

## **Annex (5.16): E-Government Program Background and Implementation Framework**

This section provides background material and information relating to this RFP. Nothing in this section shall be construed as a representation on the part of the Ministry of Information and Communications Technology (MoICT) as to the MoICT's future conduct or the project schedule.

### **E-Government Program Background**

E-Government is a National Program initiated by His Majesty King Abdullah II. The purpose of e-Government program is to enhance the performance of government in terms of service provision, efficiency, accuracy, time and cost effectiveness, transparency, customer –centricity, customer satisfaction, cross-Governmental integration, and the way government is perceived.

The e-Government Program will support government transformation, using ICT tools to achieve the ultimate National goals of public sector development. This transformation process requires a focal point of contact to coordinate the efforts between Government entities and support them with best practices and subject matter expertise. The Ministry of Information and Communications Technology is responsible for the e-Government Program which facilitates and provides support services to Government entities in the areas of Program Management Office (PMO), project management, change management, technical management and support services, risk management, quality management and others. The role of the e-Government program is to plan, facilitate, manage and supervise the implementation of e-government through: Business Process Re-engineering (BPR) towards better and more efficient processes, human performance development (including knowledge transfer and training), organizations review and re-structuring to achieve greater efficiency. Additionally, the e-Government deploys best practices and latest technologies to enable Government stakeholders to implement new processes and create a knowledge-based community.

The scope of e-Government Program includes:

- Planning of the e-Government Portfolio (including selecting priority e-Services)
- Guiding and instigating Change Management efforts
- Determining technological standards for products and services integrated with e-Government Infrastructure (Portal, Secure Government Network)
- Establishing Technical and Information Security Standards, Program and Project Management methods, Change Management standards, procedures and tools, and reporting requirements for e-Government Projects across the Government entities
- Describing standards for e-Government Infrastructure (e-Government Architecture Framework (eGAF), IIF, Reference Architecture) and developing other technology-oriented initiatives in order to establish a service-oriented and collaborative environment for e-Services.
- Developing and supporting e-Government strategy and providing support to its operations.

The e-Government Program has recently completed its 1st Wave of e-services (five Fast Track projects).

The 2nd wave of e-services, which started in 2006, comprises a number of cross-organizational e-services.

### **Objectives of the e-Government Program**

The objectives of the e-Government Program include:

- To develop and support the e-Government strategy to be implemented across Government entities
- To participate in the planning and coordinating of a sustainable national portfolio of e-Government initiatives
- To maintain technological integration and interoperability of e-Government initiatives, and encourage the re-usability of application components, to achieve consistency among Government entities for technical solutions

- To plan and implement security policies through a secured network environment for e-Government projects
- To promote and monitor a systematic method of planning, developing and implementing e-Government projects
- To promote and monitor organizational transformation at the Ministry/ Department/ Organizational level necessary to establish effective e-Government in involved governmental entities
- To offer necessary training for GoJ employees and transfer the knowledge at different levels (IT and non-IT employees) in order to ensure proper service provision and to increase productivity and proficiency
- To create awareness and promote e-Government activities
- To provide analysis and information on the status of e-Government projects to sponsors and stakeholders.

### 1st Wave e-Services

The approach of the Jordanian government to development of e-Government Program was two folds: developing a comprehensive strategy that defines the main building blocks of e-Government, while simultaneously delivering e-Services to citizens and businesses through fast track projects.

Delivering e-Services entailed specifying selected services and identifying them as “Fast-Track Projects” within the 1st Wave of e-Services. These e-services were implemented in the government entities:

- Drivers and Vehicles Licensing Department
- Income Tax Department
- General Sales Tax Department
- Department of Lands and Survey
- Companies Control Department

For each department, the analysis phase involved:

- confirming the overall project strategy
- Scoping and analyzing current services.

The design phase involved:

- developing a strategy for the department
- redesigning the selected services for electronic delivery
- identifying organizational changes required to support the redesigned services
- developing a conceptual technical architecture that supports the delivery of all the services in scope
- defining the high level technology, functional, data and user interface requirements for the electronic delivery of each service
- Recommending required changes to the laws, directives, regulations, instructions and the required incorporation of the e-Transactions Law.
- Providing a roadmap for implementation.
- Implementing, rolling out and supporting the selected e-services.

