Linking environmental scanning to total quality management through business planning

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Abstract *This paper investigates the relationship between scanning and planning,
planning and TQM practices, and scanning and TQM practices by collecting primary
data from 54 small and medium-sized enterprises (SMEs) through questionnaire in the
Republic of Botswana. Being explanatory in nature, the study used only descriptive
statistics to analyze the data and indicate the nature and direction of the relationship.
The study found a statistically significant relationship between scanning and planning;
and between planning and TQM practices. However, scanning is indirectly related to
TQM and has a moderating impact on TQM practices. Important implications of the
findings for practitioners, future research and SME support agencies are also provided.*

Environmental scanning

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. Environment can create problems and opportunities for organizations, which depend on it for scarce and valued resources. Environmental uncertainty increases information processing within organizations because managers must identify opportunities, detect and interpret problem areas, and implement strategic adaptations. An important competitive weapon for firms is, therefore, to acquire superior information about the environment (Sawyer, 1993).

  Managers gather information from different sources and with varying degree of frequency. Informal sources include face-to-face and telephone communication whereas formal sources include documents, reports survey results, magazines and newspapers. The sources of information could also be internal or external to the organization. Internal sources include memos, reports, discussions and meetings with organizational members whereas external sources include personal contacts and other media outside the organization. The informal sources are unstructured but content-rich while written sources enable to obtain tangible data about discrete events. The frequency of scanning is also very crucial (Hambick, 1983). Managers may gather and interpret information irregularly or continuously, or regularly on

daily, weekly, monthly, quarterly or yearly basis. As managers have limited time and cognitive capacity to comprehensively and completely understand the environment, they must choose among scanning alternatives (Elenkove, 1997). They may choose to scan broadly across the general environment or focus narrowly in sectors in the task environment. Firms may attain a strategic information advantage or disadvantage depending on how scanning is conducted.

Several studies on environmental scanning and strategic planning (Daft and Weick, 1984; Elenkov, 1997; Sawyer, 1993; Hambrick, 1983) conceptualized the environment as having several sectors that exist in two-layers – the task and general environment. The task environment involves environmental elements that are commonly defined to include competitors, suppliers, customers and technological factors. The general environment refers to sectors that affect organizations indirectly and include economic, political, demographic, cultural, regulatory and social sectors. These sectors are expected to influence scanning and other organizational activities because they differ in uncertainty.

Perceived environmental uncertainty is the absence of information about organizations, activities and events in the environment. It is the difference between available and derived information (Rhyne, 1986). Two environmental characteristics, complexity and rate of change, influence perceived uncertainty. Complexity refers to the heterogeneity of external events that are relevant to the organization. The larger the number and diversity of external events, the higher the complexity. Rate of change refers to the frequency of changes that occur in the organization's environment. When rate of change is high, external activities and events shift rapidly so decision makers do not have accurate information about them. As the rate of change increases, perceived uncertainty of the sector also increases. As level of complexity and rate of change in environmental sectors increase, the amount of uncertainty perceived by managers also increases (Duncan, 1972).

However, as shown in Figure 1, environmental sector uncertainty by itself will not lead to scanning behavior. Unless the external events are perceived important, managers may have little interest in them. Perceived strategic importance is related to the notion of resource dependency, which is the extent to which the sector provides resources for the attainment of organizational goals. Figure 1 clearly shows that perceived environmental uncertainty and importance together create "strategic uncertainty" for managers. Their

Figure 1.
A model of scanning behavior
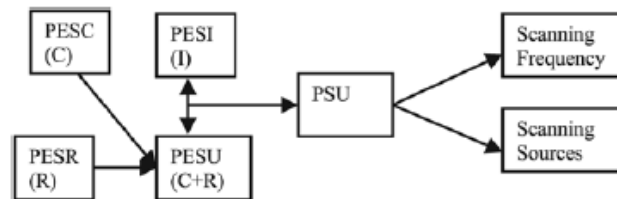
combination is expected to generate a need for strategy makers to scan events in selected environmental sectors (Hambrick, 1983).

Perceived environmental sector complexity (PESC) and rate of change (PESR), therefore, lead to perceived environmental sector uncertainty (PESU), which create perceived strategic uncertainty (PSU) for corporate leaders if the sector is perceived to be important to the strategic planning process of the organization.

