Environmental scanning and perceived problems in the state of Kuwait

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Abstract
Strategic information is currently considered by proactive companies in the West as a real strategic resource, the same as corporate assets and human resources. Scanning information systems created for this purpose have become a real decision support system to cope with information that informs about unexpected events and turbulent changes, called "*weak signals*". Rouibah and Ould-Ali (2002) have proposed a process that eases weak signal management in the West. In order to translate this process in the Arab region, this study identified 24 issues and their perceived importance in a Middle East country and a less developed country (LDC). An instrument was then developed and validated in term of reliability and validity in a pilot phase. Data collected from 194 Kuwaiti executives revealed the three most important issues facing the respondents are identification of the company's requirements in term of scanning activities, inadequate management education and training, and selection of relevant and crucial information. The three least and unimportant issues are: problem of legal and ethical issues of environmental scanning, lack of resources to conduct scanning activities and non integration of collected information into strategic decision making. In addition, results revealed significant difference in three problems (difficulty to analyze quality of collected information, difficulty to analyze the quality of information sources and lack of data sources where weak signals can be found) with regard to availability of R&D scanning activities. This paper discusses these results as well as their implications for practitioners and researchers.

Key-words
Strategic management, environmental scanning, strategic information, weak signals, anticipatory information, problems of scanning activities, training, information quality.

1 Introduction

Studies in the well developed countries theorized that executive support system (ESS) can be quite successful in helping managers to identify organization's environment strengths and weaknesses. These systems are also able to provide support to manager's need to be aware of *external changes* which lead to threats or opportunities. When organizations in less developed countries (LDC) try to adopt such systems, they may face several issues. We argue in this paper that several managerial and organizational issues must be first identified and solved before the introduction of these systems into organizations. This paper is a first step toward understanding the executives' requirements for environmental scanning in LDC before the development of such systems.

By learning from the best, organizations in LDC are able to imitate the best practices in the West. Learning is therefore becoming the most indispensable activity in the current knowledge-based economy. In the nowadays turbulent environment, in order to compete and survive, firms must be constantly alert, capable of adapting to fast changes constantly learn, evolve, and transform themselves rapidly. This is the core of environmental scanning.

1.1 Focus of this paper: environmental scanning in less developed countries

Effective strategic response to environmental changes requires a clear perception of events and trends in organization's external environment. Literature in the West labels these perceptions through a process under several names such as environmental scanning (Aguilar 1967), business intelligence (Rouibah and Ould-Ali 2002), and competitive intelligence (Attaway 1998).

While several studies investigated environmental scanning in well developed countries, little research is conducted in LDC. For example, in the West, the topic was studied in several countries including France (Lesca 1994), USA (Beal 2000; Yasai-Ardekani and Nystrom 1996), Canada (Auster, and Choo 1994) and UK (Roiron and Lesca 1996). Outside the West, environmental scanning was studied in few countries including Nigeria (Sawyerr et *al.* 2000), Algeria (Rouibah and Bessam 2001), Bulgaria (Elenkov 1997), Tunisia (Chouk-Kamoun and Salles 1998; Chouk-Kamoun and Lesca 2004), Thailand (Ngamkroeckjoti and Johri 2000), and South Africa (Du Toit 1998 and 2003). While these studies focused on different facets of environmental scanning, the current study discusses the major perceived problems encountered by executives when translating theory of environmental scanning into practice. Kuwait was the subject of this study because of the high competition in the market; and of many joint ventures and foreign companies operating in Kuwait. In addition, with WTO accords in the service sector, more companies are entering the Kuwaiti market leading to increase the competition. Environmental scanning is therefore necessary to evaluate current practices in order to point to enhancements.

We carry out this research having in mind that potential differences may exist between practices in the West and those in LDC. Since the behavior is culture bound, many scholars advocate the existence of cultural and management differences between USA and other Arab and African countries (ElSayed-Elkhouly and Ruda 1997). In addition, comparative management researchers have found a lack of fit between conventional Western theories that focused on the organization-environment interface (i.e. environmental scanning) and the realities of organizations in developing countries (O'Shaughnessy 1985).

The remainder of this paper is structured as follow: First, it discusses the environmental scanning and the problem that may be raised when translating theory into practices. Then it describes the used research methodology, following by the description of the study's results. The last section summaries results of the study and point to potential implications for theory and practice.

2 Theory and background

2.1 Environmental scanning and weak signals

Environmental scanning is the informational process through which a company keeps informed in an anticipatory way about opportunities and threats which occur in its socio-economic environment. It tends to position and relates the organization to its environment in a way that will assure the organization's continued success and make it secure from surprises and unexpected events.