### 2nd Wave e-Services

The 1st wave paved the way for the definition of the 2nd Wave of e-Services Portfolio. The scope of the 2nd wave project includes:

- Develop and confirm the criteria and build an automated ratings system for identifying, classifying, and prioritizing candidate e-Services for the Second Wave of e-Services under the e-Government Program
- Identify, inventory, classify and prioritize candidate cross-governmental e-Services that meet the criteria for inclusion in the e-Services Portfolio for the next 3 years (A cross governmental service is a service that is provided by more than one governmental entity)
- Define each service, identify stakeholders (government entities and other), perform readiness assessment (organizational, technical, and legal) of stakeholders, apply ratings system to prioritize, perform high level design and conduct a needs assessment on all candidate e-Services in the portfolio
- Define common components and major cross-references to define shared services amongst e-Services (A shared service is a generic service that is jointly used in different service processes of various government entities).
- Analyze and study each of the services in the defined portfolio in terms of:
  1. Goals achieved by the service and service functionality for the customer
  2. Definition and analysis of the service recipients and stakeholders as well as entities cooperating in the service delivery process
  3. Description of steps required to receive the service along with workflow diagram
  4. Analysis of the service use pattern, frequency, volume of transactions and predicted demand dynamics
  5. Recommended major changes and improvements in the service delivery process resulting from streamlining
  6. Benefits resulting from providing the service in “e-“ mode
  7. Required access and delivery channels and shared services
  8. Required systems for e-Service delivery, their architecture and integration
  9. Recommended e-Service workflow
  10. Legal issues associated with e-Service implementation
- Analyze readiness of service provider in terms of organization, HR and technology.

The e-Services with the highest priority were selected for implementation in the 2nd Wave of e-Service implementation.

### **Implementation Framework**

This section provides a definition of a general framework for e-government infrastructure components that is based on the concept of the e-Government Architecture Framework (eGAF) and Service Oriented Architecture (SOA) as well as two other major initiatives – e-Government Portal and Secure Government Network – that are major supporting infrastructure components for e-Services. In addition to other important initiatives like the e-Government Contact Center, National Payment gateway, EFAWATEER.com.

#### **e-Government Architecture Framework (eGAF)**

As the facilitator of the implementation and delivery of governmental e-Services, the e-Government Program has been working diligently to define its target e-Government federated enterprise architecture, which is meant to enable seamless integration and secure interoperability of services between distributed entities cohesively and cost effectively using SOA. The responsibility of the implementation and delivery of government e-Services lies upon the government and its various entities:

The e-Government Program plays the role of the “e-Services enabler” by providing the components that constitute the Central e-Government Service Delivery Platform;

The other governmental entities (mainly ministries) play the role of the “e-Services providers” by composing and operating their e-Services, having the choice to either outsource these services, or operate them in-house.

The following diagram presents a high-level view of the various e-Government stakeholders, and depicts the federated, customer-centric nature of the e-Government architecture[1]:

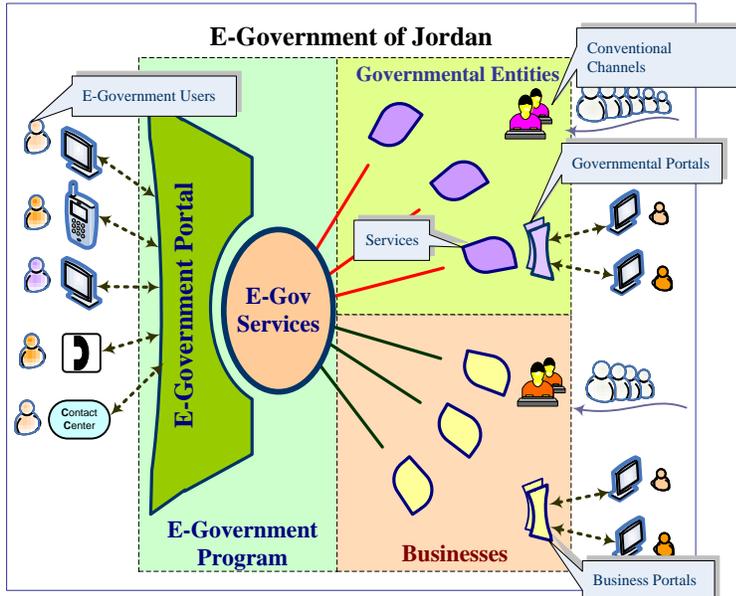


Figure 5.13.1: e-Government of Jordan High-level View

The e-Government of Jordan is customer-centric, i.e. all e-Services are centered on customers' needs. Currently, the e-Government Web Portal, which constitutes the central web informational portal of the e-Government, co-exists with a number of other governmental portals. Ultimately, the e-government's portal will turn into a multi-channel, one-stop-shop for all government e-Services, and will support various access and delivery channels (e.g. Web, SMS, Kiosks, etc.).

The following diagram depicts the main building blocks for the e-Government target architecture:

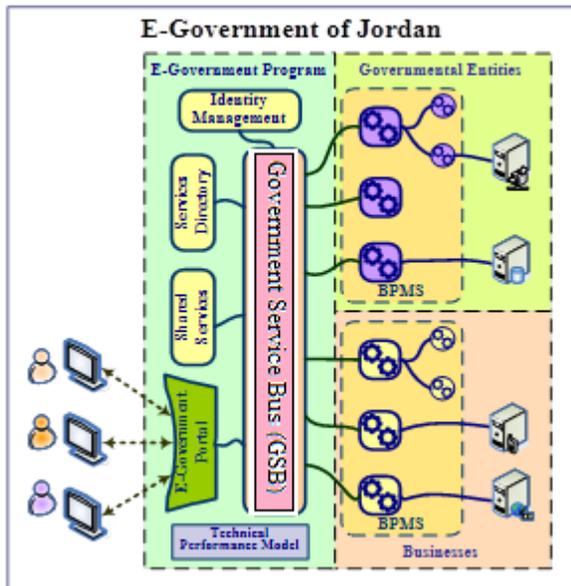


Figure 5.13.2: e-Government Architecture High-level View

[1] The diagram is meant to present a high-level view of the e-Government from a business perspective; hence many businesses and technical details do not appear for the sake of the overall understanding.

As shown in the above diagram, the e-Government Program will provide a central Government Service Bus (GSB) that will serve as a unique point of traffic. It will take care of routing service invocations towards service providers and of returning responses back to the service clients (which could be the portal or some other service as in the case of cross-organizational e-Services). The e-Government Program will also provide a set of shared services (for instance National Payment Gateway ,EFAWATEERcom, notification gateway, etc.) that can be invoked from within the context of any e-Service, promoting reuse of components across the government and thus reducing the costs by eliminating the needs for dedicated implementations of components that perform the same functionalities offered by any of the central shared functionalities at the entities side. The services directory will maintain an active list of all available services as well as their interface specifications. A central identity management solution will be used to federate identities, provide (when applicable) single-sign-on, facilitate propagation of user identities and attributes across the e-Government trust domain, and enable account provisioning. Finally, a central technical performance model will be put in place to enable concerned technical stakeholder at the e-Government Program to monitor the health and performance of the overall e-Government and identify issues and bottlenecks as well as potential areas for improvement. In order to prevent vendor lock-in, all of the above components will be built solely upon open standards, such as Web Services, SOAP. Where necessary, all service providers shall conform to the above standards in order to interoperate with other components within the e-Government framework.

The e-Government of Jordan Program will also provide Government Entities with an Enterprise Architecture Framework and methodology to help them in building their Enterprise Architecture in respect of the above principles. The e-Government Program will also provide help and support on how to apply this framework to aid the entities during the course of the framework implementation.

The e-Government Program will provide all necessary documentation and support in order to enable project implementers to produce deliverables that are in line with the e-Government architecture vision in the form of a Reference Model Winning PSPs shall have to access the necessary documentation.