Strategic uncertainty is then measured by integrating the measurement for rate of change, degree of complexity, and sector importance as validated by Duncan (1972) and applied by Sawyer (1993) and Elenkov (1997). The formula used by Sawyer (1993) and Elenkov (1997) to construct the score for the strategic uncertainty variable for each environmental sector was PSU = I(C+R).

Where:

PSU = perceived strategic uncertainty;

I = perceived environmental sector importance-PESI;

C+R = perceived environmental sector uncertainty-PESU;

C = perceived environmental sector complexity-PESC;

R = perceived environmental sector rate of change-PESR.

Previous studies by Tan and Litschert (1994) and Hambrick (1983) found that strategic uncertainty is associated with both the frequency and sources of scanning.

Sectors characterized by low strategic uncertainty are found to be associated with infrequent scanning and greater use of formal sources of information. Managers are expected to direct their scanning toward the uncertain sectors and to use sources that provide a better picture of the environment. One issue to be tested, other than scanning sources and frequency, is whether sectors in the task environment generate greater strategic uncertainty than sectors in the general environment. The task environment is expected to change more rapidly, to be more complex, and to be perceived as more important than the general environment (Smeltzer *et al.*, 1988). Customers' tastes change, competitive strategies change, and managers must respond to unpredictable events. Economic conditions or social demographics may gradually and indirectly affect the organization, but customers and competitors may affect performance on a day-to-day basis.

Planning without scanning

The literature on strategic business planning is both descriptive (Matthews and Scott, 1995; Pearce *et al.*, 1987, Mintzberg, 1994) and prescriptive (Brews and Hunt, 1999). It can generally be described as an active process of continuously determining what an organization is able or intends to carry out with respect to its future, and how it expects to do this (Mintzberg, 1994). This involves setting organizational goals and determining the strategies by which to achieve the goals.

The environment in which strategic planning takes place may have an important effect on how it is conducted (Lindsay and Rue, 1980). A significant body of corporate planning literature is currently addressing environmental scanning, which is not conducted for its own sake. It is a critical input for strategic planning. As firms begin to depend more on formalized strategic business planning to pursue their goals, their need for a systematic approach to environmental scanning increases simultaneously. In other words, to cope with the changing and shifting environment, managers or the strategic planning process must find new ways for exploring the shape of things to come and for analyzing strategic alternatives. The effectiveness of strategic planning is directly related to the capacity for environmental scanning. Accurate analysis provides the best framework for maximizing opportunities and allocating resources for the anticipated future. There is, therefore, an overwhelming consensus in the literature (Pearce *et al.*, 1987; Mathews and Scott, 1995; Durate, 1993; Rhyne, 1986; Mintzberg, 1994) that environmental scanning is a basic input for strategic planning process.

TQM without business planning

Stiff competition, driven by demanding customers, has exerted pressure on both small and large firms to adopt some form of quality improvement practices. A number of recent studies (Douglas and Judge, 2001; Reed and Mero, 2000; Chandler, 2000) have begun to describe and evaluate TQM as a potential source of competitive advantage. TQM is an organizational philosophy and policy committed to continuous improvement, customer satisfaction, reducing rework, long-range thinking, increased employee involvement and team work, process redesign, competitive benchmarking, team-based problem solving, constant measurement of results and closer relationship with suppliers (Powell, 1995). As an integral part of the strategic management process, these practices are designed and evaluated during the business planning process. At the heart of TQM practices are strategic planning, policy deployment (Durate, 1993), management by objectives, management by policy (Collins and Huge, 1993), and hoshin kanri (Wichter and Butterworth, 1997). TQM practices are developed in the planning phase and deployed in the implementation stage. Thus, planning and TQM are inseparable, and the effectiveness of TQM is affected directly by the quality of business planning (Reed and Mero, 2000).

Despite the fact that planning and TQM are inseparable corporate activities, only very few studies have integrated the planning and TQM practices of SMEs in a developing economy context. Mixed and inconsistent findings are observed in the scanning-planning and TQM literature. According to Mintzberg (1994) and Brews and Hunt (1999), the main methodological explanation for the mixed and inconsistent research results stems from poor conceptualization and measurement tools utilized to operationalize the constructs. Boyd and Reuning-Elliott (1998) concluded that inattention to

construct measurement is a major impediment to the advancement of research in strategic management. They pointed out that some studies compare firms on different dimensions or on arbitrarily chosen indicators. Methodological flaws and nonrobust statistical methods have also contributed to this problem. Thus, while the direction of the relationship between TQM and planning is clear and understandable, the problem lies in measuring the constructs.