Ansoff (1975) was the first author who called senior mangers to keep track of strategic information that may create discontinuities in the company strategies. He called this kind of information "weak signals" to denote pieces of information that may feed unexpected decision or that lead to initiate opportunities or avoid unexpected threats. Weak signals are different than strong signals which are pieces of information that confirm decision already taken. Later on several experts in the strategic management discipline (e.g. Martinsons 1994, Attaway 1998; Rouibah and Ould-Ali 2002; Janizzek-Muniz et al., 2006) built different models to

formalize the environmental scanning as well as to transform the weak signal management into feasible processes.

In this paper we defend the vision that environmental scanning approach should be proactive so that a company may be an exploiter/ innovator (Mair et al., 1997). The company should turn out to the collection of weak signals that are essential for its survival, and that have an impact on the company' performance and that informs about events not yet realized. In the strategic management literature, theorists consider the environmental scanning system role for a business as a radar for a ship. It aims to inform managers early enough, about interesting opportunities and threats so that they become able to cope with them and propose adequate answers. Such strategy will help to keep a sustainable competitive advantage.

The environmental scanning system is a generic term encompassing many facets, frequently called SEPT (Social, Economical or commercial, Political, and Technological). The characteristics of each type of information concerned differ accordingly. They are much formalized and are easily accessible in the case of the technological radar. However, for both the competitive and the commercial facet, weak signals have specific characteristics (Rouibah and Ould-Ali 2002). They are *anticipatory*; *uncertain*, *ambiguous; fragmentary, dynamic, cyclical; qualitative*. In addition, most of the time pieces of information are available in the external environment. Accordingly, there is a need to motivate gatekeepers to collect it.

The assimilation of environmental scanning is quite similar to knowledge management in several ways. Weak signals are tacit knowledge since they represent anticipative pieces of information in the mind of gatekeepers who believe they might be useful to senior managers. Moreover, each piece of information is insignificant unless it is interpreted and transformed to actionable information or transformed to explicit knowledge by interaction with other managers. Such activity is completed when several viewpoints are combined and opposed.

With regard to weak signal management approach, companies may adopt two different policies: The *first* one is an offensive strategy via a proactive attitude. The first strategy consists to seize opportunities by having a focus on events that have not yet taken place and that are announced by weak signals. The second strategy consists to adopt a defensive or reactive behavior. This is the example when a company waits until the best company grasps the opportunity; and then it reacts after tangible benefits are achieved.

Adopting one of the two previous strategies besides the particular characteristics of weak signals make their management little difficult.

The translation of theories on environmental scanning to actionable knowledge useful for decision making require the existence of a process model. While several processes were proposed over the past, this paper emphasizes the model developed by Rouibah and Ould-Ali (2002). This process is certified ISO 9000, and is oriented to ease weak signal management. This process requires several activities: (a) the delimitation of scanning areas; (b) the collection of target information; (c) the selection of relevant information; (d) the routing and diffusion of collected information; (e) the interpretation of collected pieces of information; (f) and the integration of processed information in the decision-making process.

When executives try to translate Rouibah and Ould-Ali's (2002) model into practice, they may encounter several obstacles. The following sections will review these problems.

2.2 Obstacles to environmental scanning

In trying to review past studies on the subject, we categorized the literature into two groups: studies based on empirical studies vs. studies –based on process view.

With regard to the first category (empirical studies), several researches have investigated different issues of environmental scanning.

Ghosal and Westney (1991) conducted a study in three large USA firm about corporate competitor analysis system. The study revealed two main problems facing managers: How to evaluate scanning activities and how to improve the current practices. The study found a significant gap between what was needed by the organization and what was being delivered by the company's competitive analysis system.

Lesca (1992) described the case of implementing environmental scanning in a French company. In the early stage of environmental scanning, people were highly motivated, scanning factors were identified and critical success factors were set up. After a period of time, the scanning efforts failed and gatekeepers were less motivated. The cause is that interpreted pieces of information were not included in seniors' decision making.

Auster and Choo (1994) interviewed 13 CEO in the Canadian publishing and telecommunication industries on how to initiate the scanning activities and what information sources are used by executives to feed their decision making process. Authors proposed a number of guidelines for managers based on their interviews.

Lesca (1994) tested the validity of 8 problems facing 271 French executives with regard to environmental practices. The eight problems are: (1) Confusion of concepts that refer to environmental scanning, (2) relevancy of the approach, (3) delimitation of the areas for scanning, (4) selection of weak signals, (5) collection of weak signals and personal motivation, (6) communication of weal signals, (7) weak signals' interpretation and amplification, and (8) measuring the quality of practices. Results revealed three critical problems (those which are strongly validated): Confusion in the assimilation of existing concepts, selection of weak signals, and weak signal amplification. Two others problems received partial support: Relevance of environmental scanning, and how to motivate employees. Two other issues received contradictory results: Collection of weak signals and communication. Results of the four other remaining issues are not reported in Lesca (1994)'s study.

