The Information and Communications Technology Industry in Lebanon

Results of the 2007 ICT Industry Survey

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EXECUTIVE SUMMARY

SRI International is pleased to present the results of the 2007 ICT Industry Survey conducted in Lebanon. This report provides an update of the findings of the 2004 ICT Capabilities Survey. The aggregate response of the participating firms demonstrates that the information and communications technology (ICT) industry continues to be a significant, resilient and productive industry sector in Lebanon, even in the midst of challenging economic circumstances.

Size and Growth Performance

- Notwithstanding the serious disruptions in the Lebanese economy due to ongoing political and security turmoil, the ICT industry has sustained its overall size and levels of activity, largely due to a concentration on expansions of export business in regional markets.
- Survey responses and follow-up interviews suggest that the size of the Lebanese ICT industry in 2006 falls roughly within the same range as in 2003, at $380-$420 million, and perhaps saw a modest increase of

5-10 percent. However, the number of survey responses was too low for the study team to estimate industry size with accuracy.

- Large firms continued to dominate the sector, generating the lion's share of industry-wide revenues.
- The majority of survey respondents reported that they made profits on their sales from 2005 to 2006. In fact, 64 percent of the respondents reported pre-tax return on sales of 15 percent or above. Software firms were more likely than hardware firms to report positive returns. Medium-sized firms were more likely to report profitability than small or large firms.

Exports and Market Focus

- Survey respondents reported a higher level of export activity compared to the 2004 survey, suggesting that export plays an important role in market diversification of Lebanon's ICT firms amid an unstable domestic market. Almost 64 percent of the responding firms reported that at least 10 percent of their sales resulted from activities outside Lebanon.
- Software companies led in export activity while hardware firms lagged behind.
- Medium-sized firms participating in the survey were the most active in exporting, outperforming both small and large firms.
- The Gulf Region is the most important export market for Lebanese ICT firms, followed by other countries in the Middle East. Almost three quarters of respondents who export reported sales to the Gulf States, and 69 percent reported an increase in sales to the Gulf States.

Core Capabilities

- *Banking services* and *distribution* led as the two strongest core business domains for Lebanese ICT firm respondents, followed by *government*, *general trade and services*, and *insurance*.
- In the hardware sub-sector, survey results suggest an increasing focus on *sales and maintenance* and a migration away from hardware design and assembly.

- In the software sub-sector, the majority of respondents reported *software programming* and *customization* as the core capabilities of their firms.

Market Access and Business Development

- Similar to the 2004 survey findings, the two most frequently cited means for generating new business leads were *client initiated contacts* and *referrals from existing clients*. These results affirmed that Lebanese ICT firms continued to perform well, meeting and exceeding client expectations, as well as garnering repeat business and referrals by existing clients.
- Tradeshow attendance continued to be an important tool for ICT firms to generate new business leads. Among the tradeshows attended by responding firms, Termium Lebanon remained the most popular tradeshow, followed by GITEX Dubai, the Road Show in Qatar and the SHAM Exhibition in Damascus.
- Of respondents who participated in tradeshows, 83 percent reported that such attendance resulted in new business development overall.

Human Resources

- While the number of survey responses was too low for SRI to estimate ICT industry employment with accuracy, responses from participating firms as well as additional interviews suggest that industry employment remained similar to the 2004 level of 6,500 to 6,750.
- Large ICT firms continued to employ the lion's share of the industry's employees. Across ICT sub-sectors, ICT employment has shifted distinctly from the software to mixed-business (software and hardware) firms.
- More than one third of respondents reported a net increase in employees in 2006, while almost a quarter reported a net decrease. This is a bleaker employment picture compared to the findings from the supplemental survey collected in 2005, where 76 percent had reported a net increase in employment and only 5 percent of respondents had reported a net decrease.

- The top three reasons cited for a net decrease in employment were layoffs due to decline in sales and business, layoffs due to other reasons, and voluntary departures to accept employment elsewhere, both in and outside Lebanon.

Industry Dynamics & Competitiveness

- In the software sub-sector, *high quality* and *customization to suit customer needs* were ranked as the most important factors for success. *Low price* was ranked as the least important competitive factor.
- Similarly, among hardware firm respondents, *high quality* and *after-sales service* were ranked as the most important success factors. The declining importance of low price suggests that the Lebanese hardware companies are moving into a more sophisticated competitive space, as it migrates away from cost-based competition in the lower end of the market.
- It is important to note that *lack of competitiveness in quality* is ranked as the least significant growth barrier in 2007, compared to the 2004 results, which indicated the *lack of technical skills* as a significant growth barrier. This corroborates other survey findings that the Lebanese ICT industry – both the software and hardware sub-sectors – continues to grow in sophistication, quality and competitiveness as it develops and matures.
- ICT industry firm respondents identified the *lack of information on export markets, policies and procedures*, and the *lack of client awareness* as the top two challenges to sales and export growth.

INTRODUCTION

In 2004 SRI International conducted the first-ever comprehensive ICT Capabilities Survey in Lebanon, as a means to determine the Lebanese ICT sector's core capabilities, competitive advantages, prospects for and challenges to growth. In May 2007, SRI International, in partnership with Social and Cultural Development Association (INMA), conducted a follow-up survey to measure changes in industry capabilities and performance over time, as well as to identify emerging areas of advantages or new challenges. This report details the 2007 survey results.

Survey Participants and Response Rate

In 2004, SRI International developed a comprehensive list of ICT companies operating in Lebanon; this list, totaling 600 companies, reflected, in essence, Lebanon's entire ICT sector. Of these 600 companies, 146 complete responses were received in 2004. A supplemental ICT industry survey was also distributed in 2005 to gather more information on sales, exports and employment in the ICT sector, and to gauge the impact of participation of ICT firms in regional tradeshows on the firms' performance.

To provide a clear frame of reference for changes between 2004/2005 and 2007, the 146 respondents to the 2004 survey formed the core group identified as potential survey participants for the 2007 survey. To ensure an adequate survey response rate, however, the 2007 survey was sent by email to the entire list of 600 companies during May 2007.

Because of the outbreak of violence at the Nahr Al-Bared refugee camp in late May 2007 and the resulting uncertainty within Lebanon, the operations of potential survey respondents (as well as INMA's work in implementing the survey) were disrupted during May and June 2007, resulting in a lower-than-anticipated survey response rate. Efforts to encourage survey responses continued until mid-June 2007, by which point 41 complete responses had been received, yielding a response rate of 7 percent, which falls within a typical response rate (i.e., 5-10 percent) for a medium length survey like the ICT survey. The actual number of responses is small relative to those received in 2004, and, as such, may not be representative of the entire Lebanese ICT industry. However, as noted in the following section, the profile of survey respondents matches that of the 2004 respondents in some respects, which may suggest that the 2007 respondents are representative of the industry. Also, due to the low number of responses to the 2007 survey, the survey results are more sensitive to variation in individual responses and thus may not be as robust as the 2004 survey results.