Research design and methodology
A descriptive survey research method was employed to produce this paper. Scanning, planning and TQM data were extracted from two major research projects conducted in 2001 in the Republic of Botswana. The first project was on scanning and planning behavior of 87 SMEs whereas the second research project was on TQM practices of 74 SMEs. There were 54 SMEs participating in both research projects and formed the sample for this study. The 54 firms were taken from three industries–manufacturing, merchandising, and service industries.

The scanning-planning questionnaire was divided into three parts-demographic data, scanning sources and frequency, and planning indicators. The respondents indicated on a five-point scale ranging from five (very high) to one (very low) how frequently they scan the four sources to study six environmental sectors and how important are the 16 selected planning indicators. The TQM questionnaire contained 52 items under ten dimensions and asked to rate their perceived importance as quality improvement tools. Although there was a three-month gap in administering the two questionnaires, it is believed that this will not make significant difference in the perception of respondents. The data were then analyzed using simple descriptive statistics such as mean, standard deviation and correlation coefficients.

Results and discussions
The sample firms consist 13 manufacturing, 19 merchandising (wholesaling and retailing firms), and 22 service (banks, hotels, hospitals) firms. Although the partnership form of business is not common in Botswana, all legal forms of ownership were operational. Only 18 percent of the sample firms were organized as partnership and joint venture while 50 percent of them were corporations. The remaining 32 percent were formed as sole proprietorships. In terms of size, most of them (63 percent) belong to the small business category. Firms with six to 25 full-time employees are defined in Botswana as small whereas firms with 26 to 99 employees as medium-sized enterprises.

The sample firms were divided into:

- formal scanning oriented firms and non-formal scanning oriented based on their mean scanning scores;
- formal planning oriented firms and non-formal planning oriented firms based on their mean score for planning indicators; and

- formal TQM oriented firms and non-formal TQM oriented firms based on their grand mean for the ten TQM categories.

This division was done for the purpose of analyzing the relationship among the three constructs.

Analysis of ownership status showed that salaried full time managers managed almost 60 percent of the firms whereas owners themselves and family members managed the remaining 40 percent. On average, the sample firms have been operating in Botswana for over four years. This is generally assumed to be adequate time for firms to evaluate and respond to changes in their environment. The average managerial experience was over four years and only 11 percent of salaried managers were female. The majority of the respondents have a high school and above high school educational qualification. Although most of the salaried managers have college certificate and diploma, about 92 percent of them indicated that they "have never received professional training" in the past three years. All the sample firms (100 percent) were single independent business units, who can, in principle, initiate and execute scanning, planning and TQM programs.

Perceived strategic uncertainty
The perceived strategic uncertainty of the environment is measured by asking the respondents to indicate the rate of change (R), degree of complexity (C) and level of importance (I) of six environmental sectors. The mean score is then changed to perceived strategic uncertainty (PSU) score using the formula $PSU = I(C+R)$. As shown in Table I, although the respondents indicated that the task environment (competitors, customers and technology sectors) has greater uncertainty (task mean $= 20.33$) than the general (regulatory, economic, and socio-cultural sectors) environment (general mean $= 18.41$), the uncertainty mean score for the total environment is above average (environment mean $= 19.37$) indicating that almost all the firms are operating in an uncertain and complex environment, where there is strong need for organized scanning and systematic planning.

When perceived strategic uncertainty is high, firms are expected to gather and process information systematically in order to learn more about the environment. Information can be obtained from internal/external or formal/informal sources with varying degree of frequency depending on the amount of strategic uncertainty in the environment.

