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ICTI Local Technology Firms - IQC Report

AMIR II Achievement of Market-Friendly Initiatives and Results

July 2006

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JORDAN AMIR II

Achievement of Market-Friendly Initiatives and Results

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AMIR Access to Microfinance and Improved Implementation of Policy Reform Program

AMIR 2.0 Achievement of Market-Friendly Initiatives and Results Program

ASEZA Aqaba Special Economic Zone Authority

ASYCUDA Automated System for Customs Data

BMI Business Management Initiative

CBJ Central Bank of Jordan

Devis Development InfoStructure

G2B Government to Business

G2C Government to Citizen

G2G Government to Government

GOJ Government of Jordan

ICT Information and Communications Technology

ICTI Information and Communications Technology Initiative

INT@J Information Technology Association of Jordan

IP Internet Protocol

IQC Indefinite Quantity Contract

IT Information Technology

JTB Jordan Tourism Board

MIS Management Information System

MIT Ministry of Industry and Trade

MoICT Ministry of Information and Communications Technology

MoPC Ministry of Post and Communications

REACH Jordan's National Information Technology Strategy

USAID United States Agency for International Development

VoIP Voice Over Internet Protocol

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1 Executive Summary

The AMIR 2.0 Program carried out a determined plan for Jordan to implement e-government solutions to improve services using technology. This success required the teamwork of Program staff, consultants, and local private IT companies providing an assortment of services, including software development and IT project management. The inclusion of local IT firms in the program also had a goal of positioning Jordan's budding technology sector to make a breakthrough in regional and international markets.

AMIR saw the opportunity to build partnerships with local technology firms that would support Jordan's e-government goals while also strengthening the local tech industry. In order to facilitate overarching program goals for AMIR while at the same time assisting Jordan to develop its Information and Communications Technology (ICT) sector, the AMIR Program developed a strategy to engage local IT firms on AMIR supported e-government initiatives. Fittingly, an approach using an Indefinite Quantity Contract (IQC) plan was implemented which allowed AMIR to identify and contract with five selected local technology firms while managing only one procurement process. AMIR apportioned and assigned work by issuing task orders and/or by conducting mini-competitions among the IQC firms during the program.

As the firms gained experience, they saw their opportunities multiply. All of the IT firms in the IQC program grew in size and revenue over the period of the AMIR Program. By 2004, the firms chosen for the IQC had become the top five technology companies in Jordan and are now establishing themselves in the international tech services market. Further, firms were able to extend their experience in working on AMIR projects into related GoJ projects. Building upon AMIR Program experience, several government agencies have selected CNS/Primus to implement their internet & intranet solutions such as the Prime Ministry, Ministry of Planning, Customs Department, Ministry of Finance and others.

In many cases, the firms were asked to team and collaborate towards a particular goal (rather than compete), which they did with great success. This allowed the program to not only achieve goals on projects where employing only one firm may not have been able to complete the project because of scale or skills, the firms were able to realize how they could collaborate with each other in order to perform on projects that would otherwise be outside of their reach. All five firms were able to collaborate and extend their work on the GoJ E-Government Portal for continued work on a \$1 Million contract with the GoJ.

The contributions provided by the local firms to AMIR objectives proved to be significant. Each of the local IT firms were vitally responsible for the successful implementation of major projects as outlined in this report.

Oversight and mentoring of the IQC firms was provided by Development Infostructure (Devis), a US-based small business experienced in IT on

International Development programs. Specifically, Devis assisted in establishing IQC management processes and implementation plans, assisted ICTI in finalizing Task Orders, conducted technical coordination meetings, advised AMIR, Client Agency Project Managers, and IQC Firms in launching work, and coordinated and oversaw technical work. In addition, Devis was responsible for providing e-project analysis and recommendations for related projects for AMIR, vital for strategic planning purposes.

2 Introduction

The King's initiation of the Economic Consultative Council (ECC), a private sector-dominated forum for the analysis of economic and business reform issues, has energized the GOJ and the private sector to jointly address key economic challenges in a range of sectors such as e-Government, information technology (IT), banking, judicial reform, and capital markets. The Palace has played an important and aggressive role in promoting Jordan as a good place to do business. The King's willingness to champion the REACH Initiative, which is focused on developing Jordan's IT industry, is an outstanding example of how leadership has helped propel growth in a "new economy" industry.

The United States Agency for International Development (USAID) has supported the development of the Jordanian economy through the Achievement of Market-Friendly Initiatives and Results (AMIR) Program. An important component of the AMIR Program effort is assisting Jordan to develop its Information and Communications Technology (ICT) sector. As the foundation of the strategy for growth of the Jordanian ICT sector, the development of and maturation of local ICT Firms has been an important focus for the AMIR Program.

To facilitate these overarching program goals, the AMIR Program engineered a synergy between its broader economic objectives and achieving the objective of developing the Jordanian ICT Sector, by developing a strategy to engage local IT firms on AMIR supported e-government initiatives. Accordingly, an approach that uses an Indefinite Quantity Contract (IQC) plan had been implemented instead of issuing separate RFPs (Requests for Proposal) and evaluating proposals for each project separately. This approach allowed AMIR to identify and contract with each local technology firm while managing only one procurement process. The IQC selected five highly qualified local firms, capable of performing substantial pieces of the software development work in support of the Program. AMIR apportioned and assigned work by issuing task orders and/or by conducting mini-competitions among the IQC firms during the program.

3 Local Technology Indefinite Quantity Contract (IQC) Summary

The AMIR 2.0 Program carried out a determined plan for Jordan to implement e-government solutions to improve services using technology. This success required the teamwork of Program staff, consultants, and local private IT

companies providing an assortment of services, including software development and IT project management. The inclusion of local IT firms in the program also had a goal of positioning Jordan's budding technology sector to make a breakthrough in regional and international markets. AMIR saw the opportunity to build partnerships with local technology firms that would support Jordan's e-government goals while also strengthening the local tech industry.

Under other circumstances, one might choose to consider each e-government initiative as a separate procurement and software development project. However, two factors argued for the more integrated approach: first, the short timeline for completion of complex applications, and second, the integrated nature of the e-government initiatives. Rather than awarding contracts for each individual undertaking in the e-government program, AMIR created the Local Technology Indefinite Quantity Contract (IQC), which allowed local firms to pre-qualify for performing technology tasks and then quickly be assigned task orders on demand. Twenty-four Jordanian IT firms bid for the chance to participate in the four-year contract and the five top firms were selected through a complex competitive process and criteria. The firms worked with the AMIR Program and the Jordanian government on a wide range of projects, including Web sites, Information Systems, and Automated Operational Systems significantly contributing to the e-government initiative.

3.1 Goals and Results

The AMIR 2.0 Local Technology Indefinite Quantity Contract (IQC) is a contracting vehicle that allows AMIR components to fund e-government software and system development projects in a flexible and efficient way while developing the Jordanian ICT Sector. The objective of the Local Technology IQC was to set up and manage a procurement process that established an IQC contracting vehicle for Jordanian technology firms to carry out e-government software development projects. The procurement resulted in a working group of five Jordanian IT companies under contract with AMIR for the sole purpose of implementing, at AMIR's discretion, portions of the e-government software development work during the AMIR 2.0 Program.

Development InfoStructure (Devis), a US-based small IT business, provided oversight for the IQC procurement process with the assistance of staff at the AMIR Field Office and PMU (Program Management Unit in Washington). The procurement process consisted of the following tasks:

- Develop IQC Strategy Plan
- Develop RFP
- Issue RFP via Int@j
- Conduct Bidders Conference:
 - Explain the IQC process to all potential respondents
 - Lead panel discussion on how to produce high-quality technical proposals
 - Revise RFP based on feedback
- Evaluate and rank technical proposals

- Conduct site visits of bidders, either as part of a best-and-final round or to prepare/present proposal clarifications
- Recommend final list of IQC winners
- Conduct kickoff meetings among finalists to lay the groundwork for IQC implementation

3.2 Local Technology Award

The detailed evaluation methodology is developed and implemented in order to determine to rank the top local IT firms that had submitted RFP's. The criteria for the evaluation was explicitly defined so that each technology firm was clearly aware of the factors that influenced in the award. Another major intent of the selection criteria methodology was to help these small firms organize their practice in ways that would not only be responsive, but also helpful in their own business operations.

Five Jordanian technology firms were selected for the AMIR e-government IQC using a competitive evaluation procurement process:

- eStarta - a leading IT player that specializes in delivering software solutions to its three market sectors-- public, telecommunications and financial services enterprises— across the United States , Europe and Middle East . Working side-by-side in a collaborative environment with both its clients and workforce, eStarta Solutions recruits the most talented business and technical professionals who have years of industry experience behind them. The company offers its clients the convenience of a single point of contact for all comprehensive IT solutions. eStarta Solutions is based in Jordan, with sales headquarters in Dubai, UAE, as well as offices in Doha, Kuwait and Riyadh.
- Integrated Technology Group (ITG) - ITG has a strong local and international presence with deployments in Jordan, the Middle East, North Africa, and Europe. ITG is specialized in providing state-of-the-art technologies and solutions in the following areas: e-Learning, e-Business & e-Government Solutions, Application Integration (EAI) Technology, WAP, SMS and GPRS Solutions, ERP Solutions, Web Development, Interactive Multimedia, Solutions, New Media & Visual Production, and Hardware & Process Automation Solutions
- CNS/Primus - Established in 1996 to meet the maturing needs of the Jordanian IT community, and has become one of the leading Software and web development companies in Jordan. A wide range of clients, with varied IT needs, have selected Primus to develop their Software applications and websites. Client base started in Jordan and has expanded to the United States, Iraq, Saudi Arabia, Egypt, Kuwait, Lebanon and Palestine. In addition, Primus works with a variety of clients including corporate entities, non-profit organizations and public institutions. Primus develop Internet, Intranet & extranet solutions for government agencies, business associations, hotels, airlines,

information technology companies, the food industry, embassies, and hospitals, among others.

- Specialized Technical Services (STS) - Since its establishment in 1989, STS has contributed significantly to the growth and development of the IT sector in MENA. STS's diversified IT activities, partnerships with industry leading companies such as Microsoft, Dell, Sun, IBM, CISCO, and Hypercom, in addition to more than 300 qualified and highly skilled employees, have enabled STS to stand firm among the best providers of turnkey solutions to the government, banking, education and telecommunication sectors.
- AlliedSoft (ALS) - a world-class software development company established by a multinational partnership to cater for clients' needs in both Europe and the Middle East. AlliedSoft has a business partnership affiliation with ProAsset, a System Engineering company based in Germany, and operates offices in Amman - Jordan, Russelsheim - Germany, and Riyadh - Saudi Arabia.

Each of these five firms represented up-and-coming businesses showing potential in terms of both organizational prowess and technological talent. Even though a lot of the skill sets of these companies overlapped, each of these companies also had specialized areas of knowledge that were beneficial to not only the program, but also to been able to exploit niches in the IT sector.

Through the life of the AMIR 2.0 Program, Development Infostructure provided oversight and mentoring to the local IT firms on the IQC:

- Assisted AMIR ICTI component in establishing IQC management processes, including implementation plans, etc.
- Reviewed Task Order (TO) budgets and assisted ICTI in finalizing initial TOs.
- Conducted initial technical coordination meeting with all IQC Firms (including other subcontractor EDS).
- Advised AMIR, Client Agency Project Managers, and IQC Firms in launching work on each TO.
- Coordinated and oversaw initial technical work on the TOs for which inter-operability issues were important: portal, authentication, personnel directory, organizational directory, etc.

