

# **EMERGING DIGITAL ENVIRONMENT IN THE PRIVATE SECTOR: AN ANALYSIS OF INFORMATION OPERATIONS<sup>+</sup>**

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**Abstract:** The purpose of the study was to profile the information activities in the Kuwaiti corporate sector and to find out if there were any differences between the current practices and the perspectives of corporate leadership about the future needs. One of the top executives or managers from each of the 39 Kuwaiti companies, which volunteered to participate in the study, was interviewed. Participant input was sought on a carefully designed instrument, containing 19 statements in four operational areas, covering the scatter of information operations in private companies. In the first part, each participant indicated the extent to which each of the information operations was performed in the organization. Then, they were asked to rank three most and three least important activities, based on their best judgment, disregarding the operational situation in their organizations. It was found that there is a marked difference between the current practices and the perceived importance of different activities in the areas of information organization, database development, data security, and the conduct of competitive intelligence. Low perceptions about the importance of Internet utilities and Web design also point to some issues of awareness about their use and availability of manpower.

## **Introduction**

Information technology has influenced all the operations of management, production, sales, marketing, human resources and financial control in the corporate sector. Evidently, any competitive organization in this sector is becoming a rigorous user of information resources, systems, resources and services, as information runs like a life-fabric through each activity. The internal operations of a private company have been reconfigured and new approaches are applied to the operations related to data, documents, records, reports and communications. We also see a constant shift in adopting an aggressive approach in the outreach efforts of a private enterprise with its external environment, stakeholders, customers, public agencies and a number of other partners in diverse

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<sup>+</sup> This is revised version of the paper presented in the 9<sup>th</sup> Conference of the Arabian Gulf Chapter of the Special Libraries Association, Doha, Qatar, April, 2002 where it was given the best research award.

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spheres. A number of technologies have been employed for these activities in this fast changing work environment.

In order to manage information operations effectively, it is important to profile them so as to indicate the extent and depth of their conduct, which would in turn lead to the articulation of human resources needed in the emerging environment. It is understood that a given socio-economic and technological context would dictate the extent to which changes are introduced in information operations in the corporate companies. It is further assumed that the apparent expediencies of the change might be prompting certain information activities being conducted at a certain level. However, the executives of these companies may hold divergent views about the current practices. They may have their own insights about their priorities for future directions. Thus, it becomes a two-fold task; first, to determine the nature and extent of information operations in these companies, and, secondly, to examine if the current practices are at variance with the perceptions of the executives about the value and importance of these activities.

A number of variables related to geographic locations, socio-cultural context, operational focus, size, and public policies cause innate variations in the information operations of the private sector in any region. Kuwait is a small state in the Arabian Peninsula, with a small population of .83 million natives, but having the second largest petroleum reserves that give it a distinct prominence in the world community. It has an expatriate population of 1.7 million. During the last 60 years, its economy has evolved from the pre-petroleum phase of sea-trade and small domestic market to its post-petroleum integration with the international systems of production and multinationals. The latest drive is toward free enterprise, possibly through new sets of legislation, tariff provisions, and trade regulations.

The corporate sector of the nation has been quite active during the last many decades. It is evident from the fact that the net contribution of this sector to the GDP grew from 27% in 1997 to 31% in 1999, registering a growth of about 15% in two years. Some petrochemical industries have also been developed. Consumer-oriented industries in the areas of food technology, construction and development, and communication have flourished, catering for the needs of the local and regional needs. The nation boasts of being one with the highest figure for per capita automobiles. It also has one of the strongest service sectors in financial area, concentrated in banking, insurance and investments. The country has certain laws of import, export, investment and economic activity that favor the indigenous population. Many small and medium-sized enterprises have been in a rigorous competition for capturing the consumer market. This corporate sector is typical of

other countries in the Arabian Peninsula, all sharing certain points. These countries have a small industrial base; the industrial sector is concentrated in areas related to petroleum and minerals; there is little research and development activity; and the focus is on the consumer-oriented products and services. The Arabian Gulf region, under its existing organizational framework of the Gulf Cooperation Council (GCC), has six member nations and Kuwaiti private sector typifies the overall corporate activity in the region. It is worth exploring how the Kuwaiti companies are managing their operations with regard to their use of IT, information systems, and resources and services. Also, it is important to find out the variations between the current practices and the views the executives have about their priorities for future applications.

