ヨルダン・ハシュミット王国
情報処理技術向上プロジェクト
在外事後評価報告書

2006年3月

独立行政法人国際協力機構
ヨルダン事務所

1．案件の概要		
国名：ヨルダン・ハシェミット王国		案件名：情報処理技術向上プロジェクト
分野：職業訓練		協力形態：プロジェクト方式技術協力（現：技術協力プロジェクト）
所轄部署：社会開発部　社会開発協力第二課		協力金額：3億6,182万円
協力期間	1999年12月1日 ～2002年11月30日	先方関係機関：コンピューター技術・訓練・産業研究センター
		日本側協力機関：(財)国際情報化協力センター

他の関連協力：RSS / NIC / JCS / 慶應義塾大学

1－1　協力の背景と概要

　ヨルダンは、天然資源に恵まれていないため人材育成に力を注いでおり、特に情報通信（IT）分野における人材育成を重点課題の1つとして位置づけている。かかる状況下、ヨルダンは1988年7月、我が国に対し、大型コンピューターによる情報処理技術者育成を目的として、プロジェクト方式技術協力を要請した。これに対し我が国は、王立学院（RSS）内のコンピューター技術・訓練・産業研究センター（CTTISC）において、1990年6月から1994年6月まで「コンピューター訓練研究センター」プロジェクトを実施し、ヨルダンにおいてCTTISCの技術力は高く評価された。しかしながら、IT分野における技術革新は目覚しく、クライアント・サーバー（C/S）システムをベースにしたIT技術が主流になった。CTTISCがヨルダンにおいてIT人材育成の中心的存役割を担っていくためには、C/Sシステムに対応したIT技術の習得を通じての機能強化が不可欠となったことから、1997年8月に新たにプロジェクト方式技術協力を要請してきた。この要請を受け、我が国は、1999年12月1日から3年間を協力期間として、専門家がC/Sシステム導入に必要なIT技術についてカウンターパート（C/P）へ技術移転を行い、その後C/Pがその移転された技術を活かした質の高い研修コース、並びにソフトウェア開発サービスを政府機関、民間企業及び教育機関に提供することにより、ヨルダンのIT産業・人材育成に寄与することを目的として協力を実施してきた。

1－2　協力内容

（1）上位目標：CTTISCが、C/Sシステム分野の研修コースをアラブ周辺国に提供できるようになる。

（2）プロジェクト目標：CTTISCが、C/Sシステム分野の質の高い技術サービスをヨルダン国内に提供できるようになる。

（3）アウトプット（成果）：
 ① プロジェクトの運営・管理体制が強化される。
 ② 必要な機材が供与、据付運転、保守される。
 ③ カウンターパート（C/P）の技術力が向上する。
 ④ C/Sシステム分野の研修コースが実施される。
 ⑤ C/Sシステム分野のソフトウェア開発が強化される。

（4）投入（プロジェクト終了時）
日本側：

長期専門家派遣	3名	機材供与	1億3,126万円
短期専門家派遣	19名	ローカルコスト負担	572万円
研修員受入	8名		

<div align="right">総額3億6,182万円</div>

相手国側：

カウンターパート配置	35名	ローカルコスト負担	69万5,850米ドル

2．評価調査団の概要		
調査者	（担当分野：氏名、所属先、職位） JICA ヨルダン事務所 Dajani Consultant	
調査期間	2005年10月26日～2006年1月26日	評価種類：事後評価

3．評価結果の概要

3-1　評価結果の要約

（1）インパクト

　王立学院（RSS）の情報技術センター（ITC）は、国際コンピューター・ドライビング・ライセンス（ICDL）を習得するための訓練機関として、公的に認証された機関であり、学校の教員や公的機関の職員を対象に訓練コースの提供を行っている。ITC は、様々な公的機関に対して訓練を提供しているが、これら公的機関の一部は、職員の研修機関として ITC を認定しているところもあり、そういった組織は ITC との関係が強い傾向にある。アラブ諸国からの訓練生向けの第三国研修の実施を通じて、ITC は域内における IT 分野のパイオニア・センターとして評判が高い。この情報通信技術（IT）の訓練を受講することにより、訓練生はより良い雇用の機会を得ることができ、生計面での向上にも繋がっている。なお、ICT は情報技術向上プログラム（ITUP）の実施により、外部から収入を得ており、2002 年から 2005 年の年間予算をみると、多少の黒字を生じている。なお、本プロジェクトは、ICT に一定の収入を齎したが、情報技術の急激な発展により、当初期待された開発目標の達成には至っていない。ITC の収入確保は、RSS の予算にとって肯定的な影響を与えている。ITC における訓練は、一般的に受講者の能力を向上させ、より良い仕事と所得の増加を達成している。また、ITC は多くの訓練生に対して最新の情報処理技術を移転する重要な役割を担っており、ヨルダンにおける人的資源開発の観点からは強いインパクトをもたらしているといえる。今次の評価調査では、そのインパクトが最大に達したのが 2002 年であり、それ以降は情報技術の急激な発展から取り残されたため減少傾向にある。また、ITUP は技術的及び運営的な面で、カウンターパート機関の能力構築に寄与しており、高度な情報技術の訓練を提供するとともに、研修やコミュニケーションに関する能力を高めている。さらに、ITUP の実施は、訓練コースや教材の開発に関する ITC の能力を向上させた。なお、ITUP のプログラムの中でも、特に情報処理技術ソフトウェアの開発は、カウンターパート機関の知識・経験の蓄積という観点から大きなインパクトを与えた。しかし、現在は、急速に進化する情報技術を背景に、ITC は訓練コースや機材の更新などの課題を抱えている。

（2）自立発展性

・ 制度・組織的側面

　RSS の戦略的目標は全て持続性が考慮されており、あらゆるプログラムやプロジェクトに関しても将来的な持続発展性と成長が両立するように設計されている。また、プロジェクト当時の経営陣やカウンターパートを含む運営上のキーパーソンは現在も ITC に在籍しており、これらの人材から他の職員へ、知識や技術が移転されることにより、プロジェクトの持続性が確保されている。なお、過去 3 年間に約 28％のカウンターパートが ITC を離職したが、これは情報技術分野の一般的な転職率を考慮すると、それ程悪い数値とは言えない。知識の留保のため、ITC では職員向けに内外の訓練計画を策定している。

　ITC は、RSS 傘下の組織であるが、本体である RSS からの継続的な支援を受けており、信頼関係も強い。また、ITC は半官組織として認知されていることから、公的機関のみならず、多くの民間企業との連携も構築している。

・ 財政的側面

　2002 年から 2005 年にかけての ITC 予算状況をみると、その財政状態は概ね安定しており、歳入が歳出を超過していることから、毎年一定の収益を上げているといえる。なお、ITC の予算は、ハードウェア及びソフトウェア開発に関する項目も限定的ではあるものの計上されている。情報技術分野の急激な進化・発展は、すなわち技術革新のための高額な経費負担を ITC に課すことになるが、限定的な予算配分では、これに対応できていないのが現状である。拠って、ITC が提供するサービスは時代から取り残された内容になっていると考えられる。なお、ITC は全予算のうち、訓練サービスの実施や拡充に必要な新しい機材やソフトウェアを購入するための費用に 13.7％を配分している。また、ITC は全予算のうち約 2％を職員の技能や知識をアップグレードさせるための研修・訓練予算として確保している。

・ 技術的側面

　移転された技術や技能を有益なものとするために、ITC のカウンターパートはその専門性に応じて各種マニュアルや教材を更新しており、また ITUP を通じて追加的な知識・技能を習得している。加えて、これらカウンターパートは、訓練プログラムの計画策定、実施、評価といった一連のサイクルを高度なレベルで行っている。また、ITC は年齢的に若いカウンターパートに対し、継続的に研修を受けさせ、その知識・技能を向上させている。なお、よく保守・管理された機材は、ハードウェアの更新が適切に行われることで、今後数年間は有効に利用できると思われる。

本プロジェクト終了後、ITC は主に短期訓練サービスの拡充を図る目的で、独自に 2 つのコンピューター訓練室を追加的に設置した。また、ITC は本プロジェクトで導入された機材の保守・管理を継続的に実施してきたことから、これら機材は全て稼動している。

3-2 プロジェクトの促進要因

RSS は組織としての評判や信用度は高く、公的機関、民間部門を問わず良好な関係を築いており、これは ITC が市場への参入を促進する要因となっている。また、専門的知識・技能を身につけたカウンターパートの存在は、ITC における事業の持続発展性を促進する要因となっており、これがひいてはプロジェクトのインパクトを高めている。また、ITC の職員に対する継続的な訓練の実施は、プロジェクトの持続性向上に貢献している。さらに、経営陣のプロジェクトを支援する強いコミットメントは、ITC を発展させるために必要な多様なリソースによる資金の確保に貢献している。

3-3 プロジェクトの阻害要因

情報技術分野における急激な進化・発展に伴い、市場に適合した能力・技能の強化が ITC に求められることになる。しかしながら、現在の RSS、或いは ITC の財政状況ではこれを達成することは困難であるといわざるを得ない。

3-4 結論

ITC の財政状況は概ね安定しているものの、訓練やソフトウェア開発などのサービスの質が向上すれば、より改善されるものと思われる。本プロジェクトは、プロジェクトが終了した 2002 年から 2005 年にかけて ITC で実施された ITUP の持続性を高めることに貢献しているが、ITC が今後数年間にわたり、これまでと同様の成果を発現していくためには、外部からの介入を必要としている。また、ITUP は ITC のみならず全ての裨益者に対して肯定的なインパクトを与えたが、そのインパクトも情報技術の急激な進歩により減少傾向にある。ITC は組織として地元コミュニティーに定着しており、その評判も高い。しかしながら、この社会的地位を維持していくためには、より一層の支援と開発が求められている。

3-5 提言（当該プロジェクトに関する具体的な措置、提案、助言）

多くの ITUP の受講者は、情報技術に関する最新の技術を学びたいと望んでいることから、市場のニーズに対応する意味でも、ITC は訓練パッケージやソフトウェアの継続的な更新を行うべきである。また、ソフトウェア開発に必要な技術は既に市場で対応可能であることから、市場は ITC が持つ技術を超過しているといえる。情報技術はまさに日進月歩の分野であることから、ITC はそうした新技術を捕らえる機会を確実に確保するとともに、学んだ新技術を一般に公開していくことが求められる。RSS からの予算は、主にソフトウェアの定期的な更新や、新たな製品やサービスの開発のために配分されるべきである。また、ITC は提供するサービスの質的向上を図るために、カウンターパートの技術的・運営的向上研修により一層努力を行うべきである。

3-6 教訓（当該プロジェクトから導き出された類似プロジェクトの発掘・形成、実施、運営管理に参考となる事柄）

本プロジェクトの終了後、2002 年から 2005 年にかけて ITC の発展やカウンターパートの育成のための外部機関によるフォローアップは限られた範囲でしか行われなかった。拠って、今後協力を取り付けるためにも、JICA や他の組織に対して情報の収集と提供を行うためのフォローアップ計画などを策定する必要があろう。また、ITC は本プロジェクトの期間中、ITUP から技術支援を受けたが、今後は運営、財政、市場調査に関する能力構築を外部機関の支援を得つつ行っていくことで、本プロジェクトのインパクトや持続発展性を更に向上させることが可能である。

Evaluation Summary

1. Outline of the Project		
Country: Hashemite Kingdom of Jordan	Project title: Information Technology Upgrading Program (ITUP)	
Issue/Sector: Information Technology	Cooperation scheme: Technical Cooperation Project	
Section in charge:	Total cost : ___3.618 billion yen	
Period of Cooperation	Dec 1999 – Nov 2002	Partner Country's Related Organization(s): Royal Scientific Society (RSS)/ Information Technology Center (ITC)
		Supporting Organization in Japan: International Information Cooperation Center
Related Cooperation	RSS / NIC / JCS / Keio University	

1-1. Background of the Project

In 1991, RSS in cooperation with JICA established a regional training center at ITC to provide training courses in Senior Programming System Engineering using Mainframe systems for computer specialists in Jordan and the region. In August 1999, the RSS signed with JICA an agreement to start phase II of the project to execute the ITUP in order to convert the Mainframe into Client Server system, to enhance the capabilities of the computer personnel and to provide new long-term courses in IT. The ITUP aimed at conducting training courses in the field of Client Server System to Jordanian specialists in particular and to computer specialists from Arab countries at large, and providing technical services in the field of client server system.