Cartwright et al. (1995) performed a study concerning the relevance and the perceived usefulness problem of environmental scanning for companies. The authors surveyed 74 members of the Society of Competitive Intelligence Professional (SCIP) and proposed a framework to increase the usefulness of the environmental scanning approach.

Yasai-Ardekani and Nystrom (1996) focused on the effective and ineffective issues of environmental scanning systems in USA, and analyzed 100 North American business organizations. The study revealed the problem of how to identify environmental scanning requirements. Authors found that organizations with effective scanning systems tend to align their scanning designs with the requirements of their context. On the other hand, the results showed that organizations with ineffective scanning systems failed to exhibit the requisite level of alignments between contexts and scanning designs.

Elenkov (1997) studied the practices of environmental scanning in 141 medium size Bulgarian companies on how to delimit the environmental scanning areas. Author found the political/legal sector created the greatest level of perceived uncertainty for the Bulgarian decision-makers sampled. His results contradict most findings in the West where competition and the commercial is the most important ones.

Chouk-Kamoun and Salles (1998) studied the application of the environmental scanning in 24 Tunisian SMEs. They found that executives don’t perceive the value of strategic information as a factor that contributes to company performance. Such as result suggest that majority of small companies did not perceive any benefit from environmental scanning.

Sawyerr et al. (2000) studied several obstacles to the performance environmental scanning activities by 47 CEOs of manufacturing firms in Nigeria. The authors included several issues based on corporate planning in developing countries. Authors found the problems varied in term of their importance: Government bureaucracy, availability of information in different language, inadequate management education and training, uncertainty regarding government long-term policies, absence of data sources, and quality of information sources.

Ngamkroeckjoti and Johri (2000) investigated the environmental scanning practices in three large corporations in Thailand. Results revealed that the delimitation of scanning scope is the critical problem. In addition, they found the three companies collect specific strategic information at the industry and market level, and use it for implementing specific programs. Political and societal sectors did not receive particular attention.

Groom and David (2001), cites De Vries' (1989) who studied environmental scanning by entrepreneurs (organizations with less than 20 employees). According to De Vries, while scanning is useful, much of the information or intelligence gathered was unused. Groom and David (2001) found that less than half (36%) of the organizations sampled, among 44, only realized benefits from environmental scanning activities.

Rouibah and Bessam (2001) interviewed 12 Algerian SMEs about practices of environmental scanning. Results showed environmental scanning activities lack efficiency because of three problems: Information sharing, communication of the collected information and how to set up an efficient environmental scanning process.

Rouibah (2003) studied the awareness of environmental scanning by executives within 86 Kuwait firms. In particular the author studied which types of information (control, influence or weak signals) receive more attention by a sample of executives. The author suggested propagating the culture of "*word to mouth*", attention to "weak signals" among employees as well as the culture of information sharing. In addition the author examined five problem faced by executives. Results revealed that inability to shape the meaning of environmental scanning was the most perceived problem, followed by the confusion in the exiting of different concepts used to refer to environmental scanning.

Du Tout (2003) examined the practices of competitive intelligence practices in South Africa from the perspectives of 78 CEO. In particular the study revealed four problems. *First*, understanding requirements of environmental scanning is a critical problem (only 21% of the competitive units regularly interview executives to truly understand their needs). *Second*, study revealed the problem of how to improve the current practices since 63.9% of the CEOs perceive their system needs improvements, but they don't not know how to do it. *Third*, the study revealed the lack of technology usage since 12% only use technologies (such as Intranet) to disseminate collected data. *Four*, the study revealed the problem of setting up a formal scanning unit since formal environmental scanning system exist only in 43% of the enterprises.

Other studies focused on the conceptualization of problems related to environmental scanning, competitive intelligence, and management weak signals without any quantitative approach.

Gelb et al., (1991) listed the following problems: difficulty to find desired information**,** lack of formal system to gather and report competitive intelligence**,** difficulties to gather and disseminate information**,** confusion in the performing operation (is it legal or ethical?), data are not often presented in an effective format for planning function, frequent changes in the market resulting in a lot of competitive information (problem of information selection), and

gathered data is not useful since it is used to confirm decisions already made or for making relatively routine decisions. Per opposite, decision makers are looking for pieces of information that support unstructured decisions such as grasping a market opportunity.

