How chief executives' perception of the environment impacts on company performance

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Abstract *Environmental scanning is a key factor to sustained competitive advantage of the firm and it is becoming increasingly important in small and medium enterprises (SMEs) theory and practice. Not surprisingly, it is widely viewed as the first step in the process of strategic management. The main debate in strategy and environment management is nowadays concerned with the primary importance of environmental scanning to strategy formulation and implementation. Moreover, effective scanning of the environment is seen as necessary to the successful alignment of competitive strategies with environmental requirements and the achievement of outstanding performance in SMEs. This paper explores the above relationship in the context of the British electrical and electronic industry. It is based on the empirical evidence and the findings of a survey of 132 chief executive officers (CEO) and their perception of environmental scanning and strategy in SMEs. It is concluded that there is a significant relationship between increasing the environmental scanning of the firm, and the success of the firm's performance in small and medium sized enterprises.*

Introduction

Strategies followed by business usually include a plan of action and policies intended to create a competitive advantage in the marketplace. Although much work has been undertaken to analyse and investigate strategy in large corporations, until recently there has been little concern with the environmental scanning in small- and medium-sized enterprises (SME) (Aram and Cowan, 1990; Foster, 1993; Lang *et al.*, 1997; Smith, 1998).

The notion that environmental scanning can be a key factor to sustained competitive advantage calls for the integration of business strategy and environment. Not surprisingly, environmental scanning is increasingly being widely viewed as the first step in the process linking strategy and environment. The main debate in strategy and environment is nowadays concerned with the primary importance of environmental scanning to strategy formulation and implementation (Walters, 1993). Moreover, effective scanning of the environment is seen as necessary to the successful alignment of competitive strategies with environmental requirements and the achievement of outstanding performance in SMEs. The above relationship has been the main focus of the study carried out in the British electrical and electronic industry.

This paper is based on the findings of a recent study into 132 CEOs' perception of the environmental scanning and firm performance. First the

literature on environmental scanning in SMEs will be reviewed. Second, the study, its scope, methodology and the nature of the data collected are outlined and the underlying methodological assumptions are dealt with. Then the main findings of the research are discussed in some detail and attention is paid to the demographic profile of the sample, environmental scanning and firm size, external factors within the industry, and firm performance. Finally, based on the above discussion, the salient conclusions are reached and pertinent implications for CEOs involved are explored.

Environmental scanning in SMEs

SMEs increase their chances of success through making a serious attempt to work through the strategic issues embedded in the strategic management model (Wheelen and Hunger, 1998). For SMEs the key point is to focus on what is important – the set of managerial decisions that determines the long-run performance (Korac-Kakabadse et al., 1998) of the firm. The review of the available literature shows that a number of models have been proposed for adopting strategic management in SMEs (Linneman, 1980; Green and Jones, 1982; Shuman and Seeger, 1986; Aram and Cowan, 1990; Foster, 1993; Berry, 1998; Beal, 2000). They all employed similar concepts and had a similar basis. Before an organisation can begin with the task of strategy formulation, it must scan its external environment to identify possible opportunities and threats and scrutinise its internal environment for strengths and weaknesses. It has been argued (Gable and Topol, 1987; Goldsmith, 1995) that analysis in strategic management context entails both external appraisal (often called environmental scanning) and self-examination (sometimes known as doing a strategic audit). Environmental scanning is the monitoring and evaluating of both the external and internal environment, and dissemination of the resulting information to strategists within the organisation. Thomas et al. (1993) have found that there is a positive relation between environmental scanning and the degree of profitability. Choo (1999) argues that environmental scanning is the acquisition and use of information about events, trends and relationships in an organisation's external environment, the knowledge of which would assist management in planning the organisation's future course of action. Organisations scan the environment in order to understand external forces of change so that they may develop effective responses that secure or improve their position in the future (Gable and Topol, 1987), to the extent that ultimately an organisation's ability to adapt to its outside environment depends on knowing and interpreting the external changes. In this way, environmental scanning constitutes a primary mode of organisational learning.