The five Jordanian technology firms were responsible for the technical delivery of their assignments, business operations were enhanced by procedures requiring:

- Reviewing Task Orders assigned to them by AMIR and accepting or rejecting the assignment.
- Submitting a detailed budget, with line items for required personnel and other direct costs, for each proposed TO.

- Submitting a detailed project implementation, deliverable, and payment plan to the Client Agency and AMIR before beginning work on a task order.
- Putting in place a change request process to be used during a software development phase. The change request process was required to have requests flow from the Client Agency to the IQC Firm to AMIR.

3.3 Results

The IQC operated in a complex environment, both internally and externally: AMIR 2.0 had four components, each of which required the funding of e-government projects. AMIR also interacted with many external players, including the technology firms themselves, the GoJ client agencies who are the primary beneficiaries of funded projects, and the e-government Programme Management Office in MoICT to name a few. Because of ICTI components unique roll in implementation support for e-government projects of all AMIR components, including itself, the ICTI component, as well as the IQC, became integral in the success of many projects across the Program.

The contributions provided by the local firms, proved to be very valuable to the program. In many cases, the firms were asked to team and collaborate towards a particular goal (rather than compete), which they did with great success. This allowed the program to not only achieve goals on projects where employing only one firm may not have been able to complete the project because of scale or skills, the firms were able to realize how they could collaborate with each other in order to perform on projects that would otherwise be outside of their reach.

Osamah Yacoub of AlliedSoft, says company revenues have tripled since 2001. "We saw that together we can deliver projects that individual companies could not handle alone. Now, we bid for projects jointly." In addition, the AMIR program was able to quickly initiate projects utilizing these firms, confident that the necessary skills for each project could be assembled from the IQC firms.

One consistent benefit stated by local firms about the IQC program is that it helped educate the firms about program management and quality standards. Further the experience with a large donor Program gave firms the confidence to go for bigger projects. Osamah Yacoub: "It would have been difficult for us to gain visibility even in Jordan, but working with USAID gives us credibility. Now we have the confidence to bid for contracts both locally and internationally."

The nature of the work provided by e-Government projects have helped each tech company find a niche in related areas that helped their evolution. Former eStarta public-sector Manager Fadi Mari: "Working under the IQC has helped us develop a specialty in e-government projects, Because of our work with USAID, we have a good understanding of what governments need." Correspondingly, value of eStarta projects more than doubled between 2002 and 2004.

For the IQC firms, the results on a whole were positive. As the firms gained experience, they saw their opportunities multiply. In fact, all of the IT firms in the IQC program grew in size and revenue over the period of the AMIR Program and substantially in some cases:

- By 2004, the firms chosen for the IQC had become the top five technology companies in Jordan and are now establishing themselves in the international tech services market.
- ITG became a recognized regional leader in E-learning software.
- eStarta received a major investment from Microsoft (and later from Cisco Systems) – the first investment of its kind in the region. eStarta also a Dubai, UAE subsidiary as it's Sales and Marketing Headquarters and later opens offices in Riyadh in Saudi Arabia. eStarta and Microsoft also signed a MOU to establish a Public Sector Innovation Center for solutions catering to the Public Sector.
- CNS/Primus – building upon AMIR Program experience, several government agencies have selected CNS - Primus to implement their internet & intranet solutions such as the Prime Ministry, Ministry of Planning, Customs Department, Ministry of Finance and others.

4 Local Technology IQC Projects

The Local ICT Firm IQC value was used to contract for ICT services for support on e-government projects for the ICTI Component as well as across component lines for the AMIR program. The following sections are a summary of the work, challenges and accomplishments resulting from these initiatives.

4.1 GoJ E-Government Portal

The Jordanian Ministry of Information, Communication, and Technology (MoICT) set the ambitious goal of putting in place a complex e-government infrastructure and application environment. Systems integration work established a secure network that the Government of Jordan (GoJ) uses for internal (government-to-government) and external (government-to-citizen and business) applications. The network infrastructure includes a government-wide email system and a network operations center, and provides content management support.

One of the significant e-government applications being developed and deployed is an e-government Web Portal, including G2G, G2B, and G2C interfaces incorporated with (1) Government Personnel Directory and (2) Government Services Directory.

The principal challenge of the project was to establish realistic expectations regarding the functionality of the GoJ e-government portal. Expectations had been shaped by observations of e-government portals around the world – e.g., in Dubai, Singapore, Ireland, the U.K. – whose functionality was generally complex and based on government policies different from those

found in Jordan. Devis Requirements Analysts examined these expectations and found ways to reconcile them with time and budget constraints, with the functionality required by the current GoJ e-government environment, and with the needs of the Jordanian public and civil service.

4.1.1 Scoping and Vision

Devis initiated the e-Government Portal project by developing a Vision and Scoping Document to define the overall objective, boundaries, environment for project to ensure the project was reasonable, achievable, and sustainable given the funding, timing, and government constraints. This document was used as a basis for system and architecture design by the local technology firms in the AMIR Local Technology IQC.

The Vision and Scoping document proposed a vision of phased development describing basic functionality required in an initial release with more subsequent releases. The Vision and Scope served as the guiding document for both short- and long-term development and contained detail guiding analysts to establish an initial, but extensible, system architecture.

Another important challenge was to determine ownership of the public and civil service portals for purposes of maintenance, future development, and content management. The e-government programme management office (PMO) played a role in those functions, but that office was not completely operational when this initiative was undertaken. Where there was a void, the Local ICT firms stepped up to provide the guidance and leadership to overcome these limitations.

4.1.2 Challenges

During the first quarter of 2003, and during the implementation of the e-Government Portal, several issues related to the population of Arabic content in the procured Content Management System (CMS) became evident. The CMS vendor, FileNet, offered to upgrade the software to its next generation product, rather than updating the older version which had been installed. Accepting this offer would have meant a six week delay in the project. At the same time, MoICT was receiving offers from Microsoft to implement their CMS product for free. Due to this pressure, the decision was made to ask FileNet for a refund and hand the CMS procurement to MoICT.

From the latter half of 2002 and through the first quarter of 2003, the five Jordanian IT firms provided the information architecture and harvest content needed to populate the e-government information portal. In March of 2003, these efforts were suspended until the procurement of a Content Management System (CMS) to house the content could be completed. At this point in time the harvesting of content was near completion and the task was on the critical path of the requirement for configuring and populating a CMS. In addition, the tasks for developing the Personnel and Services directory were also suspended as the need for identifying the CMS was necessary, but

also to a larger extent, the need for decisions regarding standards for the enterprise architecture had not been decided which directly affected the ability for the IT firm to start development (MoICT had indicated that there the standard should now be heterogeneous including both J2EE and .Net standards.)

Ultimately, MoICT rejected Microsoft's offer and engaged in a new RFP and procurement for another CMS. This process proved to be lengthy and required retraining of staff in implementation. In the interim, the local IQC firms were idle and had to be restarted following the new procurement.

During this period of time where IQC firms were idle and before the resumption of the implementation (between phases A & B) an accounting of high-level challenges to the Portal implementation beyond the day-to-day risk was provided by Devis. High-level technical dependencies were identified that could delay the planned public rollout of the Portal; however, the biggest challenge to successfully implementing the Portal was identified on the business operation side. It was possible that Portal could be technically deployed with perfection, but failure to successfully implement related business operations changes would jeopardize the investment made in the project. The analysis recognized that as the Portal was launched in Phase B, the IQC firms would disband and the focus on benefits will shift focus from design-and-construction focus to maintain-and-refine. At this point, MoICT and government entities would need to take full ownership of benefits realization. Thus GoJ would need to take ownership of several activities:

1. Continue to update and maintain content on the websites
2. Proactively drive Portal benefits with new content and services
3. Provide awareness of portal capabilities to users (citizens, business, and government employees) as well as content providers
4. Update the planning (and budgeting) process for future activities and services
5. Refinement of content provided to match demands of target users

Specifically, the audit addressed the following areas presenting challenges toward the successful implementation of the Portal, as well as mitigating strategies for each risk:

1. Production Deployment Schedule – modified to incorporate early wins and remove superfluous dependencies by providing staged releases.
2. MoICT PMO Change Management - Organizational Changes as huge factor and only PMO Change Management has authority to affect.
3. Executive Champions - Champion needed on functional side to support strategic direction.

4. Portal Manager Being Hired - Roll is crucial; IQC firms can be contracted to fill roll in interim
5. Integration with Microsoft Gateway - creates needless dependencies for Portal; dependencies minimized with revised plan.
6. Hardware Procurement - Production rollout dependent on hardware; can be mitigated with multiple procurements.
7. Outreach to Users - Success dependent upon continual update and use of system; Awareness campaign needed.
8. Content Expiration - Development of Content is contractually complete; Refresh of content due to delays are the responsibility of MoICT.

In light of these turnover responsibilities, an MOU between AMIR and MoICT was prepared that delineated these responsibilities (see Annex for original analysis).

4.1.3 Results

Ultimately, all tasks for Phase B of the Portal was completed by the IQC firms on time and budget for the Phase B plan under the AMIR Program. However, once project control turned to GoJ, many of the issues identified in the analysis continued to be troublesome for MoICT to mitigate (particularly in the procurement of Hardware) and thus caused delays in the roll-out plan. The implementation of the Portal has been a complex, cross-functional activity involving not only the IQC technical teams involved in implementing Portal software, but also the government entities that provide the source of information and services provided by the Portal.

As of the writing of this report, all technical tasks for the IQC firms related to the implementation of the Jordan E-government Portal have been completed. The main challenges of implementing the Portal have been completed: (1) information architecture and related content harvesting, (2) the technical configuration and implementation of software providing Portal functionality, and (3) organization procedural and change management required for successful on-going utilization and maintenance of the Portal.

The Portal is now in a beta “soft” launch getting ready for a public “hard” launch. The Project is in the final development stage and moving towards a public production release.

4.2 Trade and Investment Information System

Jordan actively participates in the global market by moving forward with its commitments under the World Trade Organization (WTO), other free trade agreements (such as the Jordan-US Free Trade Agreement (FTA)), and the EU Association Agreement. Despite this active participation in the global

market, Jordan's statistics lack accuracy and timeliness, and only few organizations commit to international trade and investment standards in the collection, classification, and presentation methods of statistics. Various AMIR studies found that despite the fact that the trade and investment information systems in Jordan are concentrated in few government agencies; the systems are uncoordinated and fragmented.

The origins of this project go back to 2001, when AMIR conducted an assessment of the trade and investment information systems in Jordan. The findings of the assessment pointed out that trade and investment systems in Jordan are disjointed with noticeable shortcoming. Of these, systems appear to undertake minimal processing of information; hence, trade and investment data lack timeliness, consistency, and compliance to standards or minimal presentation requirements.