A number of studies have addressed similar questions in diverse settings. Bergeron conducted an extensive review of literature on the subject and noted that information, like other organizational resources, needed to be managed to help organizations improve productivity, competitiveness, and overall performance<sup>1</sup>. The British Library Research and Innovation Center was engaged in a comprehensive study to identify the current and emerging positions of information managers in banking, pharmaceutical and information provision industries. They profiled the skills and competencies needed for first and second jobs in these sectors. They also examined how far academic departments were including these skills in their academic programs and curricula.<sup>2</sup>

Tchobanoff and Price examined the qualities needed in the library and information school managers to fill positions in corporate sector and key skills they expected to be included in the curricula.<sup>3</sup> Rehman, Abu Baker and Majid came up with lists of competencies in different operational areas for the special library setting.<sup>4</sup> Elkin examined the implications for the development of information professionals. She listed attitudinal attributes as well as those capabilities that were generally required of the future information navigators.<sup>5</sup> Underwood listed core body knowledge for

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<sup>1</sup> P. Bergeron, (1996). "Information Resources Management," *Annual Review of Information Science and Technology* 31 (1996): 263-300.

<sup>2</sup> A. Stenson., R. Raddon, and A. Abell A., *Skills and Competencies in the Corporate Sector*. London: British Library Research and Innovation, 1999.

<sup>3</sup> J. B. Tchobanoff, and J. A. Price, "Industrial Information Service Managers: Expectations of, and Support of, the Educational Process," *Library Trends*, 42, no. 2 (1993): 248-256.

<sup>4</sup> Sajjad Rehman, Ahmad B. Abu Baker, and Shaheen Majid, Defining Competencies for Special Library Professionals: Malaysian Experience, *Aslib Proceedings*, 49, no.6, (June 1997): 162-169.

<sup>5</sup> J. Elkin, Information Navigators: Future Professionals? 1998. Available at: <http://www.ukloln.ac.uk/papers/bl/blri078/content/repor~12.htm> last access: April 20, 2001.

information technology professionals approved by the Australian Computer Society.<sup>6</sup>

Many of the listed items were quite relevant for application in the corporate sector. Joling also reviewed such competencies from a futuristic viewpoint and highlighted the trends and dynamics in the information workplace. She also discussed the preparatory aspects of these professionals.<sup>7</sup> Rehman and Ansari provided detailed analyses about the perceptions of educators for the coverage of different areas and topics in the formal degree programs of information studies.<sup>8</sup> Rehman and Marouf profiled information operations in the Kuwaiti corporate sector. They had noted the looming influence of information technology on the way these organizations were conducting business by using a variety of information sources, systems and services.<sup>9</sup>

## **Problem**

Most of the studies reviewed above have addressed the need for defining the competencies that need to be developed among information professionals. In the context of corporate sector, there is a need to profile the information operations and activities that are being performed in different areas. Since the corporate sector of the Gulf countries located in the Arabian Peninsula has a peculiar context, a systematic examination of their information operations and activities would provide an understanding of the scatter and intensity of information work. As the situation of different companies requires diverse practices, a general understanding about the extent of these operations is needed. However, the current practices have been developed in response to a number of expediencies such as the human resource situation, strategic differences in different sectors of the corporate organizations, and organizational and operational profiles of these bodies. There is a strong likelihood that the executives in these organizations may have conceived their priorities for future development of information operations differently from

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<sup>6</sup> A. Underwood, "The ACS Core Body of Knowledge for Information Technology Professionals: Approved by Council on 20 September 1997." Available at: <http://www.acs.org.au/national/pospaper/bokpt1.htm> last access April 20, 2001.

<sup>7</sup> C. Joling, *Competencies with a Message*. 2000. Available at: <http://www.idrc.ca/fidcan/acuril.html> last access: April 20, 2001.

<sup>8</sup> Sajjad Rehman, and Husain Ansari, *Information Education in the Arabian Gulf Region for the 21<sup>st</sup> Century*. Research report submitted to the Research Administration, Kuwait University, 2001, unpublished.

<sup>9</sup> Sajjad Rehman and Laila Marouf, "Information Operations in the Kuwaiti Corporate Sector: An Analysis." Paper presented at the 2002 Information Resources Management Association International Conference, May 19-22, Seattle, Washington, USA.

the way these have evolved. There is a need to find out what are the differentials between the current practices and the aspirations of the executives for future directions. This would help in creating a crucial understanding of the possibilities and opportunities in the future, as these could be viewed from the practice scene of today.

## Research Questions

This study was designed to seek answers to the following two questions:

- What is the extent of operation of different information activities in the **Kuwaiti** corporate sector?
- What are the differentials between the current practices of information operations and the perceptions of the executives about the most and the least important activities, considering their future needs and aspirations?

