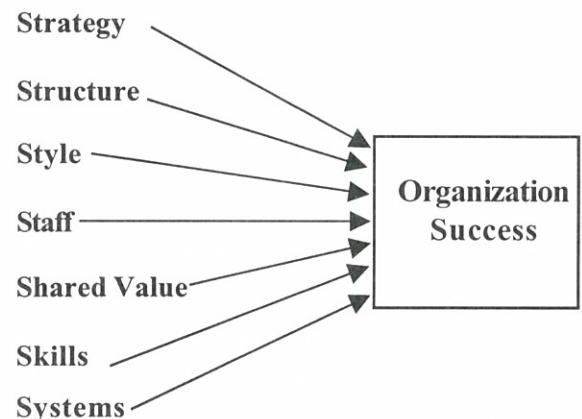


Figure1 The frame work for Model Development

The highlight of framework was the alignment of seven critical organizational context variables for the achievement of organizational objectives. These variables are strategy, structure, style, staff, shared values, skills, and systems.

Strategy refers to a coherent set of achieves aimed at gaining a sustainable advantage over competitors, or it can also refer to how the organization aims to improve its position that appeal to its customers and differentiate from its competitors, how it plans to respond to its external environments or where it positions itself to maximize its strengths and gain success.

Structure refers to the description of how tasks into the organization are to be allocated and integrated, who reports to whom, and the formal coordinating mechanism and interaction patterns that would be followed. It is found from this study that successful local companies tend to possess low degree of formalization and centralization.

Style refers to style of leaders in the organization. Leaders give organizations direction and drive. Bartlett and Ghosal (2000) found that successful local companies exhibit certain common characteristics. These companies are always led from the top. Their leaders have accurate long-term vision and a strong commitment to global entrepreneurialism. Moreover, they all exhibit a remarkable openness to new ideas that would facilitate internationalism.

Staff refers to the competencies of people in an organization. Successful companies in the knowledge-based economy require more specialists that command and control companies (Drucker 1998). With their specialists, successful companies have the ability to respond quickly to customers, create new markets, rapidly develop new products, and dominate emergent technologies (Nonaka 1991).

Shared value or culture is the collection of beliefs, expectations, and values learned and shared by an organization's members and transmitted from one generation of employees to another. Successful companies have clearly demonstrated that their corporate cultures are highly consistent with strategies (Wheelen and Hunger 1998).

Skills are distinctive capabilities that are possessed by an organization. Marchand, Kettinger, and Rollins (2000) found that successful companies are more effective in the use of information than their counterparts.

Systems refers to processes and flows that show how an organization gets things done from day to day. According to Marchand, Kettinger, and Rollins (2000), the supportive role of information systems encompass operational support, business process support, innovative support, and management

support. Management support includes software, hardware, telecommunication networks and capabilities that facilitate executive decision making.

A. *The Analytic Hierarchy Process*

The analytic hierarchy process (AHP) methodology is employed for model construction and evaluation. AHP was developed by Thomas L. Saaty in 1980 at the Wharton school of the University of Pennsylvania as a general problem solving methodology for complex multi-criteria decisions with variables that do not have exact numerical consequences (Saaty 1999). In this study, The hierarchy of the 21 variables used for the model construction is shown in Table 2.

Two groups of experts are involved in the study, one for model construction, the other for model evaluation. The first group is comprised of five executives at the chief executive officer or managing director level who are widely recognized as competent strategists in Thailand. These executives participate in judgmental exercises involved in the AHP.

The second group is comprised of five experts in the banking sector. Some of the experts are academics and some are former executives from the Bank of Thailand. The role of this group is to use the derived model to evaluate four major local banks.

The experts selected are based on references and reputations. Four renowned professors who taught MBA level courses in four major universities in Thailand are identified. These professors are asked to list names of prospects to participate in the two groups. The names of experts are then compiled and discussed among the four professors via a moderator regarding their reputations until a consensus is reached for the ten experts required in the study.