Scanning sources and frequency
The respondents indicated the extent to which they used the internal/external or formal/informal sources to study six environmental sectors. Table I shows that the internal sources (mean $= 3.31$) were used more than the external sources (mean $= 2.61$) to gather information about both the task and general environment. SMEs use the informal sources most frequently (mean $= 3.26$) to

No.		Mean	FSOF[a]	NSOF[b]
Formal indicators				
1	Quantitative targets	2.81	3.33*	2.51*
2	Mission statement	2.91	3.29**	2.69**
3	Long-term strategies	2.80	3.24*	2.54*
4	SWOT analysis	2.57	3.22**	2.19**
5	Documentation	2.81	3.21*	2.57*
6	Communication	3.02	3.17	2.93
7	Long term goals	2.85	3.15*	2.68*
8	Formal plans	2.81	3.13*	2.87*
9	Deductive process	2.76	3.11	2.56
10	Participation	2.70	3.01*	2.51*
Non-formal indicators				
1	Short-term goal	3.62	3.51	3.69
2	Functional budgets	3.39	3.28	3.45
3	Short term tactics	3.35	3.26	3.41
4	Qualitative targets	3.27	3.16	3.34
5	Incremental process	3.39	2.96**	3.65**
6	Informal plans	2.76	2.55**	3.54**
Total sample size		54.0	20.0	34.0

Notes: Levels of significance at: * $p < 0.05$ and ** $p < 0.01$; [a] FSOF = normal scanning-oriented firms, [b] NSOF = non-formal scanning-oriented firms

Table I.
Degree of emphasis
placed on planning
indicators by formal
and non-formal
scanning oriented SMEs

gather information about the task environment than formal sources (mean = 2.82). This is in contrast to theory and the findings of similar studies. It is not logical when firms use internal-informal approach more frequently to get information about economic, regulatory and socio-cultural sectors than external-informal approaches, which are believed to be appropriate to study these sectors. This difference could be partially attributed to lack of systematic scanning practices and knowledge on the part of managers.

Scanning behavior was analyzed based on its formality. Firms with above average mean (mean > 3) in the frequency of scanning the external and formal sources are labeled as formal scanning oriented firms while those who use internal and informal sources most frequently are considered as non-formal scanning oriented firms. Only 37 percent of the sample firms had formal orientation toward scanning whereas the majority (63 percent) uses non-formal, unsystematic approach to scan the environment. This division was made for simplifying analysis of scanning practices.

Scanning and planning
As there are no standard scales to measure the planning construct, the respondents were asked to rate the perceived importance of 16 selected planning indicators, which are believed to show the nature and type of

planning practices. The first ten planning indicators are generally related to formal strategic planning practices while items one to six in Table II are related to non-formal or operational planning practices. Then, the sample firms were divided into formal planning oriented firms and non formal planning oriented firms based on their mean values on the 16 indicators. The data showed that 46 percent of the sample firms have some form of formal planning experiences while the remaining 54 percent were characterized by non-formal planning experiences. In general, non-formal planning indicators are given greater emphasis than formal planning indicators.

As the main objective of this study is to establish relationship between scanning and planning, it is essential to group the data by scanning behavior. As shown in Table I, there is statistically significant relationship between planning and scanning practices at 5 percent and 1 percent confidence level. Formal scanning oriented firms put more emphasis on long term, strategic and formal planning indicators than do non-formal scanning oriented firms who place greater importance on short-term, informal planning indicators. However, there are no significant differences in the degree of importance attached to short term informal planning. Both formal and non-formal scanning oriented firms put similar emphasis on these items. This could be attributed to the fact that formal strategic planning includes short term operational planning related items like functional budgets and short-term goals. Thus, generally, we can infer that environmental scanning and business planning practices have statistically significant relationship. As firms engage in systematic scanning practices, they tend to attach more emphasis on strategic planning.

Scanning, planning and TQM
Similar classification and analysis criteria were also used to study the TQM practices of SMEs. There were 52 TQM related items were identified under ten categories and the respondents were asked to indicate the degree of importance they attach to the statements under each category. Only summary of the grand mean for the ten categories are presented in Table II.

As shown by the asterisks in Table II, there is significant relationship between scanning and TQM practices at both 1 percent and 5 percent confidence level. Both formal scanning and planning oriented firms put consistently greater emphasis on TQM indicators than do non-formal scanning and planning oriented firms. However, analysis of the level of significance for both groups shows that planning practices are more strongly related to TQM practices than do scanning practices. There is greater statistically significant difference, for example, between formal and non-formal planning oriented firms (at $p < 0.01$) than between formal and non-formal scanning oriented firms (at $p < 0.05$).

