

**Access to Microfinance & Improved Implementation of Policy
Reform
(AMIR Program)**

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Center of Excellence

Final Report

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Executive Summary

A vision statement for the Reach Initiative is the following:

Jordan shall become a regional IT leader and internationally recognized exporter of IT Products & Services, exploiting its core human capital advantage.

Strategy 7 of Jordan Vision 2020 is to Develop Skilled Human Resources. The strategy states:

Education and Workforce development should rank as one of Jordan's key development priorities. No single factor will be more important in determining Jordan's competitiveness in the global economy of the 21st century.

The Reach Initiative has set challenging targets for the year 2004. These are:

- **\$150M Foreign Direct Investment (FDI)**
- **30,000 New Jobs (20,000 direct IT Jobs)**
- **Cumulative exports to \$550M**

These visions and targets require teamwork and co-operation across Industry, Universities, and Government organisations.

This paper proposes a center of excellence that provides support to Jordanian business to sustain sufficient growth to compete in regional and international markets and achieve the vision.

The proposed center of excellence is modelled after initiatives in other countries and companies who are intent on maintaining or improving their position in the international market place.

This proposal was presented on 09-August-2000 at a workshop sponsored by [INT@J](#). The results of the workshop are included in this report.

Background

Today, Businesses in Jordan are facing a number of problems meeting their business objectives. The following table summarises some of the key issues:

Problem	Details
There are many unfilled IT jobs	<p>Candidates do not have the right skills / attitudes</p> <p>Companies are looking for the best and cannot afford to invest</p> <p>Some graduates do not meet business entry criteria</p>
Companies have not invested in current staff	<p>Technology is changing rapidly – difficult to select which training to invest in.</p> <p>Many employees have outdated skill sets</p> <p>Many employees are too busy meeting business commitments to attend training.</p>
Available training does not meet needs	<p>Training is too expensive and impacts profits and cash flow</p> <p>Advanced training is either not available or ineffective for IT staff</p> <p>Training is not available when needed to support business needs</p> <p>Forecasts for current and future training needs are not available</p>
Retaining good people in Jordanian companies	<p>Salaries are increasing – people may leave for better paying positions</p> <p>Salaries are increasing – people’s skills are being recognised for their worth</p> <p>Companies are being challenged to provide the right environment (responsibilities, training, products, etc) to retain employees.</p>

Many of the problems and challenges identified above are not unique to the Jordanian IT Business. Any company or country focusing on the Information Technology sector faces many of the same problems. This is due to:

- Product Cycle Times decreasing
- Customer Expectations increasing
- Rate of Technology change increasing

The proposed Center of Excellence

The following model was proposed at the workshop on 09-August-2000.

The purpose of the center of excellence is to:

- Provide a focal point for meeting Jordanian business needs for qualified IT personnel, process and technology.
- Meet the business needs through partnership with Jordanian IT Businesses, Universities, Professional Societies, and Government.
- Identify and respond to changing needs of the IT Businesses.

The Center of Excellence will be established and run according to good business practices as a non-profit business. This allows the Center of Excellence to act on behalf of Jordanian Business needs rather than compete for profit in the market place.

The Center of Excellence will provide the following services:

Service	Description
Training Administration	Obtain forecasts from Businesses for training Schedule courses and ensure full courses are delivered Manage course costs and appropriate discounts to businesses
Training Supplier Selection and Management	Identify and manage a forward view of training needs in Jordanian business. Ensure that future needs will be met and suppliers will be ready. Identify and manage a preferred training supplier list by type of training and capacity of training Negotiate with suppliers for preferred rates (based upon longer term volume forecasts) Assess and provide feedback on the performance of the training to meet business needs
Process Expertise	Bring together 'the best practitioners' from Jordanian Businesses to identify the processes, training and technology needed to achieve high productivity. This team will evaluate and recommend best practice in their selected areas (such as specific training and tools).