Martinsons (1994) raised many issues including: identification of scanning needs, identification of critical success factors, identification of information sources, identification of intelligent people in charge to create intelligence based on fragmented pieces of information, evaluation of the practices of scanning, and need to get support from top management level.

Rouibah and Lesca (1996) have identified six major problems facing French companies: Difficulties to gather and select weak signals, lack of training and motivation, inability to pull pieces of information together, difficulties to perceive positive impact of environmental scanning on company's performance, confusion in the existing of different concepts that refer to environmental scanning, and complexity to understand and shape the meaning of environmental scanning.

Attaway (1998) has raised several problems related to competitive intelligence activities: How to direct and orient scanning activities? How to collect strategic information? How to communicate strategic information and how to analyze collected data? How to motivate people in order to increase their contributions in scanning activities?

Other studies, in particular the French team of Professor Humber Lesca[1], focused mainly on process view of environmental scanning. Most previous publications describe how the current situation "*need to be*" instead of "*as it is*". The team identifies several problems and proposed different approaches for the following issues:

1. The usefulness of environmental scanning and its relevancy for a specific company (Verna-Schaeffer 1992; Chouk-Kamoun and Lesca 2004; Lascar 1995).
2. How to set up an environmental scanning process (Caron-Fagan and Lesca 2004; Chouk-Kamoun and Lesca 2004).
3. How to initiate, target and delimit the external environment and how to set priorities for scanning (Lesca and Schuler 1998).
4. How to train gatekeepers, those in charge of weak signal collection, using different technologies (Rouibah 2001; Rouibah 2000).
5. How to motivate and initiate gatekeepers to environmental scanning activities: Gather weak signals, orient to useful information sources, prioritize information sources and motivate gatekeepers (Lesca 2002; Lesca and Kraal 2004).
6. How to recognize weak signals (Blanco and Lesca 2005).
7. How to select critical weak signals and not strong signals (Lesca 2001; Blanco and Lesca 2005).
8. How to amplify weak signals for decision making. For example, Rouibah and Ould-Ali (2002) proposed an approach and tested with Dutch managers about weak signals management and amplification for decision making. Two other studies (Rouibah 2000; Caron-Fagan 2001) tested another approach for weak signals with French managers.
9. How to evaluate scanning activities, guide to improvements, and orient to best practices (Raymond and Lesca 1993).

Other studies focused on other organizational and individual factors that may inhibit the performance of environmental scanning activities. Individuals in charge of environmental scanning activities are often called environmental scanners or gatekeepers. Their activities

[1] The author identified himself in this stream of research.

consist to access relevant information sources, collect information, interpret and communicate these pieces of information. To achieve these activities, gatekeepers must hold specific knowledge about the organization's external environment (Choudhury and Sampler 1997). The organizations' structure acts both as means and obstacles to support information systems. In the context of environmental scanning, the organization can act as an information filter both positively and negatively. For instance Wang et al., (1991) identified the following critical factors: the structure of the scanning network (centralized versus decentralized) and the assignment of responsibilities, the proactive versus reactive culture, the management style (cognitive style); the reward systems; the existing information flows (communication) and the information quality.

Based on the previous literature review, we can observe the following remarks.

*Firs*t, past literature has discussed several obstacles, but none of the past studies tended to integrates these problems in one empirical study as well as the validity of these problems either in the West or in LDC.
Seconds, many past studies have focused on what companies should do to solve issues of environmental scanning, rather than to look at what firms actually do. Much prior literature is devoted to prescriptions or techniques (see studies of Professor Lesca team). We also reviewed papers that were published in *Competitive Intelligence Review* between 1997 and 2005. Of the 128 published papers only three have had any solid empirical research content.
Third, most empirical studies on actual practices have tended to focus on the leading firms in well developed countries. By contrast, this study looks more at how firms in LDC carry out environmental scanning, and thus gives a better guide as to the general level of acceptance and use of this approach.
Fourth, the study looks at actual environmental scanning across a range of different people in the organization. The instrument based- questionnaire used in the study is completed by people selected from different management levels (senior, middle, knowledge and operational level), and thus gives a broader organizational cultural perspective on the role and effectiveness of a firm's environmental scanning practices in LDCs.

For the purpose of this study we have summarized 24 issues that are well grounded in past literature (see table 1). The current research is an attempt to test their validity in the Kuwaiti business environment.

3 Research methodology

Since our interest focuses on clarifying the problems associated with environmental scanning from Kuwaiti executives' point of view, the survey method, based on a questionnaire, was chosen as being appropriate. The designed questionnaire includes three sections. The first one records data related to company profile (size, annual total revenue, number of total employees, number of employees involved in scanning activities). The second section highlights information related to respondents (department, position, and time he has been with the company). The third section includes major obstacles Kuwaiti executives may encounter.