### E-GAF & SOA

The primary delivery models for e-government are:

- Government-to-Citizen (G2C)
- Government-to-Business (G2B)
- Government-to-Government (G2G)

Jordan e-government program is capitalizing over the G2G, G2B, and G2C service models in order to provide information integration between the different government entities to improve government processes efficiency, easy end users accessibility, increase transparency and reduce total cost of ownership.

The following figure depicts the different parties involved in the integration.

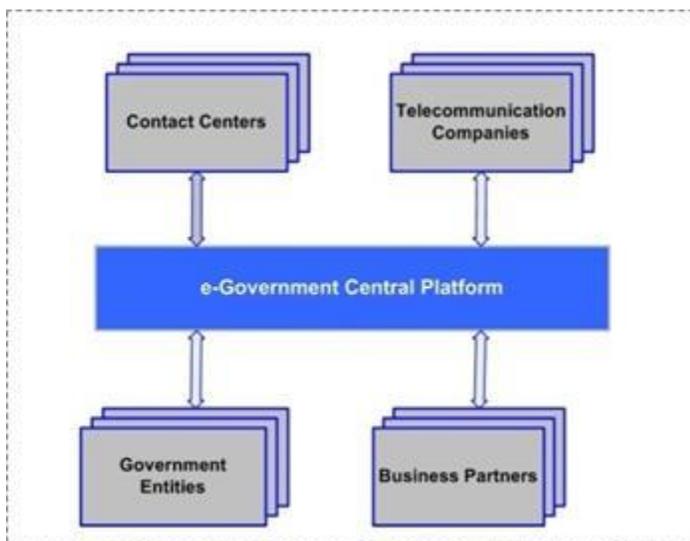


Figure 5.13.3: Government of Jordan Integrating Participating Parties

As seen in the figure above the following parties are involved in integration:

- **Government entities:** Government entities form the major customer and beneficiary for the business integration service provided by the e-government central platform. G2G integration model shall introduce efficient mechanism for integrating the government entities in order to deliver G2C, G2E and G2B services.
- **Telecommunication companies:** Telecommunication companies are considered business partners. The program will be responsible for providing the G2B integration services between those companies and the government entities. One example of such services can be the SMS notification.
- **Business partners:** The program will be responsible for providing the G2B integration service between business partners and government entities. Example for such business partners: payment service providers (PSP) and private banks.
- **Contact center:** Contact center's business is to serve the government entities end users. The program will be responsible for providing the G2B integration services between those contact centers and the government entities.

The IT infrastructure in the government entities and other business partners in Jordan is heterogeneous across operating systems, applications and software packages. Existing applications are used to run current business processes; so starting from scratch to build new infrastructure is a very expensive and non-practical option. Hence; government entities should quickly respond to business changes with agility; leverage existing investments in applications and application

Infrastructure in order to address newer business requirements; support new channels of interactions with clients and partners (other government entities); and feature an architecture that supports business oriented model.

SOA is efficient for large and distributed systems where other types of integration are more complex and costly.

### Jordan e-Government Business Integration Patterns

The business integration patterns that will be enabled by the central platform infrastructure are:

- Vertical e-Services integration pattern: defines the pattern in which services are provided end-to-end by one government entity. It's true that such services are provided by one government entity but their integration pattern may use some of the e-government central platform shared services such as authentication, online payment, notification, contact center ... etc.
- Cross organizational e-Services integration pattern: defines the pattern in which a government service requires the involvement of several government entities in order to be delivered.
- Composite e-Services integration pattern: defines the pattern in which a service flows across multiple government entities and contribute to e-Government overall objectives (e.g. GRP).
- Shared e-Services integration pattern: shared services are defined as the 'enablers', providing technology-based functionality that are central to the provision of vertical and cross-organizational services. Their ultimate ownership belongs to the e-government central platform as part of the federated architecture framework.

### Jordan Information Interoperability Framework (IIF)

The Jordan e-government program has initiated an information interoperability framework that will manage and standardize the exchange of common and shared information between the different parties involved in the e-government of Jordan such as the government entities, central platform and business partners.