## Procedures

For this study, it was considered appropriate to identify companies that would represent the Kuwaiti corporate sector and collect data from them through a structured interview with one of the top executives of each of them, based on a carefully developed research instrument. In order to identify companies as population of the study, the directory, *AlMisbar: The Who's Who of Kuwait in State and Business*, 4<sup>th</sup> ed. (Delta: Kuwait, 2000) was used. Selection criteria used were (a) minimum number of employees must be 50, (b) the minimum capital of the company must be one million Kuwaiti dinar, and (c) it should be willing to participate in the study. Based on the first two factors, a total of 70 companies were identified. They were faxed an initial request in which the purpose of the study was stated and it was explained that one of the top executives of the company would be interviewed for about 45 minutes in case they volunteer to participate in the study. Telephonic inquiries and personal contacts were used to extract responses. Subsequently, fifty-four of them (77%) consented to participate.

Later, at the time of conduct of interviews, 15 of the 54 companies (27.8%) were unable to work out a mutually convenient interview appointment and thus they could not participate in the study. Thirty-nine companies which actually participated in the study belonged to diverse sectors and the following breakdown provides an overall picture of the wide spectrum of the scatter:

### Financial Institutions

Investment	7
Banks	4

Insurance	2
Service Industry	
Hotel industry	4
Automobile	2
Pharmaceutical (import & sale)	2
Estate management	1
Warehousing	1
Travel	1
Communication	1
Financial information systems	1
Other Industries	
Construction and development	3
Petro-chemical	2
Food Technology	2
Other Industries	1
Business	
Conglomerates	3
Export/Import	1
Retail	1
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Total	39

Preparation of the research instrument was the most critical step. The intent was to have a brief, logical and well-designed instrument that would elicit the needed data without causing strain on the interviewees. As a first step, based on an extensive review of literature and scanning of competency studies, an initial list of information activities in the corporate companies was prepared. Then these activities were organized by merging those that had an element of overlap, deleting those that were considered unnecessary or redundant, and combining a number of them so as to have a logical set of activities. The instrument was also pre-tested.

The research instrument was designed to collect information about two dimensions: (1) extent of operation of each of the 19 activities in the four operational area, and (2) perceptions of the participants about the three most and the three least important activities. The participants were asked to do these rankings after they had given their judgment about the current practice, item by item, and they were able to make a sound judgment about their actual need vis-à-vis their current practice. Rankings was requested only for three items for both the most and least important dimensions, as longer lists were feared to create confusion in their responses. Also, the use of two measures of the most and the

least important was expected to add validity to the responses, obliging the participants to be more critical in their thought process.

A faxed request for interview, together with a copy of the research instrument, was sent to each of the interviewees. They were assured of the use of information exclusively for research and about the anonymous treatment of their responses. It also contained the proposed date and time of interview. The interviewee was requested to scan the research instrument before the meeting and frame his/her opinion and also mark any areas that deserved explanation. It was specified that none of them was expected to have filled in the instrument before the interview. Telephonic follow-up was made for confirmation in majority of the cases. A number of interviewees were contacted many times, yet it was not feasible to conduct the interview due to their non-availability, bringing down the final number of participant organization to 39 as compared to 54 who had initially agreed to participate.

The mode of conduct of the interview was that the researcher would briefly describe the purpose and significance of the study. The researcher would read out a statement and provide any explanation, if the interviewee wished so. Then the researcher would ask the interviewee to indicate the extent to which a particular activity was performed in the organization. The researcher would mark the response on the instrument she was holding. In the second part, the researcher attempted to bring them out of the mode of the current practice and focus on their needs in relation to their priorities for the development of information operations in the future. It was made overly clear that their responses to this part had nothing to do with their current practice. Then, they were asked to identify from those activities from the instrument that they considered most or least important. Thus, each participant was expected to mention six activities, three being the most important and another three being the least important.

Quite a few interviewees requested their colleagues, responsible for certain operations in the company, join them for providing input related to certain activities. In one company, it was realized that its two units performed in an autonomous manner and could have different responses for specific statements. It was agreed that in order to ensure validity of responses, two individuals for the company would be interviewed separately, resulting in two responses from the same company. Consequently, we had a total of 40 responses from 39 companies, based on this interview exercise. Amount of time spent on an interview was timed and it was found that an average interview consumed 45-60 minutes.

## Analysis

Data about current practices were analyzed by using frequency counts and respective percentages. The respondents had given their judgment about the extent of operation of each activity in one of the four categories: no, little, moderate, and extensive levels of activity. Table 1 provides analysis of these results with frequencies and percentages in the four categories for each statement.