3.1 Sample and procedure

In an attempt to test the validity of the 24 problems, we targeted Kuwaiti executive as the unit of our analysis.

We followed a procedure involving three steps to collect the data and to approach the companies. *First* we have chosen to contact companies through personal visits, using personal

network, telephone and in some case using e-mail to solicit their participation. *Second*, the executive is identified and an appointment was made with him. During the appointment executive was delivered a letter that describes the research objectives and the questionnaire. *Third*, each participant was briefed on the purpose, content, and procedure for completing the questionnaire and provided with a copy of the instrument. *Fourth,* another appointment was made to pick up the questionnaire.

The instrument required respondents to provide information based on what was currently in practice in his organization. Of the 250 questionnaires distributed, 194 were retuned, giving a response rate of 77.6%.

The following table provides the demographic data about the respondents.

Department	**Frequency**	**Percentage**
Information systems	4	1.86
Store and maintenance	5	2.48
Research and development	11	5.59
Human resources	14	7.21
Production and manufacturing	14	7.45
Finance and Accounting	27	13.91
Sales and Marketing	52	26.8
Free business (family business)	67	34.7
Total	194	100
Position of respondents	**Frequency**	**Percentage**
Operational level	15	7.73
Middle Management	49	25.26
Knowledge level[2]	64	33
Strategic level	66	34.01
Total	194	100
Time you have been with the company	**Frequency**	**Percentage**
Less than 1 year	11	5.68
1-5 years	72	37.11
6-10 years	52	26.8
11-15 years	26	13.4
More than 15 years	33	17.01
6-10 years	52	26.8
Total	194	100

Table 1. Demographic data and Profile of respondents

It can be noticed that 34.7 % of respondents are free business (i.e. owned by the family) followed by sales and marketing department (26.8%), while people belonging to the information system department are not involved in the environmental scanning activities. In addition, the majority of respondents belong to the senior management level which depicts the importance of environmental scanning activities in Kuwait, while 33% of respondents belong to the management level. The majority of respondents (37.1%) have been with their company between 1 and 5 years. 26.8% are respondents who spent between 6 and 10 years. The profile of the respondent provides credibility and validity of the environmental scanning practices in Kuwait.

3.2 Profile of companies

Table 2 provides the profile of companies involved in the survey.

[2] Knowledge level includes people who deal with knowledge when designing products, distributing information, and coping with paperwork in an organization.

Sector of companies	**Number**	%
Manufacturing	7	3.62
Travel agencies, hotels, and transportation	20	10.30
Petrochemical	12	6.19
Services company (accounting)	14	7.22
Automotive	14	7.22
Telecommunication	15	7.70
Consumers good and food industry	16	8.25
Trades and retailers	17	8.70
Construction	30	15.50
Finance, banking and insurance	49	25.30
Total	194	100.00
Nature of company	**Number**	**Percent**
Belong to joint venture	1	0.52
Mixed company	9	4.88
Public	34	17.65
Private	149	76.95
Total	193	100
Age of company	**Number**	**Percentage**
Less than 5 years	25	13.22
5.1 -10 years	21	10.35
10.1-20 years	17	8.62
More than 20 years	131	67.81
Total	194	100
Number of business sectors	**Number**	**Percent**
1	42	21.51
2-3	88	45.34
4-5	39	20.34
6-7	11	5.81
8-10	4	2.32
11-15	6	2.9
16-20	4	1.74
Total	194	100
Annual turnover (in million $)	**Number**	**Percentage**
Less than 1.6	17	8.88
1.6-3.3	14	7.4
3.3-16.5	45	22.96
16.5-33	70	36.29
33-108.9	24	12.59
109-165	7	2.96
Above 165	17	8.88
Total	194	100
Number of employees in the organization	**Number**	**Percent**

Less than 100	59	30.41
101-499	40	20.61
More than 500	95	48.96
Total	194	100
Existence of R&D activities	**Number**	**Percent**
No	62	31.9
Yes	132	68.1
Total	194	100
Percentage of employees involved in scanning	**Number**	Percent
0% (informal scanning)	18	9.27
1-5 %	82	42.26
6-20 %	60	30.9
More than 20 %	34	17.57
Total	194	100

Table 2. Characteristics of the companies and practices of scanning

Most of companies are in the finance, banking, and insurance sector (25.3%) followed by construction (15.3%). After Saddam Hussein fall in 2003, there sectors are facing a huge annual growth. Majority of companies belong to the private sector (76.95%), while a small percentage (17.65%) belong to public sector and 4.88% to mixed companies (owned by Kuwaiti and foreigners). 67.81 % of the companies have been in existence since more than 20 years and do know their business and environment very well, while 13.22% have been in existence for less than 5 years. Among the surveyed companies, 45.34 % are involved in up to 3 business sectors. More than half of respondents (59.25%) work in companies with an annual turnover comprised between $3.3. millions and $33 millions. 51.04 % of companies are SME (small and medium companies) while 48.96% are large. Among the sampled companied 68.1% have R&D activities and 73% have less than one quarter of their employees (≤20%) involved in environmental scanning activities.