1-2. Project Overview

ITUP is implemented by RSS/ITC in cooperation with JICA. JICA's assistance included upgrading of technology transfer in the field of C/S System by the Japanese experts dispatched to Jordan, provision of equipment and machinery, and counterpart training in Japan.

1-3. Overall Goal

Assist in the development of IT in Jordan through a leading agency (ITC) to provide services that are promoted at public and private institutions in Jordan and the region. ITUP is an initiative that would trigger other activities aiming at development if qualified IT specialists and experts that satisfy market needs, and generate feasible employment opportunities in IT. This is a challenging goal that requires numerous interventions, based on a professional and capable organization such as ITC, which is supported by well-known and esteemed institution such as RSS.

1-4. Project Purpose

The purpose of the project is to upgrade the technical services provided by ITC in the field of C/S system in order to serve the IT needs of the Jordanian community and the region.

1-5. Outputs

1) Equipment, which are provided by JICA, are properly functioning and maintained.
2) Technical capability of the C/P and ITC personnel are developed.
3) Training programs in the field if C/S system are implemented, particularly long-term programs.
4) Software development services are upgraded qualitatively and quantitatively.

1-6. Inputs (as of the Project's termination)

Japanese side :

Long-term Expert	3 persons	Equipment	1.312 billion yen
Short-term Expert	19 persons	Local costs	5.724 million yen
Trainees received	8 persons		

Jordan's Side :

| Counterpart | 35 persons | Local Costs | 76.538 million yen |

2. Evaluation Team		
Members of Evaluation Team	Dajani Consulting: Eng. Samer Ghannam Eng. Nuha Al Habarneh	
Period of evaluation	November 16, 2005 - February 9, 2006.	Type of Evaluation: Ex-Post Evaluation

3. Results of Evaluation

3-1. Summary of Evaluation Results

(1) Impact

The impact on the overall goal of the project was acceptable and adequate, due to promoting of ITC as a C/S long-term training programs provider in Jordan and the region. ITC conducted more than 30 long-term training programs in Jordan, with more than 340 participants. ITC conducted 4 long-term TCTPs, with 64 participants from different Arab countries. This impact was achieved during 2002 – 2005.

The project achieved the following positive impacts:

1. Socio-cultural aspects

ITUP contributed to the achievement numerous positive effects such as enhancing computer literacy through obtaining official authorization as a training institution for provision of International Computer Driving License (ICDL) certificate. ITC provided training and ICDL licenses for more than 400 participants from governmental and public institutions during 2001 – 2005. ITC established relations with more than 100 public institution and agency in Jordan during 2001 – 2005

2. Financial aspects

ITUP has a great effect on the financial situation of ITC, RSS, and beneficiaries. revenues of ITC covered expenses.

3. Technical aspects:

ITC has played a significant role in transferring the latest technologies to a wide number of trainees, which have impacted Jordan's human resources development to a certain content.

(2) Sustainability

the overall project purpose is highly sustainable. RSS actively supports the Jordanian government by formulating opinions on issues involving research and technology policy to achieve these goals, which are still valid and apply on the ITC plans and strategies. Being under the umbrella of RSS, gives ITC the official support and credibility that supports the project sustainability, and the ITC attractiveness as outstanding and distinguished IT training facility. stability of its financial situation over the years, its revenues were higher than its expenses, and some profits are generated annually. Preventive and corrective maintenance procedures are followed at ITC premises to sustain the equipment as much as possible. Retention and application of transferred techniques and skills contributes to sustaining ITC.

3-2. Factors that have promoted project (Impact and Sustainability)

- RSS possesses excellent reputation and credibility, in addition to the strong relationships with governmental and private sectors, which facilitated and promoted the entrance of ITC to market.
- Presence of professional counterparts promoted the success and continuity of ITC, and enabled it to achieve the intended impacts.
- Continuous training for ITC staff contributed in sustaining the project.
- Commitment of top management in supporting the project, and bringing funds from different resources to develop ITC.

3-3. Factors that have inhibited project (Impact and Sustainability)

- Rapid growth in IT sector requires similar development in ITC capacities, but its financial resources is not enough to achieve the desired development, which is important to maintain the presence of ITC in the market.

3-4. Conclusions

Based on the evaluation results, it is concluded that the overall goals of the project are largely sustainable, while project outputs are partially sustainable. The project had a significant positive impact on both the ITC and the community. These conclusions are supported by the fact that ITC's financial status (Funding, Budget) is generally stable, but can be enhanced if the services (training and software development) are upgraded. Another fact is that ITUP has contributed to the sustainability of ITC during 2002 – 2005, but ITC needs a similar intervention to ensure sustainability in the coming years.

As concluded, ITUP has a significant direct positive impact on the ITC, and an indirect positive impact on its beneficiaries, but this impact is diminishing due to the rapid progress of IT in the market. Therefore, ITC needs a similar intervention to regenerate and sustain the positive impact. ITC is well-established, and its reputation is well-built in the community, but needs more support and development to maintain this reputation and position. The impact of the project can also be attributed to the fact that ITUP was carefully designed, prepared and carried out by both JICA and ITC, which lead to significant impact and sustainability, due to efficient utilization of equipment and training.

It is a fact that ITC still provides unique services such as the TCTP, and it is regarded as the source of exceptional IT training regionally, and the source of widely-recognized and reliable training and software systems locally, thus promoting its future sustainability.

3-5. Recommandations

It is recommended that ITC cooperates with private sector IT companies and academic institutions in order to share the experience and the latest in the field of C/S and programming. ITC should also allocate a fund or part of the budget for regular updating of software versions and packages, in addition to develop new products and services. very rapid and continuous updating of training packages and software is highly recommended through negotiating terms of updating when purchasing original software packages. It is advised that ITC should attracts sponsorships from IT firms, in which they provide up-to-date technology in return for advertising for them by ITC during training programs or software development projects. Another way is to partner with these companies when offering total solutions for clients. It is advised to nominate C/Ps to attend certain managerial programs in external institutes. The ITC should use any future assistance or support in developing its regional role as an IT pioneer and service provider.

3-6. Lessons learnt

After completion of ITUP, there was limited follow up on the progress of the ITC and C/Ps during 2002-2005. A sustainability or follow up plan should be set – including measurable targets and performance indicators- in order to collect and provide information to third party in case of evaluations.

ITC received pure technical assistance during ITUP. IT development projects may include a component for management, financial and marketing of the technical services developed as a result of technical assistance projects, to enhance the expected impact and sustainability.

Dajani Consulting Co.

Japan International Cooperation Agency (JICA) Jordan Office

FINAL REPORT
Ex-Post Evaluation of The Information Technology Upgrading
Project

Information Technology Center
Royal Scientific Society
Amman – Jordan

March 2006

PREFACE

The information technology revolution now sweeping the world has the potential to transform the traditional development paths of countries. In just the past two decades, the Information Technology (IT) industry has grown to be the principal driving force behind the world economy, with benefits that are only now being understood.

To cope with the rapid and tremendous evolution in the Information Technology during recent years, and as a second phase of the capacity building project implemented at the Information Technology Center (ITC), which was established at the Royal Scientific Society (RSS) in 1990 to develop manpower in the field of computer technology and thus to contribute to the socio-economic development of Jordan, Japan International Cooperation Agency (JICA) and RSS signed the Record of Discussion on August 1999 to implement the Information Technology Upgrading Project (ITUP), aiming at:

- Conducting training courses in the field of Client Server (C/S) System to Jordanian specialists in particular and to computer specialists from Arab countries at large.
- Providing technical services in the field of C/S system.

Computer Training Labs provided during ITUP
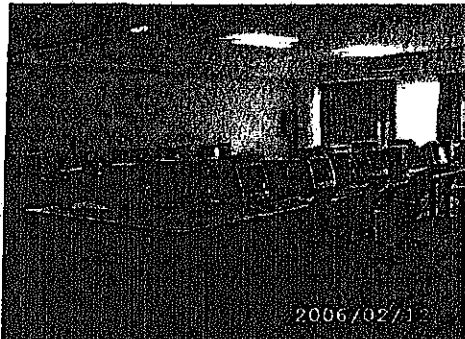
Computer Training Rooms Established by ITC

Developers and Programmers (C/P) of ITUP - ITC

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Abbreviations

JICA	Japan International Cooperation Agency
RSS	Royal Scientific Society
ITC	Information Technology Center
ITUP	Information Technology Upgrading Program
IT	Information Technology
R&D	Research and Development
C/S	Client Server
C/P	Counter Part
PC	Personal Computer
TCTP	Third Country Training Program

1. INTRODUCTION

1.1 Project Background

The remarkable expansion of the Internet and the rapid development of the wireless networks are changing modes of production and social forms around the world.

The government of Jordan under the direction of His Majesty King Abdullah II and his Majesty's vision under the REACH initiative, is taking steps to upgrade the information and communication technology infrastructure making it an integrated component of its social and economic development strategies, and giving IT sector high priority to develop and deepen its applications to enhance economic productivity and international competitiveness.

In 1991, RSS in cooperation with JICA established a regional training center at ITC to provide training courses in Senior Programming System Engineering using Mainframe systems for computer specialists in Jordan and the region. In August 1999, the RSS signed with JICA an agreement to start phase II of the project to execute the ITUP in order to convert the Mainframe into Client Server system, to enhance the capabilities of the computer personnel and to provide new long-term courses in IT. The ITUP aimed at conducting training courses in the field of Client Server System to Jordanian specialists in particular and to computer specialists from Arab countries at large, and providing technical services in the field of client server system.

1.2 Project Overview

ITUP is implemented by RSS/ITC in cooperation with JICA. JICA's assistance included upgrading of technology transfer in the field of C/S System by the Japanese experts dispatched to Jordan, provision of equipment and machinery, and counterpart training in Japan. The duration of the project was three years starting from 1st of December 1999 and ending by December 2002. During the project, ITC received about 42 computers in addition to servers and printers.

1.3 Study Objectives

In this ex-post evaluation mission, ITUP implemented during the period 1999-2002 at the ITC is being evaluated to assess the main criteria; impact and sustainability, in addition to other criteria. The results of the study shall be used to decide and design new assistance scheme for ITC.

1.4 Scope of Work

Dajani Consulting was contracted by JICA - Jordan office to conduct the ex-post evaluation study, and produce reports of the evaluation supported by documented evidence of the impact and sustainability of ITUP at the ITC. The scope of evaluation covers the period 2002-2005, after the completion of ITUP, and achieving its planned outputs according to the Record of Discussion signed in 1999. The ITUP was evaluated directly after completion by a team of Japanese experts.

1.5 Evaluation Team

Eng. Samer Ghannam: Senior Management Consultant.
Eng. Nuha Al Habarneh: Research Expert.

1.6 Study Period

November 13, 2005 - February 9, 2006.

2. EVALUATION STUDY APPROACH

2.1 Study Methods:
The evaluation team reviewed the objective of the ITUP in order to determine the scope of evaluation, and to use it as a baseline for comparison with the findings. The team met the responsible staff at JICA office, Mr. Nakahara Shinichiro, to agree on the evaluation methods and deliverables. The team then had a meeting with project coordinator, the director of ITC, Dr. Saqer Abdel Rahim, and obtained

information, data, records, statistics, and reports necessary for evaluation. They also requested additional records and lists from ITC. Other meetings were held with training supervisor, Ibtisam Abdel Jaber from ITC.

