

Full Length Research Paper

Environmental scanning and performance: A study of Iranian automobile parts manufacturers

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This paper is aimed to gain a better understanding of the relationship between environmental scanning and performance. A quantitative, non-experimental, and descriptive-analytic questionnaire survey design was used in this study. A random sample was drawn from members of Iranian Automobile Parts Manufactures Association (IAPMA). The results of stepwise regression analysis indicated that scanning competitors environment is the major and the only factor that affects performance. Thus, parts manufacturing companies can focus deeply on the competitors' environment to improve their performance.

Key words: Environmental scanning, performance, parts manufacturing companies.

INTRODUCTION

With a 50 trillion Rial fiscal circulation, Iranian automobile parts industry provides at present, 80% of the parts of the cars produced in the country. It is noteworthy that export of 10 billion dollar worth for a period of ten years has been projected (IAPMA, 2008). The parts manufacturing industry has to improve its organizational performance and enter international markets to make Iranian car industry competitive in the world market. As a result, presence in international markets needs elements like strategic planning, competitiveness of the companies, and identifying potential changes signs in the environment.

Success in today's turbulent business environment depends, to a large extent, on the ability of firms to gather and process information and the amount of relevant information used in the planning process (Temtime, 2004). The value of relevant information is enhanced by the firms. Also, competitiveness of the companies depends on the ability to scan the environment and adapt

to their environment; consequently, this adaptability that is based on the information acquired through environmental scanning is a veritable tool for securing competitive advantage (Pashardis, 1996). Environmental scanning on the other hand is an essential phase in the organizational strategic planning (Yunggar, 2005). There is a general understanding among strategic management scholars that environmental scanning constitutes a preliminary step toward an effective strategy formulation process (Angriawan and Abebe, 2011).

Nowadays, many companies have realized that information is a precious part of their property. Daft et al. (1988) believe that organizational action is a result of data gathering and interpreting. Environmental scanning plays a prominent role in strategic changes through provision of information (Hitt et al., 2007).

Through environmental scanning, companies explore signs of changes in the environment, potential or currently happening (Robbins, 1987). To respond smartly against events, organization needs to be sensitive to the environment and develop an understanding of environment through environmental scanning.

Gathering up-to-date data will reveal existing opportunities to organizations, however, enormous

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information mass can constitute threat for companies. Because companies that scan the environment too vigorously could be drowned in the information and experience information overload, thus, they may only respond reactively.

This study provides a better understanding of the relationship between environmental scanning and performance. It explores the environmental factors affecting companies performance, so the parts manufacturing companies will be better guided to gather information in the environmental scanning process that, given the environmental situation of Iran, have an important effect on the performance of the company. Also, it must be stressed that in most of the previous studies, one or two indicators of performance have been taken into consideration but in this study, more indicators have been used.

LITERATURE REVIEW

Environment has been defined as "composed of those institutions or forces that affect the performance of the organization but over which the organization has little or no direct control" (Robbins, 1987: 149). Environment is divided into two major areas; societal and task environments. Societal environment refers to those forces affecting long term decisions of organization rather than short term. Societal environment is divided into four categories including economic environment (elements like interest rates, money supply, inflation rates, and gross domestic product), technological environment (elements like product innovations, application of knowledge, new production processes), political legal environment (elements like tax laws, foreign trade regulations, stability of governments), and sociocultural environment (elements like career expectations, lifestyle changes, population growth rate). Task environment comprises factors affecting the company directly such as competitors, consumers, employees, workers unions and suppliers' factors.

Hanger and Wheelen (2000) believe both task and societal environments should be supervised to detect strategic elements which play an important role in success or failure of the company. To study the environment, a means called environmental scanning is used. Thompson (1997) believe environmental scanning includes studying and interpreting social, economic, political, ecological and technological events to detect processes and situations that can turn to influential forces. In other words, environmental scanning means acquisition and use of information about trends and events in an organization's external environment, the knowledge that would help management in planning organization's future (Wei, 1999). Synder (1981) defines environmental scanning as supervision, assessment and information impartation with managers. It has also been

defined as assessing the societal environment and task environment to identify trends, threats and opportunities as a base for formulating strategies (Harrison and Johon, 1998).

Given the afore definitions, one can see the environmental scanning output process is identifying environmental opportunities and threats. Opportunities and threats mean economic, social, cultural, and technological trends and events having a major impact on the organization (David, 1999). Opportunity refers to situations in which gaining profit is very probable and threat means negative situation in which damage is very probable (Kumar, 2001).

It is worthy of note that although there are similarities between marketing research and environmental scanning, they are two separate concepts. Marketing research starts normally with determining the objectives but environmental scanning explores the environment like a radar. Environmental scanning is a process to gather data but marketing research is a process toward pre-determined aims. Moreover environmental scanning is not limited to marketing decisions but helps in other managerial tasks as well (Decker et al., 2005).