Most empirical studies on environmental scanning have focused on relationships between scanning behaviours (frequency, scope, sources used, and interest) and environmental conditions such as environmental uncertainty, perceived threats and perceived opportunities (Daft et al., 1988; Tyler et al., 1989; Sawyer, 1993; Lang et al., 1997), while some other studies investigated relationships between competitive strategies and environmental scanning (Tyler et al., 1989; Jennings and Lumpkin, 1992; Yasai-Ardekani and Nystrom,

1993; Bantel and Osborn, 1995). Tyler *et al.* (1989) in their investigation of the relationship between different environmental conditions and the executives' usage of different types of information sources when formulating competitive strategy, found that:

- high and low rich information sources were used less under highly changing, unpredictable environmental conditions than under stable, predictable conditions; and
- low rich information sources (income statements, memos or letters) were used more than high rich sources (face-to-face discussions with workers, customers, or suppliers) under stable, predictable conditions.

They also discovered that the executives in their 28 firms used more high rich information sources in formulating differentiation strategies than in formulating low cost strategies.

These results suggest that environmental conditions affect the type of sources (low rich versus high rich) used by executives in selecting a competitive strategy – that is, low cost leadership or differentiation. Jennings and Lumpkin (1992) argued that the types of information that CEOs seek varies according to their firm's competitive strategies. This implies that strategy can determine scanning behaviour as well as be affected by it. This perspective deviated from the traditional view posed by Design School proponents that environmental scanning and analysis are determinants of strategy rather than being the products of it (Mintzberg, 1994). Jennings and Lumpkin (1992) found support for their hypotheses that:

- firms following a differentiation strategy scanned their environments in search of opportunities; and
- firms following a low cost strategy looked for threats to their survival.

However, because the study included firms in only one industry, the generalization of the results is limited.

In a comprehensive study of the scanning systems of 179 small (50 employees) to large (more than 200,000 employees) manufacturing and service firms, the relationships (Yasai-Ardekani and Nystrom, 1993) examined included that between firms pursuing low cost leadership, and the scope and frequency with which they scanned their environments. Results indicated that firms with effective scanning systems pursuing low cost leadership (Korac-Kakabadse *et al.*, 1998) scanned their environments more frequently and more broadly than those firms with ineffective scanning systems pursuing the same competitive strategy. Furthermore, the findings suggest that firms employing effective scanning systems achieve alignment between strategy and environment.

Niv *et al.* (1998), in their recent study interviewed CEOs in 46 firms in relation to the pattern of the environmental scanning that they regularly performed. The results were analysed to determine the degree of use of information systems by CEOs in their strategic decision making and the link with the firm's success in introducing new products. The study indicates significant differences in the level of environmental scanning and in the use of

information systems between firms that were more successful in introducing new products into the market and those that were less so. Differences were found to be present in the patterns and the frequency of conducting environmental scanning, in the number of computerized applications, and in the number of advanced marketing information systems (Niv *et al.*, 1998).

Simultaneously, Sven (1998) presented his work based on cognitive psychology, psychiatry, and organisation theory. His empirical findings from four Swedish organisations lead to the development of spontaneous environmental scanning. It covers the cognitive base for this behaviour and how it is influenced by organisational factors. The purpose of the theory is to form a foundation for establishing organized environmental scanning. Other findings also indicated that organisational size was not necessarily a determinant in so far as effectiveness of scanning systems was concerned (Analoui, 2000). That is, small as well as medium sized and large organisations are able to develop effective scanning systems (Yasai-Ardekani and Nystrom, 1993; Beal, 2000).

Some of Beal's (2000) findings appear to be relevant to the present study of SMEs in the electrical and electronic industry; it would therefore be useful to briefly review them. Beal (2000) provides three plausible explanations for his findings on SME and environmental scanning.