For the second part, each respondent had identified three statements as being either the most important or the least important. It means that each activity had a certain tally of 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> ranks, as indicated by the respondents. These tallies were then used to compute rank score of each activity, which was used to sequence them in the order of the most important and the least important in Tables 2 and 3, respectively. The rank score was computed by using the multipliers of 3, 2 and 1 for the ranks of 1, 2 and 3, respectively within each rank category and then adding them up together in order to get the overall rank score. For instance, if Activity A was ranked first by 5 respondents, second by 3 of them and third by one of them, the rank score would be:

Rank 1 Frequency: 5	Multiplier of 3,	score of	15
Rank 2 Frequency: 3	Multiplier of 2,	score of	6
Rank 3 Frequency: 1	Multiplier of 1,	score of	1

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Total rank score of the statement: 22

Activities were arranged by using the descending rank score criterion. If more than one activity had the same score, the rank was determined by averaging out.

For each activity, results of the extent of operation from Table 1 were used. For perceptions about importance, results of Tables 2 and 3 for the same statement were used for the purposes of comparison and discussion.

**Table 1: Information Operations in Kuwaiti Corporate Companies (N=40)**

I Information Needs and Use, Resources and Services	None	Little	Mode- Rate	Exten- sive
1. Obtaining and using information sources for organizational work such as research reports, periodicals, books, manuals, standards, databases, Internet sites, reference materials, etc.	0 0.0%	3 7.5%	16 40.0%	21 52.5%
2. Supplying information to users in your organization in appropriate report formats and media	0 0.0%	9 22.5%	11 27.5%	20 50.0%
3. Conducting competitive intelligence for your organization such as finding information about competitive companies and their products, forecasting activities, etc.	2 5.0%	4 10.0%	17 42.5%	17 42.5%

4. Locating information sources about your organization such as statistical data, technical reports, company archives, publications, etc.	2 5.0%	9 22.5%	13 32.5%	16 40.0%
5. Determining information needs of users from your organization such as research and development staff, professionals, executives, etc.	2 5.0%	11 27.5%	14 35.0%	13 32.5%
6. Organizing internal information (memos, reports, etc.) and external information and documents by using appropriate techniques such as indexing, filing, tagging, categorizing or classifying them	2 5.0%	16 40.0%	13 32.5%	9 22.5%
<b>II Computing Activities: Hardware, Software, Networking and Data Security</b>				
1. Configuring computer software needs of your organization and selection and purchase of packages; troubleshooting of operating systems and software	0 0.0%	2 5.0%	4 10.0%	34 85.0%
2. Configuring computing hardware requirements of your organization and their procurement; maintenance and troubleshooting	0 0.0%	0 0.0%	7 17.5%	33 82.5%
3. Developing a LAN or an Intranet for your organization such as setting up servers and client stations, physical planning, assigning IP addresses and rights of access to	2 5.0%	5 12.5%	4 10.0%	29 72.5%
4. Ensuring data security in your organization through encryption techniques, firewalls, disaster recovery	4 10.0%	9 22.5%	10 25.0%	17 42.5%
<b>III Computing Activities: Database, Information Retrieval and Internet</b>				
1. Using Internet directories and search engines for retrieving relevant information and documents for the needs of your organization	1 2.5%	5 12.5%	11 27.5%	23 57.5%
2. Developing databases for organizing company data by using systems such as Access, Oracle, etc.	6 15.0%	9 22.5%	6 15.0%	22 47.5%
3. Searching, retrieving and packaging information from databases, both external and internal	5 12.5%	10 25.0%	11 27.5%	14 35.0%
4. Designing Web pages and sites for your organization using languages and utilities	16 40.0%	12 30.0%	7 17.5%	5 12.5%
5. Using Internet utilities like Telnet, Listserv, bulletin boards, FTP, etc. for your organizational needs	18 45.0%	15 37.5%	3 7.5%	4 10.0%
<b>IV Management Activities</b>				
1. Preparing financial and costing reports for your organization using different computing utilities such as spreadsheets, etc.	1 2.5%	0 0.0%	3 7.5%	36 90.0%

2.	Planning strategically for your organization such as writing mission statements, goals and objectives, benchmarking, roadmaps, etc.	1 2.5%	5 12.5%	10 10.0%	24 60.0%
3.	Communicating with individuals and groups within and outside the organization by using verbal and non-verbal skills; application of communication/presentation skills in public relations, marketing, etc.	0 0.0%	3 7.5%	13 32.5%	24 60.0%
4.	Training staff in information searching and use	9 22.5%	17 42.5%	4 10%	10 25%