In 2003, AMIR commissioned a group of consultants. The goal was to produce a scoping study of the data on trade and investment. The proposed TIIS came as the core recommendation of this scoping study. Additionally, guidelines on how the system should be established, governed, and structured were provided. This effort was concluded towards the end of year 2004. Realizing the pressing need to establish the TIIS, as per the scoping study's recommendations, the AMIR Program in cooperation with the two sub-contractors (Al Jidara and Allied Soft) worked to set-up and implement the Trade and Investment Information System (TIIS). A two-phase approach was chosen for the implementation as follows:

- **Phase I – Data Governance of the TIIS:** Occurred from December 21, 2004 to October 31, 2005
- **Phase II – TIIS Development:** Occurs December 2005 to July 2006, the focus of this phase is to develop and implement the actual TIIS technical solution guided by the business requirements and needs, this phase aims at selecting the appropriate technical solution and constructing the system. The end-in-mind goal of this phase is an up and running TIIS.

One of the greatest obstacles to effective policy-making in the area of trade and investment in Jordan is the fact that relevant information is difficult to obtain and often inaccurate. A variety of different entities, such as the Aqaba Special Economic Zone Authority (ASEZA), the Central Bank of Jordan (CBJ), Companies Control Department (CCD), the Customs Department (Customs), the Department of Statistics (DOS), Jordan Investment Board (JIB), Jordan Industrial Estates Corporation (JIEC), and Ministry of Industry and Trade (MIT) collect data relevant to trade and investment. There are a number of significant problems, however, with using this data. First, the quality of the data collected within some of the entities is poor. Second, the entities collect data for their own individual purposes in isolation from one another, resulting in a lack of standardization and consistency across the entities. Finally, the databases of the various entities are not linked in any way, making it difficult to exchange information.

If Jordan's investment promotion and enterprise development entities are to perform at the level of international best practice, accurate and timely data with which to make effective policy decisions must be available. The AMIR Program has studied this problem in the past and an integrated information system for trade and investment has been recommended as the solution.

4.2.1 Results

The AMIR Program employed the Local Technology IQC firms to develop and implement the Trade and Investment Information System to provide infrastructure, standards and services to support the sharing of trade and investment data across Jordan. Trade and Investment statistical information is generated by government trade and investment authorities and trade and investment professionals in the conduct of their normal activities. In this project, Trade and Investment information were optimized and shared between the different government authorities and collections were rationalized to eliminate duplication and eliminate errors.

As of the writing of this report, the final implementation and acceptance testing of the system was being completed. The initial results indicate that the system will successfully fulfill the requirements of the project as defined during analysis.

4.2.2 Challenges

A major technical challenge of the project revolved around the technology used to implement the solution. The initial phase of the project determined that the two most appropriate architectures that would work for this project were Oracle and SAP. An RFP evaluation awarded the technology to SAP, which was determined to be a best-value choice that would satisfy requirements of the project. The main issue with selecting SAP is the lack of experience and knowledge of SAP in the region. SAP simply did not have a presence in the Middle East. However, SAP did promise to provide the project with lavish support and training to ensure that the project was a success. This was indeed an important project for SAP in the region and did follow through with their promises. As a result, the IQC vendor was not only capable on implementing the project, they are now capable of servicing other SAP projects available in the region.

A second challenge on this project has been finding a senior government official to 'champion' the project. Given the nature of this project, having a 'champion' is vital to the success of the project, particularly since success is dependant upon organizational coordination and acceptance. In trying to find a champion, there has been resistance as government official stated that they did not think Trade and Investment alone were inadequate for forming a clear view of economic activity. However, after repositioning the project as being just the first step in a Government Statistic Information System has resulted in a more receptive response from government officials.

4.3 Jordan National Customs Human Capital Development Management System

An earlier consultancy initiative engaged by AMIR in December 2003, evaluated the Training framework adopted by JNC. The consultancy advised that a shift to the Systems Approach to Training (SAT) is recommended to improve the efficiency of the human capital development and the training process within JNC. SAT has been successfully deployed across many World Customs Organizations (including the Canadian Customs) and has been used as a core framework for managing training requirements in the US military for many years. A subsequent AMIR consultancy recommended that JNC adopt an IT solution to support the SAT approach to training. The solution addressed each of the component parts of the SAT approach, including:

- Performance management
- Skills/competence tracking
- Training tracking

The AMIR program engaged Devis to conduct an evaluation and selection of a COTS systems (MenaTech) to provide automation to support the implementation of SAT on JNC. Following the software acquisition, AlliedSoft was engaged to work with the software vendor to ensure the successful implementation of the system.

4.3.1 Results

The AMIR Program engaged in a procurement for HCDM systems that conformed to Human Resources-related business processes adopted at JNC. It also provided JNC with a comprehensive and open IT platform that will enable the organization to use SAT to meet its human resources development requirements for the next 2-6 year period.

The HCDM System provides JNC with a comprehensive and open IT platform to allow the organization to use a SAT approach to meeting its human resources development requirements. It also provides JNC with a collection of functionalities that are related to Human Resources information management and reporting.

Implementation of the HCDM system was conducted in a two phase approach. The first phase was a pilot test at a small number of offices, which was successful. AlliedSoft was immediately engaged to complete the full roll-out to the rest of JNC, which again was completed on-time and within budget.

4.3.2 Challenges

A number of options for meeting SAT IT requirements were considered, including purchasing a comprehensive Commercial-Off-The-Shelf Human

Capital Development and Management (HCDM) software solution; purchasing a combination of performance management, skills/competence tracking and training tracking software, designing and developing the solution using in-house resources or using an external software developer to design the solution.

Due to the low number of HCDM systems available in the Arabic language, the proposed solutions received were not exactly what was expected. In evaluating the proposals, Devis identified the added risks involved in the unique proposals and the offers were allowed to amend their proposals to address the identified areas of risk. This process proved very useful in that the software vendor made critical guarantees to ensure the project success.

Another challenge during project implementation was in the area of data conversion into the new system. During implementation, it was discovered that JNC HR data was inconsistent and with little integrity. For example, two different systems would show an employee with differing number of children, which neither system being recognized as the system of record. This problem was rectified by addressing the conversion task as its own task order. AlliedSoft implemented a conversion strategy that recognized the data integrity problem and paid low level detail to the conversion to ensure that it was correct and complete.

4.4 Municipality of Madaba: Business License Automation

The AMIR program engaged AlliedSoft for the development and implementation of an automated system for issuing and renewing professional licenses' processes at the Municipality of Greater Madaba which will also include design and development of a static website under the e-government portal, Ministry of Municipal Affairs section.

Under this engagement, the recently implemented and manually operated procedures for issuing and renewing professional licenses were electronically enabled using an interactive web based workflow application. In addition, a static website was developed to include a complete guide to professional license issuance /renewal processes as well as the related necessary forms available online thus realizing the one-stop shop online service of business establishment.

4.4.1 Results

The application enabled the Municipality of Greater Madaba to electronically enter data and electronically produce the required forms, certificates and retrieve data according to need, realizing a step towards an e-Government environment.

The web-based application provided the following advantages:

- The web-based application enabled real-time communication between team members within the municipality through a paperless environment

that will speed process. Through the application, users from various departments could complete the process of issuance and renewal of professional licenses through user privileges that would provide them with access to information in order to take necessary action;

- The web-based application would improve efficiency and assist the Municipality of Greater Madaba staff to better manage the issuing / renewing of professional license processes by minimizing manual operations, as well as eliminate redundancies. By having a multi-disciplinary and cross-functional application, stimulate teamwork and improve workflow, which would accelerate the professional license issuance and renewal processes. Further, automation would allow for processing of applications by each department to happen in parallel, as opposed to the current serial process that occurs as the paper application moves from department to department;
- The web-based application would minimize the number of signatures and help consolidate data into one place as well as track application status which immensely impact time of completing the process;
- The web-based application maintains an accurate up-to-date electronic record of all licensed businesses and would be used as a central database to integrate all applicant and enterprise information. It would provide the applicant's professional licensing information; health related information, clearances and amount dues, as well as other information;
- The web-based application will encompass relevant information from various sections including the Health Directorate, the Public Works Department, Investigation Unit, Professional Licensing Division and Financial and Administrative Directorate, in addition to Madaba Court and Madaba Financial Directorate all of which reside within the Municipality of Greater Madaba;
- The web-based application would retrieve amount dues for the Municipality of Greater Madaba;
- The web-based application would maintain a complete guide to professional license issuance /renewal processes;
- The web-based application would generate all relevant forms and certificates;

The ultimate measure of success of this project is the vast reduction in time for processing a business license from 45 days to 5 days.

4.4.2 Challenges

The only delay during the implementation of this project was a delay that was caused by additional requirements being requested in the last few weeks of the project. The new requirements were satisfied during a one week extension at the end of the project and the implementation was successful.

Another challenge that was anticipated was the organizational challenges that were anticipated by the lack of computer skills by Municipality staff. The users were trained at regular intervals over a one month period to ensure that they didn't receive too much information at one time. This proved useful as the final system was accepted by all end users.

4.5 Central Bank of Jordan Forms Automation

The AMIR Program prepared a Work Plan of technical assistance and training for the Bank Supervision Department under the Central Bank. The focus was on Central Bank examination and supervision activities, the IT systems and the institutional capacity of the banks in Jordan. The AMIR Program worked with the Central Bank on reviewing the data collected from banks and rationalizing the various reporting requirements.

The Supervision Department activities include data collection, monitoring, analysis and reporting from all banks in Jordan, this data is then used to generate reports to assist the Central Bank and Supervision Department in monitoring the banking sector in Jordan, including an Early Warning System model that the AMIR Program helped implement.

The AMIR program has provided the Central Bank of Jordan (CBJ), with a Wide Area Network (WAN). The WAN connects the CBJ with its branches in Irbid and Aqaba, with the headquarters of the 23 commercial banks in Jordan and with any other financial institution if needed such as the Securities Depository Center (SDC) which is already connected with CBJ.

The Bank Supervision Department requested assistance in automating and standardizing reports generated by commercial banks and the Central Bank. The automation utilizes the Wide Area Network (WAN) for communication purposes and enhances the CBJ's Banking Supervision Department's ability to monitor and track the practices of Jordan's commercial banks.

4.5.1 Results

The AMIR program engaged AlliedSoft to develop this application to automate data and reports generation and standardization at the commercial banks, reports consolidation at the central bank, and reports generation and data analysis at the Central Bank - Banking Supervision Department (CBJ-SD).

The CBJFA system provides the physical link between the economic banks in Jordan and CBJ-SD. It will be the primary component of the real-time astronomical reporting data processing capability. Its primary responsibility is to perform basic data assembly, format and report services and to support the

desire for the real-time inspection of the astronomical data streams reporting activities to and for CBJ-SD.

The primary objective the application is to automate the data and reports generation and standardization, reports consolidation at the Central Bank, and reports generation and data analysis at CBJ-SD. The major functions that the system performs are:

- Receiving standardized formatted electronically data file from the economic banks
- Loading the data in the received electronic file into a repository database
- Performing a limited amount of real-time data processing
- Performing a limited number of additional processes upon user request
- Delivering suitably standardized reports results to the system end-user

As of the writing of this report, development of the CBJFA is complete. Production-quality functionality of the completed portions of the system has been given to the CBJ for review and testing. Deployment of the CBJFA is ongoing though now major issues have been identified

4.5.2 Challenges

The implementation on the CBJFA had several challenges:

Organizational - The biggest risks to the success of the project is with the people that will use the system. This means extra effort on behalf of both AlliedSoft and CBJ in promoting the system to those required to use it.