First, the set of questions used to measure scanning frequency may lack content validity. Although the frequency of scanning indices constructed were similar to those adopted by Hambrick (1981) and Fahr *et al.* (1984), which resulted in reliable indices (Cronbach alphas ranged from 0.74 to 0.87), the indices themselves may not have been content valid. While determining content validity is invariably judgmental, Beal believes that the set of questions designed to capture CEOs' frequency of scanning provide adequate coverage of the various environmental sectors scanned such as competitors, customers, suppliers, manufacturing and product development technology, economies (local, state, and national).

CEOs of SMEs in the manufacturing sector are constrained by their involvement in the firms' daily operations and, therefore, may not have sufficient time for frequent scanning of their external environments. Consequently, environmental scanning of the sectors with most impact on firm performance and the formulation/implementation of competitive strategy occurs relatively infrequently (Korac-Kakabadse and Korac-Kakabadse, 1997). This finding provides the most plausible explanation for the non-significant relationships found between frequency of scanning and external alignment.

Third, the frequency with which CEOs of SMEs scan their environments may not be critical to aligning their firms' competitive strategies with the stage of the industry life cycle in which the firms compete. Other factors such as scope of scanning, accurate assessment of opportunities and threats, and effective use of competitive information may be the key.

It has been argued (Miller and Cardinal, 1994; Berry, 1998) that the entrepreneurs' strategic awareness and their perception of the benefits arising from environmental scanning within the SME will act as significant

determinant of the success and survival of the SME in the long term. Berry (1998, p. 464) in her recent research concluded that:

> ... the technical entrepreneur's strategic awareness will determine the nature of planning used within the SME. The strategic awareness of the entrepreneur will be heightened by exposure to strategic management techniques within another organisation prior to business start-up or alternatively through contact with individuals who are aware of the benefits strategic planning may bring to the business.

As a final point, no strategic planning will be implemented in SMEs where the senior managers or entrepreneurs exhibit a lack of strategic awareness.

Scope of the study

The present study examines the senior managers' views and their perception of environmental scanning in relation to the firm's performance in SME sector. Using Storey's (1994) definition, the SME sector is disaggregated into three components:

(1) Micro-enterprises: the firms with between 0 and 9 employees.

(2) Small enterprises: the firms with 10 to 99 employees.

(3) Medium enterprises: the firms with 100 to 499 employees.

The SMEs in the study were located by using British Standard Industrial Classification (SIC). The SIC for the UK covers the provision of all goods and services and is compiled in accordance with internationally approved standards. In order to frame the sample, two different registers were used:

(1) *Kompass*, Vols 1 and 2 (The Authority of British Industry in association with the Confederation of British Industry 1998/1999a, b); and

(2) *Smaller UK Companies* (Financial Times Information Ltd, 1998).

In general 508 manufacturing companies, which employed less than 500 employees with less than £50 million annual turnover in the last financial year, were selected. These two criteria have been used widely in literature in defining the SMEs (Hertz, 1982; Preston *et al.*, 1986; Storey, 1994; Smith, 1998). The main research instrument was mail questionnaire. However, a sub-sample of 12 managing directors have also been interviewed. Data were collected via mail surveys from 132 (for a 27 percent response rate) CEOs of the SMEs of the electrical and electronic industry in the UK. A personalised cover letter that explained the purpose of the study and provided assurances regarding the confidentiality of collected data accompanied each questionnaire. Managing directors were urged to personally participate in the survey. In order to minimise response bias, the participants were also provided with pre-addressed envelopes to enable them to return the completed questionnaires directly to the researchers.