**Table 2: Ranking of The Most Important Activities (N=40)**

Statement of Activity	Ranks			Score
	1	2	3	
1. Planning strategically for your organization such as writing mission statements, goals and objectives, benchmarking, roadmaps, etc	21	5	1	74
2. Organizing internal information (memos, reports, etc.) and external information and documents by using appropriate techniques such as indexing, filing, tagging, categorizing or classifying them	3	5	6	25
3. Conducting competitive intelligence for your organization such as finding information about competitive companies and their products, forecasting activities, etc.	3	3	4	21
4. Developing databases for organizing company data by using systems such as Access, Oracle, etc.	2	4	3	17
5.5 Ensuring data security in your organization through encryption techniques, firewalls, disaster recovery strategies, etc	2	1	4	12
5.5 Training staff in information searching and use	1	3	3	12
8. Obtaining and using information sources for organizational work such as research reports, periodicals, books, manuals, standards, databases, Internet sites, reference materials, etc.	2	2	1	11
8. Determining information needs of users from your organization such as research and development staff, professionals, executives, etc	0	4	3	11
8. Locating information sources about your organization such as statistical data, technical reports, company archives, publications, etc.	2	2	1	11

10. Communicating with individuals and groups within and outside the organization by using verbal and non-verbal skills; application of communication/presentation skills in public relations, marketing, etc.	0	3	4	10
11. Supplying information to users in your organization in appropriate report formats and media	0	2	5	9
12.5 Searching, retrieving and packaging information from databases, both external and internal	0	3	1	7
12.5 Designing Web pages and sites for your organization using languages and utilities	2	0	1	7
14. Using Internet directories and search engines for retrieving relevant information and documents for the needs of your organization	1	1	0	5
15.5 Developing a LAN or an Intranet for your organization such as setting up servers and clients stations, physical planning, assigning IP addresses and rights of access to users	1	0	1	4
15.5 Preparing financial and costing reports for your organization using different computing utilities such as spreadsheets, etc., roadmaps, etc.	0	2	0	4
17.5 Configuring computing hardware requirements of your organization and their procurement; maintenance and troubleshooting	0	0	1	1
17.5 Configuring computer software needs of your organization and selection and purchase of packages; troubleshooting of operating systems and software	0	0	1	1
19. Using Internet utilities like Telnet, Listserv, bulletin boards, FTP, etc. for your organizational needs	0	0	0	0

**Table 3: Ranking of the Least Important Activities (N=33)\***

Statement of Activity	Ranks			Score
	1	2	3	
1. Designing Web pages and sites for your organization using languages and utilities	8	5	1	37
2. Using Internet utilities like Telnet, Listserv, bulletin boards, FTP, etc. for your organizational needs	7	3	2	29
3. Configuring computing hardware requirements of your organization and their procurement; maintenance and troubleshooting	4	1	1	15

\* Those who did not consider any activity irrelevant = 7 out of 40.

4.	Conducting competitive intelligence for your organization such as finding information about competitive companies and their products, forecasting activities, etc.	4	0	0	12
5.	Ensuring data security in your organization through encryption techniques, firewalls, disaster recovery strategies, etc.	2	1	1	9
6.	Developing a LAN or an Intranet for your organization such as setting up servers and clients stations, physical planning, assigning IP addresses and rights of access to users	0	3	2	8
8.	Locating information sources about your organization such as statistical data, technical reports, company archives, publications, etc.	0	2	3	7
8.	Using Internet directories and search engines for retrieving relevant information and documents for the needs of your organization	2	0	1	7
8.	Determining information needs of users from your organization such as research and development staff, professionals, executives, etc.	1	2	0	7
11.	Supplying information to users in your organization in appropriate report formats and media	1	1	1	6
11.	Training staff in information searching and use	1	1	1	6
11.	Communicating with individuals and groups within and outside the organization by using verbal and non-verbal skills; application of communication/presentation skills in public relations, marketing, etc.	1	1	1	6
13.	Searching, retrieving and packaging information from databases, both external and internal	0	2	1	5
14.5	Organizing internal information (memos, reports, etc.) and external information and documents by using appropriate techniques such as indexing, filing, tagging, categorizing or classifying them	0	2	0	4
14.5	Developing databases for organizing company data by using systems such as Access, Oracle, etc.	0	2	0	4
16.5	Configuring computer software needs of your organization and selection and purchase of packages; troubleshooting of operating systems and software	0	1	0	2
16.5	Preparing financial and costing reports for your organization using different computing utilities such as spreadsheets, etc.	0	1	0	2
18.	Obtaining and using information sources for organizational work such as research reports, periodicals, books, manuals, standards, databases, Internet sites, reference materials, etc	0	0	0	0
19.	Planning strategically for your organization such as writing mission statements, goals and objectives, benchmarking, roadmaps, etc	0	0	0	0