After review of the collected literature and documents, the evaluation team designed the questionnaires for three different target groups (ITC staff, graduates/trainees and their organizations). They also prepared interview checklists to be used during meetings with stakeholders. These tools were supposed to collect qualitative and quantitative evaluation indicators. The evaluation process was based on evaluation plan and schedule prepared in advance by the team.

Study team started collecting data and feedback from target segments, beneficiaries and stakeholders using questionnaires, focus groups sessions and personal interviews. The collection of information concentrated on the previous experience of the different segments with ITC, and strength and weakness of ITC in many aspects. Once the information collection was completed, study team started classification and analysis of data, in order to put it in categories relevant to the sustainability and impact criteria of the project.

Afterwards, study team drew conclusions from the facts and findings built on the results of the survey. Accordingly, recommendations and lessons learned were made, and the final report was prepared and submitted to JICA – Jordan office.

2.2 Stakeholders:

A. Internal Stakeholders: these include the organizations and institutions directly related to the ITC, and usually benefit from its services and affect its policies:
- Royal Scientific Society (RSS).
- National Information Center-RSS.
- Technology Transfer Center-RSS.
- Princess Sumaiya University for Technology-RSS.

B. External Stakeholders: these include organizations and individuals that obtained some of ITC services in the past, and still interested in obtaining such services:

- *Private sector companies/enterprises.*
  - Fastlink (Mobile Telecommunication Company).
  - Royal Jordanian Airlines.
  - Electricity Generation Company.
  - Housing Bank.
  - Jordan Kuwait Bank.

- *Public sector institutions.*
  - Department of General Statistics.
  - Ministry of Justice.
  - Ministry of Planning.
  - Higher Council for Youth and Sport.
  - Ministry of Higher Education and Scientific Research.
  - The University of Jordan.
  - Department of Lands and Survey.
  - Prime Ministry.
  - Municipality of Greater Amman.
  - National Aid Fund.

C. Donors: these include organizations which supported or still support the development and upgrading of RSS in general, and ITC in particular:
- Japan International Cooperation Agency (JICA).
- Microsoft.
- European Union.
- IBM.
- World Bank.

2.3 Implementation

The evaluation study was implemented using the following methods:

A. Desk Review:

Study team conducted desk review to gain a comprehensive picture about the actual history of the project, and to gather statistical data regarding the performance of ITC in relation to the stated project objectives. The desk research included collecting information, reports and records of the activities carried out by ITC using project facilities and outputs. Examples of these records include staff list, employment records, training programs records, equipment maintenance reports and financial balance statements. Study team made some remarks on the availability and usability of the records.

The desk review also included the careful review and analysis of these documents to extract verifiable key indicators such as number of long-term training programs held, number of participants in the training programs and evaluation results of training programs. The findings of the desk review were then linked to the project's specific and overall objectives.

B. Focus Groups/Personal Interviews:

Study team prepared and carried out focus groups to build a general consensus regarding certain issues pertaining to ITC role in achieving project objectives and goals. Also personal interviews with key decision makers and other concerned individuals revealed their experience in dealing with ITC. In order to properly conduct those evaluation activities, the study team prepared themes and interview guides including questions covering several areas of the performance of ITC, impact and sustainability of ITUP.

In the focus groups, study team invited a selected group of people (e.g. C/Ps, ITC staff, and representatives from organizations benefiting from ITC's services) with common characteristics and interests to participate in the focus group. The arrangements consisted of making date, venue and session requirements. During the focus groups, one of the study team guided brainstorming and discussions to address the relevant issues (status before and after ITUP, progress of ITC since ITUP's completion, weaknesses and strength affecting the impact and sustainability of ITUP). At the end of each focus groups session, a summary report was prepared in Arabic. Three focus groups sessions were conducted, each one contained about 12 persons.

In addition, study team arranged appointments with interviewees to discuss their impressions and experience perceived during direct and indirect dealing with ITC. Remarks and notes were taken during the meetings. About 10 interviews were held with target respondents, in addition to several meetings with ITC director and staff.

C. Survey Questionnaire:

Study team collected specific information and opinions as perceived by target respondents, through a series of closed and open questions covering several subjects of project's impact and sustainability. This activity was completed through a series of steps, starting with designing and selecting of a sample from each target segment (e.g. C/Ps, participants in training programs, organizations benefiting from ITC's services). Afterwards, study team specified survey objectives and scope as stipulated in the evaluation plan. Based on the purpose of the survey, study team prepared a questionnaire form for each target segment, tested it on representative sample members and modified it accordingly. Study team finalized the questionnaires and sent a copy to JICA for comments and/or approval.

After confirming the list of sample members, study team launched the field survey to collect questionnaires. Questionnaires were completed and collected face to face as much as possible. Study team was able to collect 17 questionnaires from ITC staff, 40 questionnaires from participants/graduates of ITC programs, and 10 questionnaires from organizations' representatives responsible for training function.

Study team checked on the completeness and credibility of questionnaires, and then started data entry using statistical software (MS Excel). After processing of questionnaires, study team implemented data analysis techniques to isolate quantitative from qualitative information. The end of the activity resulted in measures of the indicators, which were directly reported in the study.

3. RESULTS

3.1 Overall Goal:

The overall goal of the ITUP is to assist ITC in the development of IT in Jordan as a leading agency, and render it able to provide services that are promoted at public and private institutions in Jordan and the region. ITUP is an initiative that would trigger other activities aiming at development if qualified IT specialists and experts that satisfy market needs, and generate feasible employment opportunities in IT. This is a challenging goal that requires numerous interventions, based on a professional and capable organization such as ITC, which is supported by well-known and esteemed institution such as RSS.

3.2 Project Purpose:

The purpose of the project is to upgrade the technical services provided by ITC in the field of C/S system in order to serve the IT needs of the Jordanian community and the region. There are two indicators that measure the achievement of the purpose, which are:

3.2.1 Level of satisfaction of present and former service beneficiaries:

In general, participants or trainees benefiting from ITC training services were found highly satisfied. Many tools were used to verify this indicator, including; beneficiaries questionnaires and interviews. The results of participants' questionnaire showed that most participants had significantly benefited from the long-term training programs, which are conducted by ITC, 75% of them benefited more from the theoretical part of the training, while 62.5% benefited more from the practical part of the training. Usually, ITC programs contain a practical part designed to help participants in applying theoretical concepts through a project or a problem. This theoretical part is either administered for individual trainees or teams. Accordingly, this component is essential, highly demanded and appreciated by participants.

Another contributing factor for participants' satisfaction is management and arrangements of the training programs. About 87.5% found that ITC's management of ITUP was very good, thus they were highly satisfied. The satisfaction level was enhanced by the performance of the trainers; around 75% of participants evaluated the trainers' ability to communicate information as very good. This is an evidence of the upgraded capacity of C/Ps as a result of ITUP. Furthermore, most of participants confirmed the availability of proper equipment for training at ITC, which is another aspect supported by ITUP and maintained by ITC. All participants stated that the training material and manuals of long-term programs were very much suitable to be utilized at their workplace. In fact, the contents of the programs were in line with the needs of most participants as they declared in the questionnaires.

Generally, most beneficiary organizations believed that the effect of the training programs on their employees' performance was very good, because they applied most of the gained knowledge at their workplace. Organizations' representatives noticed a significant improvement in the skills and knowledge of their staff participated in long-term programs. They also stated that they were satisfied with the extent of knowledge transfer among employees within the organization as a result of attending ITC's programs. This is an evidence of the role of ITUP support for ITC in upgrading the IT abilities in the Jordanian community. Organizations' representatives think that the quality of the training programs and the performance of ITC are very good in comparison to other training centers in the private sector. This indicates that ITC achieved a competitive position among other IT training suppliers due to upgraded capacity of the center and its staff.

When evaluating the satisfaction of clients from software development services, it was found high among most of the beneficiary organizations. In particular, organizations were fully satisfied with the quality of ITC software to an extent that they emphasized their intention to procure ITC's services in case the new software development needs appeared in the future. This is considered a very strong indicator on the sustainability of ITC. Client organizations explained during interviews that ITC provided training for those beneficiaries, to enable them to deal with the developed systems. Furthermore, the interviewees stated that the developed systems met the organizations' requirements. They also explained that ITC usually offer regular maintenance and upgrading to the developed systems, and keep a good relation with the organizations. These factors enhance the sustainability of ITC as a software service provider.

3.2.2   Number of newly introduced/improved services and new clients:

In general, the total number of services offered and clients remained almost· constant since the completion of ITUP. Referring to ITC records it was found that some new software development services were created by ITC C/Ps, including MIS, Web applications, Financial Systems and Monitoring Systems. The number of these services ranged between 12 and 15 annually. These services were mainly provided to governmental institutions, based on a service contract with fixed amount and fees. These contracts were renewed annually to receive the updating and maintenance services of ITC. This guaranteed a constant income for the ITC, which contributed to its sustainability. In addition, new clients were introduced, while some previous clients disappeared year after year, but the total number of clients remained constant. This means that ITC preserved an average level of sustainability during the years.

From the above-mentioned facts and discussion, it is apparent that the overall purpose of the project is sustainable to a large extent.

3.3 Project Outputs:
The outputs of the project are:

3.3.1   Proper functioning and maintenance of ITUP equipment:
The equipment provided during ITUP was found satisfactorily functioning and in a very good shape due to regular maintenance and care by ITC. This output was verified by checking equipment provided during ITUP, manuals, hardware and software available at the facilities of ITC. By observing the contents and condition of equipment, referring to the inventory, operation and maintenance records, it was concluded that the servers are regularly maintained by the supplier according to a maintenance contract with ITC, while PCs are maintained internally according to regular (preventive) and emergency (corrective) maintenance procedures and records. In addition, the manuals are kept in a very good condition and are still in use. Regarding the hardware and software; hardware equipment was upgraded in 2003 according to a purchase order issued by ITC, and installation report issued by the supplier, while the software was never updated with new versions, due to the high cost of new software licenses, and unavailability of allocated budget for this purpose.

From the above-mentioned discussion, it is realized that the sustainability of the equipment provided during ITUP can be considered very high, and expected to serve for further few years, while most of the software programs provided during ITUP are partially out-of-date and expected to become obsolete within the coming few years.

3.3.2   Enhancing the Technical Capability of the C/Ps:
The technical capability of the C/Ps was significantly enhanced during and following the ITUP; due to the concentration on training and developing the capacity of C/Ps, in addition to the stability of ITC's staff and management support. This output was verified using C/P's questionnaire and focus groups, participants' program evaluation, C/Ps self-assessment, training records, participants' questionnaire and interviews with beneficiaries from software development services and R&D.

C/P's questionnaire and focus groups revealed several interesting points. For example, ITC provided training for its employees (trainers/developers) before the ITUP, in order to enhance its services, especially in software development activities. This activity enabled ITC staff to interact with ITUP activities, and absorb the support of Japanese experts dispatched to ITC during the project. Furthermore, some employees (C/Ps) were trained during ITUP in Jordan and Japan under the supervision of Japanese experts. The training contributed to building the employees' capacities and enhancing their skills, which enabled them to perform their work properly, especially in training and software development services. This improved the impact of ITC's training programs.

Additionally, training needs assessment is the tool that is being used to assess trainees before the program. This tool ensures that the required development will be achieved, hence increasing the expected impact of the program. ITC staff's training continued after ITUP completion, which enabled ITC to carry on the services originally upgraded by ITUP. This lead to sustainability of services provided by ITUP.