Sample Data - CBJ had not provided the development team with sample data (due to confidentiality of the data). Though the developer created their own sample data, there was risk that errors that would be caught with more realistic data may not be caught by data that does not represent the more common range of data present in the database.

Decision Making- There was concern that Decision Making was not happening in a timely fashion. The Project Manager devised a process to help alleviate the decision making delays that would trigger escalation of delays after a predetermined time lag.

Scope Creep- There were several instances where additional functionality has been defined that has required the project scope to increase. The project schedule was aggressive and additional enhancements caused some delays in the deployment of the project.

4.6 E-Projects and Assessments

In addition to the oversight and mentoring of IQC firms for major e-Government projects detailed in this report, Devis was also engaged on a

number of e-projects and assessments which played a major role in strategic planning and decision making through out the life of the AMIR Program.

4.6.1 Int@j Open Source Software

Information Technology (IT) firms in Jordan face a number of challenges as they develop and expand their businesses in the face of fierce international competition, particularly from those who started operations in this arena earlier. This competition has to be met on two fronts: the provision of services (and products) for (1) domestic sales, and (2) potential export sales. Open Source Software (OSS) could be an enabling technology for Jordanian IT firms to move forward on a much stronger competitive footing than would be possible relying on expensive, closed, proprietary operating systems and applications imported almost exclusively from Western countries.

The AMIR program engaged Devis to research the extent of penetration of OSS in Jordan and other Arab States and to establish a web-based reference set for anyone interested in OSS with a special emphasis on issues relative to OSS use in Arabic speaking countries. The objective was to deliver a reference set of materials describing the current state of OSS in the Middle East in general and Jordan in particular. Rather than produce a static “report”, however, this activity created a dynamic set of electronic documents in the form of web pages containing annotated links to information of interest, organized by topics. It highlighted opportunities that AMIR could pursue to bring OSS to the attention of Jordanian IT firms and orient future efforts to pursue commercial opportunities in OSS consulting and development.

The study analyzed issues that need to be addressed in order to launch a significant initiative in the use of open source software for e-government for the purpose of stimulating local IT industry. Some of the more apparent questions to be addressed were (1) the availability of open source operating system, utility and application software in Jordan and/or neighboring countries; and (2) compatibility issues, notably the availability of Arabic language fonts capable of correctly rendering Arabic characters on a computer screen. Other considerations were the availability of web-based resources and information on the experience of other developing countries having made a major commitment to open source, particularly the Linux operating system and Apache web server software.

The deliverable output resulting from this work will be a set of web pages constructed as a resource “portal” containing links organized along the following lines:

- Introduction to open source for newcomers
- Understanding the open source approach to software copyright
- Major web links for open source software information and technology exchange
- Links to publications, newsgroups, forums, etc.
- Links to web sites in other developing countries operated by governments, companies, universities or individuals engaged in

- implementing Open Source solutions
- Principle commercial software and consulting services sites for Open Source

While web sites in Arabic and/or sites located in the Arab World dedicated to these topics are still very few in number an effort will be made in carrying out this study to identify the ones that exist and to include them whenever possible.

Along with this study, Devis work with Intaj to sponsor two Open Source Software (OSS) Conferences in Jordan. The purpose of these conferences were to bring together with internationally recognized experts Jordanian and regional professionals from government, industry and commerce, and the academic community. The meetings facilitated the exchange of knowledge, experience and ideas on using Open Source software (OS) to further the Jordan's economic and social development and help to build lasting contacts for mutual cooperation in this field. Further, these conferences brought discussion promoting ideas of how OSS could be used as a business model that could be used for success by the Jordan ICT sector. The conferences were well attended and received by the local ICT sector.

4.6.2 ASEZA Support

The AMIR Program had been asked to assist ASEZA with their e-Government initiatives and establish commonality and determine where synergy is possible between Aqaba and national e-government initiatives. The AMIR program engaged Devis to provide a study for the identification and assessment of the e-government opportunities provided by the collaboration between AMIR and ASEZA as well as a strategy assessment for each opportunity. The utility of this study was used as a basis for further analysis in support of strategic decision-making and planning and determining the appropriateness of future collaborations for AMIR and ASEZA.

A summary of e-government initiative and recommendation from the analysis are listed below:

- Enterprise Resource Planning System: None
- Investment Facilitation and E-Permitting: Shared Learning
- Sales Tax Revenue: None
- Document Management and Workflow: Collaborative Initiative
- Investment Facilitation and E-Permitting: Shared Learning
- Data Warehousing: Funding or None
- Cargo Inspection and Auditing: Collaborative Initiative or Fund ASEZA
- Geographic Information System: None
- E-Procurement: None (possible future initiative)
- E-Government Portal Website: Include ASEZA
- Secured Government Network/Email: Include ASEZA
- e-government Applications: Include ASEZA where appropriate

The findings and recommendations from the report were utilized for analysis

preparation for AMIR in its annual planning sessions in 2002. All initiatives identified in this study would require a significant amount of resources and/or funding. The larger initiatives identified, if taken on a national scale, would be enormous in scale.

4.6.3 Jordan Tourism Board Portal

The Jordan Tourism Board (JTB) intended to redevelop its two current web sites into a single site supporting the National Tourism Strategy of Jordan, addressing both supply and demand in an integrated way. In support of this strategy, JTB prepared and issued an RFP in May 2004 to local vendors to develop the web site. In June 2004, proposals were received from six vendors. As a result of the subsequent evaluation, none of the bids reached the minimum requirements of scoring 75 out of 100 points in the technical assessment. Hence, none of the bidders were recommended for selection as a supplier for the bid.

The responding vendors were non-compliant in a host of areas, but most noticeably in not sufficiently responding completely to the stated requirements of the RFP. Several reasons had been identified as root causes to the low quality of the vendor proposals. Most notably, the technical and operational competencies of the JTB were well known in the market. Additionally, the non-binding nature of the tender restricted bid interest and constrained the willingness of vendors to invest in responding to the tender. Further, though the RFP was very detailed in defining the capabilities required for the web site, the RFP was open-ended in defining how the vendors should respond to the requirements. As a result, the vendors had their own interpretations and provided a wide variety (and sometimes confusing) of responses. Moreover, the RFP contained a broad scope of functionality, which led to a broad range of solutions and created uncertainty to whether the vendor should emphasize more on service or more on technology.

As a result the evaluation, the evaluation committee recommended a new bid be issued and managed by AMIR and directly supported by JTB as the client. The intent is to increase vendor participation because AMIR's operational, procurement and technical competencies are well known and reliable.

AMIR engaged Devis to provide an analysis on alternatives available to the successful implementation of the Portal including identification of potential obstacles and analysis of risks and return on investment.

The results for the analysis provided a strategy for rectifying the non-compliance issues produced from the first RFP such as (1) including a bid template to ensure that each response is uniform in structure and respondents can easily ensure that they are providing the exact information that is being asked and (2) clearly orienting the RFP toward procuring 'technical services' and away from procuring a 'technology product'. More importantly, the analysis provided AMIR with two high-level options for procuring the required services:

Option 1 – AMIR contracts with 5 local IT firms, each of which is experienced in the information architecture that is required for this project. Each of these firms is experienced with building the Jordan e-Government Portal and this experience is directly transportable to this project. AMIR could engage one (or more) of these firms immediately and begin development and thus, forgo a new RFP tender. This option would leverage AMIR's experience with these firms to achieve an immediate project start-up with firms that have an established track-record building systems for the GoJ at pre-negotiated rates.

Option 2 – AMIR can tender a new RFP as described above. Respondents should be limited only to local Jordanian vendors, as a long-term local presence will be required to complete the work. This should not preclude any local vendor from teaming with other non-local firms as needed; however, the primary local firm should be accountable for all aspects of delivery on the contract as well as the administration of their own subcontracting arrangements.

As a result of this analysis, it was determined that the Portal Project needed more funding resources and analysis than originally expected and that were available for the project. In light of this, the project was moved to a travel-related donor program.

4.6.4 MIT Center of Excellence Information Technology Assessment/Investment Promotion Info System

The Government of Jordan, under King Abdullah II, has continued the open economic policies started by the late King Hussein, has accelerated Jordan's entry into the global economy, and has recently adopted a new, socio-economic plan which, among other things, espouses private-sector led economic development based on private investment. However, a great deal of work remains to be done to assist various important economic-oriented ministries to move beyond their traditional roles as regulators of industry and commerce, and adopt more proactive roles as facilitators of an enabling environment attractive to investors and enterprises, and as knowledge managers for better informing government and private sector decisions. These new roles need to be consistent with international best practices in excellence in government and accelerated economic development.

One of the most important ministries in this regard is the Ministry of Industry and Trade. While considerable work has been accomplished at that Ministry with respect to Jordan's WTO membership, e-government initiatives, and the streamlining of certain business-related procedures, significant re-engineering must be undertaken to enhance the overall quality of Ministry operations, as well as specific functions and processes in the Ministry. In particular, the Ministry needs to adopt a systematic approach for regular review and improvement that enables it to enhance the effectiveness, efficiency and impact of the Ministry in establishing and implementing economic, commercial, industrial and trade policies and regulations.

The AMIR ICTI component engaged Devis in a consultancy to assist senior

Ministry of Industry staff in assessing the data and information requirements, resources, outputs, and flows within the Ministry of Industry and Trade, in light of the Ministry's strategic plan, organizational structure, and departmental functions. The assessment was one of the building blocks contributing to the Ministry's implementation of a Center of Excellence program. As a result of this initial assessment, the Minister of Industry and senior management will have a detailed and more clear understanding of the information needs, resources, outputs and flows within the Ministry of Industry and Trade, the MIT's technical resources, systems, websites, etc. to manage the information systems, and what these means in terms of change management, re-engineering, and modernization for the Ministry.

4.6.5 MoICT PMO Automation Assessment

The AMIR program is assisted the MoICT in the creation of a Program Management Office (PMO) as the focal point to provide support and capability that enables the coordination of management, implementation, interoperability and integration of the national E-Government initiative. The PMO will utilize its subject matter expertise to support other GoJ ministries and communicate the standards and methodologies related to project management to ensure consistency in operations among project teams. AMIR had engaged with EDS to help establish the MoICT PMO. The objectives of the PMO can be summarized as:

- Select and coordinate a substantial national portfolio of e-Government initiatives that maximizes benefits for Jordan
- Oversee technology integration and interoperability of e-government initiatives to reduce overall costs
- Promote and enforce a 'system view' of e-government initiatives
- Enhance the management of projects towards maximizing the success of e-government initiatives

Establishing a fast-paced and complex program of coordination requires significant technical assistance from outside the MoICT. To coordinate the various e-government projects throughout the Government of Jordan (GoJ) and to establish process and technical standards to assure integration, interoperability, and successful implementation, a project management support tool capability was proposed to assist the PMO.

In support of this initiative, the AMIR program engaged Devis to provide a study for the evaluation and recommendation for an Automation tool for MoICT Program Management Office. After performing a gap analysis, examining the current PMO structure and processes, and reviewing the marketplace for PMO automation tools, several recommendations were made.

The strategic question for an automation tool related to how Project Managers are to control their projects and easily interact with the PMO. The recommendation for PMO automation were:

1. There were no grounds to implement an automation tool that only involves

the PMO and not include Project Managers. The key component revolves around improving the quality and timing of project reporting from Project Managers to the PMO within any organizational units of the GoJ. This capability will allow for consolidation of systems efforts across agencies ultimately saving the GoJ large sums in software development and procurement. Thus it was urged that the needs of the PMO internally be a secondary factor to the reporting and management needs of the Project Managers.