Profile of Survey Respondents

The 41 participating firms employed approximately 1,200 personnel in their businesses. Thirty-six of the 41 firms provided revenue information, and reported a total of over $71.2 million in 2006 sales.

Among the survey respondents, companies offering software sales, design and development comprised 39 percent,[1] while those engaged in hardware sales, deployment and maintenance comprised approximately 31 percent,[2] a slightly higher proportion than the 25 percent who responded in kind to the 2004 survey.

The remaining 30 percent[3] of firms reported a mixed-business focus, with a significant proportion of their sales arising from software as well as hardware sub-sectors. More than 31 percent[4] of all the respondents also reported IT-enabled services as part of their core capabilities. IT-enabled services include business process outsourcing, such as back-office, call centers and data processing, Internet Service Providers, IT education, etc.

Respondents reported a wide range of products and service offerings, annual revenues and employment, indicating a good mix of large, mature firms and small and medium-sized enterprises in Lebanon's ICT industry.

[1] This figure includes firms in the software sub-sector who may also offer IT-enabled services, but do not offer hardware-related services. This is equivalent to the "Software only" plus "Software plus IT-enabled services" in the chart.
[2] This figure includes firms in the hardware sub-sector who may also offer IT-enabled services, but do not offer software-related services. This is equivalent to the "Hardware only" plus "Hardware plus IT-enabled services" in the chart.
[3] This figure includes firms in both the software and hardware sub-sectors who may also offer IT-enabled services. This is equivalent to the "Both software and hardware" plus "Software, hardware and IT-enabled services" in the chart.
[4] This figure includes any firms offering IT-enabled services, equivalent to the sum of "Software plus IT-enabled services," "Hardware plus IT-enabled services" and "Software, hardware and IT-enabled services" in the chart.

To gain a better understanding of firm performance by size, respondents were grouped into three categories:

- Small firms with annual sales of less than $100,000
- Medium-sized firms with sales between $100,000 and one million dollars
- Large firms with over a million dollars in annual sales in 2006

Defined this way, the medium-sized firms formed the lion's share (over 47 percent) of respondents. Small firms comprised 22 percent, while large firms comprised approximately 30 percent. The following table lists the distribution of respondents by size and by primary ICT activity:

Distribution of 2007 ICT Capabilities Survey Respondents

By Size			By Sub-Sector		
Size	**Number of Firms**	**Percentage of Total**	**Sub-sector**	**Number of Firms**	**Percentage of Total**
Small	8	22.2	Software only	11	26.8
Medium	17	47.2	Software plus IT-enabled services	5	12.2
Large	11	30.6	Hardware only	10	24.4
			Hardware plus IT-enabled services	3	7.3
			Both software and hardware	7	17.1
			Software, hardware and IT-enabled services	5	12.2
Total	36*	100	**Total**	41	100

* Note: 5 of the 41 survey respondents did not specify their annual sales and therefore were not included in the calculation of the total number of firms and percentages of firms by size.

KEY FINDINGS

The responses of the participating firms demonstrate that ICT continues to be a significant and resilient industry sector in Lebanon. As a whole the industry performance remained stable and quite resilient under challenging economic circumstances. While many responding firms indicated that their sales within Lebanon decreased, their exports to the Gulf States and the Middle East increased. Small firms were the most adversely affected in terms of growth, while large firms were better positioned to weather the adverse economic and security conditions. Overall, software firms seemed to fare better than their hardware peers.

Size and Growth Performance

- Survey responses and follow-up interviews suggest that the size of the Lebanese ICT industry in 2006 was roughly within the same range as in 2003, at $380-$420 million, and perhaps saw a modest increase of 5-10 percent.
- Large firms continued to dominate the sector, generating the lion's share of industry-wide revenues, while the share of sales by small firms remained small.
- In terms of profitability, a majority of ICT firm respondents achieved a positive return on their sales from 2005 to 2006. Software firms were more likely than hardware firms to report positive returns. Medium-sized firms were more likely to report profitability than small or large firms.

Thirty-six of the 41 respondents reported their revenues, which collectively amounted to approximately $71.2 million in revenue in 2006.[5] On average, the revenue per responding firm was almost $2.0 million, as compared to the average of approximately $1.8 million per firm (per 2004 survey). Unfortunately, the number of responses to the 2007 survey was too low for the study team to extrapolate and estimate the industry-wide revenue without a significant risk of bias. However, survey responses and follow-up interviews suggest that the size of the Lebanese ICT industry in 2006 fell roughly within the same range as in 2003, at $380-$420 million, and perhaps saw a modest increase of 5-10 percent.

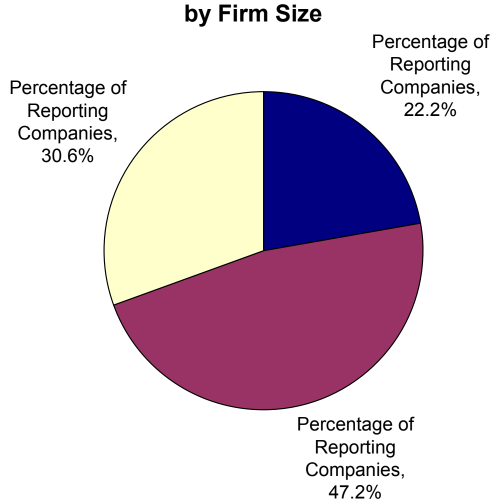
[5] Only one firm reported over $10 million in revenue which may upwardly skew the calculation for the average revenue per firm, along with other calculations.

In examining revenues reported by respondents by firm size, we find that:

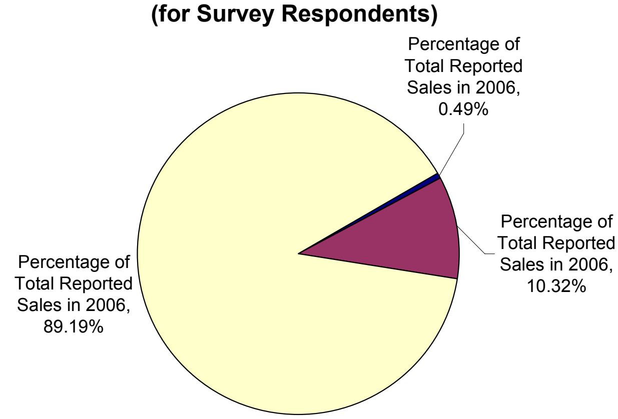
- The 8 small firms who participated in the survey accounted for 22 percent of the respondents, but when combined they generated less than one half of one percent of total sales reported.
- Medium-sized firms, comprising almost half of all respondents, contributed over 10 percent of total revenues reported by the respondents.
- The 11 large firms, while representing 30% of respondents, had a dominant share of the reported revenues: over 89 percent of total sales by respondents.