Other services that could be provided from the center of excellence are:

Service	Description
Career Counselling	Delivering or recommending individuals to help IT professionals plan or develop their skills
Skills Assessment	Delivering or recommending individuals to assess current skills of people entering or improving their career potential.
Support to implement ISO 9001 and / or CMM maturity levels	Provide support to companies implementing quality management systems for ISO 9001 and / or achieving CMM maturity levels. This may take the form of consultancy in process areas, or help establishing an implementation team to improve the business to achieve the qualifications. These certifications may become part of the preferred supplier requirements.
Support to achieve company product / specialist certifications	Provide support to companies working to achieve company certifications for specific products. IE Microsoft Certified Solutions Provider, Microsoft Certified Training Provider, etc. These certifications may become part of the preferred supplier requirements.
Additional process focus	Management, Marketing, Product Management, Program Management, Software Manufacturing, Quality Management.
Support to Graduates	Help with placement in Jordan IT companies: including interviewing skills, writing a Resume (CV), indications of companies hiring and types of vacancies available.
Support to under graduates	Identification and monitoring of work experience (Job Placements) within Jordanian Companies
Support to Universities	Identification and monitoring of research or company specific projects to be conducted within Universities. Support for intellectual property protection, ensuring projects are meeting objectives.
Support for people re-skilling or raising their IT skills	Establish (or select) target competency levels for IT related skill areas. Identify and provide training in these areas. For example, the ECDL or Microsoft Office Proficiency.

The people using these services fall into two categories:

Category	Description
People currently in the IT Industry	Those requiring advanced training. Those requiring new skills and product knowledge.
People desiring to enter the IT Industry	Those people who meet the minimum selection criteria (to be defined) who will re-skill to enter the IT industry

Center of Excellence Organisation

The proposed Center of Excellence will be established as a non-profit organisation consisting of the following minimum areas:

Center of Excellence Teams	Description
Center of Excellence Board	The Board consists of representatives from Industry, Government, and Universities. Key responsibilities of the Board will be to: set policy, review and approve plans, review and approve key staffing decisions, review performance against plans and handle any escalated issues for resolution.
Center Management Team	Manage the day to day operation of the center and provide the services to the stakeholders as planned.
Administration Teams	Carry out the training administration tasks as planned. Ensure that all training courses are full and the appropriate costs and discounts are applied as agreed.
Virtual Process Excellence Teams	Virtual Process Excellence Teams consist of representatives from the industry and universities to establish the process and skill requirements to identify the training needs of these people. This work will be role based within organisations to enhance the transferability across Jordanian businesses. These teams will evaluate training, support the preferred supplier selection process, and provide feedback on training performance. They may also provide consulting to Jordanian businesses in the process areas to gain most benefits from the training.
Supplier Representatives	The center will work closely with supplier representatives and involve them in planning and

	feedback on performance
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Cost models

The Center of Excellence will have sources of funding. These are:

Source of Funding	Description
Government Grants	Funding to provide specific initiatives and incentives to individuals and businesses
Charitable contributions	Funding to provide specific initiatives and incentives to individuals and businesses
Payment for services	Payment from individuals and businesses to cover some or all of the costs for the services provided by the Center of Excellence.
Non-Monetary Contributions	Contributions of resources, equipment, or intellectual property in lieu of a monetary contribution. Equivalent value will be identified for these contributions and tracked separately

Source of Costs	Description
Running Costs of the Center of Excellence	Salaries of permanent staff, occupancy, telecommunications, computing, advertising, etc.
Service Delivery costs	Costs to preferred suppliers for the delivery of services - these will be set according to an agreed contract.

The pricing models for use of the Center of Excellence will be determined by producing a business plan for the Center of Excellence (see next steps).