2. There was inherent risk in making a determination to implement a PMO automation tool at this time. The PMO was in the process of implementing customized procedures and templates that had not yet had a chance to be evaluated.
3. A purely strategic decision could be made to implement a Full-Service COTS PMO Automation System to support the Project Managers and the PMO. The system could be immediately implemented and would force users to use best-practice procedures built into the system. The downside is that the custom-built EDS procedures and templates could not be used. However, the substance of the EDS best-practice procedures is generally incorporated into most Full-Service Tools. The risk involved in this approach is that failure could impact the PMO's ability to operate. This solution can be implemented by either implementing software locally or using a solution hosted by the vendor that would allow for a cost-effective pilot test.
4. Another alternative was to implement a COS Collaboration Tool that is customizable. This could be run as a pilot project with customization built in stages as desired. This option was not recommended as these packages contain few PMO capabilities out of the box and it is anticipated that development cost to build PMO functions would be expensive compared to the Full-Service PMO Packages. The end result for the money would be inferior to the Full-Service solution. This option should only be considered in the unlikely event that the cost of software and associated labor is very low and the objective is to iteratively "prototype" solutions for the PMO.

In summary, the recommendation was to defer the decision of implementing an automation tool until the PMO operation stabilizes. With more concrete knowledge, a more logical alternative could be chosen and a suitable system can be selected with full knowledge of operational issues and challenges. However, the GoJ may decide that it is imperative to create an automated project reporting framework. In that case, it would be best to choose the Full-Service COTS package alternative as Project Managers and the PMO would immediately gain the benefits of standardized procedures and reporting structures. A customized approach using a Collaboration Tool, would provide some benefit, however, the final solution would unlike provide the utility of the Full-Service tool, would cost more, and carry the additional risks of building customized software.

This study also contains a high level summary of some of the packages that could be used for each of the alternative presented. A full scale full-scale market review could be performed only after one of the automation paths described in this study is selected. It is also noted that any decision be taken into consideration with GoJ capital planning. Any solution should fully look at GoJ resources to determine the objectives and how the solution achieves those objectives versus all alternatives.

Annex A Task Orders Issued to IQC Firms

Task Order Number	Firm	Task Order Title
1	Est	Portal Coordination
2	STS	Enterprise Directory
3	CNS	Portal G2G
4	ITG	Portal G2B
5	ALS	Portal G2C
6	ITG	MoICT Website
7	STS	Architect SGN
8	ALS	Egov Training
9	ALS	Training Mgmt System
11	Est	Portal Coord Proj Mgmt
12	CNS	Portal G2G Phase 1B
13	ALS	Portal G2C Phase 1B
14	ITG	Portal G2B Phase 1B
15	Est	Portal Coord Phase 1B
16	STS	Ent Dir & Implement Serv Phase 1B
17	ALS	TIIS Scoping
18	ALS	HCDM Proj Mgmt
19	ALS	TIIS Phase 1:Governance
20	ALS	Madabah BLA
21	ALS	CBJ Forms Automation
22	ALS	HCDM JNC Rollout
23	ALS	TIIS Implementation
24	CNS	Madabah Website Hosting

Annex B IQC Project Analysis Reports

Aug 6, 2003

TO: Steve Wade, Abed Shamlawi
FROM: Amir Tahami
COPY: Peter Gallagher, Alan Johnston
SUBJECT: GoJ Portal Project Next Steps

The attached PowerPoint presentation provides an outline of the current project status and the appropriate approach for AMIR to complete the implementation of the GoJ E-Government Portal. The goal of this project plan is to deliver a “live”, functional Information Portal to MoICT configured in a Content Management System.

The scope of the Information Portal consists of G2G, G2B, and G2C sites, as well as Organizational and Personnel directories that allow constituents and employees to locate appropriate government resources. This scope remains consistent with the original “E-Government Portal Scope and Vision Document” prepared by AMIR in March 2002. The original scope purposely and specifically does not define any Enterprise Architecture requirements for the Portal – it assumes that the CMS is agnostic to architecture. While it is understood that the CMS implementation must be coordinated with respect to the operating environment, any issues related to defining and implementing an enterprise architecture are considered outside of the scope of this project.

A major concern for the remainder of the project is the limited budget that AMIR has to finish the project. The current remaining budget is about JoD 300,000. The projected cost of the presented plan is approximately JoD 335,000, relatively in range of the current budget. Options to trim the projected budget do exist by trimming deliverables, for example, not providing a Personnel directory can save JoD 15,000.

The following are the major task areas for IQC firms that need to be completed for the implementation of the Portal:

1. CMS implementation
 - Re-harvesting perishable content
 - Training
 - Search Engine Integration
 - Production Implementation
2. Organizational and Personnel Directories
3. Production Turn-over
 - Coordination with Enterprise Architecture

The end-result of this plan will be the hand-over of the “live” E-government Portal to MoICT. It is envisioned that the CMS will already be running on servers in the National Operations Center (NOC). If the assumption that the NOC can run the Portal fails, there are alternate hosting options can be explored. As MoICT is responsible for designing their enterprise architecture, it has yet to be implemented, and therefore, the possibility of encountering problems moving the CMS into the MoICT environment can not be determined. However, since MoICT is selecting and procuring the CMS package that will host the Portal, the CMS should conform to MoICT standards and run in their environment. Therefore, major problems related to the CMS in the enterprise architecture would likely require MoICT to change their standards or procure yet another CMS.

This project plan does provide for IQC firms to provide technical support for the MoICT for 3 months during the hand-off to ensure that responsibility for support and maintenance of the Portal is successfully transferred to MoICT.

July 20, 2004

TO: Abed Shamlawi
FROM: Amir Tahami
COPY: Name
SUBJECT: GoJ Portal Project Part B
NO. PAGES: 46 page(s)

I've met with all 5 IQC firms this week to discuss the current status of the GoJ Information Portal Project as well as the delivery of deliverable, and risks to the overall completion of the project. I suspect we'll want to use our analysis of our findings for our meeting with USAID this week. My findings, recommendations, and alternatives follow:

Information Architecture/Content Harvesting – Estarta and G2X firms (CNS, ALS, and ITG)

- These firm's tasks revolve around harvesting and organizing content for the Portal. Each firm is nearing completion for the 'AMIR' tasks for Part B of the project, which is to deliver gathered content from ministries for the Portal on a CD (MoICT is responsible for populating the CMS package with this content).
- Since Estarta is responsible for the coordination, digitization, and organization of content harvested by G2X firms, I have instructed Ahmed on how to package the content, Maintenance Plans, and Information Architecture documents on a CD. I will put this CD together as part of a package to send to MoICT for the final deliverable for the AMIR part of this project.
- Each of the G2X firms has successfully completed the following tasks:
 - Completed remaining Agency Visits
 - Created updates to Information Architecture
 - Created updates to all Design Documents
 - Content Harvesting and formatting
- The remaining tasks for each G2X firm include:
 - Creating Maintenance Plan for Content – the 3 firms are working jointly to create a common template to ensure consistency and completeness for each plan
 - Integrating Translated Content – the firms are receiving weekly batches from translation service and organizing with existing content
 - Quality Control of translated content as it is received in batches
- Not many risks associated with the AMIR side on this part of project, translation services are currently the critical path of this project. We can expect to close this part of the project within 5-6 weeks, depending on the translation process.
- Once AMIR finalizes deliverable, there is considerable work to be accomplished on the MoICT side in populating content in the CMS (the actual population will include all 4 firms). Related tasks include such things as defining workflow, defining Metadata and database schema, and Training. There many risk factors here including dependencies on outside organizations. MoICT is retaining all IQC firms to continue the project, and this continuity will greatly reduce project risk. However, there are numerous risk factors including the CMS/Portal Technology and the dependence on other organizations that have to be successful in order to complete the project. Since these risks are MoICT's responsibility to manage, a detailed risk analysis of these is not provided here, however, the risk issues and recommendations listed below apply here as well.

Implementation and Services – STS and Estarta

- Estarta and STS are currently putting an overall project plan together for the implementation and services part of the project. Many of the tasks have dependencies that need to be completed before they can begin:
 - STS can immediately begin the analysis for NOS Directory for the Pilot Ministry. The Ministry of Finance has been selected as the Pilot Ministry and Manal will contact them to ensure their participation. The analysis will begin with a survey of the Ministry followed by a Design for the Directory Architecture (MoICT will be responsible for the implementation).
 - STS can also begin the Portal Strategy Analysis. They are currently procuring a Technical Architect and plan on meeting with Microsoft to discuss this strategy (as an Information Portal Strategy only).
 - Other major STS tasks are dependant on decisions outside of their control, such as Security Design and the Delivery Platform Design. STS is coordinating with Estarta to design a comprehensive plan for the Implementation Services.
 - Estarta and STS are fully engaged

Risk Issues

- Each firm is currently in negotiation with MoICT for the government side of the project. Each firm expressed concern about the scope of tasks MoICT specified in the Statements of Work which are currently being negotiated. All firms expressed that they believed the contracts would be worked out satisfactorily.
- There is considerable amount of concern among the IQC firms regarding the risks involved with MoICT taking over the remaining tasks of the project. Most of the concern stems from the long delays that MoICT's indecisiveness in making key decisions and approving contracts over the past year.
 - Each of the G2X firms has expressed difficulty in negotiating an acceptable contract with MoICT – currently none of the IQC firms have a signed contract.
 - Each of the G2X described the MoICT contracts as shifting the project risk and burden to the IQC firms with little responsibility to MoICT. A specific example is a stipulation that the G2X firms will be responsible for updating GoJ content after implementation (without increasing the current project scope).
- There is concern that MoICT is currently not involved in the 'details' of the project, but rather, are reactive when issues do arise. This creates considerable risk to resolving issues that arise as MoICT must be re-educated and briefed in order to allow decision making.
- The overall biggest concern involved in the transfer of responsibility to MoICT is what unknown issues may arise and how they may or may not be resolved. The history of MoICT on this project has shown that MoICT decision-making process is not efficient in terms of time or process.
- MoICT project management is a risk. Over the last few months MoICT has lost the senior Project Manager (Fadi Mari) that was leading the project from the MoICT side as well as serving as the prime decision maker. The project is now coordinated by a Junior Project Manager that does not possess the same high-level of experience and savvy as the previous manager.
- MoICT staffing and turnover provide risk. The person to serve the key role of Portal Content Manager has left MoICT. This role is vital in that the Content Manager is responsible for ensuring that all ministries keep their content updated.
- With these risks under consideration, there are several recommendations that AMIR may want to consider to help MoICT to ensure success of the entire project:

- The project would hugely benefit by providing a government executive to champion the Portal within the GoJ. It is clear that MoICT is currently relying on the IQC firms to perform the technical implementation and provide training. However, experience has shown that the largest challenge with these types of systems is more at risk from organizational non-adoption and not so much technical implementation. It is not uncommon to see projects like this be technically successful while at the same time, fail due to non-use by the Government. In the case of this project, out-of-date or poor quality of content would make the project ultimately unsuccessful, even though the system works perfectly. A suggestion would be to communicate the need to the MoICT minister the need for an Executive Champion for the project. This person has the executive authority to implement required processes and procedures within the government to ensure the usefulness of the portal. (This suggestion no way implies that we think the MoICT PMO is not doing a good job. There is a definite distinction between the role of the PMO, the CTO, and the Executive Champion.
- It is reasonable to assume that MoICT will be required to make additional key decisions affecting the project during the implementation phase. The risk here is that delays in decision making likely will affect the critical path toward completing the project. MoICT has a history of delaying decisions for extended periods of time. A mitigation technique for this is to employ a written and documented procedure for Decision Making and Approvals. This procedure requires the Ministry to make a decision within a preset time-frame (say five days) whereby assumptions can safely be made by the IQC firms if MoICT has not responded timely. The difficulty is determining an acceptable way to enforce the agreement on the government.
- MoICT has engaged other firms (Microsoft and Business One) to perform related work to this project that unfortunately may impact the ability to complete the final project. The dependency and interaction with these organizations increase the complexity of the project as each organization has varying goals, technologies, and business objectives. Moving forward, IQC firms should look to MoICT as being the interface to work performed by outside firms and not the individual firms themselves.
- If MoICT delays the project further, AMIR may want to consider taking the project back to the original scope in Plan A – basically using the IQC firms to populate the content in the CMS, make it available on the web, and make the live system the deliverable to MoICT. AMIR could do this without much budget change by removing the STS tasks related to Enterprise Architecture that were added last September (MoICT can implement this tasks later if desired).