This revenue distribution by firm size is similar to the 2004 survey results.

Percentage of Survey Respondents by Firm Size



Percentage of Total Reported Sales in 2006 by Firm Size (for Survey Respondents)



In terms of revenue distribution by sub-sector, hardware firms represented 42 percent of the total revenue of the responding firms, mixed-business firms accounted for 39 percent, and software companies comprised the remaining 19 percent of reported revenues. Among the survey respondents, hardware firms tended to be larger in size and to report higher revenues on average than both software and mixed-business firms.

The majority of ICT firms (87 percent of respondents) achieved a positive return from 2005 to 2006. In fact, a sizeable number of companies – over 64 percent – reported pre-tax return on sales of 15 percent or above.

- Software firms were the most profitable; almost 93 percent of firms engaged in the software sub-sector reported positive returns of 15 percent or above, more than double the proportion for hardware companies and mixed-business firms.
- Examining profitability by firm size, almost three-quarters (73 percent) of medium-sized firms reported profitability of 15 percent or above, compared to 56 percent of the large firms and 29 percent of the responding small firms.

Overall, these results suggest that, even within an unstable economic environment, the overall ICT industry remains healthy and viable, and in some segments enjoys growing profit margins and sales revenue growth.

Exports

- Overall export activity increased relative to 2004, continuing to play an important role in Lebanese ICT market growth.
- Software companies continued to lead in export activity, while hardware firms lagged behind.
- Medium-sized firms increased export activity, outperforming small and large firms.
- The Gulf Region is the most important export market for Lebanese ICT firms, followed by the Middle East.

Exports play an increasing role in the growth of Lebanese ICT firms. Almost 64 percent of the responding firms reported that at least 10 percent of their sales resulted from activities outside Lebanon. The survey responses also indicated that almost 28 percent of responding Lebanese ICT firms were "export-focused" (defined as having more than 75 percent of their sales coming from business outside Lebanon).[6]

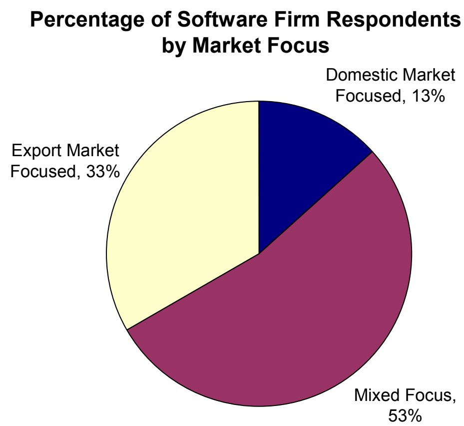
[6] The following working definition of market orientation was used for the purpose of this analysis: *Domestic market focus*: where firms had less than 10 percent of their sales from business outside Lebanon; *Mixed market focus*: where firms had higher than 10 percent but less than 75 percent of their sales from business outside Lebanon; and *Export market focus*: where firms had higher than 75 percent of their sales from business outside Lebanon

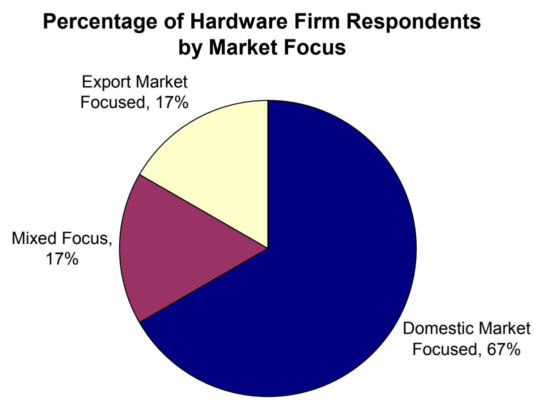
Export Performance by Industry Sub-Sector

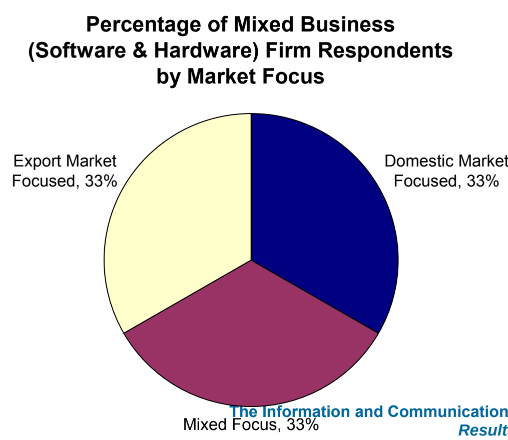
Within the ICT industry, substantial variation in exports was observed across sub-sectors.

- Software companies clearly increased their export activity since the last survey period, with more than 86 percent of software firm respondents reporting that at least 10 percent of their sales resulted from exports. In addition, one third of these software companies reported being "export-focused."
- Mixed-business firms (software and hardware) were not far behind, with a third of them being "export-focused" and two thirds deriving at least 10 percent of sales from exports.
- In contrast, hardware firms lagged behind in export activity, with only one third of responding firms in this sub-sector reporting at least 10 percent of sales from exports.

Relative to the 2004 survey, software and mixed-business firms increased their export activity, whereas hardware firms demonstrated little change.