From this one can infer that while scanning is directly related to planning, it is indirectly and moderately related to TQM practices. More evidence of the relationship between the three constructs can be obtained by conducting correlation

No	TQM categories	Mean	[a]FSOF	[b]NSOF	[c]FPOF	[d]NPOF
7	Performance evaluation	3.45	3.69*	3.31*	4.25**	2.76**
5	Supplier partnership	3.24	3.49*	3.09*	3.98**	2.60**
2	Product improvement	3.14	3.25*	3.08*	3.65**	2.70**
1	Employee empowerment	3.12	3.21	3.07	3.36*	2.91*
3	Managerial commitment	3.02	3.25	2.88	3.26*	2.81*
9	Process improvement	3.01	3.15	2.93	3.19*	2.85*
8	Benchmarking	2.98	3.79**	2.50**	3.01	2.95
6	Customer information	2.96	3.48*	2.65*	3.26**	2.70**
4	Corporate culture	2.88	3.28**	2.64**	3.24**	2.57**
10	Feedback on output	2.74	3.25	2.44	2.98*	2.53*
	Total sample size	54.0	20.0	34.0	25.0	29.0

Notes: Level of significance at: * $p < 0.05$ and ** $p < 0.01$; [a] FSOF = Normal scanning-oriented firms, [b] NSOF = Non-formal scanning-oriented firms, [c] FPOF = Formal planning-oriented firms, [d] NPOF = Non-formal planning-oriented firms

analysis. As shown in Table III, there is statistically significant relationship among the three constructs. Formal planning practice is positively related to both scanning practices ($r = 0.71$, at $P < 0.01$) and TQM practices ($r = 0.67$, at $P < 0.01$). However, as shown before, scanning is more strongly related to planning, ($r = 0.71$, at $P < 0.01$) than to TQM practices ($r = 0.47$, at $P < 0.05$). This implies that improvements in scanning behavior will eventually lead to better planning and managerial decisions.

Conclusions and discussions

The objective of this paper is to investigate the relationship among scanning, planning and TQM practices of small and medium sized firms by collecting primary data from 54 SMEs in the Republic of Botswana. The study has three important shortcomings. First, since there are no empirically tested and validated instruments to measure the three constructs, subjective indicators were used as measurement devices. Thus, the findings obtained through subjective indicators must be considered tentative and interpreted with

No.	VAR.	[a]FSOF	[b]NSOF	[c]FPOF	[d]NPOF	[e]FTQM	[f]NTQM
1	FSOF	1.00					
2	NSOF	− 0.22	1.00				
3	FPOF	0.71**	0.28	1.00			
4	NPOF	0.27	0.53*	− 0.18	1.00		
5	FTQM	0.47*	0.19	0.67**	0.23	1.00	
6	NTQM	0.21	0.36*	0.24	0.49*	− 0.23	1.00

Notes: Level of significance at: * $P < 0.05$, ** $P < 0.01$; [a] FSOF = Normal scanning-oriented firms, [b] NSOF = Non-formal scanning-oriented firms, [c] FPOF = Formal planning-oriented firms, [d] NPOF = Non-formal planning-oriented firms, [e] FTQM = Formal TQM, [f] NTQM = Non-formal TQM

caution. Firms are considered as having formal or non-formal orientation toward the three constructs based on the perceived importance of selected items in each construct. This was done for comparison purposes and does not mean that all firms within the formal scanning, planning or TQM group are actually practicing formalized scanning, planning or TQM practices. The findings should therefore be considered as indicators of relational direction rather relational depth and strength. Finally, the mixed-industry sample has made it difficult to generalize the findings to any particular industry because the degree of formality and intensity of scanning, planning and TQM practices vary from industry to industry.

Despite these limitations, the study has identified important findings on the relationship among the three constructs. There seem to exist a general consensus among the sample firms that the environment in which they operate is full of strategic uncertainty. However, this perception of the environment is not supported by the scanning behavior of most firms because they are not systematically gathering and processing information from the appropriate sources using the appropriate modes at a reasonable degree of scanning frequency. The scanning practices were largely informal, short term oriented and unorganized. Only one-third of the firms were found to have, to some extent, formal scanning orientation. Planning without scanning is similar, in essence, with "planning not to plan". Scanning provides basic inputs for planning, which, in turn, determines the goals and strategies for the TQM implementation. However, despite the uncertain and unstable environment in which SMEs are operating, their scanning behavior is characterized by hap-hazarded way of gathering and processing information from wrong sources with irregular scanning frequency. Such scanning behavior will have serious repercussions on the "change management" efforts of managers. Inability to collect and analyze relevant and timely data about customers, suppliers, competitors etc, will affect the effectiveness of business planning.