July 6, 2005

TO: Steve Wade, Abed Shamlawi
FROM: Amir Tahami
COPY: Peter Gallagher
SUBJECT: Close Out of IQC Task Orders 12 -16

The documentation in the enclosed binder documents the completion and close out of Task Orders 12 thru 16 for Jordanian IQC firms related to the implementation of the GoJ E-Government Portal Website Project. These Task Orders specify the work completed for Phase 1 Section B of the project (similar documentation for the close-out of Phase 1 Section A was prepared in September 2003). The contents of the attached binder provide the Task Orders and Statements of Work that describe the task requirements and deliverables and documents the deliverables produced by each Jordanian IQC Firm related to their assigned Task Orders.

The documentation for the project is broken out in this binder according to each Task Order as follows:

Task Order 12: CNS Primus: G2G E-Gov Portal Design and Preparation
Task Order 13: AlliedSoft: G2C E-Gov Portal Design and Preparation
Task Order 14: ITG: G2B E-Gov Portal Design and Preparation
Task Order 15: Estarta: E-Gov Portal Website Coordinator
Task Order 16: STS: Enterprise Directory and Implementation Services

Each section contains each of the IQC firm's Statement of Work, which details the deliverables required to complete the Task Order. Following the task orders are the deliverables produced by the IQC firms supporting each Statement of Work.

An additional purpose of this Task Order close-out documentation is to create a reference and repository for the information architecture and all content harvested to date for the initial implementation of the portal. The content represents a large amount of data, and since it is inefficient to provide such a large amount in printed fashion, the content is provided electronically on the enclosed CD. The CD also includes additional secondary project documentation that was not included in this binder.

The official closing out of these Task Orders represents the completion of Phase 1 Section B of the project, which consists of the Information Architecture for the Portal Website, final harvesting of content, training, and related Enterprise Directories and Implementation Services for the Portal. The completion of this phase represents the ending of project responsibility for the AMIR program. Following the completion of this phase, the IQC firms will continue their engagement with the Ministry of Information and Communication Technology (MoICT) to bring the Portal live on the government Content Management System. IQC firms will also be responsible for the transfer of ownership of the project for continued operations to the Government. Although the AMIR program has vested interest in the completion and success of the project, at this time, full responsibility for bringing the project live belongs to MoICT. As of this writing the IQC firms have continued their engagement with MoICT without any problems and are currently testing a soft launch of the Portal.

As the project transfers into ownership of MoICT, the overall biggest concern involves potential unknown issues (both technical and organizational) that may arise and how MoICT may or may not resolve them. To date, history on this project has shown that the MoICT decision-making process has not been efficient in terms of time or process. Recurrence of similar delays could greatly affect the success potential of this project, particularly considering that the content is perishable.

As the technical implementation continues, MoICT emphasis needs to shift toward addressing the organizational requirements that need to be fulfilled to ensure the benefits of the Portal continue to be realized beyond the initial roll-out. While the current project plans require the

IQC firm to do knowledge transfer and training of users, the IQC firms do not have the authority over government operations and thus, can not ensure that the government entities perform tasks required to affect necessary organizational changes. The ability to implement related organizational changes presents on-going sustainability risk for the project. It is quite possible that the Portal project can be a complete technical success; however, a failure by GoJ entities to organizationally adapt to the new technology may result in overall project failure.

Contract No.: 278-C-00-02-00210-00

Contractor Name: Chemonics International, Inc.

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USAID Jordan

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Author's Name: *Amir Tahami*

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Results Program (AMIR Program)

ICTI Component
432.1.3 IQC Monitoring and Coordination

*ICTI Technical Projects Assessment
Final
March 19, 2006*

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

Data Page

Name of Component: ICTI

Author: Amir Tahami

List of Key Words Contained in Report:

AMIR	Achievement of Market-Friendly Initiatives and Results Program
ARTS	Automated Report Tracking System
BLA	Business License Automation (for Municipality of Madaba)
CBJFA	Central Bank of Jordan Forms Automation
HCDM	Human Capital Development and Management
HR	Human Resource
JNC	Jordan National Customs
RDBMS	Relational Database Management System
SAT	Systems Approach to Training
SME	Subject Matter Expert
TIIS	Trade and Investment Management System
USAID	United States Agency for International Development

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Executive Summary

This report is an assessment of five Information Technology projects undertaken under the oversight of the ICTI component of the USAID AMIR Program. This assessment takes place as three of these projects enter the final stages of delivery and the other 2 projects complete important mid-term milestones. The Project Assessments include a review of the technical, functional, and organization aspects required to not only complete the technical delivery of the project, but also to ensure the implementation of the automation is successfully received and utilized by the customer. The assessment was achieved through period tracking of each of these projects to-date, as well as through interviews with Project Management, review of design documents and project plans, and a review of artifacts of the related systems.

The five projects analyzed in this report are:

1. Automated Report Tracking System (ARTS)
2. Business License Automation (BLA)
3. Human Capital Development and Management (HCDM)
4. Trade and Investment Information System (TIIS)
5. Central Bank of Jordan Forms Automation (CBJFA)

Automated Report Tracking System – Customs (ARTS)

Background

The CRM subcomponent of the AMIR II Program has generated over 30 reports containing over 200 recommendations provided to the Jordan Customs Department (JCD). As with all modernization efforts, specific recommendations over time should be either accepted, rejected, or in some instances overcome by changes in circumstances. The process of making recommendations is always far easier than implementing them and, as new studies and a better understanding of the Jordan Customs Department emerges, the weight of the significance of recommendations changes. In part, to fulfill this mandate, Mr. Howard developed a database in MS Access to record and track progress against consultancy recommendations. The baseline version of this database was accepted as part of his final report for this consultancy.

The initial testing of the Access database identified that this systematic approach to process change management has wider applications than only Customs reforms. Additionally, other features were identified to use fully the power of the automated process. Accordingly, an SOW was released to CNS to develop a multi language (Arabic/ English), multi component, user friendly, pre-defined user access, multi-reporting feature that in addition allows users to upload documents to the database.

Current Status

In February 2006, a second Task Order was issued to CNS to update and modify the baseline CRM version of the recommendations management tool based on AMIR's requirements for more effective and wider application. The second version was tested and after the positive outcomes, new requirements were raised.

A significant issue that became apparent after implementation is the need for AMIR staff to enter Recommendations into the database. This is complicated by the fact that the system resides within the Customs network, which does not extend to AMIR offices. This has resulted in AMIR maintaining a second copy of the database in AMIR offices, which is then manually synchronized with the Customs version of the database on an irregular basis. This has created issues regarding which version of the data is current, as well as the risks and complications of synchronizing different databases. The current architecture of this process is displayed in Figure 1.

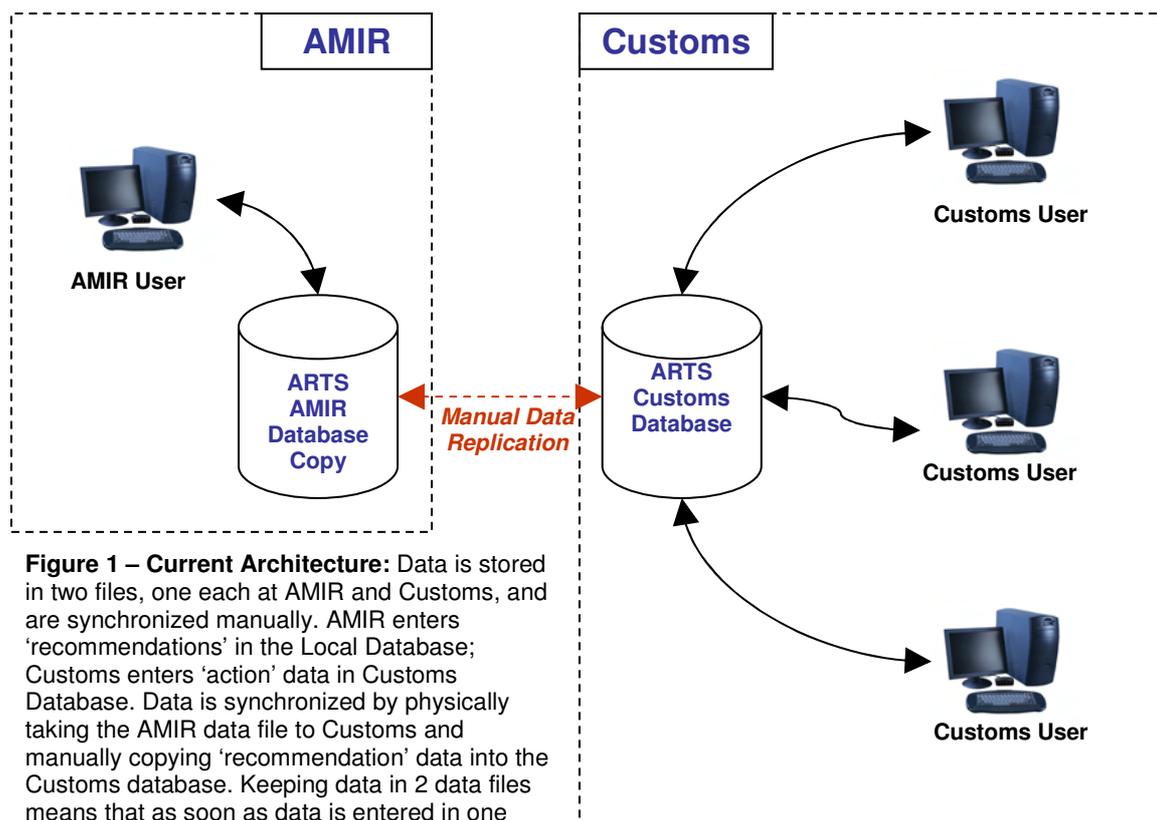


Figure 1 – Current Architecture: Data is stored in two files, one each at AMIR and Customs, and are synchronized manually. AMIR enters 'recommendations' in the Local Database; Customs enters 'action' data in Customs Database. Data is synchronized by physically taking the AMIR data file to Customs and manually copying 'recommendation' data into the Customs database. Keeping data in 2 data files means that as soon as data is entered in one database, the other data file is outdated.