The first section of the questionnaire investigates the demographic characteristics of respondents. Respondents were asked about their age, sex, and their status within the organisation, experience, education, and functional background. Age is highly correlated with total work experience, organisational tenure, and industry tenure. The second section of the

questionnaire investigated the methods used by the firms and the extent of environmental scanning employed on both the internal and external factors affecting the business. The aim is to develop a picture of the CEOs' degree of awareness of the environment in which their firms operate. The external environment of the firm consists of two distinguished societal and task environment variables. Societal environment include economic, technological, socio-cultural, and political legal variables, while task environment includes industry force variables. In contrast, the internal environment of the firm consists of structure, culture, and resource variables. For instance, each respondent was asked to indicate to what extent external variables seem to drive the company's strategy. The company performance variable was measured by self-reported ratings of the respondents concerning the indicators of achievement of the intended outcomes, financial performance, and implementation of plans within the expected time and predicted cost. A five-point Likert-type scale ranging from 1 (low success) to 5 (high success) was applied. This method of self-reporting rating of performance is widely used in SMEs' strategy research (Gable and Topol, 1987; Rangone, 1999; Analoui, 2000).

Findings and discussion
Demographic profile of the sample
Typically, the studied companies were operating in the high tech electrical and electronic industry. Completed questionnaires were received from 132 SMEs for a response rate of 27 percent. Table I provides a summary of the demographic profile of the respondents. The size of the companies (mean = 2.27, SD = 0.56) varied from micro ($n = 8$ (7 percent)) to small ($n = 81$ (61 percent)) and medium sized ($n = 43$ (32 percent)) based on the number of employees and the amount of annual turnover. The results showed that the majority of companies ($n = 93$ (70 percent)) were established by more than two founders, whereas only 30 percent of the studied companies ($n = 39$) were established by one or two founders. This also concurs with the findings of Berry (1998) that successful small businesses are founded by a team of two to five people rather than by an individual. We measured the firm size by amount of annual turnover of the firms as well as number of their employees. The amount of the annual turnover of the firms (mean = 1.95, SD = 1.14) varied from £1.25 million to £49.6 million. As shown in Table I, 63 (47.7 percent) companies studied had a turnover level of £10 million (25.8 percent) ($n = 34$) up to £20 million. Also there were 17 companies with an annual turnover of between £20 and £29 million which accounted for a 12.9 percent response rate. The findings shows that only 14 of the companies had turnovers of between £30 and £39 million (10.9 percent), and a few ranged between £40 and £50 million (3 percent).

Building on the premises of strategy research, researchers argue that respondents' observable characteristics serve as indicators of the mental models used by executives during strategy formulation and implementation (Smith and Fleck, 1987; Hambrick and Mason, 1984). Thus, the managerial characteristics and personality of the CEOs of the companies, such as age,

	Percentage
Firm size (number of employees)	
Micro-enterprises (1-9)	7.0
Small-enterprises (10-99)	61.0
Medium-enterprises (100-499)	32.0
Age of the respondents	
30 or less to 39	29.5
40 to 49	46.2
50 to 59 or more	24.2
Respondent's sex	
Male	92.4
Female	7.6
Respondent's years of work experiences	
9 or less	27.3
10-19	47.7
20-29	16.7
30-39	5.3
Annual turnover of the firm (million pounds)	
9 or less	47.7
10-19	25.8
20-29	12.9
30-39	10.9
40-<50	3.0
Respondent's educational level	
Up to A level	50.8
Bachelor degree	22.7
Master degree	22.12
PhD	5.3
Respondent's educational background	
Engineering	34.0
Management	26.0
Science	11.0
Technology	8.0
General	21.0