The same trend was identified in the planning behavior of SMEs. Many SMEs were applying incremental rather than deductive and informal rather than formal planning approaches. The study found positive and significant relationship between scanning and planning practices. As SMEs engage in systematic scanning, they tend to put more emphasis on planning practices than those with unorganized and fragmented scanning practices. In conclusion, effective scanning leads to proper planning by providing the basic information about the factors in the environment. The fact that the majority of SMEs focus on short-term operational planning rather than long term strategic planning, indicates the low level of emphasis given to formal scanning as a pre-requisite for business planning. There is lack of understanding about the long-term financial impact of both formal scanning and planning.

The TQM orientation of SMEs is not also different from that of scanning and planning. Although the majority of SME attached great importance to TQM, its

implementation has been unsystematic and fragmented. A dynamic relationship was found among scanning, planning and TQM practices. Planning with out scanning is impossible and TQM without planning is a journey without compass. Since scanning is directly related to planning and indirectly to TQM implementation, the promotion of the culture of developing systematic scanning and planning practices will eventually lead to effective TQM practices. Thus, as originally hypothesized SME should be assisted to understand both the positive and negative consequences of environmental scanning during planning and TQM implementation. Understanding the nature and direction of the relationship among the three constructs has paramount importance for both researchers and practitioners.

The implications of the findings for further research are threefold. First, although environmental scanning has been central to strategic management research, there are very little consistencies in its operationalization. Researchers have used scanning constructs for over two decades. However, the development of a common conceptualizing and measurement scheme has received only sporadic attention. Thus, further research should give adequate attention to the development, testing and validation of a model of environmental scanning. Previous findings on scanning behavior of SMEs in developing economies are often confusing and misleading (sometimes contradicting) because of lack of empirically tested and validated measurement instruments. How can SMEs measure rate of change, complexity and importance of environmental sectors? How can smaller firms exploit information and communication system technologies to gather and process environmental data? How do managers in SMEs form impressions of environmental uncertainty? Are there any patterns or procedures to be followed in the perception and evaluation uncertainty? Another research implication pertains to the debate about whether formal versus informal scanning sources of information provide better input to the organizational strategic planning process in SMEs.

Second, the planning processes in SMEs appear episodic and disjointed. An important question concerns whether discernible patterns exist in the sequencing of planning activities. Does planning pay? How do we measure the relationship between planning and profitability? Does planning intensity or formality vary according to specific demographic variables such as stage of development, industry type, legal form etc? Further research should attempt to fully explore these questions through longitudinal rather than cross-sectional studies. Longitudinal research will allow determining what factors generate commitment and legitimacy pressures.

Third, linking environmental scanning with TQM is a difficult task and requires a system approach. TQM is an integral part of planning, the quality of which depends, among other things, on scanning effectiveness. It is therefore essential to empirically investigate the impacts of scanning on TQM implementation. There is lack of an implementation framework for TQM in

SMEs. Further research is needed to examine the basic requirements and infrastructure for effective implementation of TQM. The literature on quality management treats ISO 9000 certification and the adoption of TQM practices in somewhat similar manner. Owing to the pressure from major customers, contractors, large firms and government agencies, SMEs are forced to register for ISO 9000/1 certification without being ready for and without understanding what TQM really mean for them. ISO 9000/1 certification is not an end by itself; it should lead to TQM implementation. Researchers should therefore aim at investigating ways of educating SMEs on how the necessary quality infrastructure can be built up, phase by phase, before indulging in a fragmented and short-term targeted quality improvement practices.

The findings of the study also have important recommendations for management practitioners. Management practitioners should balance their emphasis on the three constructs as they progress or regress on the scanning-planning-TQM continuum. These constructs should not be considered as separate managerial practices, as the output of one could be a critical input to the other. The traditional assumptions that scanning, planning and TQM are costly and hence appropriate for only large, multi-national, multi-product and multi-divisional firms must be re-explored and tested. Scanning or planning can be done at different degree of formality and intensity depending on resource availability and the amount of strategic uncertainty in the operating environment. Scanning represents a difficult organizational problem because the environment is vast, complex and changing. Moreover, the scanning behavior of managers particularly in developing economies is affected by:

- the absence of technology to systematically monitor the environment;
- highly unstable economic and political environments;
- low level of managerial and general education; and
- lack of systematic data depository or information sources, and so on (Sawyer, 1993).