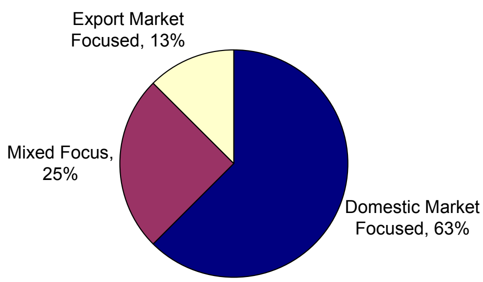




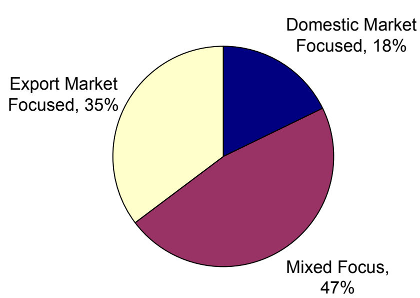


Export Performance by Firm Size

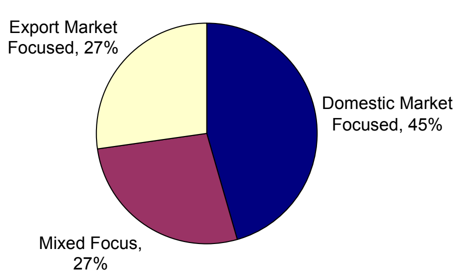
Percentage of Small Firm Respondents by Market Focus



Percentage of Medium-Sized Firm Repondents by Market Focus



Percentage of Large Firm Respondents by Market Focus



Medium-sized ICT firms appeared to be the most export-oriented. Among those respondents, 82 percent derived at least 10 percent of their sales from exports, while 35 percent of them were “export-focused.”

Among large firms, 45 percent reported at least 10 percent of their sales from exports, while 27 percent reported being “export-focused.

Small ICT firms are the least engaged in exports. However, even among those, 37 percent derived at least 10 percent of the sales from exports.

This is an interesting development compared to the result of the 2004 survey, where roughly half of the firms had derived at least 10 percent of their sales from business outside Lebanon, regardless of size.

While the finding that medium-sized firms were leading large firms in export activity would appear counterintuitive for more traditional industries, this is not unusual in the high-technology sectors, where exports are often a key driver of growth for smaller, more nimble firms.

Geographic Export Markets

To understand the geographic markets in which the Lebanese ICT firms are increasingly active, the 2007 survey also asked the participants to report the percentage of their sales in 2006 to Lebanon, the Gulf States, the Middle East, North Africa, Europe and the United States.

Outside Lebanon, the Gulf Region stands out as the most important market for Lebanese ICT firms, with almost three quarters of respondents who engage in export activity reporting sales to the Gulf States. The Gulf Region is followed by the non-Gulf Middle East in importance, with 58 percent of respondents with export activity reporting sales to the Middle East.

Market	Percentage of Survey Respondents Exporting to Region (out of those who reported any export activity)
Gulf States	73%
Middle East	58%
North Africa	38%
Europe	27%
United States	15%

Of the respondents, 69 percent reported increases in sales to the Gulf States, while 60 percent indicated increases in sales to the Middle East. These results suggest that the Gulf States and the entire Middle East region continue to be the major growth market for Lebanon's ICT firms.

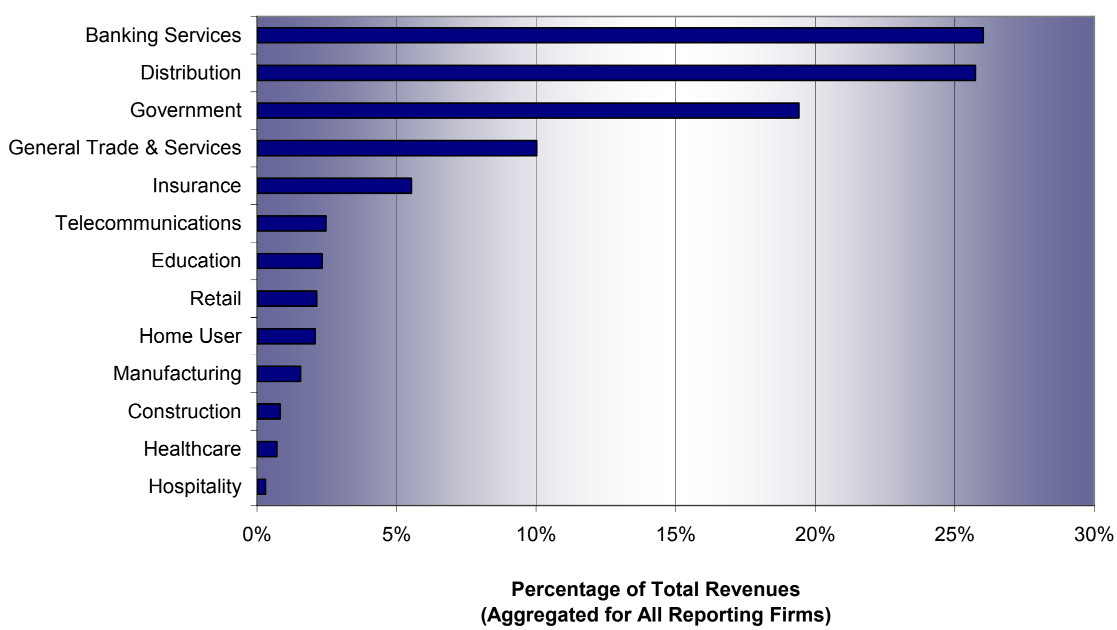
Core Capabilities

- *Banking services* and *distribution* led as the two strongest core business domains for Lebanese ICT firms, followed by *government, general trade and services*, and *insurance*.
- In the hardware sub-sector, there may be an increasing focus on *sales and maintenance* and a migration away from *hardware design and assembly*.
- In the software sub-sector, the majority of respondents reported *software programming and customization* as the core capabilities of their firms.

The 2007 ICT Industry Survey asked the respondents to identify the core business domains or market segments that their firms supported. Developing domain competency and specialization is a major catalyst for growth and market competitiveness for the industry.

Using the total aggregated revenue reported by respondents, SRI tabulated the revenues earned by ICT firms in each core domain and ranked them below.

Domain Competencies of Lebanese ICT Firm Respondents



Banking services and *distribution* clearly led as the two strongest domains, followed by *government*, *general trade and services*, and *insurance*.[7] These five domains were where Lebanese ICT firms concentrated most of their business and consequently where these respondents developed much of their competency.

The survey also asked firms about their core capabilities. A large proportion of respondents reported that they sell and/or service branded software and hardware products (over 46 percent for software and over 51 percent for hardware).

In the hardware sub-sector, there may be an increasing focus on *sales and maintenance* and a migration away from *hardware design and assembly*. For example, only one firm that sold and serviced hardware products reported hardware design activities, which is considerably less than the one-fifth reported in the 2004 survey results. Similarly, only 38 percent of the hardware respondents engaged in some form of hardware assembly, compared to the 70 percent reported in the 2004 survey.

In the software sub-sector, the majority of respondents reported *software programming and customization* as the core capabilities of their firms. Other core capabilities reported including *software design* and *enterprise consulting*, in declining importance.