Risks/Recommendations

ARTS is currently deployed, in use, and its utility is being realized. However, the issues related to maintaining separate databases at AMIR and Customs does present difficulties.

The initial thought was to rebuild ARTS as a web-based system that interacts with the web-based MM&E system that can be used for other components, counterparts and USAID projects. A further investigation does reveal several problems with this strategy:

- It is a comparatively expensive solution compare to the initial investment in ARTS.
- There are bandwidth issues (as well as internet availability) issue at Customs that may make this solution even more onerous.
- MM&E will go away at the end of the AMIR Program, likely making ARTS unsustainable beyond AMIR.
- Though MM&E does share some high-level data with ARTS, it is not apparent that there is any synergy from this data residing only in one system.

This analysis determined a more cost-effective solution that allows ARTS to be utilized as designed and developed. This solution removes the need to have a copy of the database at AMIR offices by giving access to the Customs database directly to AMIR Staff. This is accomplished by utilizing a 'Remote Access' solution that allows AMIR to control a PC inside the Customs network that has access to the Customs Database. Specifically, the open-source (and free) "VNC" program can be utilized to provide AMIR access to the Customs database by accessing a secured PC at Customs over the internet. (The UltraVNC product is recommended as it has the capability to run as a Windows Service, allowing access anytime the PC is turned on, as well as providing file transfer capabilities). There are other tools and online services that provide the same capability as an alternative to VNC, however, the discuss remains pretty much the same if an alternate utility is used. This architecture is depicted in Figure 2.

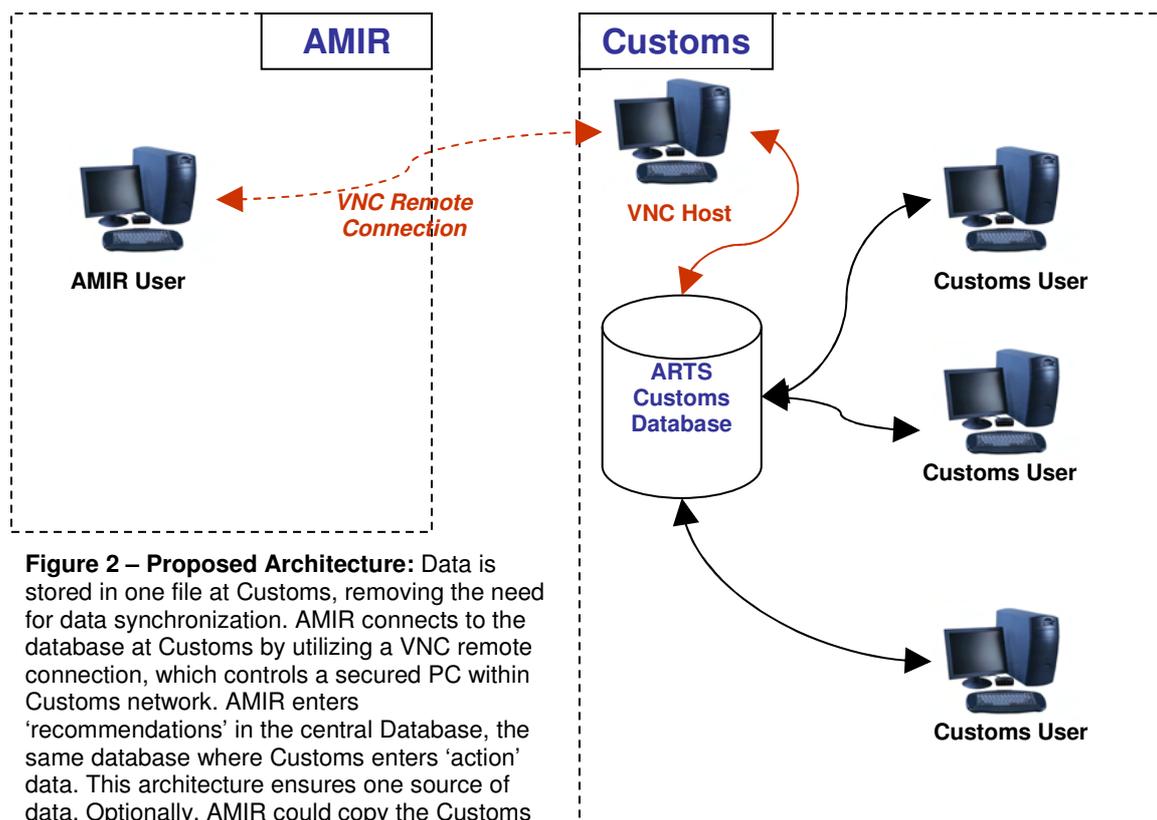


Figure 2 – Proposed Architecture: Data is stored in one file at Customs, removing the need for data synchronization. AMIR connects to the database at Customs by utilizing a VNC remote connection, which controls a secured PC within Customs network. AMIR enters 'recommendations' in the central Database, the same database where Customs enters 'action' data. This architecture ensures one source of data. Optionally, AMIR could copy the Customs database locally (perhaps for adhoc reporting), however, the Customs Database will always be the 'system of record'.

The main benefits to the proposed solution are:

1. Extremely low cost & low risk
2. Removes the need for multiple database copies and synchronization
3. Can be expanded to allow access to other outside entities
4. System can continue to be used after the AMIR Program completes

There are several obstacles that could make this solution difficult. The main concern is the internet bandwidth at Customs, which is likely to be slow. In fact, it may be too slow for VNC to operate properly. This can only be determined through testing at certain times and it may be apparent that the solution would only work during non-peak times. (It is noted that if bandwidth is indeed an issue, the same problems would complicate a web-based solution as proposed earlier.) The other major issue would to the VNC solution would be issues from Customs IT providing access through to a PC on their network. However, experience to date has indicated that Customs IT would be receptive to this approach.

Business License Automation – Madaba (BLA)

Background

AMIR/USAID has implemented a pilot project in the Municipality of Madaba in order to develop a model licensing/permitting process that can be applied to other municipalities in the Kingdom. The pilot seeks to simplify the fulfillment of existing legal requirements rather than risk delay in negotiating legislative changes. Another objective behind this pilot was to standardize and document processes within the selected two pilot municipalities to achieve two main goals; transparency and clarity of rules, and to set a standard for all other municipalities in Jordan to follow suit and apply the reengineered processes thus having consistency in the application of rules.

The pilot project has designed and tested a simplified manual process (Stage One) and the current work applies suitable E-Processing improvements to the selected licensing and permitting processes (Stage Two). AMIR/USAID has established a multi-initiative BPR Task Force, comprising ICTI, MEI and PSPI to formulate and direct the pilot project.

The primary objective behind this Activity is to measurably reduce compliance and administration costs for selected business processes at two pilot municipalities. The Consultants shall (1) prepare an information website supporting to the business licensing process; and (2) design, develop, test, and implement an automated computer application that supports the municipality business license application and renewal processing through a web-based interface in order to achieve the following benefits:

- Accelerate Professional License Issuance/ Renewal processes.
- Eliminate redundancy.
- Improve communication among departments and staff.
- Improve communication with clients and businesses.
- Promote efficiency and effectiveness with automated tracking and workflow.
- Increase the accuracy and consistency of data.
- Provide capability to produce accurate and timely reports on Professional Licenses with minimal investment of staff time to produce such reports.
- Establish a base for integration with future e-government projects.

Current Status

The current task order that has been issued to AlliedSoft and Al Jidara by the AMIR program is to design, develop, test, and implement automation to support business license application and renewal processing for the Municipality of Madaba. There are two major tracks in this initiative:

1. **Static Website:** Developing a static website or creating a dedicated section under the e-government portal MoICT E-Government Information Portal (ie Ministry of Municipal Affairs section) to include a complete guide to professional license issuance /renewal processes as well as the related necessary forms available online thus realizing the one-stop shop online service of business establishment.
2. **Web-based Automation of Internal Processes:** An interactive web-based workflow application through automating internal workflow and processes of professional license issuance/ renewal within the Municipality of Greater Madaba office.

Testing of the production software has been complete. Modifications were recommended by the Municipality and accepted. It is expected that implementing these modification will be complete by the end of March. It is expected that the BLA will be fully operational following the March license renewal 'rush'.

Risks/Recommendations

BLA is very close to completion and there are few technical risks. The major risks at this point are organizational. Madaba staff does continue to make suggestions for the system, however, at this point it has been developed per the original scope. Staff will be instructed to continue to collect their suggestions with the intention that a future release of the system will incorporate these suggestions.

Training and engaging Madaba staff is key at this point, as the system will not realize it's potential if the users are not engaged. From now until the official roll-out of BLA, it is highly recommended that the implementation team keep Madaba staff engaged through weekly meetings and updates. Weekly training should be utilized to increase awareness, acceptance, and engagement with BLA. This can also serve to reduce the official training on the system once it is in production (Training is scheduled for April 3).

For public awareness, AMIR plans 3 press releases in succession:

1. Emphasis on manual process improvements made that decrease process time
2. Announcement that the automation support BL has been completed
3. Announcement of whole story and intention of roll-out to other municipalities.

This press should help create visibility of the changes to all people affected including related businesses and other municipalities that could benefit.

Human Capital Development and Management – Customs (HCDM)

Background

The AMIR program has promoted that JNC adopt an IT solution to support the SAT approach to training. The goal of this solution would address each of the component parts of the SAT approach, including: Performance management, Skills/competence tracking, and Training tracking. Prior to procuring a supporting HCDM system, AMIR worked with JNC to define a collection of business and user requirements (functional, non-functional, and technical). These requirements were defined to conform to existing Human Resources-related business processes adopted at JNC, and to provide JNC with a comprehensive and open IT platform to enable the organization to use SAT to meet its Human Resources development requirements for the next 2-6 year period.

A Pilot project to implement a comprehensive Human Capital Development and Management (HCDM) software solution and at 5 Customs department covering about 200 employees was executed in September-October 2005. The HCDM System provides JNC with a comprehensive platform to allow the organization to use a SAT approach to meeting its Human Resources development requirements.

An assessment that provided a third-party evaluation of the Pilot and the feasibility to extend the piloted system to the rest of Jordan National Customs departments and sites was performed at the end of the Pilot Phase. This assessment resulted in a 'High Positive Recommendation' to proceed with the full roll-out. This recommendation was based on the main factors: (1) There were no unresolved issues or hi-impact risks from the pilot that would indicate not doing complete roll-out; and (2) technically, the system would easily scale to meet the full usage requirements for Customs. The new HCDM system would replace a legacy HR system that had limited capabilities and would provide new automated capabilities to the Training Center where there was no previous system.

The assessment did identify several risks associated with the roll-out. The most important risk identified relates to Data Cleansing and Migration of HR Data. There are known data quality/consistency issues in current HR and Financial Systems that make the data cleansing a challenge (the migration of Pilot data created 200 employee records in 12 days). To mitigate this problem, it was highly recommend the project management vendor, AlliedSoft assume responsibility and the risk to cleansing and migrating the data. As part of this, AlliedSoft would prepare Policies and Procedures for HR defining how data should be entered in the system to prevent data quality errors from arising in the future. Further, in order to prevent data discrepancies between the HR and Financial systems, JNC would issue directives making HR system the official system of record.