Table I.
Demographic profile of
the respondents

Source: Survey questionnaire

gender, management training, educational background, and functional
background formed the focus in one section of the study. The results show that
respondents' age (mean = 44, SD = 8) ranged from 32 to maximum 65. Nearly
one-third (n = 39 (29.5 percent)) reported their age to be between 30 and 39,
while the majority of respondents (n = 61 (46.2 percent)) were apparently
between 40 and 49 years old. The remainder (n = 32 (24.2 percent)) reported
their age between 50 to 59 or more years old. The respondents' work experience
(mean = 15.91, SD = 7.99) range was 34 years. In other words, the minimum
experience was eight years, while the maximum was reported to be 42 years.
The respondents were categorized into five groups. The findings show that 36
of the respondents (27.3 percent) had less than ten years work experiences,

while many of the respondents ($n = 63$ (47.7 percent)) fall in the group ranged from 10-19 years of work experience. Although 22 (16.7 percent) of the respondents reported that they had between 20 and 29 years of work experience, only seven people (5.3 percent) reported their work experience to be between 30 and 39 years. Only two (1.5 percent) CEOs reported that they had more than 40 years of work experience.

Regarding the gender, the majority of the respondents ($n = 122$ (92.4 percent)) were male and only 7.6 percent of the respondents ($n = 10$) were female. This result reveals that most of the top management positions and especially the executive positions in the electrical and electronic industry seemed to be occupied by men rather than women. Another characteristic of the CEOs is their education.

As noted by Lang *et al.* (1997), executives with formal education in, for example, engineering are more likely to approach a problem solving situation mechanistically, thus developing specific approaches and mental models for tackling the task of strategy formulation. The educational level of respondents was categorized to four groups including: up to A level, undergraduate, Masters degree, and PhD or equivalent degree. Nearly half of respondents ($n = 67$ (50.8 percent)) reported that they had undergraduate degrees in different areas such as engineering, management, and sciences. Although 30 (22.7 percent) of the respondents reported their education to be up to A level, in contrast 26.5 percent ($n = 35$) of respondents indicated that they possessed a postgraduate degree. The postgraduate level of respondents include Masters degree ($n = 28$ (21.2 percent)), and PhD or equivalent degree ($n = 7$ (5.3 percent)).

The CEOs came from different backgrounds. These included engineering, management, science, technology, and general. The engineering discipline seemed to be more prevalent ($n = 45$ (34 percent)). In contrast, those with a technology background seem to form only 7.6 percent ($n = 10$) of the total. One of the interesting findings of this research is that about 21.2 percent of the respondents ($n = 28$) did not have any higher education degree. It was also discovered that 34 of the CEOs (25.8 percent) reported that they had degrees in management and business studies.

Environmental analysis and firm size
In the second part of the questionnaire we aimed to examine the CEOs' perception of environmental scanning as the first step in formulating the strategic management process in SMEs. Basically, organizations scan the environment in order to understand external forces of change so that they may develop effective responses that may secure or improve their market positions in the future. The extent of an organization's ability (Korac-Kakabadse *et al.*, 1995) to adapt to its outside environment mainly depends on knowing and interpreting the external changes that are taking place. As noted earlier, environmental scanning constitutes a primary mode of organizational learning.

The CEOs were asked to indicate whether or not they were engaged in formal or informal environmental scanning in their organizations. Whilst the

majority of the respondents ($n = 125$ (94 percent)) indicated that they were generally involved in environmental scanning for the purpose of formulating their firm's business strategies, only 118 firms (89 percent) claimed to use formal environmental analysis. Accordingly, the respondents were asked to rate the importance of formal or informal environmental scanning within their organizations. The responses were varied in terms of the size of organizations. Table II shows the variation in the managerial perception of the CEOs of the importance of environmental analysis within the studied firms. Some 2.97 percent of the firms considered environmental analysis as not an important factor in the firm's strategy formulation. In contrast, some 50.08 percent of the respondents described the environmental analysis as a very important and essential factor in their firms' strategic management process. The findings seem to indicate that the perception concerning the importance of environmental analysis seems to increase as firms get bigger.