Benefits – by Stake Holder

Stakeholder	Benefits
Jordanian Business	Reduced functional costs - lower training costs People with certificates 'can do' the work Benefit from best practice (process and role focus)
Government	Better skills mean less jobs unfilled in IT More business growth Leverage Jordanian business needs (critical mass support and representation) Businesses are competitive
Employees	Access to relevant and good quality training Recognition of achievement and skills Support by business

Stakeholder	Benefits
Preferred suppliers	<p>Access to delivery and administrative resources</p> <p>Feedback on performance</p> <p>Forecasts for future planning (lower marketing and sales costs)</p>
Universities	<p>Partnership with industry and suppliers</p> <p>Expertise sharing</p> <p>May deliver specific training</p>

Key Issues

Issue	Description
Excellence must be 'earned'	<p>To be 'recognised' as a Center of Excellence by Jordanian Businesses and the people of Jordan</p> <p>Usage should not be mandatory - Businesses should be able to demonstrate their advantage for using the Center of Excellence.</p> <p>Must be responsive to needs and change.</p> <p>Technology is changing rapidly - The Center must be on the leading edge and bring change to the industry quickly.</p>
Funding	<p>Once the services have been defined, the business plan will outline the running costs and service delivery costs and cash flow. Once this is clear, funding sources can then be approached to assess the start-up of the Center of Excellence.</p>
Forecast of Need	<p>Collecting and managing a forecast of needs in the IT industry will be a challenge. The center management team will be spending some of the start-up time building a clear view of the needs of the industry and universities. Priority setting will be a critical challenge.</p>
Additional Added Value Services	<p>Establishing the initial service offerings of the Center of Excellence will be an issue given the number of people involved. The definition of these initial services is critical to the success of the Center of Excellence. A sufficient portion of the Jordanian business community must support these services. (See the list of additional services identified in the description of the Center of Excellence).</p>

Issue	Description
Short term vs long term goals	The strategy for delivering these services must clearly identify short and long term goals for the Center of Excellence. Trying to do too much may jeopardise the entire viability of the Center of Excellence.

Next Steps

The Center of Excellence must be established using 'good business practices'. This will ensure that the organisations that use or contribute to the Center can count on the services being available and to a defined standard.

The next steps proposed below produce a 'design' for the Center of Excellence that will allow all of the stakeholders to understand and commit to the services that will be provided according to the business plan that will be developed.

This next stage in the development of the Center of Excellence will produce the following deliverables:

- Service Specification
- Organisational Design
- Business Plan
- Plan for the Next Stage

Step to Complete the Design Stage	Description
Appoint Project Manager and Plan the Design stage	A project manager (single person) must be identified to complete the plan for the Design stage
Form a project team and project board	Ensure that these teams are representative of all of the stakeholders. Ensure that there is a minimum level of commitment that each person will provide throughout the stage Define the roles and responsibilities of the team
Obtain funding to complete the Design Stage	Based upon the team and tasks identified in the Design Stage plan, obtain funding to complete the stage.

Step to Complete the Design Stage	Description
Identify the Service Specification	Identify the Services that will be delivered by the Center of Excellence. These services will be defined in terms of work required to be done, skills required, deliverables to the stakeholders. These services will also be prioritised.
Obtain initial needs and forecasts for these services	Identify the needs of the Jordanian businesses relative to the services provided. Identify and inventory the suppliers, partners, or individuals that may be involved in delivering these services.
Produce an Organisational Design to deliver the services	<p>Identify the resources and skills required to operate the Center of Excellence. Identify the roles, responsibilities and job definitions of the individuals who will have key roles in the organisation. Identify any infrastructure needs for the organisation.</p> <p>This step will also include an evaluation of current organisations that are delivering similar services. This will ensure that any synergies or conflicts can be identified early in the design process. (ie NIC, Universities, Professional societies (JCS), INT@J, etc)</p>
Produce a Business Plan and Operating Model	<p>Produce a business plan that identifies the cost and pricing models to deliver the identified services. The plan should be for at least a 1 to 2 year period.</p> <p>The business plan will then identify the funding requirements for operating the center and the expected sources of funding.</p>
Produce a plan for the next stage	Produce a plan for the next stage of the project. This plan will also include an overall plan for the project including all future stages and completion criteria.
Review and Authorise the Next Stage	<p>The stakeholders, project board, and other parties will review the Center of Excellence Design and Business Plan and Authorise the team to proceed to the next stage.</p> <p>Without sufficient clarity and agreement to the services that will be provided and support from Jordanian businesses, the government and universities to utilise these services, the project may also be stopped</p>

Discussion at the workshop

The discussion at the workshop focused on the following areas:

Topic	Discussion
Funding	Who will pay for the Center of Excellence?
Leadership	Which group today will take leadership to establish the center?
Trained resources	Will the individuals stay in Jordanian Businesses after investing in training?
Competition with other companies	Will the Center of Excellence compete with other companies within Jordan?
Sizing and volume	How much resource is required? Which services will be provided?