The sustainability of the technical capability of C/Ps is guaranteed by several measures. ITC is like a learning organization; the knowledge and skills that were gained by C/Ps during the project were transferred to their other colleagues. The knowledge transfer guaranties ITUP's effect continuation, since the know-how was not monopolized. Another aspect of capitalizing on the technical capability of C/Ps, is the internal training. Many of the staff demand and receive soft skills training, like communication skills, presentation skills, project management and planning. Nevertheless, there is a need for specialized IT training in new fields of programming such as DOT NET and ERP packages. IT sector is developing rapidly, accordingly, continuous development in hardware and training aids is one of the most important challenges that faces ITC services, and limit the capabilities of ITC.

Usually at the end of each training program, trainees evaluate the performance of trainers. The evaluation system of ITC uses a five-point scale to assess knowledge and skills of Trainers (C/Ps). In general, the performance of C/Ps was found satisfactory from the point of view of participants. The average evaluation of trainers since the completion of ITUP is 4.25 points of 5.00 (85%). The evaluation results also confirm trainers' ability to communicate information to trainees as in table 3.1. This indicates that the technical capacity of the C/Ps is upgraded and sustainable.

Figure (3.1) shows the results of trainers' evaluation during (2002-2005).


Training Programs Conducted During (2002-2005)				
	2002	2003	2004	2005
Trainers' Performace Evaluation	4.25	4.38	4.33	4.25
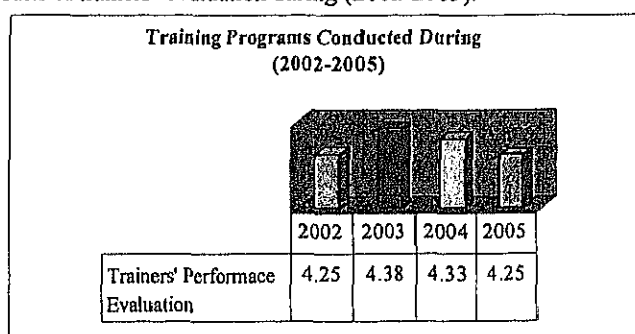
Fig. (3.1)

	Excellent	Very good	Good	Acceptable	Not acceptable
Evaluation results	25%	50%	25%	0%	0%

Table (3.1)

On the other hand, C/Ps self-assessment of knowledge and skills shows decline from an average score of 4.04 before ITUP completion to 3.37 during (2002-2005) as shown in fig. 3.2. The reason for this decline is attributed to the rapid growth of IT sector, which requires continuous training of C/Ps and upgrading of programs material to cope with development in IT.

Counterparts' Self Assessment (2002-2005)				
	2002	2003	2004	2005
Counterparts' Self Assessment	3.17	3.41	3.50	3.40
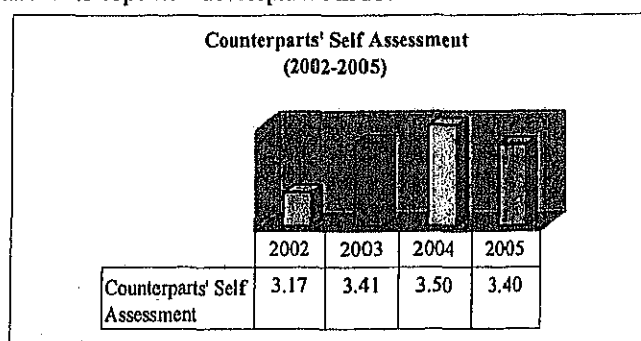
Fig. (3.2)

Referring to training records of C/Ps during 2005 (annex 3), ITC conducted 11 courses for Research and Development department, 14 courses for Analysis and Programming department, and 16 courses for Monitoring and Implementation department. Most of the courses were highly specialized, and some of these courses concentrated on management and soft skills, such as time management, presentation skills, communication skills, creativity, etc. These activities are evidence of sustained technical

capacity building given to C/Ps after the completion of ITUP. C/Ps questionnaire confirmed that they still need training, although most of them obtained a good number of training courses.

Interviews with beneficiary organizations agreed that the quality of developed software was very good, and the services were performed completely on time. C/Ps utilized available capabilities as much as possible, although they had work overload. The follow up services by ITC are considered satisfactory.

Based on the previous discussion, it is concluded that C/Ps are highly qualified technically, and they are building on this capability, so it is expected to sustain and grow in the coming years because of knowledge and experience accumulation as a result of continuous training of C/Ps, and conducting training programs fro new participants by C/Ps in the ITC. Nonetheless, C/Ps need additional new technical training in certain fields to upgrade the overall capability of ITC.

3.3.3   Implementation of training programs in the field of C/S system:
ITC continued organizing and conducting long-term and short-term training programs in the field of C/S system, with satisfactory and acceptable results. This output was verified using a number of indicators. The number of training programs conducted remained almost constant since the completion of ITUP. For example, ITC conducted about 30 long-term programs during (2002-2005) including Software Engineering, Web Computing, Networking and Multimedia, with an average of 7 programs per year as shown in fig. 3.3. The approximate duration of each program was 2 months, this means the utilization of the project computer laboratories was about 67%, which is considered highly satisfactory (refer to annex 4).
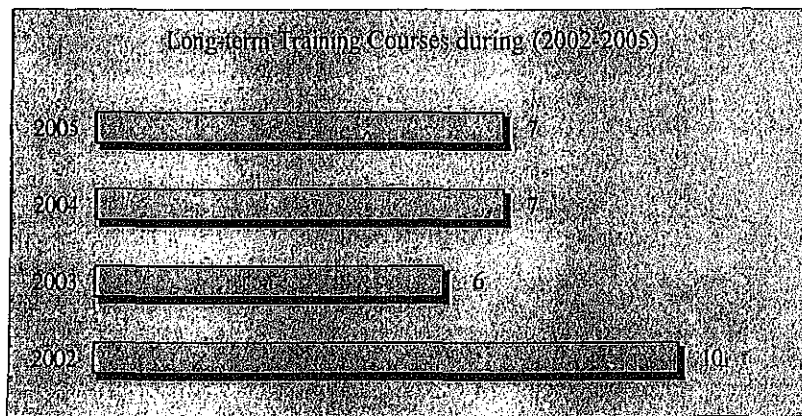
Fig. (3.3)

Fig. (3.3) compares computer laboratories' utilization in the last four years in terms of the number of long-term training programs conducted during these years. The number of programs declined during the last three years, due to the quick advancement of IT industry, which requires continuous updating in the current programs, software and hardware in order to sustain programs attractiveness.

On the other hand, short-term training programs decreased in 2003 due to unstable political situations in the region, but in 2004 and 2005 it regained momentum after recovery from Iraq war implications, as shown in fig. 3.4.
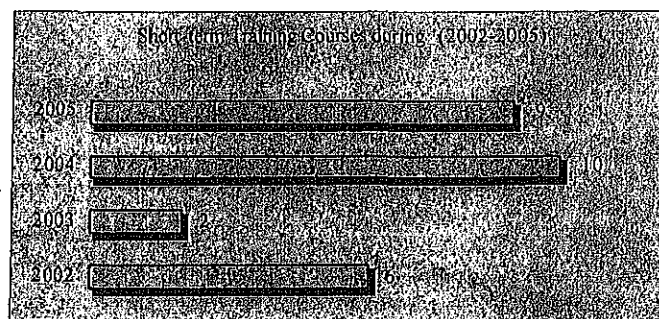
Fig. (3.4)

Another indicator of training programs is the frequency of conducting each program. figure (3.5) shows the frequency of conducting each training program according to ITC records:
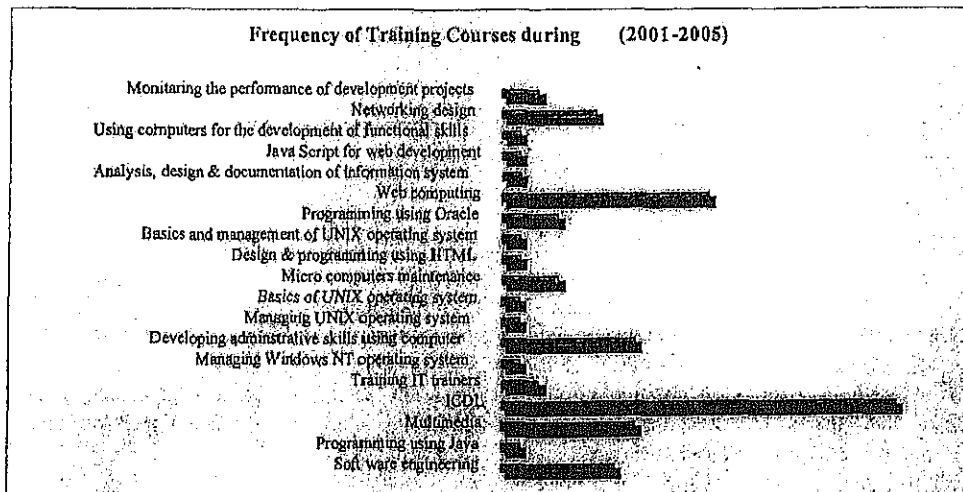
Fig. (3.5)

The figure illustrates that ICDL is the most frequently held program; it was conducted 21 times during the last four years, followed by Web Computing programs, Multimedia, Networking, Software Engineering, and developing administrative skills using computers. This is due to appearance of new centers and institutes providing the advanced training, and IT faculties in universities providing curricula that matches these programs. The design and components of ITC programs are slightly different from those existing in the market, thus having competitive features that attracts trainees.

Regarding the number of participants in training programs, by referring to training records of ITC, it can be seen that the number of participants in long-term training programs decreased since the completion of ITUP. Table (3.2) shows the numbers of participants during the last five years, and the percentage of change in these numbers. The reason of such a decrease is that the programs are becoming out of date compared to the aggressive progress in IT environment. This requires upgrading and modernization of programs to compete with the offered programs in the market.

Year	Number of trainees	Trend
2001	162	
2002	125	-23%
2003	80	-36%
2004	65	-19%
2005	70	8%

Table (3.2)

Within the same context, the number of participants in the short-term programs decreased during 2002 and 2003, but in 2004 the number increased, then decreased in 2005. Table (3.3) shows the number of participants during the last five years. Similar to long-term training programs, short-term training program faced the same obstacles.

Year	Number of trainees	Trend
2001	81	
2002	76	-6%
2003	38	-50%
2004	207	445%
2005	173	-16%

Table (3.3)

To evaluate the training programs deeply, curricula, manuals, and training material were evaluated in terms of participants' evaluation and the C/Ps achievements. After analyzing participants' questionnaire, it was found that the duration of theoretical and practical parts of training was sufficient enough to provide the required information to participants. Participants confirmed that most of the gained knowledge can be utilized at work. This is a sign of a positive impact of the training programs. Most trainees expressed the suitability of training material to be utilized at work. Participants stated that nearly all topics that were mentioned in the training programs brochures and outlines, were covered during training sessions.

On the other hand, regarding C/Ps achievements, they were able to develop limited number of manuals and training materials by themselves, given the limited time and resources. So far, they upgraded five training subjects, as mentioned in annex 6. The upgrading process addressed some subjects of each training program, but not all the modules. This is a sign of sustainability of training programs.

Finally, it is perceived that the implementation of long-term C/S training programs is considered moderately sustainable, due to the types and frequency of the training programs held after completion of ITUP, which showed a little variation and development over the years as a result of internal and external factors.

3.3.4   Enhancing Software Development Services:
A number of software development projects were implemented, while others are still under construction, and the feedback about software development services is positive, which indicates enhanced software development capacity of ITC. The criteria used to evaluate this output include the number of software development services and satisfaction of clients.