Market Access and Business Development

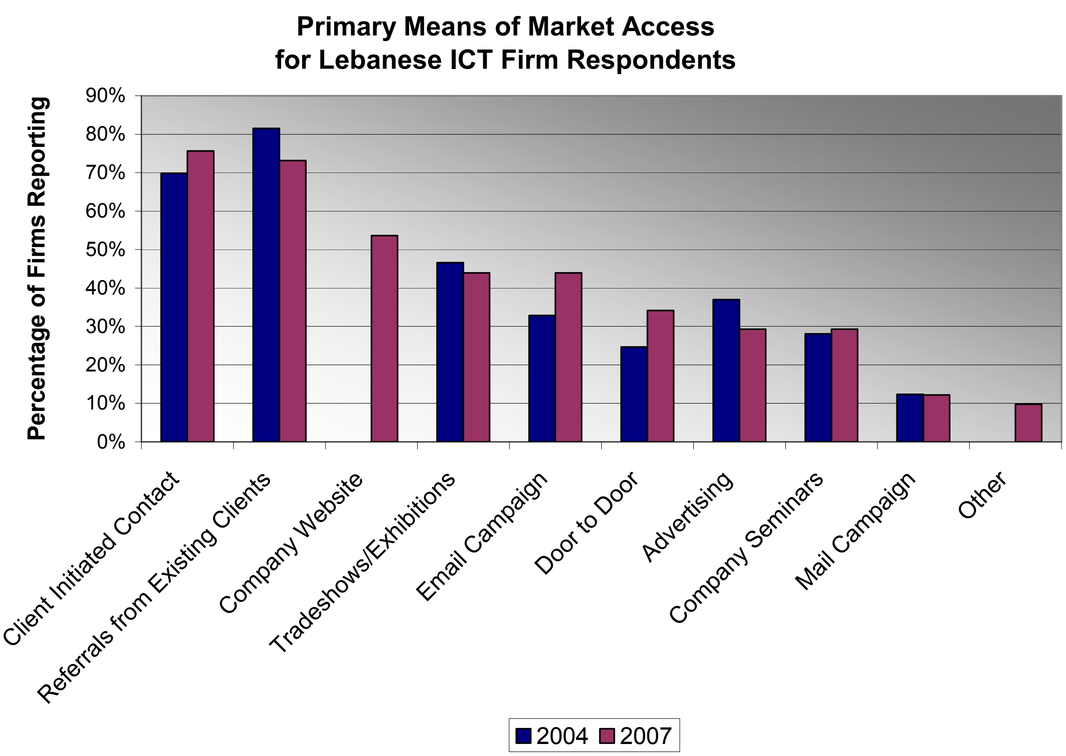
- Lebanese ICT firms continued to perform well, meeting and exceeding client expectations, garnering repeat business and referrals by existing clients.
- Tradeshow attendance continued to be an important tool for generating business leads. Among all the tradeshows that respondents attended in the last two years, Termium Lebanon continued to be the most popular tradeshow, followed by GITEX Dubai, the Road Show in Qatar and the SHAM Exhibition in Damascus.

[7] These findings may be somewhat skewed because some firms who reported their core domains did not report their revenues broken down by domain, and thus could not be included in this particular analysis.

The respondents reported a variety of marketing tools used, ranging from traditional door-to-door marketing and advertisements to email campaigns, trade shows and client referrals.

Similar to the 2004 survey findings, the two most frequently cited means for generating new business leads were *client initiated contacts* (76 percent) and *referrals from existing clients* (73 percent). The 2007 survey results affirmed that Lebanese ICT firms continued to perform well, meeting and exceeding client expectations, garnering repeat business and referrals by existing clients.

The following chart compares the 2004 and 2007 survey results on business development. Relative to 2004, email campaigns and door-to-door marketing increased in significance, while the use of advertising fell. Also, 54 percent of respondents cited their company websites as a primary means of market access, ranking this medium third most effective in 2007.[8]



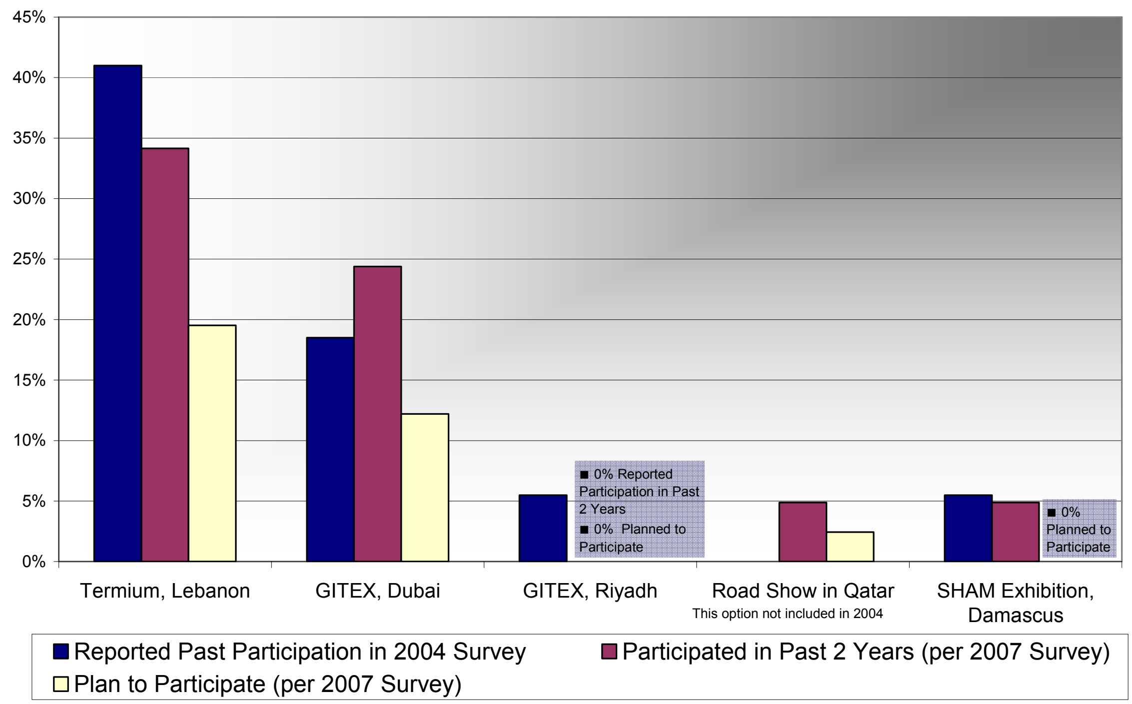
[8] Note that the 2004 survey did not include "company website" as a possible response for this question.