Based upon the discussion at the workshop, most of the questions will be answered by completing the design of the Center of Excellence.

Conclusion

Taking a significant step towards making the Reach Initiative Vision a reality requires a bold and precise actions with the co-operation and teamwork from all stakeholders.

The Center of Excellence can provide a significant step forward given the right services and support from Jordanian Government, Universities, and Industry.

I recommend completing the Design Stage for the Center of Excellence.

Annex A - Center of Excellence - Underlying Principles

A1 Change Management

Change Management is critical in today's business environment. The center of excellence must be a role model for initiating and completing changes within the IT Business Industry. Key questions for managing change are:

How do you make changes?
How do you know what changes to make?

The easiest time to make a change is when there is a crisis! During a crisis, the need for a change is obvious; however, the risk in making the right change is much higher. The hardest time to make a change is when the perception is that all is well. In the future, the companies that can change directions quickly and effectively in any environment will have an advantage.

The Pareto principle also applies to change management (80 / 20). Carrying some risk forward is also acceptable.

A2 Capability or Competence

Individuals working in business need a balance of personal skills, knowledge and experience, an understanding of Process ('what to do' and 'how to do' work) and supporting technology. Productivity suffers without all three areas improving.

A3 Maturity

The concept of maturity allows for a better assessment of development within the areas of organisation, individual competence, and process. These concepts allow a much better measurement of the current state of a business rather than a binary view of the capability. The Software Engineering Institute's Capability Maturity Model, Ed Yourdon's description of an individual's competence and H. James Harrington's process measurement are three examples of refined measurements in these areas.

A4 Gap Analysis

When making any changes in a company, implementation of a change is typically the hardest part of the change. Implementation is focused on eliminating gaps between 'what you say you do' in terms of process or planning documents and 'what you actually do' in the company.

The active elements in closing gaps in organisations is typically a combination of training and coaching (proactive change), Goal sets (motivating change) and assessment of the change (measuring the change).

Gap analysis can be applied to individuals, processes and organisations.

A5 Excellence

The term excellence can mean many things to many people. In this report, there are a number of dimensions to excellence.

Business Excellence focuses on an entire organisation and encompasses how well the company performs in the market place (Results) and how well the business conducts business (enablers). The European Foundation for Quality Management has devised an Excellence Model that addresses the entire organisation.

Within business excellence, there can be defined two supporting views – Customer Excellence and Functional Excellence.

Customer Excellence focuses on delivering the right products into the right markets or achieving high levels of customer satisfaction. It also encompasses the correct planning and market focus to sustain customer excellence.

Functional Excellence focuses on the way the business delivers the products or services. Functional excellence looks at the Financial, Human Resources, and Process view within a company. This view provides the way to improve performance of teams or individuals and the use of financial resources within the company.

Annex B - Center of Excellence - Best Practice Review

B1 - Approach and Source

In Annex B of the Reach Initiative Final Report, a number of current organisations providing a role model of Centers of Excellence were identified. A recent search of the Internet has found 18890 hits with 'Centers of Excellence', 2912 with 'Information Technology Centers', and 12 with 'Software Center of Excellence'. A sampling of the sites indicates that each center has their own purpose and objectives and target stakeholders. Some of these are narrow in focus and others are similar to the proposed Center of Excellence.