3.3 Measures

Each of the 24 obstacles to environmental scanning, identified from the past literature (see table 1), was measured using a five-point scale: strongly agreed (1), agreed (2), neither agreed nor disagree (3), disagree (4), and strongly disagree (5). The respondents were asked to indicate on a scale whether each of the factors had been an obstacle to efforts to collect, receive and disseminate the information from the environment.

3.4 Reliability and validity of the instrument

Before data analysis content validity and reliability of constructs were examined. To ensure *content validity*, a thorough examination was made of the relevant literature. Before questionnaire distribution and to further reduce the possibility of non-random errors, a pilot was conducted to examine the questionnaire for validity (measuring what is intended), completeness (including all relevant variable items), and readability/understandability. A pilot phase was conducted with 20 executives and two faculty members. This was done in order to test the applicability of such instrument. The results of the pilot study suggested several changes to the questions. These changes were incorporated in the instrument.

Once data were collected, they were entered into SPSS version 13, reliability of constructs was examined. In order to ensure that the variables comprising each proposed research

construct were internally consistent, reliability assessment was carried out using Cronbach's alpha. A low value of Cronbach's alpha (i.e. close to 0) implies that the variables are not internally related in the manner expected (Nunnally 1978). As can be seen in table 3, the internal consistency reliability coefficients for research constructs are required to exceed the 0.70 level (Nunnally 1978).

4 Data analysis & results

Results in table 3 show that Cronbach alphas for all variable exceed 0.94. These values indicate very high reliability.

4.1 Problem of environmental scanning

Table 2 provides the survey responses (frequencies and means). It provides the analysis of obstacles executives are facing (1 strongly agree to 5 strongly disagree)

Problems of environmental scanning	N	Mean	SD	Alpha coeff.
1. Difficulties to identify the company's requirements in term of scanning activities	187	1.18	1.04	0.94
2. Inadequate management education and training	188	1.21	1.08	0.94
3. Frequent change in the market resulting in a lot of pieces of information and we lack methods to identify and select relevant information	187	1.27	1.10	0.94
4. Difficulty to analyze the quality of information sources	187	2.06	1.25	0.94
5. Difficulty to shape the meaning of several concepts which refer to "*environmental scanning*" and these have no clear vision about their content and usefulness	186	2.09	0.84	0.94
6. None integration of collected information in decision making process	188	2.33	1.14	0.94
7. Lack of knowledge how to start scanning	190	2.39	1.00	0.94
8. Lack of data sources where weak signals can be found	187	2.42	1.30	0.94
9. Collected data are not often presented in an adequate format for decision making function	186	2.45	1.12	0.94
10. Lack of quality of collected information	179	2.45	1.25	0.94
11. Lack of formal process to share colleted information	186	2.52	1.09	0.94
12. Inability to analyze collected pieces of information	183	2.55	1.28	0.94
13. Lacking of people motivation	183	2.61	1.48	0.94
14. Employees' resistance to environmental scanning culture	187	2.61	1.00	0.94
15. Uncertainty regarding government long-term policies	184	2.64	1.06	0.94
16. Lack of trust and cooperation among members of organization	186	2.67	1.45	0.94
17. Inability to perceive potential benefits or impact of scanning activities on the company 's performance	180	2.70	1.26	0.94
18. Lack of support from top management	184	2.70	1.26	0.94
19. Company culture is not oriented toward usage of environmental information	188	2.79	1.24	0.94
20. Difficulties to evaluate current practices of environmental scanning	185	2.79	1.02	0.94
21. Lack of time allocated to scanning activities	186	2.88	1.05	0.94
22. Data gathered is not useful since it is used to confirm only decisions already made and not new decisions	185	3.09	1.16	0.94
23. Lack of resources to conduct scanning activities	189	3.12	1.27	0.94
24. Problem of legal and ethical practices of environmental scanning	37	3.21	0.89	0.94

Table 3. Means, standard deviation, and internal reliability of obstacles facing executives to perform environmental scanning