## Findings

### I Information Needs and Use, Resources and Services

The first area of information activities covered in the research instrument was related to information needs and use, resources and services, consisting of six statements. The activity dealing with *obtaining and using information sources for organizational work* was most extensively covered in the area where 92.5% of the respondents had marked the categories of extensive and moderate levels of activities. When the same respondents ranked the most and least important activities, it was found that it had 8<sup>th</sup> rank among a total of nineteen with the rank score of 11. It means that there exists a real differential between its actual level of performance and the perceived importance of the activity. On the other hand, in Table 3 for ranking of the least important activity, no respondent had listed it. Apparently, the respondents view it quite important, but there are other activities that are perceived to more significant in relative terms.

The second most extensively performed activity in this section was related to *supplying information to users*. More than 77% of the respondents had marked extensive and moderate levels of activity. However, on the dimension of perceived importance, it had 11<sup>th</sup> rank with the score of 9. Interestingly, three participants also ranked it least important with the rank score of 6. This indicates that despite having an extensive level of performance, there is a great deal of diversity about the perceived importance of this activity.

*Conducting competitive intelligence* was performed at extensive and moderate levels in 85% percent of the organizations, evenly split in the two categories. On the dimension of perceived importance, it received the third highest rank score of 21. Most interestingly, four participants perceived it to be the least important with a rank score of 12. It means that there are a number of organizations that do not find any value for this activity, yet majority of them is performing it at a reasonably extensive level. It has been noted that collection and application of competitive intelligence is normally done informally, using the local socio-cultural outlets and exchanges. Only those organizations that are in a tough competitive run-up feel as strongly about this activity whereas many others without any real competition may not be attaching much importance to it.

*Locating information sources about the organization such as statistical data, technical reports, company archives, publications, etc.* is performed extensively and moderately by about three fourth of the organizations. It received 8<sup>th</sup> rank with a score of 11. Interestingly, as many respondents also marked it for the least important with the ranking score of 7 with 8<sup>th</sup> position in the overall ranking,

implying that difference organizations seem to have divergent views about its importance.

About two third of the organizations performed the activity of *determining user needs* at extensive and moderate levels. It had 8<sup>th</sup> rank with a score of 11 for the perception about most important activities. Again, for the measure of least important, it had the 8<sup>th</sup> rank with the score of 7. It implies that while it is widely performed, there are a number of organizations that do not attach any significance to that.

About one fourth of the participants performed the last activity in this group related to *organizing internal information* extensively, about one third moderately, 40% at the minimal level, and 5% reported no activity. It seems that this activity is being performed differently in majority of these organizations. Overall, it was the least performed activity within this group of activities. However, it was noted that it received third position with the rank score of 21, marked by 10 participants. Thus, it indicates quite a significant differential between the actual conduct and the perceptions about its significance and usefulness. For the least important measure, it had the rank of 14.5 with a score of 4. These results indicate that this activity is not being performed at an extensive level in majority of the organizations, yet they find it highly important. The differential might be attributable to the unavailability of human resources and the need for using an aggressive approach toward developing the right resources and facilities for indexing, tagging, and cataloging such resources that are needed in the company business.

## **II Computing Activities: Hardware, Software, networking and Data Security**

This section contained four statements of activities. Majority of the organizations performed these activities at an extensive level. However, the respondent perceptions about their importance appear to be quite at variance with their current practice.

Eighty-five percent of the organizations performed the activity of *configuring computer software needs, etc.* at an extensive level while another 10% at the moderate level, indicating that almost each of them is actively engaged in it. However, the sense of importance attached to the activity was very low, evident from its rank of 17.5 with the score of only one. On the dimension of least importance, it received the rank of 16.5 with a score of 2 implies that the activity is performed extensively; mostly the respondents do not think that it is unimportant, yet almost none of them attaches a great deal of importance to it. One possible explanation is that the companies might have already established their software systems and hence they do not find any pressure about their significance, as they might be managing them reasonably well.

About 98% of the respondents performed the other component of information systems related to *configuring hardware needs, etc.* at extensive or moderate levels. However, for the perception of importance, it had the rank of 17.5 with the score of 1. Concurrently, it received 3<sup>rd</sup> rank with a total score of 15 for being least important. It clearly indicates that while being performed in every organization extensively, employers do not attach much significance to its conduct.