Almost all managers in medium sized enterprises ($n = 40$ (out of 43)) felt that, environmental analysis is important and therefore it forms an essential factor in developing their business strategy. In contrast, only one micro-enterprise CEO ($n = 1$ (out of 8)) rated environmental analysis as a very important factor. Simultaneously, a slightly lower proportion of the smaller enterprises than the medium sized ones ($n = 26$ (out of 81)) felt that environmental analysis must be considered as very important in developing business strategies. Supporting this result Spearman-rank order correlation analysis (see Table III) shows that a strong and significant correlation ($\gamma = 0.71, p < 0.01$) exists between environmental analysis and firm size. Managers from medium rather than small and micro firms believe that the firm should analyse external factors before formulating business strategies. It was also discovered that correlation between managers' strategic awareness and firm size was positive and significant ($\gamma = 0.68, p < 0.01$).

In order to further support the data collected through the postal questionnaire, a sub-sample of managing directors of the firms were also

Extent of importance of environmental analysis	Size of organization by number of employees			
	Micro enterprises	Small enterprises	Medium enterprises	Total (%)
Not important	3 (2.27)	1 (0.70)	0 (0.00)	2.97
Limited importance	2 (1.53)	16 (12.12)	0 (0.00)	13.65
Important	2 (1.53)	38 (28.78)	3 (2.27)	32.58
Very important	1 (0.70)	21 (16.11)	12 (9.09)	25.81
Essential	0 (0.00)	5 (3.78)	28 (21.21)	24.99
Total	8	81	43	132 (100)

Table II.
Environmental analysis by organization size

Note: Figures in parentheses are percentages

Source: Survey questionnaire

Variables	Mean	SD	1	2	3	4	5	6	7	8	9
Formal environmental scanning	1.72	0.62	1								
Managers' strategic awareness	3.66	1.11	0.58**	1							
Technological changes	3.84	1.03	0.32	0.39	1						
Strategies of competitors	3.76	1.07	0.01	0.28	0.61	1					
Economical trends	3.55	1.12	0.17	0.33	0.49	0.18	1				
Social and cultural trends	3.01	1.15	0.38	0.52	0.33	0.14	0.44	1			
Political and legal developments	2.82	1.15	0.23	0.51*	0.26	0.38	0.32	0.21	1		
Firm size	2.27	0.56	0.71**	0.68**	-0.11	0.28	0.31	0.15	0.41*	1	
Performance	3.73	1.39	0.82**	0.56**	0.31	0.08	0.25	0.18	0.12	0.16	1

Notes:
* Correlation is significant at the 0.05 level (two-tailed); ** Correlation is significant at the 0.01 level (two-tailed)

Table III.
Environmental
scanning and firm
performance non-
parametric correlation
matrix

interviewed. It was learnt that, managing directors believe that their awareness of environment plays a significant role in the strategy formulation process. For instance, one of the managing directors belonging to a medium sized enterprise indicated that:

> . . . it is a golden opportunity to take the blinders off and look at external factors in business to assess the impact of these environmental factors on your business in particular, to view your firm as part of an interconnected business ecosystem (CEO).

Another respondent made a similar point:

> We worry about things nowadays that we never used to worry about before. Think about the technological changes in the industry. Now we worry about it. Environmental issues like technology are important external factors that influence firm strategy (managing director).

Priority of external factors within the industry
Theoretically, through environmental analysis, the key economic, political, social, and technological trends can be correlated and identified with opportunities, strengths, and threats and weaknesses in order to determine the necessary strategies for the future development of the firm. Senior managers cannot build an effective strategic plan if they do not know where the firm has been or where it is likely to go. In this regard, the respondents were asked to indicate to what extent internal and external environment factors affect their firm's strategy. A five-point Likert scale was applied for these questions in this section. As for the reliability of the data, by calculating alpha (α) coefficient, it was found that there was internal consistency between the responses in each group (see Table IV). The findings show that the respondents ranked the degree of impacts of environmental factors on their firm's decision-making process as follows. First priority: technological changes (Mean = 3.84, SD = 1.03); second priority: competitors (mean = 3.76, SD = 1.07); 3rd priority: economic trends (mean = 3.55, SD = 1.12); fourth priority: social and cultural trends (mean = 3.01, SD = 1.15); and finally fifth priority: political and legal developments (mean = 2.82, SD = 1.15) (see Table IV). In other words, 91 percent of the respondents believed that technological change of the environment impacts the strategy decision-making process within their organizations.

