SUPPLY DEMAND GAP ANALYSIS

In the Jordan ICT Sector
Final Report

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FINAL REPORT

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EXECUTIVE SUMMARY

With the assistance of Sustainable Achievement of Business Expansion and Quality Program (SABEQ), German Jordan University, Int@j, and the Ministry of Information and Communications Technology (MOICT), Primus- A division of Computer Networking Services (CNS) organized and conducted a survey of the 'Competency, Skills, and Needs Assessment in the ICT Sector in Jordan'.

The companies chosen to take part in the survey came from various subsectors within the ICT Sector, which included Communications, Software Development, Productions House, E-Commerce, Hardware and Infrastructure Building, International Companies, Consultancy/Research, and Human Capital.

The questionnaire itself addressed several aspects of the company's information, which included Company Profile Data, Development/Implementation Data, Educational Data, and Technological Data.

Primus' survey conducting team contacted the representatives of over 90 ICT companies and set up appointments with the survey conductors. Over a period of twelve working days, the survey conductors then visited these companies, collected the data of 53 ICT companies who were willing to take part in the survey and filled out the ICT questionnaires electronically.

Throughout this process, weekly meetings were held at SABEQ, German Jordan University, and Primus' offices to brief the ICT Surveying team on the status and latest developments of the surveying process as well as to plan for the next steps.

The data from the 53 questionnaires was processed and entered into a customized Excel document to simplify the analysis of the data. Feedback on the Excel document was collected from the ICT Survey team and incorporated into the Excel document and the final version was delivered to the ICT Survey Conducting Team.

Next steps for the project include providing a detailed analysis of the results of the study; which is to be done by the German Jordan University. The findings will then be presented at a workshop organized for the ICT and Academia Industries to assist in reaching a common ground between the two; hence adopting new curricula and training methods to generate a more highly qualified Jordanian ICT workforce.

INTRODUCTION

In an effort to develop a national cooperative framework for professional education and training driven by the needs and requirements of skill set and professions in the Information and Communication Technology Sector in Jordan, Primus- A division of Computer Networking Services (CNS) organized and conducted a survey of the 'Competency, Skills, and Needs Assessment in the ICT Sector in Jordan'. This effort was with the assistance of Sustainable Achievement of Business Expansion and Quality Program (SABEQ), German Jordan University, Int@j, and the Ministry of Information and Communications Technology (MOICT).

The objective of the survey was to gather, develop and present technical research findings on competency-based evaluations and needs assessment of the ICT Industry in Jordan. These findings will be presented at an ICT workshop specifically organized for the ICT and Academia Industries. The goal for this workshop is not only to present the findings, but also to assist in reaching a common ground between the ICT and Academia sectors in order to adopt new curricula and training methods and thus generate a more highly qualified Jordanian ICT workforce.

The results of this activity will then pave the way for conducting similar assessments for the other sectors in Jordan.

METHODOLOGY

The first step in conducting the survey was developing a questionnaire based on scientific analysis and international standards, the results of which would clearly reflect the needs of the ICT Sector. This questionnaire was then reviewed by several organizations of different professional backgrounds to ensure the clarity and accuracy of the questions being asked. After reviewing and editing a number of drafts, the result was a twenty two-page questionnaire covering the below data:

Competency, Skills, and Needs Assessment in the ICT Sector in Jordan Questionnaire

Data Collected

Data Type	Description
Company Profile Data	This data covers the overall Number of Employees, Shareholders, Primary and Secondary Business Sectors, Market Orientation, Customer Base, Partners, and the Number of IT and Non IT Graduates.
Development/Implementation Data	This data covers the Development/ Implementation Processes, Methodologies, Benchmarks, Research Methods, and Standards.
Educational Data	This data covers the Educational Levels of the Technical Staff, Outsourcing, R&D, Theoretical and Practical Skills of Technical Staff, Internships, Training Methods, and Turnover. A question regarding Salary Scales was presented as Optional.
Technological Data	This data covers Design Tools, Operating Systems, Back Up Processes, Database Tools, Network Infrastructure, Digital Media and Animation, Systems Analysis and Integration, Project Management, Testing and QA, Sales, Technical Support, Web Development, IT Management, Technical Architect and Communication Tools, ERP Systems, Maintenance, Security, and Necessary Soft Skills.

After finalizing the questionnaire, 90 ICT companies were selected from the Int@j Members Database, which consisted of approximately 120 companies. Although the project called for only 60 companies to be surveyed, 90 companies were selected to ensure that 60 filled questionnaires were received. The selection criteria included:

1. The overall size of the company, which was measured by the number of employees. Companies of different sizes were included in order to maintain the accuracy of the sample.

2. The company's specific sector within the ICT Sector. The sectors which were selected to take part in the survey included:

- Communications
    - Telecom Operators
    - Internet Service Providers
    - Call Centers
    - VSAP VOIP
    - Mobile Technology
    - Telecommunications/ Communications Services
    - Telephony Solutions
    - Prepaid Operators
- Software Development
    - ERP
    - Business Intelligence Solutions
    - Automaton
    - Data Management
    - Customer Care/ Outsourcing
    - E-Solutions/Industry Solutions (Banking, Financial Educational, Health, Gov't, Telecom, etc)
    - Web Directory, Portals and Web Services
- Productions House
- E-Commerce
- Hardware and Infrastructure Building
- International Companies
- Consultancy/Research
- Human Capital

An email was then sent to all the Int@j members. It explained the purpose of the study and informed the ICT companies that they would be contacted by a survey team represented by Int@j, MOICT, the German-Jordanian University, and the USAID funded SABEQ program in order to send a survey conductor to their offices to assist them in filling the questionnaire. The ICT Questionnaire was attached to this email. This was done in an effort to simplify the survey conducting process and to provide the companies with a window of time to prepare for the

meeting with the survey conductor since most of the questions required detailed responses, exact numbers and percentages.