Participation in tradeshows is the fourth most important way of generating business leads among the responding firms. More than 44 percent of respondents had participated in some tradeshows that helped them generate business opportunities in the last two years.

Among the tradeshows cited, Termium Lebanon continued to be the most popular tradeshow, with more than 34 percent of respondents reporting participation, and an additional 20 percent reporting plans to participate in the future. The second most popular tradeshow was GITEX Dubai, with almost a quarter of respondents reporting participation. The Road Show in Qatar and the SHAM Exhibition in Damascus were the third most popular according to the 2007 survey results. None of the respondents in the 2007 survey participated in GITEX Riyadh in the past two years or planned to participate.

The following chart captures the preferences of respondents toward regional tradeshows targeted toward the ICT industry.

Participation of ICT Firm Respondents in Tradeshows



To identify specific effects these tradeshows and road shows had on businesses, the 2007 survey probed the type of effect on business development that could be directly or indirectly attributed to the firms' participation in tradeshows. Of respondents who participated in tradeshows:

- 83 percent reported that such attendance resulted in new business development overall;
- 72 percent reported that it resulted in the development of new business inside Lebanon; and
- 61 percent reported resulting new business development outside Lebanon, which is similar to the proportion reported by the 2005 supplemental survey.[9]

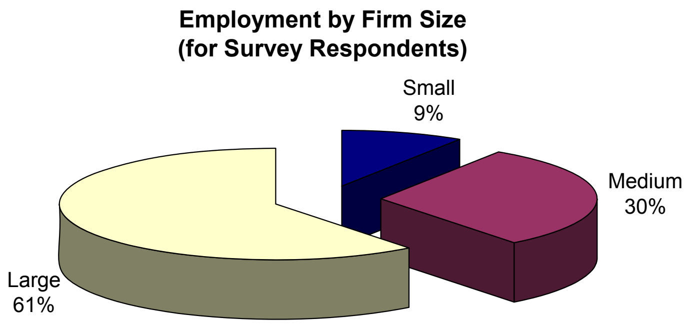
Human Resources

- While the number of survey responses was too low for SRI to estimate ICT industry employment, responses from participating firms as well as additional interviews suggested that industry employment remained similar to the 2004 level of 6,500 to 6,750.
- Large ICT firms continued to employ the lion's share of the industry's employees of employees.
- Across ICT sub-sectors, ICT employment has shifted distinctly from the software to mix-business (software and hardware) firms.
- Relative to the 2004 survey, fewer firms reported a net increase in employees, and more firms reported a net decrease or no net change in employment.

Due to the low number of survey responses and the difficulty of extrapolating a sector-wide employment estimate with accuracy, this study does not provide a specific estimate of the overall ICT industry employment in Lebanon. However, survey responses from participating firms as well as additional interviews with industry representatives suggest that industry employment remained similar to the 2004 level of 6,500 to 6,750.

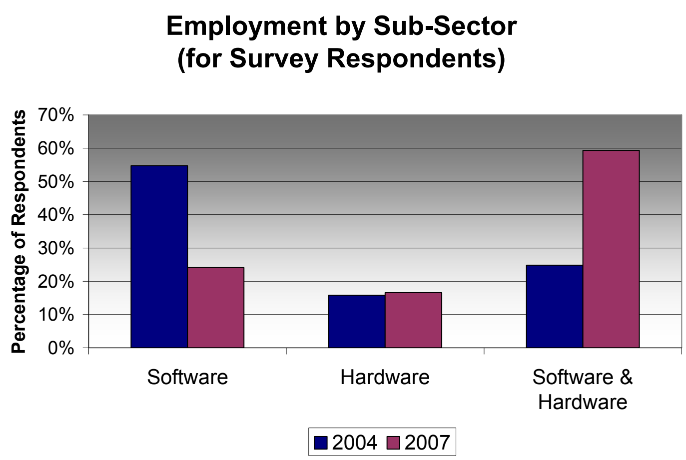
[9] Discrepancies in findings between the 2005 supplemental and 2007 surveys may be partially due to low numbers of respondents for both surveys.

Employment Distribution by Firm Size



Survey results show that large firms continued to employ the majority of Lebanon's ICT workers. Large firms accounted for 61 percent of the workforce among responding firms. Medium-sized firms represented 30 percent of ICT employment among respondents, while small firms accounted for 9 percent.

Employment Distribution by Industry Sub-Sector



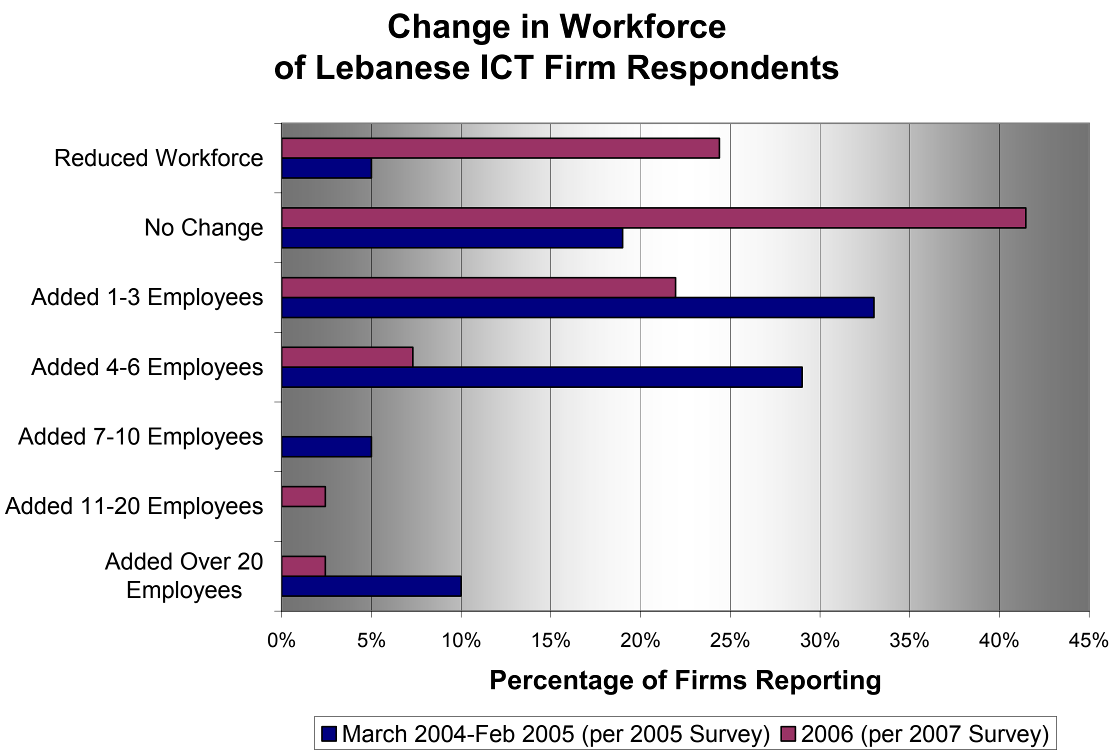
Employment in ICT sub-sectors has shifted distinctly toward mixed-business since the 2004 survey.[10] Responding firms with a mixed-business focus went from employing a quarter of total ICT employees reported in the 2004 survey, to almost 60 percent in the 2007 survey. At the same time, the proportion of workers employed by software firm respondents was halved to less than a quarter of the total employment reported by firms. While this employment distribution should not be extrapolated directly to represent the industry's employment distribution, it suggests that a pronounced shift of workers from the software sector to the mixed business sector within the industry.