Current Status

Approval for roll-out of HCDM immediately followed the successful completion of the Pilot phase. The scope of the roll-out phase builds on and extends the pilot implementation to the rest of Jordan National Customs including 23 Departments, 40 remote locations, and covering the up to 3000 employees under the different departments (200 have been covered in the pilot, 2800 covered under the rollout phase).

At this time all the roll-out implementation tasks have been completed including data conversions and Customs is currently in parallel testing. This testing is expected to be complete by the end of March. Thus far, no major bugs have been reported and Black Iris has been very agreeable to making cosmetic changes as requested.

Risks

This project is very near completion and most previously identified risks have been mitigated. JNC has pretty much accepted the system and the project should be closed with relative ease.

JNC has made requests to extend the parallel testing for an additional 2 weeks. If the project manager agrees to accept the request, it should not provide additional risk and may increase buy-in from Customs. However, the additional testing is not expected to uncover anything that would material affect the acceptance of the system.

Customs is installing a new Attendance System that is intended to integrate with the HCDM. Interfaces need to be developed and implemented, however, the HCDM is designed to easily accommodate data interfaces with attendance systems. This task should be easily accomplished.

The MenaME interface does not show some data fields that Customs would like to display. Mena has indicated that they may make modifications to show these fields, however, if they don't there are no major consequences.

Trade and Investment Information System (TIIS)

Background

Currently, Jordan actively participates in the global market by moving forward with its commitments under the World Trade Organization (WTO), and other free trade agreements, such as the Jordan-US FTA and the EU Association Agreement. Despite this active participation in the global market, Jordan's statistics lack accuracy and timeliness, and only few organizations commit to international trade and investment standards in the collection, classification, and presentation methods of statistics. Various AMIR studies found that despite the fact that the trade and investment information systems in Jordan are concentrated in few government agencies; the systems are uncoordinated and fragmented.

The origins of this project go back to 2001, when AMIR conducted an assessment of the trade and investment information systems in Jordan. The findings of the assessment pointed out that trade and investment systems in Jordan are disjointed with noticeable shortcoming. Of these, systems appear to undertake minimal processing of information; hence, trade and investment data lack timeliness, consistency, and compliance to standards or minimal presentation requirements.

In 2003, AMIR commissioned a group of consultants (Al Jidara to undertake the business assessment of TIIS and Allied Soft to undertake the technical assessment) to carry out a scoping study of the trade and investment information system project. The proposed TIIS came as the core recommendation of the scoping study. Additionally, guidelines on how the system should be established, governed, and structured were provided. This effort was concluded towards the end of year 2004. Realizing the pressing need to actually establish the TIIS, as per the scoping study's recommendations, AMIR called for the assistance of the two consulting firms (Al Jidara and Allied Soft) to set-up and implement the Trade and Investment Information System (TIIS). A two-phase approach was chosen for the implementation as follows with Al Jidara leading the project management efforts:

Phase I – Data Governance of the TIIS, December 21, 2004-October 31, 2005: This phase is the focus of the report at hand. This phase deals with the business aspects of the system, which include, but are not limited to, the following: forming a TIIS Task Force that encompasses participating entities, surveying technical and business data, developing metadata, researching best practices and international standards, developing operational procedures and a governance structure.

Phase II – TIIS Development, November 2005-current: The focus of this phase is the actual technical development of the TIIS. This phase guided by the business requirements and needs aims at selecting the appropriate technical solution and constructing the system. The end-in-mind goal is an up and running TIIS.

Current Status

Development of the TIIS is approximately 50% complete with only minor issues in the development process. The selected platform for TIIS is built around the Business Intelligence/Analytic software, SAS. Though it is mature in other parts of the world, SAS is new in Jordan, thus providing a challenge to the development team that has never worked with SAS before. In order to alleviate these concerns, SAS has provided lavish on-site support to the developers to help ensure they can complete the project. Since SAS is planning on expanding within the ME region, they have a vested interest in making sure this project is a success.

The back-end work has mostly been completed and the development team has started working with entities to extract their data for import into TIIS. The entities have shown a widely varying degree of

their ability to extract data from their own systems and in some cases, the developers have had to create the entities own views to extract the required data.

Development of the front-end continues, however, the developers are having to do more programming than they had anticipated and are finding the development environment to be cumbersome. They are finding that more Java coding is needed and their lack of experience with Java causing the development to slow. The Front-End interface template has been finalized and the web GUI components are being laid out on the corresponding pages in order to finalize the page design. Research and investigation is taking place to conclude the best approach to integrate the back-end to front-end.

Risks/Recommendations

Though there are technical challenges to this project, the bigger risks are organizational. This project will not succeed unless all entities participate and ensure quality in the data they present. The project is currently experiencing the affects of non-participation: they recently asked all entities to test the FTP capabilities (a task that would take about a minute) and only 3 entities responded. Also, a key entity in the implementation, SEI, has recently not been responding to requests.

The organizational challenges must be met on two fronts – first by Project Management and through a Project Champion from GoJ. Project Management should continue to cultivate a close relationship with each of the entities to ensure their engagement with TIIS is understood, timely, accurate, and complete. To date, the Project has had a deep involvement with the entities, however, as the project continues, it may require an even deeper involvement to keep the entities engaged.

The need for a Project Champion is vital for the system to be utilized as a useful tool. The Project Champion will promote the system as a beneficial tool for all and ensure that everybody involved understands its importance. Recently, the team approached the head of the Government Performance Directorate to act as Project Champion, to which the response was luke-warm. The response was that the data collected was only a subset of what was needed to be useful and only wanted to support a comprehensive solution. Though unexpected, this response is not illogical as there is use for Trade and Investment data, it does not tell the whole story of the Jordanian economy and sectors that are not involved in T&I would have no need to participate.

In order to obtain buy-in across the board of GoJ and industry sectors, the marketing of TIIS should be changed to be the first phase of a much larger project (perhaps Government Statistics Info System?), rather than a complete system by itself. Though this change does not affect the current project, it does convey that the project will eventually represent all areas of the economy. Al Jidara is currently preparing a short analysis of the areas that could be incorporated into the future system with a logic phase plan on how it could be accomplish.

Technical risks to the project do remain, however, their impact mostly affect the timing of delivery, but not so much toward the success of implementation, particularly related to the organizational aspects. Project management has provided the following summary of technical risks and mitigations:

<u>Risk</u>	<u>Impact on project</u>	<u>Proposed mitigation</u>
Integrate the back-end to the front-end (Connection to the back end and processing of the generated data).	Major delays to the project final deployment And/or major impact on the requested functionalities	More time needs to be provided (14 to 30 working days), for research and solution implementation.
GUI Related issues (such as UTF-8 support, Data binding).	Certain GUI functionalities or features will be missing from the project final deployment.	More time needs to be provided (5-10 working days), for research and solution implementation.
Deployment and configuration of the solution	this issue could span 10 to14 working days beyond the allocated time on the schedule	Several deployments on the test environment are needed, to pinpoint the exact problems and look for resolutions, in order to, reduce the additional time needed.

changing and additions to the project scope and functionalities	Each change will require additional time to implement; depending on the requested change size.	the requested system functionalities needs to be stabilized
high dependency on the back-end	depends on the Back-End risks impact	depends on the back-end related mitigations

Central Bank Jordan Forms Automation (CBJFA)

Background

The Central Bank of Jordan Supervision Department (CBJ-SD) has initiated a comprehensive review of its organizational structure, regulatory activities, on-sight and off-sight supervision activities; information is collected from Economic Banks (EBs) associated information databases and IT systems. As a technical assistance for the Central Bank of Jordan Supervision Department (CBJ-SD), an IT system was recommended by AMIR program to assist the Supervision Department in monitoring the banking sector across Jordan. The main activities of Central Bank of Jordan Supervision Department are:

- Collecting data from all banks in Jordan.
- Monitoring the economic banks financially and regulatory.
- Analyzing the economic banks in Jordan.
- Reporting the status of the banks in Jordan.
- Generating statistical and/or aggregated data reports.

The Central Bank of Jordan has requested assistance in automating and standardizing the reports generated by commercial banks and the Central Bank. The automation envisioned to utilize the wide area network (WAN) for communication purpose and is expected to enhance the Banking Supervision Department ability to monitor and track the practices of Jordan's commercial banks.

The primary objective of this project is to develop an application to automate the data and reports generation and standardization, reports consolidation at the Central Bank, and reports generation and data analysis at CBJ-SD.

The CBJFA system provides the physical link between the economic banks in Jordan and CBJ-SD. It will be the primary component of the real-time astronomical reporting data processing capability. Its primary responsibility is to perform basic data assembly, forma and report services and to support the desire for the real-time inspection of the astronomical data streams reporting activities to and for CBJ-SD.

The major functions that CBJFA system shall perform are as following:

- Receiving standardized formatted electronically data file from the economic banks.
- Loading the data in the received electronic file into a repository database.
- Performing a limited amount of real-time data processing.
- Performing a limited number of additional processes upon user request.
- Delivering suitably standardized reports results to the system end-user.

Current Status

Development of the CBJFA is about 52 percent complete. Production-quality functionality of the completed portions of the system has been given to the CBJ for review and testing. This is an iterative development lifecycle, allowing for immediate review of competed iterations of development. The next module is scheduled for delivery on March 30 (given an aggressive effort). The project has 2 new modules that need to start development and are expected to be completed by April 20. Following the completion of the final modules, the CBJFA is scheduled for 3 weeks of system testing in May before deployment.

Deployment of the CBJFA is anticipated in May, 2006, however, there is not a solid launch date. There are several decisions needed to be made that are on the project's critical path that could affect the

deployment date. The main decision revolves around the hardware specifications that are needed to complete the project (AMIR is procuring the hardware). The decision issue revolves around the design scenarios related to integration with other systems which affect the hardware selection. Project Management plans to escalate the decision making process to alleviate the possibility of the project being delayed.

Risks/Recommendations

The risks associated with System Development appear minimal at this point as the requirements are well defined and understood. However, there are several potential areas that could effect the successful deployment of the system:

- **Organizational:** One of the biggest risks to the success of the project is with the people that will use the system. This means extra effort on behalf of both AlliedSoft and CBJ in promoting the system to those required to use it.
- **Sample Data:** CBJ has not provided the development team with sample data (due to confidentiality of the data). So far they have been unable to provide even 'dummy' sample data. Though the developer can create their own sample data, there is more risk that errors that would be caught with more realistic data may not be caught by data that does not represent the more common range of data present in the database. This could result in the developer's inability to reproduce errors that CBJ may be encountering. The development team will make a more concerted effort to get sample test data from CBJ to alleviate this concern.
- **Decision Making:** There has been some concern of Decision Making not happening in a timely fashion. At the current stage of development, and decision delay could delay the project. The Project Manager is currently devising a process to help alleviate the decision making delays that would trigger escalation of delays after a predetermined time lag.
- **Scope Creep:** There have been several instances in the past where additional functionality has been defined that has required the project scope to increase. The current project schedule is aggressive and it is likely that any additional enhancements would delay the deployment of the project. The recommendation is to postpone any additionally identified functionality unless it is determined vital to the success of the first deployment.