The above table highlights the *most critical* problems (Means less than 2), the *least critical* (Means between 2 and 3), the neutral and those which are not at all perceived as problems (Mean greater than 2.5). Accordingly four categories of executives:

The first category represents the majority of surveyed executives (more than 96%) who strongly perceived the three following issues (issues no1 to 3 in table 3) are effective problems when they perform environmental scanning. The three perceived issues are: "*difficulties to identify the company's requirements in term of scanning activities*" is the most ranked problem, followed second by "*inadequate management education and training*" and thirdly by "frequent *change in the market resulting in a lot of pieces of information and we lack methods to identify and select relevant information*". Respondents seem to face problems on how to target and monitor the company's environment. They seem to be convinced about scanning activities, however, they lack skills of scanning in order to be more effective. Therefore, we refer to this category as ***beginner scanners*** since the practices are in their early stage.

The second category represents the executives who moderately agree with the following seven issues (issues no4 to no10 in table 3): "*Difficulty to analyze the quality of information sources*", "*difficulty to shape the meaning of several concepts which refer to "environmental scanning" and these have no clear vision about their content and usefulness*", "*None integration of collected information in decision making process* ", "*lack of knowledge how to start scanning activities*", "*lack of data sources where weak signals can be found"; "collected data are not often presented in an adequate format for decision making function", and "lack of quality of collected information".* Respondents seem to have started scanning activities including collecting weak signals; evaluating their quality; these pieces of information are, however, not yet integrated in decision making. Accordingly, scanning activities are advanced but not mature. We can refer to this category as ***advanced scanners***.

The third category represents executives who don't see the following statements are the main issues when performing environmental scanning (issue 11 to 25). In particular, this category highlights the three least and unimportant problems: "*data gathered is not useful since it is used to confirm only decisions already made and not new decisions*", "*lack of resources to conduct scanning activities*", and lastly "*problem of legal and ethical practices of environmental scanning*". Those respondents do not care about scanning their external environment since they perceive any of the reported problems are effective issues. Executives of these companies do not seem to fully understand the importance of environmental scanning. We therefore, refer to this category as ***non scanners***.

The next section analyses whether there is differences between respondents with regard to the issues in the two first categories: beginners and advanced scanners. Comparison is based on company size, respondent experience, nature of company, and number of employees involved in scanning activities.

4.2 Difference in perceived problems

In order to test whether there are significant differences in the 10 perceived problems (included in beginners and advanced scanners), we first assessed the normality of all these issues. For this purpose we examined normality using Kolmogorov-Smirnov test (Nunnally 1978). The null hypothesis being tested was that the ten problems are normally distributed. The P-value [0.00] was found to be less than alpha [0.05], indicating that the variables are not normal distributed. Therefore, the Mann Whitney test was selected to test whether there are significant differences among the ten perceived problems based on the following seven variables.

1. Type of company (private, public, joint venture, and mixed companies).
2. Age of companies (≤5; 5-10; 10-20;≥ 20).
3. Annual turnover (≤1.6; 1.6-3.3; 3.3-16.5; 16.5-33; 33-108.9; 109-165; and > 165).
4. Number of employees (≤100; 101-500; and > 500).

5. Percentage of employees involved in scanning (0%; 1-5 %; 6-20 %; and more than 20 %).
6. Number of business functions (1; 2-3; 4-5; 6-7; 8-10; 11-15 and 16-20).
7. Existence of R&D activities (Yes vs. No).

The Mann Whitney test shows no statistical significance for the first six issues (perceived problems): Type of company, age**,** annual turnover, number of employees, percentage of employees involved in scanning and number of business functions. In table 4 we report only results for the last variables (existence of R&D activities).

Note: ** Significant at p<0.05 and *Significant at p<0.10

Perceived problems related to environmental scanning	**Presence of R&D**	**Mean rank**	**Man-Whitney U**
1- Difficulties to identify the company's requirements in term of scanning activities	Yes	88.77	0.371
	No	95.73	
2- Inadequate management education and training	Yes	95.19	0.063
	No	80.38	
3- Frequent change in the market resulting in a lot of pieces of information and we lack methods to identify and select relevant information	Yes	94.36	0.133
	No	82.58	
4- Difficulty to analyze the quality of information sources	Yes	96.79	0.024**
	No	79.03	
5- Difficulty to shape the meaning of several concepts which refer to "*environmental scanning*" and these have no clear vision about their content and usefulness	Yes	89.59	0.870
	No	90.88	
6- None integration of collected information in decision making process	Yes	94.07	0.117
	No	81.52	
7- Lack of knowledge how to start scanning	Yes	94.16	0.157
	No	82.99	
8-Lack of data sources where weak signals can be found	Yes	94.13	0.013*
	No	82	
9-Collected data are not often presented in an adequate format for decision making function	Yes	94.5	0.799
	No	81	
10- Difficulty to analyze quality of collected information	Yes	90	0.024**
	No	88	

Table 4. Differences in the perceived problems based on presence of R&D

The above table highlights a statistical significance difference between three problems (difficulty to analyze quality of collected information, difficulty to analyze the quality of information sources and lack of data sources where weak signals can be found) with regard to availability of R&D scanning activities. All these three problems are highly correlated.