Goal : Organization Success: Innovative responses to customers' needs

Leadership

- Long term vision
- Commitment to global entrepreneurialism
- Openness to new ideas

Strategy

- Customer interaction
- Asset configuration
- Knowledge leverage

Culture

- Creating a desire for knowledge
- Bringing knowledge to bare

Staff

- Cognitive knowledge
- Advanced skills
- Systems understanding
- Self-motivative creativity

Skills

- Information technology practices
- Information management practices
- Information behavior and values

Systems

- Operation support
- Business process support
- Innovative support
- Management support

Table 2 : Hierarchy of the Variables

B. Model Construction

The goal for the model is the success of local companies. The hierarchy of the 21 variable model constructed are then evaluated by the five experts by pairwise comparison. Individual results of

each expert are combined and the mean scores are calculated. The calculation is performed using Expert Choice software, a multi-objective decision support tool based on the analytic hierarchy process. The resulting model is shown in Table 3. The resulting inconsistency ratio of 0.07 indicates an acceptable level of consistency.

| Item | Group/Variable Descriptions | Scores |
|------|--|----------------------------------|
| 1 | Leadership (a) Long term vision (b) Commitment to global entrepreneurialism (c) Openness to new ideas | 0.175 0.064 0.024 |
| 2 | Strategy (a) Customer interaction (b) Asset configuration (c) Knowledge leverage | 0.079 0.011 0.025 |
| 3 | Structure (a) Autonomy (b) Decentralization | 0.018 0.071 |
| 4 | Culture (a) Creating a desire for knowledge (b) Bringing knowledge to bare | 0.045 0.023 |
| 5 | Staff (a) Cognitive knowledge (b) Advanced skills (c) Systems understanding (d) Self-motivative creativity | 0.013 0.025 0.072 0.100 |

| Item | Group/Variable Descriptions | Scores |
|------|---|----------------------------------|
| 6 | Skills (a) Information technology practices (b) Information management practices (c) Information behavior and values | 0.064 0.056 0.049 |
| 7 | Systems (a) Operational support (b) Business process support (c) Innovative support (d) Management support | 0.004 0.010 0.053 0.020 |

Table 3. Strategic Model in Response to Globalization

Among the 21 variables, long term vision of leader has the highest priority with respect to its contribution to organization success. It is typical for local companies that owners, management, and leaders are the same person. The need for leaders with clear global long term vision is highly apparent during the economic crisis period. Moreover, leaders should possess the commitment to global entrepreneurship.

The importance of staff competencies is also highly recognized as self-motivated creativity and system understandings are ranked second and fourth. Corporate strategy that focuses on customer interaction has the third highest priority. Decentralization of authority is ranked fifth in its importance to the success of local companies.

Information technology variables are also highly recognized for their importance to the success of local companies. The three organization information technology capabilities variables, information

technology practices, information management practices, and information behavior and values are ranked sixth, eighth, and tenth. The supportive information technology is recognized for its significance in the innovative support in exploration, development, collaboration, and sharing of new ideas to develop and introduce new products and services.

Grouping variables under their respective parents reveals that leadership still has the highest combined weight of 0.263. Information technology that encompasses IT capabilities and supporting IT systems has the second highest combined weight of 0.256. The third highest is the staff competencies variables.

III. MODEL EVALUATION

Five experts in the banking sector participated in the model evaluation. They are asked to use the derived model to evaluate four major banks in Thailand. The names of these four banks are abbreviated as BBL, TFB, SCB, and BAY respectively.

Financial data of the four banks are compiled to provide additional objective information for the experts. The data include relevant information regarding assets, deposits, loans, non-performing loan, interest and dividend income, non-interest income, total income, as well as profit and loss.

The four banks are compared in a pairwise fashion on their superiority with respect to the 21 variables. Individual results are then combined and averaged. Expert choice software is used to calculate the outcome of the final evaluation. The result of the evaluation is shown in Table 4. An inconsistency ratio of 0.87 for the judgements indicates a tolerable level of inconsistency.

Evaluation results are in concert with various credible sources including Far Eastern Economic Review, Standard & Poor's, and Moody's Investors Service, which are illustrated in Table 5 and Table 6 Respectively.

| Bank Name | Scores |
|-----------|--------|
| BBL | 0.324 |
| TFB | 0.363 |
| SCB | 0.224 |
| BAY | 0.089 |

Table 4. Evaluation Results of the Four Banks.

| Bank Name | L-T Credit | S-T Credit |
|-----------|------------|------------|
| | Rating | Rating |
| BBL | BB | B |
| TFB | BB | B |
| SCB | BB- | B |
| BAY | B+ | B |

Table 5. Rating Actions on Thai Banks :
Standard & Poor's

| Bank Name | L-T Bank Deposit | Financial Strength |
|-----------|------------------|--------------------|
| BBL | Ba1 | D |
| TFB | Ba1 | D |
| SCB | Ba1 | D- |
| BAY | Ba2 | E+ |

Table 6. Rating Actions on Thai Banks:
Moody's Investors Service.