[10] Please note that, for simplicity, firms are categorized as being in the software sub-sector, hardware sub-sector or mixed business if they engage in both, regardless of whether they offer IT-enabled services, unlike the finer breakdown in the *Profile of Survey Respondents*.

Change in Workforce in Lebanese ICT Firms

Regarding the net change in number of employees at these ICT firms in 2006, over a third of respondents reported a net increase, while almost a quarter reported a net decrease. This is a bleaker employment picture compared to the findings from the supplemental survey collected in 2005, where 76 percent had reported a net increase in employment and only 5 percent of respondents had reported a net decrease.

The top three reasons cited for a net decrease in employment were layoffs due to decline in sales and business, layoffs due to other reasons, and voluntary departure to accept employment elsewhere, both in and outside Lebanon.



A majority of firms, over 85 percent of all respondents, indicated having deployed technical workers "onsite," i.e., at their clients' premises, with close to half of those firms deploying workers at client sites outside Lebanon. This large proportion of technical personnel deployment denotes the increasingly collaborative nature of ICT companies with the technology buyers. Lebanese ICT firms are not only supplying technology products to customers, but they are also increasingly involved in the installation, maintenance and ongoing technical assistance with their clients.

Many of these firms retain technical workers that are certified by major technology vendors such as Microsoft, Oracle, Cisco, HP, Sun, Intel, Dell and IBM. Over 68 percent of responding firms employ one or more certified professionals, and over 31 percent employ five or more.

Industry Dynamics

- In the software sub-sector, *high quality* and *customization to suit customer needs* were ranked by respondents as the most important factors for competitive success. *Low price* was the least important factor, indicating that Lebanese software firms are competing on quality rather than on price.
- In the hardware sub-sector, *high quality* and *after-sales service* were ranked by respondents as the most important success factors. The declining importance of *low price* suggests that the Lebanese hardware companies are moving into a more sophisticated competitive space, as it migrates away from cost-based competition in the lower end of the market.
- ICT industry firm respondents identified the *lack of information on export markets, policies and procedures*, and the *lack of client awareness* as the top two challenges to sales and export growth.

Competitive Strategies

Survey participants reported a spectrum of competitive strategies whose importance to firm performance varied by the type of ICT business. The survey asked respondents to rank the relative importance of five competitive dimensions: *low price*, *high quality*, *quick delivery*, *after-sales service* and the *ability to customize products and services to meet customer's needs*.[11]

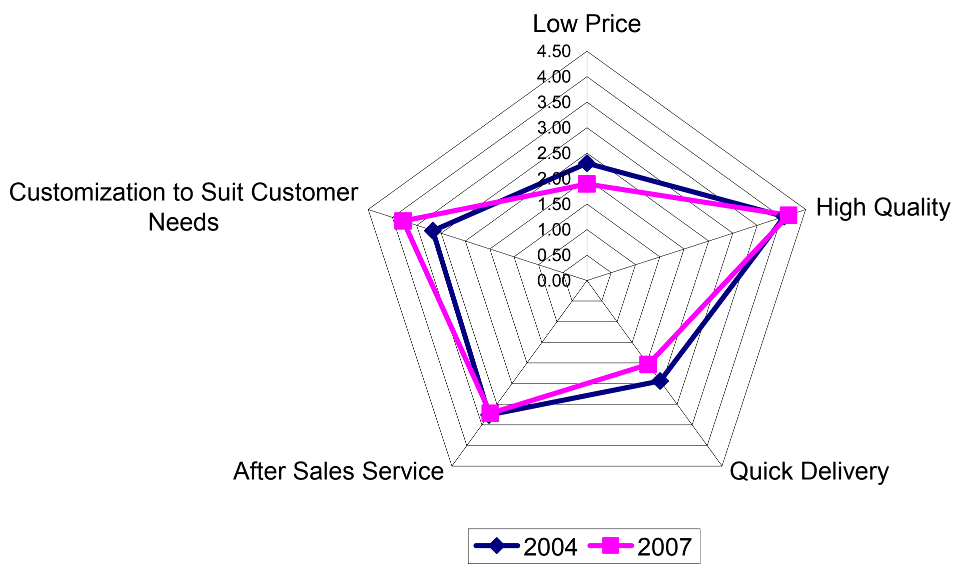
[11] Survey respondents were asked to answer questions on competition for the software and hardware sub-sectors. Some firms may have responded regarding one or both sub-sectors.

Software Sub-Sector

Among software companies that responded to questions on competitiveness, 37 percent ranked *high quality* and more than a third ranked *customization to suit customer needs* as the most important competitiveness factors. The least important competitive factor is *low price*, ranked in the bottom by 60 percent of the respondents. *Quick delivery* was ranked by 20 percent as the least important factor for competitive success. These rankings are similar to the 2004 survey results.

To compare the aggregate ranking of each dimension across 2004 and 2007 for the software sub-sector, a weighted average index was computed for each dimension. The index estimates were then charted on a web graph with five dimensions, each of which was based on a scale of one to five.