Referring to annex 5, ITC had about 21 software development contracts during (2002-2005) mainly for governmental organizations, besides the R&D projects, which were 14 during the same period. Most of these services are still ongoing, due to extended demands and requirements of the clients. The number of software development and R&D services is considered constant but acceptable, though it is less than the number of projects during ITUP implementation, due to the fact that the IT growth is faster than the ITC capacity development, which weakens the quality of services provided by ITC in comparison with competitors from the private sector. This may reduce the sustainability of such services.

On the other hand, interviews with beneficiary organization or clients of software services revealed the high level of satisfaction with ITC software development services. Most beneficiaries were satisfied with the quality of ITC services, they emphasized they will contract ITC for future IT services. this indicates a potential for sustainable provision of services by ITC to clients. ITC provided training for those beneficiaries, to enable them to use and operate the developed systems. In general, the developed systems met the beneficiaries' requirements and objectives to a large extent.

In reference to the above discussion, it is realized that the software development activities of ITC are still sustainable and expected to remain sustainable but constant in the coming years, due to the existing loyal clients on one hand, and the enhanced capability of C/Ps providing these services on the other hand.

3.4 Sustainability of the Project

The component "Sustainability" is used to comprehensively evaluate how long the favorable effect as a result of the project can continue after the project has been terminated. Evaluation of this component is required to decide how much the local resources should continue to be used for the project, and to evaluate how much the country receiving the assistance has been considering important.

The study team evaluated the sustainability of the project, from the perspectives of organizational, technical, financial and socio-cultural aspects. The overall purpose of the project is to upgrade the technical services provided by ITC in the field of C/S system. The study team concluded that the overall project purpose is highly sustainable. This was verified through several sources, mainly the C/Ps focus group, participants' questionnaire, interviews with representatives from beneficiary organizations regarding training and software development. Questionnaires were collected from 40 participants in training programs, and interviews with 10 public and private sector organizations. Also focus groups were held with about 30 ITC staff.

As explained in the results, the majority of the respondents to the participants' questionnaire are very positive with the services provided by ITC. Most trainees were satisfied with the training programs that were held by ITC and they assured that they had benefited from the long-term training programs, which are conducted by ITC, 75% of them benefited more from the theoretical part of the training, while 62.5% benefited more from the practical part of the training. Around 75% of trainees said that the trainers' ability to communicate information was very good. Most of trainees confirmed the availability of equipment for training at ITC. All trainees declared that the training material and manuals were very much suitable to be utilized at their workplace.

According to the interviews conducted by the evaluation team, most organizations that participated in ITC's training programs believed that the effect of the training programs on their employees' performance was very good, they applied most of the gained knowledge to their work. They were satisfied with the knowledge transfer among employees. They think the quality of the training programs and the performance of ITC is very good in comparison to other training centers in the private sector.

According to the interviews conducted by the evaluation team, most beneficiary organizations from ITC's software development services were also satisfied with the quality of ITC services. They emphasized that ITC's services and the de eloped systems met their needs and their support was always available; therefore, they would contract ITC for future IT services.

3.4.1 Policy aspects:
The strategic goals of RSS include sustainability components, so all the plans, projects, programs support this component, to keep the continuity and growth during the coming years. Among the strategic goals of RSS is to support the development process in Jordan through R&D to strengthen the role of SMEs in Jordan's economy, to promote itself as a reference technical institution in Jordan and the region, to expand its role as a certification body for both skilled manpower and industrial products, to strengthen co-operation with similar institutions to promote mutual interests, to develop human resources, to encourage and support the start-up, incubation and development of innovation-led knowledge-based businesses. RSS actively supports the Jordanian government by formulating opinions on issues involving research and technology policy to achieve these goals, which are still valid and apply on the ITC plans and strategies.

3.4.2 Institutional and management aspects:
Top management and key personnel are still employed at ITC including C/Ps, the existence of those employees is supporting the sustainability of the project, and guarantees transferring the knowledge and experience to new employees. About 28% of C/Ps left ITC during the past three years, but this percentage is acceptable, due to the increase of turnover in the Jordanian IT sector in general. In order to retain the knowledge, ITC developed internal and external training plans for its employees.

Being under the umbrella of RSS, gives ITC the official support and credibility that supports the project sustainability, and the ITC attractiveness as outstanding and distinguished IT training facility.

3.4.3 Financial aspects:

Reviewing ITC budget and revenues during (2002-2005) as in table 3.4 (refer to annex 10) reveals the stability of its financial situation over the years, its revenues were higher than its expenses, and some profits are generated annually. The ITC budget contains limited allocations for hardware and software development, nevertheless the rapid and expensive growth in IT prohibits ITC from achieving the desired development in its services; thus some ITC services are considered obsolete.

Year	Budget (JD)	% change	Revenues (JD)	% change
2002	544460		923588	
2003	930863	71%	745583	-19.3%
2004	686503	-26.3%	669058	-10.3%
2005	733648	6.9%	668051	-0.2%

Table 3.4

There is a decline in the revenues of ITC due to constant number of training and software development services provided, with a normal increase in the expenses and the budget.

Annually, ITC allocates about 13.7% of its budget for purchasing new equipment, machinery, and software that enables ITC to implement and expand its services, to increase the revenues and ensure sustainability of ITC. Also ITC allocates about 2% of its budget for training of its employees, in order to develop their skills and knowledge. Although not enough, these allocated amounts are used efficiently in maintaining the available assets of ITC.

3.4.4 Technical aspects:

referring to ITC records and evaluation team visits, it was found that ITC established additional two computer training laboratories, in order to expand the provided services, these laboratories were used mainly for short-term training programs (e.g. ICDL programs). ITC has been maintaining the installed equipment since 2002 until now, currently all equipment that were provided by JICA during ITUP are functioning and well-maintained. Preventive and corrective maintenance procedures are followed at ITC premises to sustain the equipment as much as possible.

Retention and application of transferred techniques and skills contributes to sustaining ITC, C/Ps are upgrading manuals and other training materials depending on the technical background gained during the ITUP, and the additional knowledge gained since completion of ITUP. Also ITUP is technically sustaining through continuous training of C/Ps, especially juniors. Furthermore, equipment was well-maintained and well-utilized, it is expected to remain functional for the next few years, conditioned by hardware upgrading.

3.4.5 Socio-cultural aspects:

ITC enjoys excellent reputation and relationships among different organizations, because it is regarded as a semi-governmental institution that attracts most public organizations and large number of private companies. Many of its graduates are holding senior and prestigious positions in the community.

The overall evaluation shows that the project is sustainable due to a number of justifications. ITC is still maintaining the equipment, material and technical training brought as a result of achieving ITUP purpose and overall goals; in fact ITC is capitalizing on these benefits to develop its capacity. The project is sustaining after the completion of cooperation, due to reasons such as the good reputation of ITC, under the umbrella of RSS, which enjoys high creditability and official support; maintaining and utilizing equipment; continuous training of C/Ps; the capability of C/Ps to update manuals and training material; stable financial status; stability of top management and key personnel; and expanding training facilities (two additional training labs).

In addition to the above, it is very likely to sustain and maintain the current outcomes, but the ambition of ITC is to increase these outcomes. The project outcomes will be maintained by updating the used software, and upgrading the project hardware, in order to cope with latest technologies; continuous training of C/Ps; developing the ITC's marketing unit and allocating the required fund for the intended development.

Furthermore, there are many factors that contribute to the sustainability of the project outcomes, while the only factor that may inhibit the sustainability is the fast-growing IT environment. Factors enhancing the sustainability of ITC include top management and key personnel employed at ITC

including C/Ps, the existence of those employees is supporting the sustainability of the project, and guarantees transferring the knowledge and experience to new employees; maintaining the equipment, and establishing new training labs; capability of C/Ps to plan, implement and evaluate training programs professionally; continuous training of C/Ps, especially juniors; ITC's appreciated reputation and stable financial support by RSS.

3.5 Impact of the Project

The component "Impact" is a foreseeable or unforeseeable, and a favorable or adverse effect of the project upon society. Impact evaluates the positive and negative effects of the project, extent of the effect and beneficiaries.

The study team evaluated the impact of the project after the completion of the ITUP relevant to the overall goals. The overall goal of the ITUP is to upgrade the technical services provided by ITC in the field of C/S system in order to serve the IT needs of the Jordanian community and the region, and enhance the IT level in the community through specialized training and other services. It was found that ITUP contributed significantly to this impact, and the positive impact gradually increased since the completion of ITUP. The project contribution was in the form of technical assistance, introduction of new technology (C/S system), capacity building of local experts (C/Ps) and capability upgrading of the training facilities (equipment). All these contributions were integrated to produce an effective impact.

The impact on the overall goal of the project was acceptable and adequate, due to promoting of ITC as a C/S long-term training programs provider in Jordan and the region. ITC conducted more than 30 long-term training programs in Jordan, with more than 340 participants. ITC also conducted 4 long-term TCTPs, with 64 participants from different Arab countries. This impact was achieved during 2002 – 2005.

In terms of socio-cultural, financial, technology and technical aspects; ITUP produced the following impacts:

3.5.1   Socio-cultural aspects:
ITUP contributed to the achievement numerous positive effects such as enhancing computer literacy through obtaining official authorization as a training institution for provision of International Computer Driving License (ICDL) certificate. ITC provides training courses for school teachers and other governmental organizations to qualify them to pass the test and get certified. ITC provided training and ICDL licenses for more than 400 participants from governmental and public institutions during 2001 – 2005 (annex 11). Another positive effect of ITUP is enhancing relationships with governmental agencies, where ITC provided training for a wide number of governmental agencies that accredited ITC for training their employees, which enforced the relation with them. In fact, ITC established relations with more than 100 public institution and agency in Jordan during 2001 – 2005 (annex 12).

Other positive effects include increasing presence of ITC in the Arabic region, through the implementation of TCTP, which provided training for Arab trainees. ITC achieved good reputation as a pioneer center for IT in the region. ITUP had an effect on empowering community, because advanced IT training resulting from the project at ITC, enabled trainees to obtain better job opportunities, which enhanced their living standards.

3.5.2   Financial aspects:
ITUP has a great effect on the financial situation of ITC, RSS, and beneficiaries. For example, it affected ITC's revenues, the annual budgets during (2002-2005) show a little surplus, which means that revenues covered expenses. Although the project enabled ITC to meet its expenses, it did not enable it to achieve the desired development, to cope with the rapid growth in IT sector. Another financial effect was reducing RSS's burdens, because covering ITC expenses affects positively RSS budget. RSS is responsible about all centers' budgets, it must replenish any deficiencies. The revenues of ITC resulting from training and software development activities developed by ITUP reduced the burden of RSS by 5% approximately. Regarding the individual's income, training at ITC developed trainees' capacities, which enabled them to get better jobs that generate higher income. Even C/Ps have received salary raises with the years as a result of enhanced financial abilities of ITC.

3.5.3 Technical aspects:

ITC has played a significant role in transferring the latest technologies to a wide number of trainees, which have impacted Jordan's human resources development to a certain content. This impact was the highest in 2002, then it declined due to the obsoleteness of used technology in comparison with IT growth. ITUP technical impacts also include developing counterparts' capacities, both technically and administratively; it provided advanced IT training, and improved their training and communicating skills. ITUP also enhanced the abilities of ITC to develop training courses and training materials. Also it has great effect in enhancing ITC software development services, because it availed both experience and equipment for C/Ps. Currently, the training courses and equipment need further upgrading.