Given the fact that any organisation may have a claim to be a Center of Excellence, using Center of Excellence alone as a criteria for looking at best practice is difficult. This Annex provides an alternative view to the Reach Initiative Final Report and highlights best practice at a 'service' level rather than an organisational level. This annex identifies services provided in the following categories:

- Best Practice in Industry
- Government and Industry
- Professional Societies and Industry
- Government and Individuals
- Universities and Industry

The services outlined in this section may be candidates for inclusion in the design of the Center of Excellence described in this report.

Best Practice in Industry

Any company in the IT industry today faces many of the problems identified in the Jordanian IT Industry, such as:

- Retaining employees
- Developing the highest staff capabilities
- Fostering innovation

Much of this best practice is hidden in businesses and kept as a strategic business advantage. Companies are being encouraged to share their practices through Benchmarking or sharing approaches to Excellence (Excellence Awards - in Europe (EFQM), Baldrige Awards in the USA).

The following are examples of services provided within companies (functional excellence) to address these problems: (in general this type of information is not available on the Internet).

Services	Descriptions
Establishing Consistent Job and Role Definitions and Measures	Companies have described job or role families and the corresponding skills, knowledge and experience needed to hold a specific job or role. In addition, training requirements and specific experiences and 'can do' requirements are defined for moving from one job or role to another.
Skills Assessment and Development Planning	Companies have developed approaches to assessing current skills, capturing a skill inventory across the company and preparing development plans for individuals.
Training forecasting and delivery	Based upon training plans, prepare and deliver training to meet needs. Managers budget for training and training may be delivered by in-house or external training suppliers.
Recruiting and Outplacement support	Provide support for people joining and leaving the company. This service provides career counselling, Company Induction, etc.
Graduate Training	Many companies have graduate training programmes where graduates are given a number of assignments over a period of time to ensure that the individuals have a good understanding of the company and suited for the work environment of the company.
Job Rotation and Secondments	To provide more senior staff with a better understanding of the company, formal job rotation programmes or secondments are provided for employees.
Establish preferred supplier information and contracts	Companies establish preferred supplier arrangements to set proper expectations and forecast volumes. These criteria may include registration to ISO 9001, company based certification or equivalent.
Establish process and capability standards using practitioners	Companies may take experts within the organisation and use them to identify process and training standards and support implementation across the organisation. These teams also support implementation of management systems to meet quality standards.

Services	Descriptions
Company specific technical training	Where there may be proprietary products, companies may develop internal training to support technical staff. Companies may also develop or tailor external courses to meet internal needs.
Professional forums	Companies may provide opportunities for sharing of information (technical and managerial) across the company - annual forums or meetings provide opportunities to share progress, future directions and build networks across the company.
Links with Universities	<p>Many companies obtain further training in specific areas through links with Universities. Most of these linkages are in the areas of management development (through MBA or continued management training (ie INSEAD training WWW.insead.com, or short management training 12-weeks) www.northwestern.edu/admin/industry.html)</p> <p>Companies are also developing company specific certificate advanced degrees in specific areas, such as project management, Henley management College www.henleymc.ac.uk</p>

Though most companies do not publish their internal information on the internet, one example of a company that has posted information about their center of excellence on the Internet is Emerson Electric <http://www.city-net.com/~amandel/emerson/pages/home/main.html>.

Government and Industry

There are a number of examples of partnership between governments and industry. In this section, I provide a number of current examples from the UK.

Service	Description
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Service	Description
Support to SME businesses Consultancy, Training, Advice.	The UK government has established a number of companies through a series of regional Business Link companies. These are typically staffed with experienced consultants and have a list of qualified local companies that provide specific expertise. Many of the services are delivered at a subsidized rate or at no cost. www.businesslink.co.uk/links , www.thamesvalley.businesslink.co.uk
Provision of cross industry standards.	Some government organisations have established teams to develop processes and support their implementation. For example, the UK Project Management Methodology was developed through the Central Computer and Telecommunications Agency (CCTA) for use in government offices. This is now gaining a broader acceptance www.ccta.gov.uk/prince/ or www.prince2.org.uk The CBI part of the Department of Trade and Industry also provided support to develop IT Sector Scheme TickIT (the application of ISO 9001 to the development of Software). www.tickit.org These initiatives are generally across the Industry to benefit individual businesses.