Then, Primus' survey conducting team, which consisted of a survey manager and two survey conductors, began the extensive surveying process. The survey manager contacted the representatives of over 90 ICT companies and set up appointments with the survey conductors. The survey manager mentioned that employees from the Technical and Human Resource Departments should be present in order to answer the questions. The survey manager also re-sent the ICT Survey questionnaire and cover letter to the members who mentioned they have not received the email from Int@j.

Over a period of twelve working days, the survey conductors then visited these companies, collected their data and filled out the ICT questionnaires electronically.

So as not to include the identity of Primus in the study, the survey manager and conductors introduced themselves as SABEQ representatives. Furthermore, the survey manager used a SABEQ email address to correspond with the companies by email.

Throughout this process, weekly meetings were held at SABEQ, German Jordan University, and Primus' offices to brief the ICT Surveying team on the status and latest developments of the surveying process as well as to plan for the next steps.

RESULTS

The ICT Survey team collected 53 ICT questionnaires. The survey conductors collected the majority of the questionnaires; one questionnaire was sent to an Int@j email; the German Jordan University collected six questionnaires; and MOICT collected one questionnaire.

The data from the 53 questionnaires was processed and entered into a customized Excel document to simplify the analysis of the data. Feedback on the Excel document was collected from the ICT Survey team and incorporated into the Excel document and the final version was delivered to the ICT Survey Conducting Team.

The data in the Excel sheet is to be exported to an Access Database, which will be customized to generate reports on the data collected.

CHALLENGES

The surveying process ran relatively smoothly. There was cooperation from the ICT Survey team as well as cooperation from many of the organizations that were surveyed. There were, however, several challenges throughout the process.

One of the most significant challenges was contacting the ICT companies. Because the contact list of the ICT companies consisted of the Chairmen, CEO's, and General Managers, there was very little initial response. Several contact persons were either not reachable, had a change in contact information, were traveling abroad or were too busy to fill the questionnaire.

This issue was resolved by the survey manager contacting the company directly and requesting the contact details of staff that could coordinate with the survey conductor and provide the information needed.

Also, during the period designated to filling the questionnaire, Int@j had circulated approximately five surveys to their members. This led to the ICT Questionnaire being lost among the other surveys. In addition, due to the fact that the survey was significantly long at 22 pages, in comparison to the other 4-6 page surveys sent by Int@j, the ICT companies were reluctant to fill the survey, claiming they did not have the "time and/or resources to dedicate to such a long survey".

This challenge was resolved by the survey manager re-sending the ICT questionnaire to the ICT companies who had not seen it, and by informing them of the significance of this survey

and its benefit to the ICT Company itself and the ICT industry as a whole. As a result, the ICT companies were more cooperative and were willing to schedule appointments.

RECOMMENDATIONS

Primus' recommendations for circumventing the challenges faced during the implementations of future Survey Conducting projects include:

- In the initial stages of the survey conducting process, it is recommended to find alternative ways to inform the Company of the survey. Although the survey was sent to all the ICT companies by email, some mentioned that they did not receive it. In addition to sending it by email, perhaps a hard copy of the Survey as well as a phone call would better prepare the Company.

- As mentioned earlier, one of the challenges faced was the difficulty in coordinating a meeting with the contact person due to the fact that he/she was the Chairman, CEO of the Company. It is recommended to directly coordinate with the Human Resources department receive a faster response from the Company.

- In coordinating meetings with the Companies, it is recommended to allocate more time for scheduling meetings with the companies. There were several circumstances in which the needed contact person was too busy or out of town; thus leading the survey manager to schedule meetings beyond the initial deadline for conducting the surveys and, in turn, extending the duration of the survey conducting process.

- Several Companies mentioned that the questionnaire was much too long. And due to that fact, insisted that they did not have the time and/or resources to dedicate to filling the survey. Suggestions for avoiding this issue in future projects wood be to:
  - Decrease the number of questions in the survey.
  - Avoid repetitive questions.
  - If the number of questions cannot be decreased, it is recommended to divide the survey into a number of questionnaires sent to the company in phases, so that the Company does not sense the true size of the survey, and refuse it accordingly.

- Another challenge mentioned above was the fact that the Survey was sent to the ICT companies during the same time period as 5 other surveys sent by Int@j. This led to confusion as well as resistance to filling the survey. It is recommended to properly coordinate as to when the survey should be sent so as not to conflict with other surveys sent to these companies.

- A number of questions in the Questionnaire were understood in different ways. It is essential to make the questions straight forward and clear so as to avoid different perspectives with regards to the meaning of the questions.

- Finally, several of the questions which were asked did not apply to all the companies which were surveyed. It is recommended to ask questions which apply to all the companies in the same manner. Another suggestion is to have more than one version of the questionnaire, each of which is customized to the services of the specific sectors within the industry.

NEXT STEPS

Conducting the survey was only the first step in the 'Skills, and Needs Assessment in the ICT Sector in Jordan' study. As was mentioned earlier, next steps include providing a detailed analysis of the results of the study; which is to be done by the German Jordan University, and presenting these results in an ICT workshop, which is to be attended by the ICT and Academia Industries in Jordan.

This workshop will pave the way for drafting a memorandum of understanding between the ICT and Academia sectors in order to provide recommendations and steps for adjusting the curricula of schools and universities to take into consideration the skills and needs for the ICT Sector in Jordan.

Furthermore, a skills and needs assessment questionnaire similar to that of the ICT questionnaire will be customized and distributed among the different sectors in Jordan. This is in an effort to analyze the needs of all the sectors in Jordan, and further prepare graduates of Jordanian universities to be better qualified for the employment positions in these various sectors.

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