The overall evaluation shows that ITUP had and still has a significant positive impact on the ITC and the community. The overall goal of the project was partially achieved at the time of terminal evaluation, but it was fully achieved during the following years after terminal evaluation, as discovered during the ex-post evaluation process. The project overall goal was achieved during (2002-2005) as planned, which is evident in the number of training programs held; ITC conducted 30 long-term training programs, 27 short-term programs, and the number of participants exceeded 1000 trainees. Another evidence of achieving the impact on the overall goal is the high satisfaction rate of both participants and organizations. Beneficiaries of training confirmed that the quality of training was satisfactory, the duration was sufficient enough, the training material was suitable to be utilized at work, in addition to the excellent capability of trainers to communicate information to trainees. The impact on technical capability was measured by the number of services provided during 2002-2005. ITC has been developing 21 software, and 14 R&D projects, these numbers are acceptable, although they are less than those that were developed during ITUP duration. The organizations confirmed that the quality of software and R&D projects was satisfactory, and the services were performed exactly on time, also the follow-up services are considered satisfactory.

The ITUP resulted in significant positive impacts after completion, in addition to the originally intended impacts. Negative impacts of ITUP were not detected. ITUP has achieved positive impacts on ITC, RSS, and community. Socio-cultural impacts include enhancing computer literacy and relationship with governmental agencies, increasing the presence of ITC in the Arab region, and empowering community. Financial impacts include increasing ITC revenues, reducing RSS's burdens, and enhancing individuals' income. The project has transferred the latest technologies to community during (1999-2002), but this impact weakened during (2003-2005) due to the obsoleteness of used technologies. Finally, technical impacts include ITUP has a significant effect in building C/Ps capacities, and enhancing ITC technical capacities.

ITUP implementation had a moderate positive effect on the economical and social status of ITC, C/Ps and community, but on the other hand ITUP effectively contributed to the improvement of the institutional capacity of ITC as an implementing agency. Choosing ITC to implement and manage the project was reasonable, due to its past experience in such field, without any doubt of the role of ITUP in strengthening and promoting the institutional capacity of the implementing agency. Now the management of ITC developed procedures for internal training, knowledge management, learning organization and monitoring of quality. The job description of C/Ps was revised and improved, and three sections or departments appeared within ITC, which are training, software development services and R&D. Furthermore, ITC now is addressing market needs, through new designs of promotional and advertising material.

It is worth mentioning that the project neither negatively contributed to the promotion of environmental and social development, nor brought negative changes to the beneficiaries.

The factors that influenced the achievement of the project overall goal are rapid growth in IT sector exceeds the capabilities of ITC to develop its resources, which weakens the quality of ITC services; some ITC's clients and competitors are receiving support in the field of IT from other donors, which influenced the achievement of the project overall goal; many universities developed IT faculties, which provide curricula and educational topics similar to the training courses provided by ITC, this led to reducing the attractiveness of ITC as a specialized center for the latest IT training.

3.6 Analysis of Factors

3.6.1 Factors promoting Impact and Sustainability

RSS possesses excellent reputation and credibility, in addition to the strong relationships with governmental and private sectors, which facilitated and promoted the entrance of ITC to market. This factor gives potential for sustainability, since ITC becomes the approved IT services supplier for these organizations, investing the good relations and the proven high performance.

Presence of professional counterparts promoted the success and continuity of ITC, and enabled it to achieve the intended impacts. C/Ps involvement in all activities of ITC elevates their skills and abilities, thus raising their performance which leads to better quality of output, either training or other services. This will certainly increase the satisfaction impact on the clients and ITC.

Continuous training for ITC staff contributed in sustaining the project, because this capacity building helps them to stay updated with the latest development in the IT environment, and aware of the existing techniques in the market. As long as ITC staff are developing, the ITC will sustain in the competitive market.

Commitment of top management in supporting the project, and bringing funds from different resources to develop ITC. This factor assists in sustaining the ITC and its services, even during extreme conditions such as political instability or recession of the economy.

3.6.2 Factors inhibiting Impact and Sustainability

Rapid growth in IT sector requires similar development in ITC capacities, but its financial resources is not enough to achieve the desired development, which is important to maintain the presence of ITC in the market. The more development in the IT environment, the more pressure is put on ITC in order to match the forces of the market. This may gradually reduce the sustainability of ITC services.

4. Conclusions:

Based on the evaluation results, it is concluded that the overall goals of the project are largely sustainable, while project outputs are partially sustainable. The project had a significant positive impact on both the ITC and the community. These conclusions are supported by the fact that ITC's financial status (Funding, Budget) is generally stable, but can be enhanced if the services (training and software development) are upgraded. Another fact is that ITUP has contributed to the sustainability of ITC during 2002 – 2005, but ITC needs a similar intervention to ensure sustainability in the coming years.

As concluded, ITUP has a significant direct positive impact on the ITC, and an indirect positive impact on its beneficiaries, but this impact is diminishing due to the rapid progress of IT in the market. Therefore, ITC needs a similar intervention to regenerate and sustain the positive impact. ITC is well-established, and its reputation is well-built in the community, but needs more support and development to maintain this reputation and position. The impact of the project can also be attributed to the fact that ITUP was carefully designed, prepared and carried out by both JICA and ITC, which lead to significant impact and sustainability, due to efficient utilization of equipment and training.

It is a fact that ITC still provides unique services such as the TCTP, and it is regarded as the source of exceptional IT training regionally, and the source of widely-recognized and reliable training and software systems locally, thus promoting its future sustainability.

5. Recommendations:

New IT products and services are introduced every day. ITC should have the opportunity and access to learn, use and offer such products and services (e.g. Dot Net technology, Software and Internet Security Applications, Biometrics). It is recommended that ITC cooperates with private sector IT companies and academic institutions in order to share the experience and the latest in the field of C/S and programming. ITC should also allocate a fund or part of the budget for regular updating of software versions and packages, in addition to develop new products and services.

People are looking for the latest technologies to learn and apply. In order to cope with market needs, very rapid and continuous updating of training packages and software is highly recommended. This can be done through negotiating terms of updating when purchasing original software packages.

The technology used for software development available in the market exceeds the technology existing at the ITC, thus upgrading of technology elements used by developers and programmers of ITC is essential to compete in the IT market, and capitalize on the advantages and strength of ITC. It is advised that ITC should attracts sponsorships from IT firms, in which they provide up-to-date technology in return for advertising for them by ITC during training programs or software development projects. Another way is to partner with these companies when offering total solutions for clients.

Concentration on technical and managerial training of C/Ps, to be able to perform and deliver better services to beneficiaries. It is recommended that a needs assessment should be conducted, and then a full training plan should be designed and implemented gradually. It is advised to nominate C/Ps to attend certain managerial programs in external institutes.

In order to regain the number of participants in training programs, it is recommended to develop a marketing strategy that presents the uniqueness and qualifications of ITC. This marketing plan should be based on the survey of participants and interested parties in the targeted segments of the community. A full technical needs assessment study should be conducted, in order to identify the specific upgrading and development requirements in terms of equipment, software packages and capacity building of ITC staff. ITC should direct its resources towards dominating certain training and software development services, to become the first provider and reference for such services. The ITC should use any future assistance or support in developing its regional role as an IT pioneer and service provider.

6. Lessons learnt:

After completion of ITUP, there was limited follow up on the progress of the ITC and C/Ps during 2002-2005. A sustainability or follow up plan should be set – including measurable targets and performance indicators- in order to collect and provide information to third party in case of evaluations.

ITC received pure technical assistance during ITUP. IT development projects may include a component for management, financial and marketing of the technical services developed as a result of technical assistance projects, to enhance the expected impact and sustainability.

Annexes

1. Questionnaires
2. Focus groups
3. Training records of C/Ps
4. List of ITC training programs (2001-2005)
5. List of developed software
6. List of updated subjects of training programs
7. Selected sample of organizations
8. Inventory of ITUP current equipment
9. *Equipment maintenance contracts and records*
10. Financial budget of ITC (2002-2005)
11. Training programs analysis (2001-2005)
12. Beneficiary Organizations (2001-2005)

Annex 1

Questionnaires

C/P Capacity Assessment Questionnaire

Project   : Information Technology Upgrading Project (ITUP).

Targeted audience   : The trainers and developers who participated in ITUP.

Sample size   :

Surveying date   :

Researcher   :

Introduction:

JICA has contracted Dajani Consulting to conduct Ex-post evaluation of the Information Technology Upgrading Program (ITUP) that was implemented during (1999-2002). This questionnaire is part of the evaluation process.

Kindly answer the questions in complete honesty.

Thanks in advance.

Firstly: Basic Information

1. Name   :.......................................
2. Date of employment   :.......................................
3. Position   :.......................................
4. Education   :.......................................
5. Previous years of experience :.......................................

Secondly: General Questions

I.   **Before ITUP (1999)**

    1. What are the courses that you gained in the following areas:
       a. IT science and technical skills

       1)........................   2)........................

       3)........................   4)........................

       5)........................   6)........................

       b. Practical skills (e.g. train of trainers, communication skills, presentation skills ...)

       1)........................   2)........................

       3)........................   4)........................

       5)........................   6)........................

    2. What is the nature of your previous job?
       a. Purely technical
       b. Technical/managerial
       c. Purely managerial

3. What is the type of experience guided in your previous job?

Management	Technical
1)	1) ....
2)	2) ....
3)	3) ....
4)	4) ....

4. What is the relation between the previous work experience and the current one?
   a. Complete relation   b. Major relation
   c. Minor relation   d. No relation

II. During ITUP (1999-2002)

1. What are the training/capacity building received

	Under the scope of ITUP	Outside the scope of ITUP
Managerial	1)	1) ....
	2)	2) ....
	3)	3) ....
	4)	4) ....
Technical	1)	1) ....
	2)	2) ....
	3)	3) ....
	4)	4) ....

2. How did you participate in the previous training?
   a. Based on training needs assessment/appraisal
   b. Project design/plan
   c. Others (specify) ....

3. Did the learned training /capacity building during ITUP contribute to your job during the ITUP?
   a. Yes   b. No

III. After ITUP (2002)

1. What are the training/capacity building received after ITUP?

Managerial	Technical
1)	1) ....
2)	2) ....
3)	3) ....
4)	4) ....

2. How did you participate in the previous training?
   a. Based on training needs assessment/appraisal.
   b. Project design/plan.
   c. Others (specify) ....

3. Did the training/capacity building received contribute to the job?
   a. Yes   b. No

Thirdly: Special Questions

I.   **Technicians Questions**

1. In reference to question 3 of II in the general questions, what are the projects (software development, consulting, technical support) that you participated in as a result of gaining the training/capacity building during ITUP?
   1) ....
   2) ....
   3) ....
   4) ....
   5) ....
   6) ....

2. In reference to question 3 of III in the general questions, what are the projects (software development, consulting, technical support) that you participated in as a result of gaining the training/capacity building after ITUP?
   1) ....
   2) ....
   3) ....
   4) ....
   5) ....
   6) ....

3. What are the skills and capacities you still need to perform your job duties better than currently?
   1) ....
   2) ....
   3) ....
   4) ....
   5) ....
   6) ....

4. Did you train other colleagues on the gained skills and knowledge during the project?

   a. Yes   b. No

5. If yes, how many? ....
How many are still in ITC? ....

II. Trainers Questions

1. In reference to question 3 of II in the general questions, what are the training courses that you conducted or participated in as a result of gaining the training/capacity building during ITUP?

   1) ....
   2) ....
   3) ....
   4) ....
   5) ....
   6) ....

2. In reference to question 3 of III in the general questions, what are the training courses that you conducted or participated in as a result of gaining the training/capacity building after ITUP?

   1) ....
   2) ....
   3) ....
   4) ....
   5) ....
   6) ....

3. What are the skills and capacities you still need to perform your job duties better than currently?

   1) ....
   2) ....
   3) ....
   4) ....
   5) ....

4. Did you train other colleagues on the gained skills and knowledge during the project?

   a. Yes   b. No

5. If yes, how many? ....
How many are still in ITC? ....

Satisfaction Questionnaire for Organizations

Project   : Information Technology Upgrading Project (ITUP)

Targeted Audience : Organizations participated in training programs of ITC during (2002 -
                            2005)

Sample Size   :

Surveying date   :

Researcher   :

Satisfaction Questionnaire for Organizations

Introduction:

JICA has contracted Dajani Consulting to conduct Ex-post evaluation of the Information Technology Upgrading Program (ITUP) that was implemented during (1999-2002).This questionnaire is part of the evaluation process.