The third statement in the section was about the *development and maintenance of LANs*. About three fourth of these organizations performed it extensively while 10% at the moderate level. Again, this activity was perceived to have the lowest importance with the rank of 15.5 with a score of 4. Conversely, for the scale of least important, it received 6<sup>th</sup> rank with a score of 8. These findings are more or less consistent with the preceding statement of activity.

The last activity in this section was about *data security facilities and tools*. This was being performed at quite a low level in these organizations in relative terms. Those performing it at extensive and moderate levels were 42.5 and 25% respectively, leaving about one third of them in the categories of little or no performance at all. On the dimension of perceived importance, it had the rank of 5.5 with a score of 12. It also received the same 5<sup>th</sup> rank for least important activities with a score of 9. These results indicate that quite a few organizations have not felt the need to install data security and encryption methods. It might be due to the fact that they are not engaged in any online sales, marketing and public contacts, which normally exposes to security breach and hacking problems. However, many of them perceive it quite important. But, concurrently, those organizations that have no such plans are as receptive to their importance. These perceptions might change when the normal business activities in the country turn into an aggressive approach for the use of Internet, EDI, globalization, and electronic business.

It has been noted that the differentials between levels of activity and perceptions about importance are quite high for three out of the four statements in this section. It is probably due to the fact that they feel little concerned about the conduct of these activities in the presence of well-established systems. It confirms this notion that the level of performance of an activity does not essentially reflect the perceived importance of a particular activity from the perspective of corporate executives.

### **III Computing Activities: Database, Information Retrieval and Internet**

This section contained five statements of activities, all related to application of information technologies and systems in the organizational life. Three of the five activities were related to Internet and Web use and applications.

The activity performed most extensively is related to *using Internet directories and search engines for retrieving relevant information*. More than 57% of the companies performed the activity at an extensive level while 27.5% at the moderate level. Its rank order for the perception of importance was 14 with a score of 5. On the other hand, 3 participants marked it to be the least important with a ranking score of 7 in the 8<sup>th</sup> rank. It seems that majority of these organizations is actively using Internet for retrieving the needed information. However, it is being performed without having any strong views about its importance or otherwise.

The next activity in this area was related to *developing databases*. Respective percentages of 47.5 and 15 were noted for extensive and moderate levels of activity. It has been somewhat surprising that 37.5% of these organizations reported little or no activity on this end. Databases are the most important application for any organization and it is quite intriguing that such a large number of them are not using these applications. This activity received 4<sup>th</sup> rank for its importance with a score of 17, marked by 9 participants. Only two participants marked it on the measure of least important, giving it the rank of 14.5 with a score of 4. These two ranking positions are mutually supportive and indicate that there is a great deal of importance attached to this activity though quite a few of them are inactive on this front. This difference in the current practice and the perceived importance is quite noticeable.

The third activity in this section was about *searching and applying information from external and internal databases*. It was found that 62.5% of these organizations were active at extensive and moderate levels while the remaining 37.5% were inactive, meaning that more than one third of them are not engaged in these crucial activities. The activity received 12<sup>th</sup> with a score of 7 on the measure of the most important. For the least important dimension, it received 13<sup>th</sup> rank with a score of 5. The inference is that those who are not engaged in the activity are not much excited about its real potential while others are just managing it the way they wish. Since this activity is based on databases, these results would be more meaningful if studied together with that activity.

*Designing Web pages* was performed at extensive and moderate levels by 12.5 and 17.5% of these organizations, leaving the other 70% being inactive or showing little activity. For its perceived importance, it received the rank of 12.5 with a score of 7, marked by three participants. Quite importantly, it received first rank for the perception for being the least important with a score of 37. Evidently, majority of the organizations is inactive in this area and they do not find much reason to give it importance. The explanation to this otherwise indifferent outlook is that many of them are outsourcing to specialists for the design of these facilities

and they do not wish to have any major operation in-house. Secondly, since the Kuwaiti companies are not yet aggressively pursuing e-business to the desktop of consumers, developing and maintaining these facilities might not be a priority in their view.

Using *Internet utilities* for communication received the lowest performance assessment in this category. Only 17.5% percent of them reported the activity at extensive or moderate levels whereas respective percentages for little or no activity were 37.5 and 45%. On the dimension of importance, it had the 19th rank with the score of zero. Likewise, there was a strong perception of its being least important with its 2<sup>nd</sup> rank and a score of 29, marked by 12 participants. All the three results are mutually corroborative. These are important utilities in the networked environment of today's business world. However, there appears to be a general lack of awareness about their real potential and application in these organizations.