CONLCLUSION AND IMPLICATIONS

This study is an attempt at filling the gaps in the literature about practices of environmental scanning between Western and LDC organizations. It examines the perceived problems related to environmental scanning by a sample of Kuwaiti executives. The ten greatest perceived obstacles to executives when performing environmental scanning activities are the following:

1. Complexity to identify the company's requirements in term of scanning activities.
2. Inadequate management education and training.
3. Lack of methods to identify and select relevant weak signals.
4. Lack of methods to analyze the quality of information sources.
5. Confusion in the assimilation of "*environmental scanning*" and its variant concepts.
6. None integration of collected information in decision making process.
7. Lack of knowledge how to start scanning activities.
8. Lack of data sources where weak signals can be found.
9. Collected data are not often presented in an adequate format for decision making function.
10. Lack of quality of collected information.

Most important result is the relationship between three perceived scanning problems (lack of data sources where weak signals can be found, difficulty to analyze the quality of information sources and difficulty to analyze quality of weak signals) and presence of R&D activities. Therefore more a company is involved in R&D more it engages itself in scanning activities, more executives discover problems to find useful information sources where weak signal can be found, more they also discover problems to evaluate the information sources and collected information.

In addition, results indicate three categories of companies: none scanners, beginners and advanced scanners. Therefore, practices of environmental scanning vary across companies; and for those involved in scanning activities, their practices are not advanced. Most identified problems are related to requirements' identification, training, information selection, quality assessment of information and information sources, and integration of collected pieced of information in the decision making process

The three identified groups need training in order to improve their practices. As can be seen, inadequate training and motivation (ranked second) is perceived as a critical obstacle to perform environmental scanning in Kuwait. This is in line with prior studies in developing and Arabic countries. Several researchers have cited inadequate management education and training as obstacles to the strategic management function (Abdalla and Al-Homoud 1995). Results also reveal many Kuwaiti executives may not fully understand that environmental scanning is useful to strategic decision making as advocated by past studies (Martinson 1994; Rouibah and Ould-Ali 2002).

The *beginner scanners* group need to focus more on training employees to increase their knowledge and skills concerning how to "delimit the scanning areas", which constitute the first phase of environmental scanning. They can also look IT solutions that might provide support for in this matter.

The *advanced scanners* need to develop methods and methodologies to train people on how to interpret pieces of information and to present them in proper format that are useful for decision-making. If collected pieces of information are not related to senior managers' requirements, and are far from the expected targets, and refer to strong signals (i.e. information informs about past events), it is expected that senior managers will not integrate such pieces of information in their decision making process. In addition, this group of companies must do more than increase spending budget allocated to scanning and adding employees to that task. The company must scan continuously, must link scanning activities

with corporate strategy (strategic decision making), and must spend more in the training of people dedicated to environmental scanning. This group

For the *non scanners* group, results of the study imply that senior managers need to change their attitude vis-à-vis of environmental scanning. They need to be trained in order to recognize the values of weak signals and to become more aggressive and proactive in weak signal management. In achieving these objectives, they must start to allocating budget to scanning activities and to assigning employees to these tasks. The company must start scanning areas even though they are narrowed in the early stages. These areas should be linked to company strategy. In addition, training sessions could focus on different issues such as assimilation of the weak signals concept, its usefulness, criteria to recognize weak signals, and characteristics of employees appointed to its collection.

For the information system executives of three identified groups of companies, the study's results, is beneficial for their departments. The information system executives can raise the value of their activities by developing new information systems that help training, and convincing employees on the usefulness of environmental scanning as well as to assimilate concepts presented in this paper.

For future research direction, since past studies have proven the existence of a positive relationship between environmental scanning activities and companies' performance (see Beal 2000), there is a need to study if such a relationship is still valid in companies that belong to LDCs. Which sector of the environment (political, economic, societal, competition, customers and suppliers) receives more attention in the Arab world? Is there any difference in the scanning frequency of these sectors as advocated by Western researcher (e.g. Elenkov 1997)? Do executives use a continuous mode of scanning (proactive) or accidental scanning (reactive)?

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