Kindly answer the questions in complete honesty.

Thanks in advance.

Basic Information

Organization :...

Sector   :   a. Governmental   b. Private

Tel. No.   :...

Please circle the right answer

1. How did you know about the training courses at ITC?
   a. Annual ITC training plan   b. Newspaper adv   c. Trainer
   d. Correspondences   e. Others (specify) ....

2. How did you nominate the participants in the training courses?
   a. Training needs assessment   b. Urgent shortage or need   c. Annual training plan
   d. Randomly

3. How would you evaluate the increase in participants knowledge and skills as a direct results of training at ITC?
   a. Excellent   b. Very good   c. Good
   d. Acceptable   e. Not acceptable

4. To what extent the participant was able to apply the gained knowledge and skills in his work?
   a. All can be applied   b. Most can be applied   c. Part of it
   d. Non of it

5. How would you evaluate the length of the training program?
   a. Long   b. Suitable   c. Short

6. Was the participant able to transfer the gained knowledge and skills to his colleagues at work?
   a. Very much able   b. Very good ability   c. Good ability
   d. Acceptable ability   e. Unable

7. Is there a need for further training?
   a. Urgent need   b. Some kind of need   c. No need

8. Did the training help the participant to?
   a. Be Promoted   b. Change the job   c. Rise in salary

9. Are there other training centers conduct similar courses?
   a. Yes, specify ....
   b. No

10. What were the training courses you participated in with similar training centers

Course	Training center

11. Your decision to participate in a training course at ITC depends on:
    a. Quality of training   b. Reputation of ITC   c. Training material
    d. Training   e. Price
    f. The availability of training equipment and rooms

12. How do you find the prices of training courses which were held at ITC?
   a. Acceptable   b. Moderate   c. Expensive

13. How do you evaluate the performance of ITC in comparison with similar training centers?
   a. Excellent   b. Very good   c. Good
   d. Acceptable   e. Unable

14. What is your future training needs in the field of IT?

....
....
....
....
....
....
....

15. General comments:

....
....
....
....
....
....

Satisfaction Questionnaire for Trainees

Project   : Information Technology Upgrading Project (ITUP).

Targeted Audience   : Participants in ITC's programs during (2002 - 2005)

Sample Size:

Surveying date   :

Researcher   :

Satisfaction Questionnaire for Trainees

Introduction:

JICA has contracted Dajani Consulting to conduct Ex-post evaluation of the Information Technology Upgrading Program (ITUP) that was implemented during (1999-2002).This questionnaire is part of the evaluation process.

Kindly answer the questions in complete honesty.

Thanks in advance.

Basic Information

Name   :...

Organization   :...

Position   :...

Training courses at ITC   :

Training Course	Training Date	Trainer

Please circle the right answer:

1. **How did you participated in the courses held by ITC?**
   a. My organization management nominated me
   b. Personal contact (directly with ITC)

2. **The training courses included:**
   a. Theoretical training   b. Practical training   c. Both

3. **Was the practical part of training sufficient enough for you to gain the needed theories?**
   a. More than enough   b. Enough   c. Not enough

4. **Was the practical part of training sufficient enough for you to gain the needed practical skills and knowledge used in work?**
   a. More than enough   b. Enough   c. Not enough

5. **To what extent can you apply the knowledge and skills gained through training courses in your work?**
   a. All can be applied   b. Most can be applied   c. Some can be applied
   d. Part of it   e. Non of it

6. **What was the most beneficial part of training for you?**
   a. Practical training   b. Theoretical training

7. **How beneficial was the theoretical part of training?**
   a. Very much   b. Benefited   c. Little
   d. No benefits

8. **To what extend have you benefited from the practical part of training?**
   a. Very much   b. Benefited   c. Little
   d. No benefits

9. **How would you evaluate ITC management of the ITUP?**
   a. Excellent   b. Very good   c. Good
   d. Acceptable   e. Not acceptable

10. **How would you evaluate the trainers ability to communicate the information to participants?**
    a. Excellent   b. Very good   c. Good
    d. Acceptable   e. Not acceptable

11. **How would you evaluate the availability of equipment needed for training at ITC?**
    a. All available   b. Most available   c. Little part of it
    d. Not available

12. **Was the references and text books suitable to be utilized on your work?**
    a. Very much suitable   b. Suitable   c. Not suitable

13. What are the difficulties in communicating learned concepts to your colleagues that were not trained?
    a. Unable to communicate with others
    b. Incompetence

14. Was all topics that mentioned in training brochure was covered in training course?
    a. Covered completely   b. Some of it   c. Most did not cover

15. Did the training course (s) help the participant to:
    a. Be promoted   b. Change job   c. Rise in salary

16. How do you find the prices of training courses which were held at ITC?
    a. Acceptable   b. Moderate   c. Expensive

17. Your decision to participate in a training course at ITC depends on:
    a. Quality of training   b. Reputation of ITC   c. Training material
    d. Training   e. Price
    f. The availability of training equipment and rooms

18. What were the training courses you participated in with similar training centers?

Course	Training center

19. What are the subjects must be covered in the training course (s) but was not covered?
    ....
    ....
    ....
    ....
    ....
    ....

20. General comments:
    ....
    ....
    ....
    ....
    ....
    ....
    ....

Annex 2

Focus Groups

Focus Group Session – Training Services

- **Purpose:** Evaluation of the effect of training activities at ITC according to the view of trainers.

- **Target Segment:** ITC trainers.

- **Moderator:** Samer Ghannam.

- **Facilities:** Meeting room at ITC.

- **Equipment:** Flip charts, white board, markers, video camera, note paper.

- **Services:** Water and hot drinks.

- **Date and Timing:**

- **Session themes:**
1. What is the difference between the baseline status (before ITUP) and the current status (after 3 years of ITUP)?
2. The quality of the training programs from the following aspects:
    a. Training material
    b. Available facilities and equipment
    c. Program design
    d. Trainers competency
3. ITC reputation and promotion of training programs in the market (public and private sector).
4. Gaps and weakness points in the training activities which need improvement.
5. Trainer's status (work load, employment status, capacity building).
6. ITC's management and its effect on training.

Ex-post Evaluation of ITUP
Focus Group 1: Training Activities
Date: 25th January 2006
Time: 2:15 PM – 4:15 PM
Venue: ITC – RSS
Moderator: Samer Ghannam

Name	Job Title	Remarks
Najem Edin Al Awadi	Head of Analysis and Programming Division	
Raida M. Zoubi	Senior System Analyst	
Dana Hisham	Senior Programmer	
Faten Abdel Hafiz	Senior Programmer	
Khalid Khamis Abu Osbeh	Senior Programmer	
Ayman M. Abdo	Senior Programmer	
Hussam A. Ihmaidi	Senior Software Developer	
Rami Tawfiq Salem	Analyst Assistant	
Islam Mamdouh Ahmad	Senior Software Developer	
Zaid Ahmad Al Zoubi	Senior System Analyst	
Ahmad Al Abed	System Analyst	

Focus Group Session – Software Development Services

- **Purpose:** Evaluation of the effect of software development activities in the ITC as perceived by developers.

- **Target Segment:** Developers and Programmers of ITC.

- **Moderator:** Samer Ghannam.

- **Facilities:** Meeting room at ITC.

- **Equipment:** Flip charts, white board, markers, video camera, note paper.

- **Services:** Water and hot drinks.

- **Date and Timing:**

- **Session themes:**
1. What is the difference between the baseline status (before ITUP) and the current status (after 3 years of ITUP) in terms of capabilities, staff, management and services?
2. The quality of the software development from the following aspects:
   a. Analysis.
   b. Design
   c. Programming
   d. Application and operation
   e. Programming languages and systems used
3. ITC reputation and promotion of software development in the market (public and private sector).
4. Gaps and weakness points in the software development activities which need improvement.
5. Developers' status (work load, employment status, capacity building).
6. ITC's management and its effect on software development services.
7. Other questions:
- What is the nature of Software and Computerized Systems that are developed by ITC?
- What is the average number of software projects carried out be ITC annually?
- What is the level of quality of the software and programming services compared to other providers?
- What is the extent of competency of software and programming staff of ITC compared to other providers?
- What is the size of projects carried out by ITC (Cost and Time wise)?
- What is the impact of ITUP in the offering such services by ITC?
- What are the barriers against improvement of Software development and programming activities in the ITC?

Ex-post Evaluation of ITUP
Focus Group 2: Software Development Activities
Date: 27th January 2006
Time: 2:15 PM – 4:15 PM
Venue: ITC – RSS
Moderator: Samer Ghannam

Name	Job Title	Remarks
Sirin Said Hassan	Head of Research and Development Division	
Daher Thabet	Senior Analyst	
Najem El Din Awadi	Head of Division	
Raeda Al Zubi	Senior Analyst	
Lina Mahamid	Programmer	
Abdulla Darwish	Programmer	
Mahoud Farfoura	Sys. Analyst Ass.	
Mohammad Zueiter	Sys. Analyst Ass.	
Hussam Hamidi	Programmer	
Rana Khalil	System Analyst	
Atef Abu Arida	System Analyst	

Focus Group Session – ITC Community Awareness

- **Purpose:** Determine the extent of community awareness of ITC services and activities.

- **Target Segment:** Community representatives (public, private and other sectors).

- **Moderator:** Samer Ghannam.

- **Facilities:** Meeting room at Dajani Consulting premises.

- **Equipment:** Flip charts, white board, markers, video camera, note paper.

- **Services:** Water and hot drinks.

- **Date and Timing:**

- **Session themes:**
1. Awareness of the existence of ITC at RSS (before and after ITUP)
2. Awareness of the training programs and other services of ITC.
3. Awareness of ITC's capabilities in terms of facilities, equipment and staff.
4. Previous experience with ITC's programs and services.
5. General impression regarding ITC and the potential for future cooperation.
6. The need for ITC's programs and services as compared to the need for similar centers.
7. Guidelines and suggestions for promotion and marketing of ITC.