As managers have limited cognitive capacity to comprehensively understand the total environment, they must find customized scanning mechanisms that can produce adequate information displays of external events. An important implication for management practitioners pertains to the debate about how impressions of the environment are formed among managers who are responsible for responding with new strategies and structures.

It is the ability of managers to effectively respond and adapt to the changing environment that makes the difference between success and failure in today's turbulent and dynamic markets. Since the external environment is a significant contingency for organizations, managers should use appropriate means through which to scan and interpret the environment. One important implication for practitioners is that scanning systems should not be locked into

continuous data on limited sectors of the environment. Management information systems should be redesigned to provide non-repetitive and non-periodic information. Repetitive and periodic data may be valuable for perceiving stable elements in task sectors but may not be valuable for unstable or hard-to-measure sectors. Another question for practitioners is to determine whether designers of information systems should try to provide only certain types of data through formal channels, and the extent to which the best view of the environment comes from multiple information sources.

SMEs cannot succeed without some form of planning. However, management practitioners, particularly in smaller firms put little emphasis on the role of planning in guiding organizational and improving financial performance in the long run. Management practitioners in developing economies should develop a positive attitude toward formalized strategic planning. They should not focus entirely on short term planning. Peter Drucker (1984, p. 126) once wrote, "... tomorrow always arrives. It is always different, and even the mightiest company is in trouble if it has not worked on the future". Managers can reduce the number of costly surprises arising from changes in the environment through business planning. Drucker (1984, p. 126) added, "... Not having dared to take the risk of making the new happen, it [management] perforce to take the much greater risk of being surprised by what did happen. And this is the risk that the largest and richest company cannot afford and that even the smallest business need not run". Thus, managers can minimize the fate that Drucker predicts by conducting strategic environmental scanning and business planning. Planning has always presented a series of challenges to managers. Today, managers cannot rely on the past to predict the trends of the future. Managers are forced to make decisions that depend on highly uncertain external factors for which the past offers little guidance. There is, therefore, a vital need for managers in developing economies to clearly understand both the why and how of business planning.

SMEs have perceptual, organizational, managerial and infrastructural problems regarding the adoption and implementation of TQM practice. SMEs perceive that TQM is costly and time-consuming task and hence appropriate for only large firms with relatively adequate resources such as finance, managerial expertise and experiences. The literature offers many lessons that practitioners may learn from failures as well as successes regarding successful TQM implementation. TQM is a costly task and needs the commitment and participation of all organizational members. Managers in SMEs often attempt to implement TQM practices without laying the necessary foundations. All organizational members need to clearly understand what TQM mean for the organization and be committed for its effective implementation. This requires both time and resources. Thus, management practitioners should give priority to educate organizational members before embarking on TQM implementation.

They should create a culture that is conducive to and supportive of TQM implementation. The implementation of TQM, like any competitive strategy, should be unique to each company because there is no "one-size-fits-all" approach in adopting TQM. Certain quality activities may be more appropriate for some organizations than for others. TQM is neither a canned program nor a simple sum of strategic management activities. They require total commitment and total responsibility by all organizational members at all organization levels and in all areas of business. Moreover, management practitioners should know that TQM is not a "magic bullet" or panacea for profitability. Managers must avoid wishful thinking that TQM will fix short-term problems and quickly improve company profitability. Managers should not consider them as ends by themselves. They are only means of achieving organizational goals (Shin *et al.*, 1998).

In sum, scanning is directly related to planning, implying that understanding the role of scanning and the approach to be used will have an important impact on the quality and relevance of planning, on which depends the effectiveness of TQM implementation. Although scanning, planning and TQM can produce performance advantages, they do not address the needs of all firms. Indeed, they are fraught with pitfalls for smaller firms that luck the requisite complementary resources. An important implication pertains to the debate about whether managerial behaviors can be learned from the scanning, planning and TQM failures and successes of other firms.

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