IV. CONCLUSION

It can be concluded that successful local companies are led by leaders with long term vision and commitment to global entrepreneurialism . Staffs of these companies are highly competent with self-motivated creativity and system understanding ability that go beyond the execution of tasks to solve larger and more complex problems to create extraordinary value. The companies formulate their strategies that allow customers to remotely experience products and services, actively participate in dynamic customization, and create mutually reinforcing customer communities.

Organization structure of these companies allow staff members to participate in the decision making process. More importantly, the companies acquire capabilities to effectively manage appropriate IT applications and infrastructure in support of organization activities and the capabilities to effectively manage information over its life cycle encompassing sensing, collecting, organizing, processing, and maintaining of relevant information. The companies also effectively employ software, hardware, telecommunication networks, and technical expertise to support their innovative endeavors. As a result, local companies can innovatively respond to customers' needs that will ultimately lead to their success in the global competitive arena.

Acknowledgements : The author would like to give special thanks to Dr.Kamchorn Lehmongkol, his former doctoral student, for the contribution to this research. He is also thankful to numerous experts in the Thai banking business for their valuable contribution.

BIBLIOGRAPHY

- Bartlett, Christopher A. and Ghoshal Sumantra. **Managing across borders : the transnational solution.** 2nd ed. Boston, Mass : Harvard Business School Press, 1998.

_____. "Going Global : lessons from late mover." **Harvard Business Review.** 78, 2000 : pp. 132-142.

Beer, Michael and Eisenstant, Russell A. "The Silent Killers of Strategy Implementation and Learning." **Sloan Management Review.** 41, 4, Summer 2000 : pp.29-40.

Bradley, Stephen P., Hausman, Jerry A. and Nolan, Richard L. **Globalization, technology, and competition : the competition : the fusion of computers and telecommunications in the 1990s.** Boston, Mass. : Harvard Business School Press, 1993.

Brancheau, James C. and Wetherbe, James C. "Key issues in information systems management." **MIS Quarterly.** 11, 1987 : pp.23-45.

Chakravarthu, B. "A new strategy framework for coping with turbulence." **Sloan Management Review.** 38, 2, 1997 : pp.69-82.

Dawar, N. and Frost, T. "Competing with giants : survival strategies for local companies in emerging markets." **Harvard Business Review.** 77, 2, 1999 : pp.119-129

Day, G. S. and D. J. **Wharton on dynamic competitive strategy.** New York : John Wiley & Sons, 1997.

Dickson, Gary W. and others. "Key information systems issues for the 1980's." **MIS Quarterly.** 8' 1984 : pp. 135-139.

_____. **Managing for the Future.** New York : Truman Talley Books, 1992.

Hammer, G. and Prahalad, C.K. **Competing for the Future.** Boston, Mass : Harvard Business School Press, 1994.

Hammer, M. and James C. **Re-engineering the corporation.** London : Nicholas Brealey Publishing, 1993.

Hesselbein, F., Goldsmith, M. and Beckhard. **The Organization of the Future.** San Francisco: Jossey-Bass, 1997.

Kaplan, R. S. and Norton, David P. **The Balanced Scorecard.** Boston, Mass : Harvard Business School Press, 1996.

_____. **The Strategy-Focused Organization.** Boston, Mass : Harvard Business School Press, 2001.

Marchand, Donald A., Kettinger, William J. and Rollins, John D. "Information Orientation : People, Technology and the Bottom Line." **Sloan Management Review.** 41, 2000 : pp.69-80.

"Measures the Matter." **Ernst & Young.** 9; 1998 : pp.21-34.

Niederman, Fred, Brancheau, James C. and Wetherbe, James C. "Information Systems Management Issues for the 1990's." **MIS Quarterly.** 15, 1991 : pp.475-495.

Nonaka, Ikujiro. "The Knowledge-Creating Company." **Harvard Business Review.** 69, 6, 1991 : pp.67-89.

Peters, Michael E. **Competitive Advantage.** New York : The Free Press, 1985.

_____. **On Competition.** Boston, Mass : Harvard Business School Press, 1998.

Saaty, Thomas L. **Decision Making for Leaders.** Pittsburgh: RWS Publications, 1999.

Waterman, R. H. "Structure is not organization." **The Journal of Business Strategy.** 3, 2, 1982 : pp.14-26.

Watson, Richard T. and Brancheau, James C. "Key issues in information systems management." **Information and Management.** 20, 1991 : pp.213-223.

Wheelen, Thomas L. and Hunger. J.D. **Strategic Management.** New York: Addison Wesley, 1998.