In contrast, political and legal developments (45 percent) seem to affect the strategic decision-making process far less than the other factors. Subsequently,

Environmental factors	α^a	Priority	Percentage	Mean	SD
Technological changes	0.83	1	91	3.84	1.03
Competitors	0.79	2	83	3.76	1.07
Economic trends	0.68	3	64	3.55	1.12
Social and cultural trends	0.76	4	57	3.01	1.15
Political and legal developments	0.62	5	45	2.82	1.15

Note: [a] Internal consistency within each group

Table IV.
Impact of environmental factors on the firm's decision-making process

the impact of the strategies employed by their competitors, economic trends, and social and cultural trends were 83 percent, 64 percent and 57 percent respectively. This finding suggests that the strategists in the electrical and electronic industry, in their decision making, should consider the technological changes more than other environmental factors. Generally speaking, this result has been confirmed by finding of managerial perception of importance of environmental factors within the industry on the firm's strategy formulation and implementation. Apart from assessing the general environmental factors on the process of strategy formulation in the studied companies, we investigated the effects of the factors within the industry too. To do this, Porter's five-force model (Porter, 1980) has been applied.

The result of the analysis shows that five external forces including bargaining power of customers (mean = 3.71, SD = 0.88), bargaining power of suppliers (mean = 3.09, SD = 0.91), rivalry among existing firms (mean = 3.73, SD = 0.99), threat of new entrants (mean = 3.12, SD = 0.95) and finally threat of substitute products (mean = 3.32, SD = 1.12) tend to influence the strategy formulation in the electrical and electronic industry. Accordingly, the respondents were asked to rank the above factors based on their perceived importance on the firm's strategy formulation process. We found that the bargaining power of customers (62.8 percent) seemed to be regarded as the most important factor. Especially, rivalry among existing firms (62.1 percent) formed the second and the threat of substitute new products (40.7 percent) formed the third priority. In contrast, the threat of new entrants (28.1 percent) and the bargaining power of suppliers (25 percent) did not seem to strongly influence the formulation of strategy in the targeted firms.

Environmental scanning and firm performance

As noted earlier, the study relies on perceptual measures of the firm's performance. In order to measure the firm's performance (Korac-Kakabadse and Korac-Kakabadse, 1997), respondents were asked to indicate using a five-point scale, ranging from 1 = very unimportant to 5 = very important, the degree of importance they attached to each of financial performance indicators. This method has been widely used in previous studies (Beal, 2000). The respondents were further asked to indicate the extent of their satisfaction with their firm's performance along each of the performance indicators.

In order to analyse the impact of environmental scanning on the firm's performance, firms that responded to our survey were ranked into three categories based on their performance namely, high, moderate, and low performance. This method has already been used largely in similar studies (for example, Campbell, 1993; Smith, 1998; O'Gorman and Doran, 1999). Of 132 firms involved in the survey, 52 were ranked in the top performing group (high performance), 41 in moderate and 39 were ranked in the lowest performing group (low performance). We excluded the firms with moderate performance and consequently compared the percentage of the high-performer and low-performer firms in terms of environmental scanning factors (see Table V).