Jain (2007) believes there are four levels for environmental scanning. In the level one, the environment is considered to be unpredictable. Nothing can be done other than to accept impact as it occurs. The management considers all the information to be the same and makes no separation between strategic and non-strategic information. In the level two, the management considers some area for precise supervision. However, there is no formal system for scanning. Sensitivity of the management to information on specific areas does not mean this information will be taken under consideration in strategy formulation. Environmental scanning is thought of as an important task in the level three and there is much effort to scan the environment to gather information in different areas. The managers have fully recognized the importance of the environment. However, the scanning takes place un-systematically and without any prior planning. Everything in the environment is considered important and the company is swamped with information. If leader of industry makes a strategic change, a company in the level three will soon react and follow the leader. As soon as the leading company in the industry makes a strategic change, the company in the level three is quick to react, following the footsteps of the leader. In the level four, the scanning takes place with enthusiasm and efforts are structured. The environment is studied according to a proper methodology and information disseminated among key members to be considered in the strategy.

Environment scanning takes place in three ways: temporary or irregular which includes a general short term study. In the regular way, the scanning is based on a regular timing plan (for example, once a year or once a month). But in the continuous way, the data is gathered

systematically and continuously, and broadly scrutinized and analyzed (Jean et al., 2007).

Much research has been done about environment scanning and its effect. The results show the direct relation between environmental scanning and profitability growth, new product development (NPD), success and better adaptation and interchange with complex insecure environments. In a research about environmental scanning and new product development, Ngamkroekjoti et al. (2005) shows that SME's who did environmental scanning were more successful in new product development. Suwannaporn and Speece (2003) investigated the relation between environmental scanning and new product development success in the large food companies and found similar results. Elenkov (1997) in his investigation of relation between environmental scanning and new product development and profitability found that there is a significant relation between environmental scanning and new product development and profitability. In another research in hotel industry, it was shown that the more environmental scanning there was, the higher revenues the hotel could make (Michael et al., 1994).

In a study, ROA's have been taken as performance criterion and managers of high-performing companies were compared with managers of low-performing companies. This study concluded that managers of high-performing companies study the environment more broadly and more frequently than their counterparts in low-performing companies (Daft et al., 1988). Also, as Analoui and Karami (2002) state, there is no relation between the size of the company and environmental scanning effectiveness. Other findings also revealed that organizational size was not necessarily a determinant for effectiveness of environmental scanning (Analoui, 2000).

Jennings and Lumpkin (1992) realized that companies following a differentiation strategy look for opportunities in environmental scanning; but companies following a low cost strategy search to detect threats. However, as this study investigated only one industry, the generalization of its results is limited.

At the same time, environmental scanning is faced with criticism. The most important criticism ever projected toward it is the difficulty of linking its results to what affects the company precisely. Moreover, conducting environmental scanning is not alone sufficient for performance amelioration. It is necessary to use scanned information effectively and to merge scanning results with strategy, rather than merely scanning the environment (Wei, 1999). The lack of strategic thinking, gathering too much information and drowning in it, mere concentration on what it is instead of on what it may become, not scanning some important information sources, the difficulty of interpreting the gathered information, managers being too busy with internal operations and issues, scattered scanning efforts, insufficient analysis, only studying obstacles and limitations, not gathering

diverse information sources and different viewpoints, not using different lenses (different social, economic, cultural, technological, political, short term, long term, medium term lenses) are all some of the problems existing in the field of environmental scanning (Jennings and Lumpkin, 1992).

As mentioned, environmental scanning can drown companies in information and have bad effects. So, does scanning all environments affect companies' performance? Environments whose scanning affects companies' performance should be determined. Thus, the main question of this study is: will scanning environmental forces ameliorate parts manufacturing companies' performance better, given the Iranian automobile parts manufacturing industry?

RESEARCH METHODOLOGY

A quantitative, non-experimental, and descriptive-analytic survey design was used in this study. In this research, simple random sampling was used in which every sampling unit in the target population has an equal chance of being selected (Shiu et al., 2009). The sample was drawn from members of Iranian Automobile Collection and Parts Manufacturing Association (IACPMA) which are located in Tehran province. Tehran province has the highest number of parts manufacturing companies in Iran. As a more developing province in Iran, the results found will offer implications for the other areas in Iran as well. Since IACPMA has 377 members in Tehran, 100 questionnaires were distributed among CEO's of parts manufacturing companies of which 82 were finally recollected.

The questionnaire was developed on the basis of a literature review and expert consultation. In most previous studies, one or two indicators of performance have been taken into consideration (profitability and new product development). In this study, after consulting with six experts of parts manufacturing industry and strategy specialists, company performance was measured with eight indicators, including: new investment success, success in implementing programs (implementation in expected period and expenditure), adaptability with unpredicted changes, new product development success, success in finding good market, success in finding good wholesale buyers or distributors, success in good suppliers and profitability growth. Respondents were asked to specify the increase of each indicator for their company in the past 3 to 5 years on a Likert-type scale.