When we compare the results of the 2<sup>nd</sup> and 3<sup>rd</sup> categories, a striking difference is noted. It seems that all the companies are quite active for hardware, software and telecommunication aspects, but they are not as aggressive about the use of these utilities for databases, information searching and retrieval, use of Internet, Web design and applications and use of Internet utilities. The activities in the third section require a great deal of professional input by experts in these areas. Also, the current cultural practices in the country may not be as favorable for aggressive design and development initiatives.

#### **IV Management Activities**

This section contained four activities where information processes and technologies can play a pivotal role in their conduct.

Information technology and processes have had a significant bearing on financial planning, management, control and reporting. Ninety percent of the organizations were engaged in the activity extensively and only one reported no activity in this area. For the measures of most and least important, this activity received the ranks of 15.5 and 16.5 respectively. It means that while this activity is performed in almost every organization, the participants failed to perceive any degree of significance with it. It needs to be examined whether it is due to their approach of doing it anyway without really looking into different aspects of its conduct where it could be improved in many ways.

*Strategic planning* was the second most extensively performed activity in this section; 60% and 10 percent of the organizations had it at extensive and moderate levels. Five out of the total 39 organizations reported little and one no activity in this area. Apparently, most organizations have a critical dependence on the quality

of information service for their strategic planning. It was worth noting that it received first rank among the total of 19 with a score of 75. It is yet to explore how the information activities are really integrated with the process of strategic planning in these organizations.

The third activity, heavily overloaded with information content and media, was related to *communicating with individuals and groups and communication/presentation capabilities*. More than 92% of the organizations performed it extensively and moderately. It had the 10<sup>th</sup> rank with a score of 10 for the measure of the most important. Even on the measure of least important activities, it had 11<sup>th</sup> rank with a score of 6. It can be inferred that almost each organization is actively engaged in the activity, yet they are doing it without any particular regard to its significance.

The last activity in the group was related to staff development in information searching and use. The fact that only 25 and 10 percent of the organizations were performing it at extensive and moderate levels was quite noticeable. Majority of them was inactive in this area. Empowerment of staff through adequate development strategies is one of the most important considerations. This anomalous situation was evident, as it received the rank of 5.5 with a score of 12. Only three participants assessed it on the scale of the least important with a score of 6 in 11<sup>th</sup> rank. This activity stands out as being one of the striking areas where the current practice and perceptions about the importance are quite at variance.

## **Conclusion**

It is recognized that the information needs vary from organization to organization, necessitating diversity in their operations, which in turn would require different sets of capabilities among the human resources. The real need is to have a clear conceptualization of the points of consensus and divergence in relation to the diversified needs and expectations.

The areas in which the differentials between the practice and the priority are most noticeable are related to organizing internal information, database management, ensuring data security, conduct of competitive intelligence, and staff development. It has been noted that these activities are being conducted at a lower level, but the participants strongly felt that these would take precedence. Information organization though indexing, tagging, annotation, cataloging and databases seems to be the primary concern of these executives. Likewise, they seem to be feeling deficient about their current practices in these areas. The executives are most concerned about the availability, development and sustenance of manpower for these areas. However, they are not as aware about the potential and application of

certain utilities. This point was further reinforced when we see both the levels of activity and perceptions about the importance of Internet utilities on a highly low side.

Apparently, information applications in management are conducted aggressively in these organizations. On the dimension of importance, planning stood way ahead of all other activities, indicating the strong desire among the executives to integrate strategic planning with intelligent information application. Likewise, communication also figured as one of the priority areas in the view of the participants. The finding about a low consistency for the current practice and the expressed need for the design and use of Web facilities was a bit surprising. It was noted that many of these companies were yet not opening up to the outside world through e-commerce channels, employment of EDI technologies, globalization, and any widespread use of public transactions. Other possible reasons include the practices of outsourcing, non-availability of human resources, and a general lack of awareness of the real potential.

This study has answered few questions and raised quite a many that need to be further investigated. These results are expected to help in conceiving the human resource requirements for this sector and the multitude of capabilities that need to be developed among this workforce. Then, it would also be worth considering who is providing education or training in this area, how adequate these opportunities are, and what needs to be done in order to meet the needs of the future workforce for this sector. A real headway is apparently the need of the hour, if the information study programs gear up to exploit the tremendous career opportunities so keenly felt in the corporate sector.

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