Annex 3

Training Records of C/Ps

Training Records of C/Ps

1. analysis and Programming Department (during 2005)

	Subject	Location	Participants
1	.Dot net	Princess Sumaya University	- Shadi Assasfeh - Reham Tameemi - Omar Nubani - Tamer Ashubaki
2	Sql Server Administration	Microsoft	- Shadi Assasfeh - Rana Khalil - Omar Nubani
3	Sql Server Programming	Microsoft	- Shadi Assasfeh - Rana Khalil - Omar Nubani
4	CRM	Princess Sumaya University	- Ra'eda Azzu'bi
5	Time Management	RSS	- Zaid Azzu'bi
6	Customer Satisfaction	RSS	- Najem Addin Al Awadhi - Atef Abu Aridh
7	Dot net	RSS	- Yaseen Albtoush - Mahmoud Farfora - Zaid Azzu'bi - Khalid Kan'an - Emad Qnais - Rana Khalil - Atef Abu Aridh
8	Project Management	RSS	- Atef Abu Aridh - Najem Addin Al Awadhi - Yaseen Albtoush - Zaid Azzu'bi
9	Oracle Portal	RSS	- Mohammed Zu'aiter - Atef Abu Aridh - Eman Kkadher - Yaseen Albtoush
10	Oracle Application Server	RSS	- Mohammed Zu'aiter - Atef Abu Aridh - Eman Khadher - Yaseen albtoush - Rami Salem - Tamer Ashubaki
11	New Feature for Oracle 10g	RSS	- Atef Abu Aridh - Yaseen Albtoush - Ra'eda Azzu'bi - Rami Salem - Tamer Ashubaki - Reham Tameemi - Abdullah Ashra'h - Omar Nubani
12	Presentation Skills	RSS	- Yaseen Albtoush - Najem Addin Al Awadhi
13	Communication Skills	RSS	- Zaid Azzu'bi
14	Creativity	RSS	- Ra'eda Azzu'bi

2. R&D Department

	Subject	Participants	Date	Duration	Location
1	Microsoft.NET	- Eslam Ahmed - Sultan Azzu'bi - Bara' Al Qdha - Khalid Abu Osbeh	5-23/6/2005	2 weeks	RSS
2	IT Management	- Sirin Hasan	23/8-5/9/2005	15 days	Singapore
3	Oracle 10g Portal	- Faten Abdelhafiz	18-22/9/2005	1 week	RSS
4	Oracle 10g Application server	- Faten Abdelhafiz	25/9-6/10/2005	2 weeks	RSS
5	Project Management	- Sirin Hasan	30/5-16/6/2005	3 weeks	Method Company, Jordan
6	Project Management	- Dhaher Thabit - Edward Jasser - Ahmed Al Abed	28/8-11/9/2005	10 days	Method Company, Jordan
7	Administrating Microsoft SQL Server 2000 Database	- Lina Mahameed	17-27/4/2005	2 weeks	Microsoft Academy
8	Programming Microsoft SQL Server 2000 Database	- Eslam Ahmed	8-18/5/2005	2 weeks	Microsoft Academy
9	Creativity	- Fakher Sawalha	8/12/2005	1 day	
10	Leader Auditor	- Fakher Sawalha	4/2005	1 week	Lloyds Register
11	Presentation Skills	- Sirin Hasan	17/11/2005	2 days	

3. Monitoring and Implementation Department

	Participant	Subject	Location	Duration
1	Samar Mzayyk	Technical Writing	Jordan	11-12/12/2002
		ISO 9001-2000	Jordan	1-2/6/2003
		Costing for Engineers and IT	Jordan	23-27/5/2004
		Project Management	Jordan	28/8-8/9/2005
2	Jamal Habaib	Hermes Project	Greece	18-22/3/2002
		Oracle DBA	Jordan	15/12/2003-5/2/2004
		Oracle 9i Performance Tuning	Jordan	1/1-1/2/2004
3	Osama Arrusan	.Net	Jordan	1/2005
		LRQA Techniques for Measuring Customer Satisfaction	Jordan	11/5/2005
		SQL Server	Jordan	6/2005
		Training Trainers	Jordan	2/2005
		Oracle Portal	Jordan	9/2005
4	Samar Hasan	Oracle Developer	Jordan	21/12/2003-11/2/2004
		LRQA Techniques for Measuring Customer Satisfaction	Jordan	11/5/2005
		Dot Net Factory Training	Jordan	15-23/6/2005
		Oracle Application Server 10g	Jordan	10/2005

Annex 4

List of ITC Training Programs
2001 – 2005

Year	Date	Training course	No of trainees	Number of training courses	Number of long-term training courses per year	No of short-term training courses per year	No of Trainees per year for long-term training	No of Trainees per year for short-term training	Total number of trainees per year
2001	1-Feb.	Software engineering using unix	19						
	18-Feb.	Managing Windows NT operating system	12						
	18-Feb.	adminstrative skills using computer	16						
	1-Apr.	Training IT trainers	7						
	1-Apr.	Managing UNIX operating system	16						
	1-Apr.	Basics of UNIX operating system	8						
	8-Apr.	Micro computers maintenance	3						
	22-Apr.	Design & programming using HTML	9						
	22-Apr.	Basics and management of UNIX operating system	14	19	13	6	162	81	243
	29-Apr.	Programming using Oracle	11						
	13-Mar.	Training IT trainers	9						
	5-Aug.	Web computing	21						
	26-Aug.	Analysis, design & documentation of information system	9						
	16-Sep.	Micro computers maintenance	8						
	30-Sep.	Multimedia	14						
	2-Oct.	adminstrative skills using computer	18						
	7-Oct.	Java Script for web development	18						
	16-Oct.	Using computers for the development of functional skills	16						
	18-Nov.	ICDL	15						
2002	2-Jan.	Networking design	18						
	27-Jan.	Web computing	7						
	3-Feb.	Software engineering using unix	10						
	17-Mar.	Multimedia	12						
	24-Mar.	ICDL	20						
	5-May.	adminstrative skills using computer	16						
	2-Jun.	ICDL	7						
	2-Jun.	ICDL	6						
	2-Jun.	Web computing	14	16	10	6	125	76	201
	11-Jun.	Programming using Oracle	16						
	23-Jun.	adminstrative skills using computer	17						
	30-Jun.	Networking design	17						
	7-Jul.	Software engineering	8						
	25-Aug.	Multimedia	7						
	25-Aug.	Web computing	16						
	13-Oct.	adminstrative skills using computer	10						
2003	5-Jan.	ICDL	18						
	5-Jan.	Programming using Oracle	13						
	19-Jan.	Web computing	11						
	26-Jan.	Programming using Java	17	8	6	2	80	38	118
	16-Feb.	Multimedia	7						
	2-Mar.	Software engineering	16						
	6-Jul.	Web computing	16						
	31-Aug.	ICDL	20						

Year	Date	Training courses	No. of trainees	Number of training courses	Number of long-term training courses per year	No. of short-term training courses per year	No. of trainees per year for long-term training	No. of trainees per year for short-term training	Total number of trainees per year
2004	11-Jan.	ICDL	40	17	7	10	65	207	272
	29-Feb.	ICDL	20						
	7-Mar.	ICDL	12						
	7-Mar.	Web computing	10						
	25-Apr.	ICDL	40						
	3-May.	ICDL	20						
	13-Jun.	Software engineering	10						
	11-Jul.	ICDL	14						
	18-Jul.	Web computing	13						
	29-Aug.	Networking design	5						
	5-Sep.	Multimedia	13						
	5-Sep.	Micro computers maintenance	10						
	13-Sep.	Monitaring the performance of development projects	15						
	19-Sep.	Monitaring the performance of development projects	15						
	3-Oct.	adminstrative skills using computer	12						
	10-Oct.	Multimedia	4						
	17-Oct.	ICDL	19						
2005	13-Feb.	ICDL	36	16	7	9	70	173	243
	14-Feb.	ICDL	19						
	27-Feb.	Software engineering	10						
	6-Mar.	Web computing	8						
	6-Mar.	ICDL	20						
	27-Mar.	Networking design	16						
	12-Apr.	adminstrative skills using computer	14						
	17-Apr.	Multimedia	6						
	24-Apr.	ICDL	20						
	2-May.	ICDL	20						
	12-Jun.	ICDL	4						
	26-Jun.	Networking design	5						
	3-Jul.	Web computing	16						
	21-Aug.	ICDL	20						
	22-Aug.	ICDL	20						
	28-Aug.	Web computing	9						

Annex 5

List of Developed Software
2002 – 2005

List of R&D and Software Projects

1. R&D Projects

Project Name	Description	Duration	Team Members
IBM Developer Agreement	Development of web applications as an IBM Development Partner	2000-2003	Sirin Hasan, Dhaher Thabit, Edward Jaser, Emad Abu Gharbieh, Mohammed Odeh, Khalid Abu Osbeh, Yahia Al-Halibi, Tariq Qasem, and Tariq Rashid.
Improving Competitiveness of SMEs through IT-based Environmental Planning (SMITE)	Assist inserted firms improve their environmental performance using IT	1/5/2002-1/5/2005	Sirin Hasan, and Dhaher Thabit.
Cluster for the development of a Euro-Mediterranean Partnership Network in the Textile-Clothing sector (E-MED TEX-NET)	Develop an on-line Benchmarking, leading to company certification	1/5/2002-1/5/2004	Sirin Hasan, Dhaher Thabit, Faten Abdel Hafith, Khalid Abu Osbeh, Mai Al Khateeb.
Automating Jordan Industrial Estate Corporation Web services	Develop an application to improve the services provided by the Jordan Industrial Estate Corporation to investors, employees, and the general public by automating the JIEC web services.	17/8/2004-28/2/2005	Mutasim Zalloum, Hussam Al-Hmaidi.
Implement Application Software for Nationwide Electronic Motor Insurance System (NEMIS)	Develop Web Enabled Application for the Jordan Insurance Federation Nationwide Electronic Motor Insurance System	1/6/2004-	Mutasim Zalloum, Dana Al Halabi, Waleed Qawasme, Ayman Abdo.
Jordan Integrated Hazardous Substances Information Management and Control System Project	Create and automated system that will serve as a tool for managing and controlling hazardous substances imported and manufactured in Jordan	1/4/2004-31/12/2006	Sirin Hasan, Faten Abdel Hafith, Khalid Abu Osbeh, Sultan Al-Zu'bi, Ahmad Al Abed, Bara'a Al-Qdah, Haneen Al-Daouud.
E-commerce in Jordan	Study the readiness of applying e-commerce in Jordan. Develop an electronic Web Site including an awareness course.	1/4/2004-31/3/2006	Eslam Ahmad, Khalid Abu Osbeh, Faten Abdel Hafeeth, Tariq Rashid
Online Irrigation Management Information System (NCARTT)	An automated system that collects data and analyze data from data acquisition weather stations.	1/9/2004-28/2/2005	Sirin Hasan, Mohammed Khair, Khalid Abu Osbeh, Lina Mahameed.
Electronic Drug Management System	Develop a web site for the Jordan Food and Drugs Association.	16/5-28/2/2005	Dhaher Thabit, Eslam Ahmad, Mohammed Khair, Dana Al Halabi
Developing and Sustaining an Integrated National Program for Sound Chemical waste management	Leading the task to develop a National Information Exchange Mechanism and a chemical safety webpage.	8/2004-3/2006	Sirin Hasan
Online Irrigation Management Information System.	Create a web application that allows brows data available on cooperative monitoring center (CMC/Amman) Server and that has been collected from weather stations distributed in Jordan and other countries in the region.	17/5/2004-31/7/2005	Sultan Al-Zou'bi, Lina Mahameed.

Memex Software Arabization Project	Conversion and customization and support of a ready made package, Memex software into an Arabic compatible format.	19/8/2004-19/8/2006	Dhaher Thabit, Amer Abu Karaki
ITC Med Solutions	Create three languages website for the EU project ITC med solutions.	1/10/2005-1/2/2006	Mutasim Zalloum, Amer Abu Karaki
Universal Networking Language	Research Project	18/5/2005-31/12/2005	Edward Jaser, Hussam Al Hmaidi

2. Software Development Services

	Client	Project
1	Ministry of Health	Administrative and Financial Systems (MIS)
2	Al Bashir Hospital	Hospital Information System and Administrative systems.
3	Ministry of Interior	Administrative and Financial Systems (MIS)
4	Civil Service Consumer Corporation	Management and Financial Information Systems (MIS)
5	Ministry of Public Works	MIS and Roads Information Systems
6	Higher Population Council	Maternal Health Indicators System
7	RSS/Environment section	Projects Data Bank
8	Income Tax Department	Management and Maintenance of Database
9	Supreme Judge Department	Inheritance Calculations
10	House of Senators	MIS and Jordanian Legislations System
11	House of Representatives	MIS
12	Department of Land and Survey	Property Classifications and Index System
13	Department of Civil Affairs and Passports	Civil Affairs Records System and Technical Consultancy
14	Ministry of Agriculture	MIS
15	National Center for Agricultural Research	MIS
16	Ministry of Planning	Development Projects Monitoring System
17	Irbid Municipality	MIS
18	Jordan Institute for Standards and Meterology	Dangerous Materials and Inspection Systems
19	RSS	Samples Testing System
20	Ministry of Interior	Security Issues System
21	Ministry of Justice	MIS