Factors	Low performance firms[a] (%)	High performance firms[b] (%)
Having formal scanning system	67	92
The entrepreneurs' awareness	82	84
Environmental scanning frequency	73	79
Importance of environmental scanning	81	87

Notes:
[a] A percentage value indicates the percentage of the low performance firms ($n = 39$) which included component in their mission statement.
[b] A percentage value indicates the percentage of the high performance firms ($n = 52$) which included component in their mission statement

Table V.
Environmental
scanning in high and
low performance firms

In this study, we examined CEOs' perceptions of importance of having formal environmental scanning on the firm's performance. The majority of respondents considered a formal scanning system as an essential factor in increasing the firm's performance ($n = 111$ (83.37 percent)). As shown in Table V, through the correlation analysis, it was discovered that there was a very strong and significant relationship between a firm's performance and having a formal scanning system ($\gamma = 0.82, p < 0.01$). It is, therefore, concluded that high performance firms seem to put more emphasis (92 percent) on a formal and co-ordinated scanning system. Successful SMEs stress the importance of environmental analysis in development of corporate strategy. In comparison, low performance firms tend to place less emphasis (67 percent) on the need for formal and high frequency of environmental scanning. Generally, the formal environmental scanning system significantly impacts upon the firm performance (see Table III). Not surprisingly, environmental scanning in high performance firms becomes increasingly sophisticated and forms a formal and explicit activity. Perhaps, because of the dynamic nature of the electrical and electronic industry (Young, 1985) the firms that have been targeted needed to develop a long-term scanning system.

We examined the role of CEOs with respect to the environmental scanning of the firms. It has been found that the strategic awareness of the CEO is important in a firm's performance ($\gamma = 0.56, p < 0.01$). Where the CEO exhibits a lack of strategic awareness, the firm performance seems to be low. Although the firm may survive during the early stages of its life cycle based on the CEO's work experiences and technical skills, these will not be sufficient to sustain the firm during long-term growth stages. So regular environmental scanning is necessary and is needed to survive in the turbulent environment. As a result, the CEO's strategic awareness and their perception of the benefits arising from formal environmental scanning will be a significant determinant for the success and survival of the firm in the long run.

Conclusion and managerial implications
In this paper we have explored the CEOs' perceptions of environment scanning in small and medium sized enterprises. We attempted to shed light on the

importance and purposes of environmental scanning and its relationship with a firm's performance in SMEs in the electrical and electronic industry. The major managerial implications of this study are as follows.

Successful SMEs do analyse environmental factors in formulating business strategies. They stress the importance of environmental analysis in development of corporate strategy. In comparison, low performance firms put less emphasis on formal and high frequency of environmental scanning. Therefore, it is recommended to practitioners to consider environmental factors such as technological changes when developing their business strategies.

There are different benefits from having a formal scanning system for SMEs. In this regard, a scanning system is necessary for the formulation and planning of business strategies, increasing profit and growth rate of the firm, and developing the firm's adaptability with unexpected environmental changes in a turbulent marketplace. Therefore, it is recommended to practitioners and SMEs' senior managers (strategists) that they establish and develop a dynamic, formal and particularly a sustained and controlled environmental scanning system.

Specifically, the strategic awareness of the CEOs plays an important role in the firm's performance. Where the CEO exhibits a distinct lack of strategic awareness, the firm performance is low. As a result, the CEO's strategic awareness of the potential benefits of considering formal environmental scanning will be a significant determinant of the success and survival of the firm in long term.

It was discovered that planning and implementing environmental scanning is a strategic activity in SMEs. Thus, in order to apply a strategic management system in the firm and benefit from it, it is particularly important to consider the environmental scanning activity as a base for strategic management.

Although by and large, increasing firm performance did positively relate to having a scanning system, the blind adoption of such systems used in large firms, is perhaps inappropriate for SMEs. In this respect the entrepreneur's strategic awareness, educational and personal characteristics can play a significant role in determining the nature of the proper scanning system used within the SMEs.

Finally, it is contended that CEOs ought to be assisted (trained) to develop a wider awareness of the importance of the environment and market in which their firms operate, thus providing the necessary flexibility within their strategic organisational decision-making processes so that changes in the environment can be responded to promptly and proactively. Obvious maybe, but organisations' strategies are only as good as their strategists.

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