The IIF mandates that all the parties should speak the same language and this includes:

- Protocol: SOAP/HTTP(s)
- Content type: XML
- Standards: Jordan e-government standards
- Format: IIF format

Note : For any new service that will be integrate with GSP it's recommended to be implemented using the WCF standard.

### E-GAF and Business Process Management (BPM)

The government entities in Jordan will provide cross organizational services whose logic is distributed across other government entities and business partners including the central platform. The main provider of a service [Principle Service Provider] will host the workflow of the Cross Organizational Service. Hence, the national GSB of Jordan will not host the workflow of any Government Entity Service, nevertheless, it should enable integration between different entities' services to constitute a Cross Organizational Service.

A government entity will utilize the central platform integration services published web services, and other government entities published e-Services to compose the business processes for their cross organizational e-service. The following figure depicts the relation between the integration infrastructure provided by the e-government central platform and the BPM components at the government entities premises.

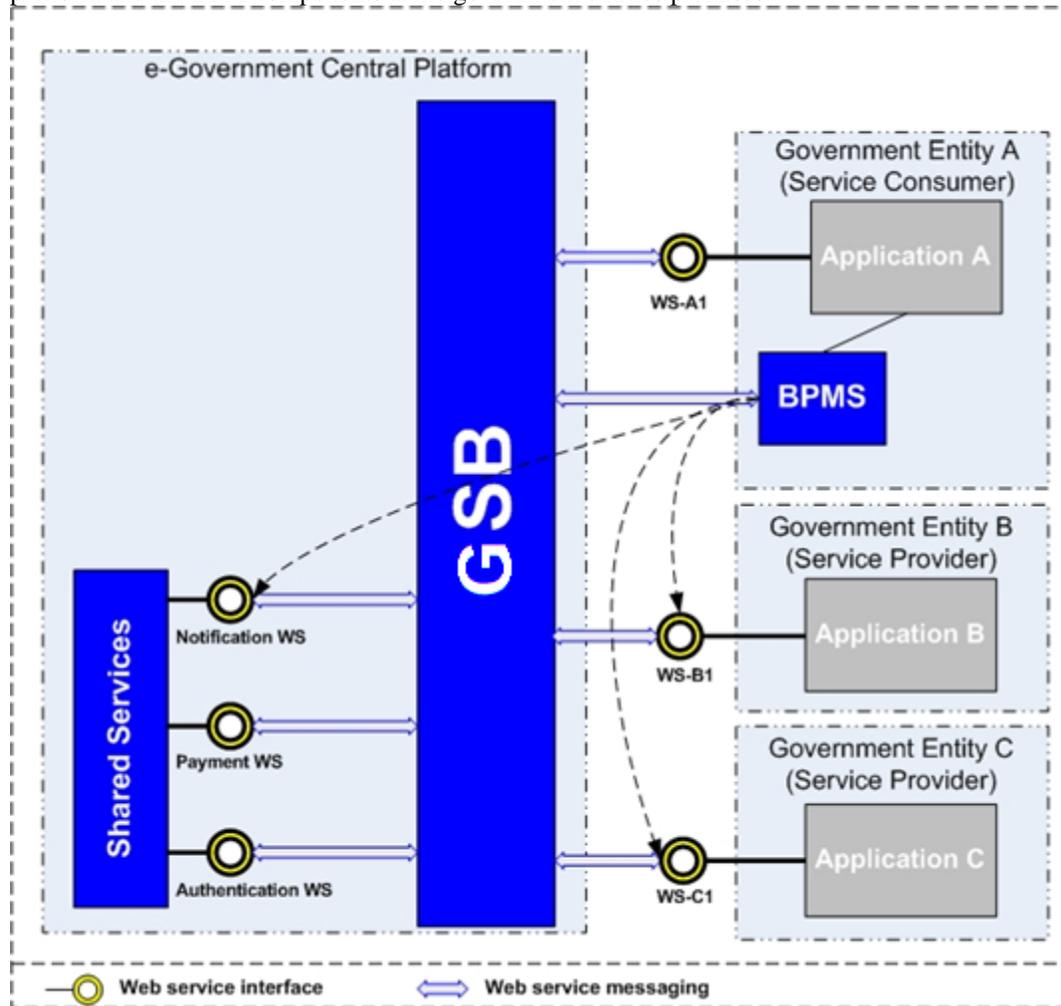


Figure5.13.5: E-GAF and BPM

As depicted in the figure above, the application in government entity “A” starts a business process that includes executing tasks at government entity “B”, “C” in addition to the notification services provided by the e-government central platform. The application at “A” will communicate with the Business Process Management System (BPMS) component<sup>[2]</sup> at its premises to execute the complete process. The BPMS component invokes the entity “B” Web