Competitive Dimensions of the Software Sub-Sector (for Survey Respondents)

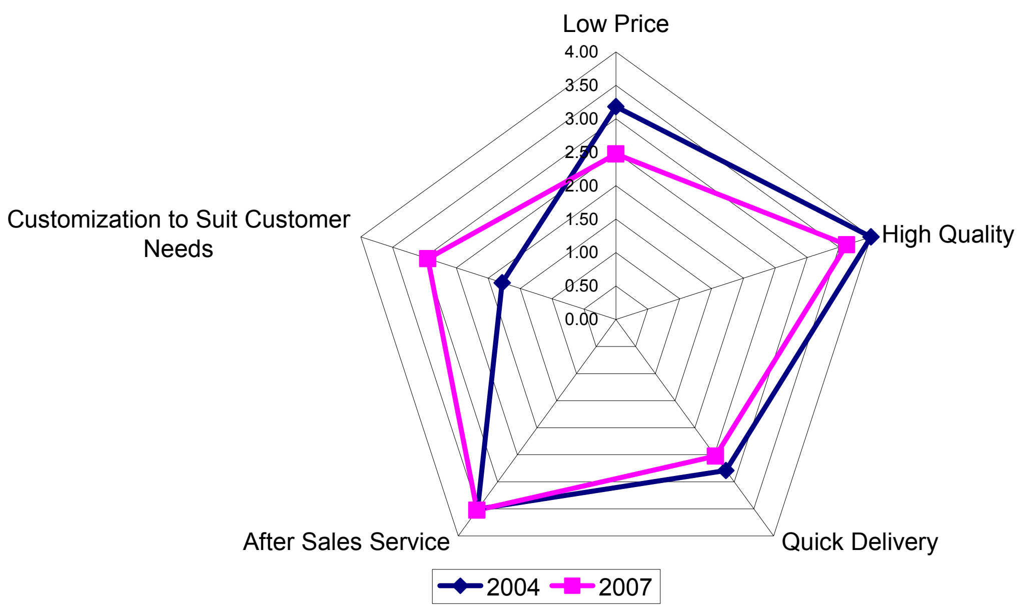


Hardware Sub-Sector

Within the hardware sub-sector, *high quality* was ranked most commonly as the most important factor for success (by 32 percent of respondents who provided rankings), followed by *after-sales service*. In contrast, *low price* was ranked as the least important by 40 percent, a reversal of the 2004 survey findings, where low price had been among the most important factors. The decline in importance of *low price* suggests that the Lebanese hardware companies are moving into a more sophisticated competitive space, as it migrates away from cost-based competition in the lower end of the market.

The following chart depicts the weighted average index estimates for the competitive dimensions of the hardware sub-sector, comparing their aggregate rankings in 2004 and 2007.

Competitive Dimensions of the Hardware Sub-Sector (for Survey Respondents)



Challenges to Market Growth

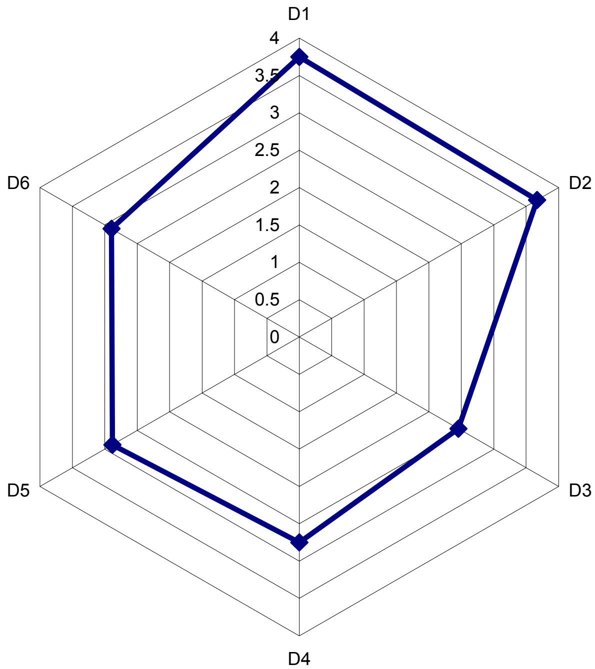
To better understand the industry's perception of challenges to growth in sales and exports, the 2007 ICT industry survey also asked firms to rank, in order of importance, the challenges they faced in relation to market penetration and growth.

Lack of information on export markets, *policies and procedures* was identified as the top barrier to sales or export growth (cited as such by 29 percent of respondents), followed by the *lack of client awareness*. This is consistent with the 2004 survey results.

In order to combine the frequency and the intensity in which respondents cited the different barriers to growth, the study team constructed weighted average indices and plot them on the following "web" diagram to compare the relative ranking of different dimensions. As the following chart illustrates, factors relating to the *lack of information and client awareness* ranked ahead of factors relating to the *lack of management skills, technical skills,* or *cost competitiveness*.

It is important to note that *lack of competitiveness in quality* is ranked as the least significant barrier to growth in the 2007, compared to the 2004 results which indicated *the lack of technical skills* as a significant growth barrier. This corroborates other survey findings that the Lebanese ICT industry continues to gain in sophistication, quality and competitiveness as it grows and matures, which bodes well for the industry's future growth prospects.

Challenges to Growth of Lebanese ICT Firm Respondents



Dimensions

D1. Lack of exports/market information
D2. Lack of awareness on Lebanese ICT capabilities
D3. Lack of competitiveness in quality
D4. Lack of competitiveness in price
D5. Lack of technical skills
D6. Lack of management skills

APPENDIX

List of Company Directories

List of Participating Companies

List of Company Directories

List of Directories/ Business References Used to Prepare the List of Lebanese ICT Companies	
No.	**Name of the Directory**
1	5 Index Directory
2	Kompass Directory
3	Lebanese Yellow Pages
4	Termium 2003 Catalog
5	PCA Members List
6	ALSI Members List
7	Business Matching with Syrian Companies Catalog
8	Berytech web site
9	ME Directory
10	LebWeb
11	The Daleel

List of Participating Companies

Acteos Liban s.a.r.l.
Active Web
Automated Information Management s.a.r.l. (Aims)
Airas ME
AM Dabbous Trad.
Apex MB
ArabiaGIS s.a.l.
Automation & Computer Technologies (ACT)
BML Istisharat s.a.l
Born Interactive O.C. s.a.l.
Business Equipment Co.
Business Products
Caretex
Cato Company s.a.r.l.
Computer Information Systems
Cre8mania s.a.r.l.
Data Consult s.a.l.
DC Soft
DigiSys s.a.r.l
Digital File s.a.r.l.
Gamma Computers
Hafco International
Hawzi Network
INFOWILL
Integrated Digital Systems (IDS)
Innovative Technology s.a.r.l. (ITEC)
ITG (Holding) s.a.l.
Ladkani Office Solutions s.a.l.
NHCC
Notebook
PROBS
Professional MultiMedia Systems (PMM)
Profiles Software
QuanTech SAL
Saadeh Computers
Saudi Micro-Tech
Software Applications and Programming (SWAP)
Sored sarl
Techno Mania s.a.r.l.
Turnkey Systems s.a.r.l.
Webserv s.a.r.l.