Professional Societies and Industry

There are a number of professional societies that are providing a cross-industry set of services to the members in the UK. Below are some of the selection of services offered by these organisations to industry.

Service	Description
Special Interest Groups in Information Technology	The British Computer Society has a number of special interest groups to provide opportunities to share experiences and provide for advanced learning opportunities. Two of the most active groups in the UK are the SPIN (Software Process Improvement Network - part of a global network) and the Project Management Specialist group. Both can be found at: www.bcs.org , http://www.sys.uea.ac.uk/Research/researchareas/spi/objectiv.htm

Service	Description
Establishing competency criteria in specific areas	The British Computer Society has established membership grades and also has a number of individual competency schemes to recognise proficiency in specific fields (for example, Certificates in Project Management).
Providing member benefits	Providing members with reduced costs for training, insurance, materials, etc
Providing a voice from the members to industry and government	Provide views of members to various groups to promote or make visible specific issues.
Sharing product specific information across the industry	<p>There are a number of product specific user groups working closely with companies to help provide advanced training and services to the user community. In the UK, the MS Access User Group www.ukaug.co.uk and the Visual Basic User Group www.vbug.co.uk are two examples of this type of service. Prince 2 also has a user group www.pug.mcmail.com</p> <p>These user groups provide reduced training or product costs, regular meeting schedules, speakers, practical demonstrations, information on future product directions and in some cases recognition awards for excellence.</p>

Government and Individuals

The following are examples of services where governments are providing support services to individuals.

Service	Description
Support to place unemployed individuals in business	<p>Job Centres have been established in the UK to help unemployed people return to work. These people are given guidance and financial support to actively look for employment. Companies use the job centres to help fill vacancies.</p> <p>www.employmentservice.gov.uk</p>

<p>Provide incentives and discounts to individuals to improve IT skills</p>	<p>The UK government has recently initiated the concept of Individual Learning Accounts where individuals can receive discounts on IT or job related training. See www.dfee.gov.uk/ila</p> <p>Or www.namss.org.uk/funds_ila.htm</p>
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Universities and Industry

The following services are examples of services provided by universities in partnership with Industry.

Service	Description
Job Placement and Career Counselling	Support is provided to graduates to enter the workforce. Interviews are setup with Businesses and support is provided to graduates to prepare resumes and conduct interviews.
Sandwich Degrees	Universities provide 4 year undergraduate degrees where 1 year (typically the 3 rd year) consists of a year placement in Industry. This provides students with practical experience taking on jobs in a work environment. Companies such as Hewlett Packard, Sun, IBM, M&S, ESSO, provide job placements (some companies provide 40 to 60 placements per year). Two recent assignments were: A business student - looking at how to improve knowledge transfer across departments in the hardware support area and a technical student designing and developing enhancements to their intranet related to hardware support website. Students are given credit for these assignments and write a dissertation about their assignment.
Taking projects into the university	Some universities also provide a number of either practical or research projects for students in their own labs. These projects are typically sponsored by companies. Two examples of this type of university work are: Carnegie Mellon University www.cs.cmu.edu , Harvey Mudd College www.cs.hmc.edu , www.eng.hmc.edu .
Establishing industry and research centers within the university.	The Software Engineering Institute, created at Carnegie Mellon University, was created as a joint venture with the US Department of Defence and the University. Today this Institute is the premiere center for software engineering process work and software research. www.sei.cmu.edu The SEI has published the Capability Maturity Model and is currently enhancing the model to provide a richer set of engineering disciplines across the IT Industry.

I'm sure that the list could be much larger. The challenge to establish the Center of Excellence is the selection of the services that will add most value to Jordanian business and make steps to achieve the vision. The challenge is to define the services in a way that bring together all of the capabilities currently in Jordan.

Annex C Related / Dependent Reach Initiative Workshops

The following other workshops may have linkages to the center of excellence recommendations.

University Alliance (July 26)
ESOPs (July 31)
Information Technology Park (August 21)
Quality Certification (August 28)