<sup>[2]</sup> WFMS: A software application that stores process definitions and runs jobs based on those process definitions via its workflow engine component. The workflow engine is the runtime execution module.

service (WS-B1), entity “C” Web service (WB-C1) and the Notification WS web services according to the rules that had been set earlier in its rule engine.

## E-GAF Integration Reference Model

The following figure depicts the E-GAF integration reference mode.

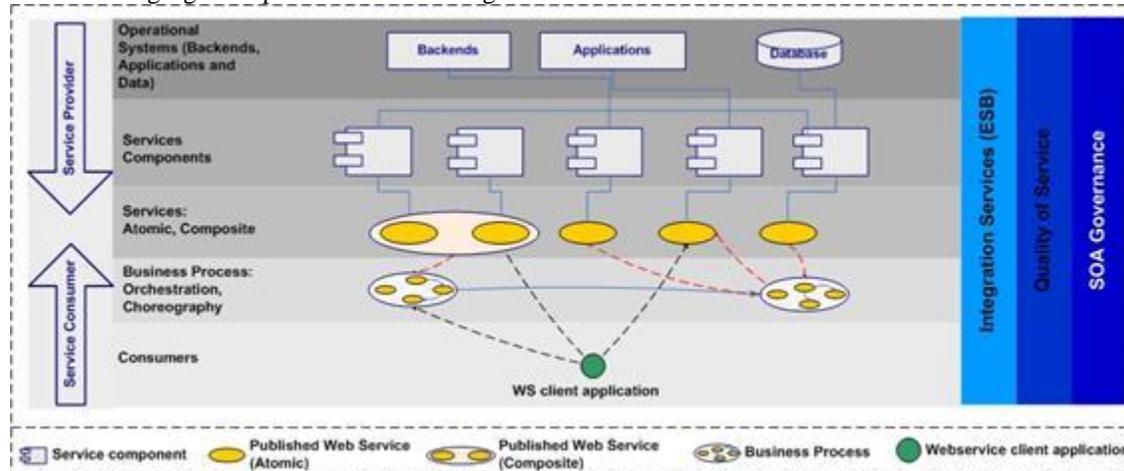


Figure 5.13.10: E-GAF Integration Reference Model

As depicted in the figure above; the reference model crosses the different parties involved in the SOA architecture: service consumer; integration services (GSB), and the service provider.

The consumer will implement the Web service client application that contains either direct calls to published Web services or calls to the orchestrated or choreographed or business processes.

The provider publishes his services (atomic and composite) through the GSB. The services are enabled by a set of components (JavaBean, EJB, COM, DCOM, PLSQL ... etc.). Such components form the bridge between the backend applications, business applications and databases on one side and the web services on the other side.

The integration services at the central platform represented by the GSB form the mediator between the service consumer and service provider. The GSB provides several services and functionalities such as integration hub, services registry, security, intelligent routing ...etc.

Security, audit, high availability, manageability are quality of service attributes for the integration model.

### Secure Government Network

The Secure Government Network (SGN) is a large initiative linking all government entities to a secure Government Network as a part of a recently developed Connectivity Strategy.

The main role of the SGN is to provide connectivity to government entities. Currently, the following services are provided through the SGN:

- File sharing/exchange between government's entities connected through the SGN.
- E-mail services (electronic services that include email messaging solution, calendar, personal communications tools, etc.).
- Inter-application communication

Upon request, MoICT will provide the winning bidder with related document(s) describing in detail Connectivity Strategy and detailed requirements related to SGN.