In the second part of the questionnaire, Wheelen and Hanger's (2000) categories have been considered and the following six environments were taken to be used in the questionnaire after consulting several parts manufacturing elites and strategic experts. Each of the environmental variables was operationalized using a multi-item scale. The respondents were asked to specify the extent to which each of the environment items is scanned. Environmental variables were measured with following items:

- i. The economic environment: inflation rate trend, gross domestic product trend, currency fluctuations, central bank policies and that of other banks in granting loans, policies of the ministry of economy, consumer purchasing power, interest rate, and economic news.
- ii. Political legal environment: policies of the ministries and the related organizations, customs tariff rate changes for the related goods, viewpoints of the leader and of the president, foreign policies of the Islamic Republic of Iran, evolutions of the neighboring countries, labor laws and policies of the Ministry of Labor.

Table 1. Reliability of data.

Assessment	Economic	Political legal	Sociocultural	Technological	Competitors	Suppliers	Performance
Cronbach's alpha	0.76	0.71	0.76	0.70	0.73	0.74	0.70

Table 2. Results of stepwise regression.

Factor	β	R	R ²	t	Sig.
Competitors environment	0.532	0.53	0.29	3.873	0.000

Table 3. Excluded variables.

Variable	Beta	t	Sig.
Economic	0.82	0.582	0.564
Political legal	0.130	0.882	0.563
Sociocultural	0.065	0.469	0.384
Technological	-0.037	-0.228	0.642
Suppliers	0.031	0.204	0.839

iii. Sociocultural environment: attitudes of the customers toward quality, age distribution of the population in the society, birth rate in the society, society's attitudes towards your industry, customer buying habits, ethnic diversity, religion diversity, higher education and training, primary and tertiary education enrollment rate.

iv. Technological environment: new production processes, suppliers' new products, any kind of technology affecting the company.

v. Competitors environment: present and new products of the competitors, strategies of the main competitors, importing similar goods from abroad, advertising campaigns of the competitors, and substitutes products.

vi. Suppliers environment: raw material price changes, energy cost changes, human resources expenditure changes (wage and income), suppliers' strategies, and distributors' strategies.

Although, for developing the questionnaire, we employed the criteria were introduced in previous studies and literature, 3 university professors and 3 parts manufacturing experts were interviewed and the content validity of the questionnaire after some wording correction was confirmed by them.

The data were tested for reliability using Cronbach's alpha to assess reliability. Results of the reliability test show that the data collected from the survey are reliable and suitable for further analysis (Table1).

RESULTS

To answer the question as to which environment may better predict automobile parts manufacturing companies performance given the situation of the automobile parts manufacturing industry of Iran, stepwise regression analysis was used. This is one of a number of approaches that can be used in deciding how and whether independent variables should be entered in the

equation and is probably the most commonly used approach. It means that each variable is entered according to the magnitude of its contribution to R². In other words, variables are entered in steps, with the variable that exhibits the highest correlation with the dependent variable. As each factor is measured in several questions, the average scores of them are calculated and used.

The results indicate that scanning competitor's environment is the major and only factor that affects the performance, with a marginal contribution of 29 % of the variance. Table 2 shows the result.

The SPSS examination output (Table 3) shows that the variables were removed from the equation because they failed to meet the program's statistical criteria for inclusion. They did not contribute to R² and were therefore not included in the equation.

DISCUSSION

To realize its goals, Iranian automobile parts manufacturing industry has to be competitive. Competitiveness of the companies in the international context depends on their power to scan the environment and adapt their strategies with it. This adaptability is based on information gained through environmental scanning. Environmental scanning provides managers with useful information to adapt the products and services with market needs. Companies determine thus the signs of the potential changes in the environment and study the changes being formed through environmental scanning. The study discussed in this paper investigated the relationship between environmental scanning and performance. It added to the current body of knowledge through new evidence. According to the results, scanning competitors' environment is the major and only factor that influences the performance. Also, the results of this study show that scanning of economic, political, legal, sociocultural, technological, and suppliers' environments do not have significant influence on performance. It should be pointed out that these findings are possibly attributable to special business environment of Iranian Automobile Parts Manufacturers. For practitioners, the finding should be interesting and suggestive.

Conclusion

The results of this research show that Iranian parts manufacturing companies can focus deeply on the

competitor's environment to improve their performance, instead of gathering excessive information. This does not mean they should ignore other environmental information; but that the concentration of the company should be on analyzing the competitor's environment information. This increases the competitive power of the company to show up in the global market. Also, it should be kept in mind that too much information gathered from the environment may confuse the company and may act as a threat.

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Like all social science research, our study suffers from limitations. The main limitation is that this study was conducted in automobile parts industry. Given the differences between industries, future researches are advised to investigate other industries.

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