

Bridging the Technology Divide with Open Standards

Delivering Egypt's unified E-Government vision

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With the increasing demand and usage of an incredible number of government services, a pressing need for better services, available around the clock, to citizens, businesses, foreigners and investors, irrespective of their location was emerging. Represented by MCIT (Ministry of Information Technology), the Egyptian government initiated and sponsored the e-government project with a vision to deliver governmental services to stakeholders in an effective and efficient way. Visit www.egypt.gov.eg

The Revolution

The Egyptian government currently offers more than 700 services to citizens, business, foreigners and investors. Information on how and where to find the right rules and regulations, in addition to paying for various governmental services has always been a major drawback between the government and all other parties involved.

A long needed transformation in information management was imperative to revolutionize both G2B and G2C services as well as provide a channel for vital government content. With so many services provided by a multitude of ministries an integrated offering which seamlessly acted ministry-wide was critical to the success of the project.

The Solution: The Joined-Up Government

With as many as 700+ services provided by the Egyptian government to citizens and businesses, the portal's architecture and design had to accommodate this wealth of services and content. A bilingual portal accessible to citizens, foreigners, businesses and investors was built to enable all stakeholders to browse the government's recent news, search for information related to particular government services, and access online services to submit requests and transactions online, all at a single 'one-stop-shop'. Navigation was designed to be easy to use, allowing quick information retrieval, while also delivering the appropriate government image online.

The e-government portal provides information and content related to governmental services in a citizen-centric manner. Services are categorized based on a logical grouping in relation to end-user interests, such as a grouping of all services related to vehicles and cars under one title, irrespective of the ministries providing the services. Through the 'No Wrong Door' policy, users can enjoy a unified experience without facing the hassle and confusion over which ministry provides which service.

A major challenge and accomplishment was to deliver a technology independent solution so that seamless assimilation of any ministry's backend is possible to leverage the internal investments of each connected ministry. The portal is a uniform foundation for the Egyptian e-government initiative, providing the foundation for *multiple services on multiple devices*.

Realizing the Vision

The e-government portal was based on the concept of three different layers. The portal front-end (www.egypt.gov.eg) provided the interface for end-user navigation. The middle tier 'Bawaba gateway' was architected to provide a single bridge between the end-user and the various government services available now and in the future. Both tiers are exclusively designed and built by LINKdotNET. The last layer involved the development and integration of several G2B and G2C online services, from various ministries, with the Bawaba gateway. (Other Microsoft partners participated in the last tier, developing and integrating different online services.)

Client

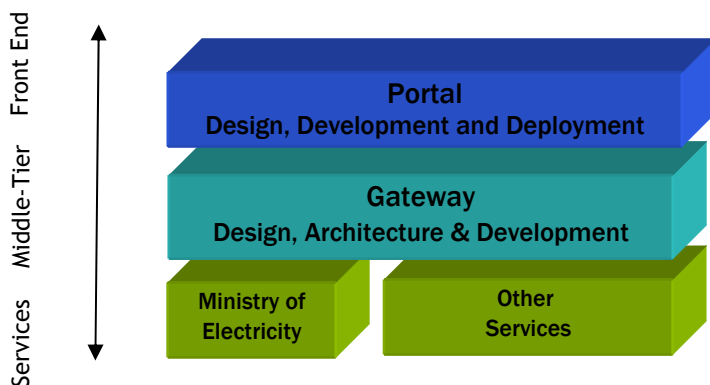
Microsoft signed an agreement with the Egyptian government, represented by MCIT (Ministry of Communication and Information Technology) to deliver the e-government initiative implemented in the form of a unified gateway and portal offering multiple services.

Solution

A triple tier integrated solution consisting of the front end bilingual portal, the middle tier 'Bawaba Gateway' and the online ministry services. The end result: straightforward and comprehensive content and transactions.

Services Engaged

- Enterprise application integration
- Business process analysis
- Content and Information architecture
- Portal design and development
- Gateway architecture and development
- E-Commerce technology
- Integration with Ministry back-end legacy
- Credit-card transaction support
- Solution deployment



Quote

"LINKdotNET, being a major partner in the e-government project in Egypt, have proved to be a valuable asset to the e-government project ... they have been an example of dedication and commitment to deliver on Microsoft state-of-the-art technologies."

*Ayman Abdel-Latif,
Services Manager, Egypt
and East Mediterranean,
Microsoft*

Bawaba Portal - Entry Point to the Joined-Up Government

www.egypt.gov.eg. The front-end bilingual portal (Arabic and English) acts as the main entry point to all government-related services to and from all ministries.

Bawaba Gateway - Authentication and Routing Hub

Centralizing authentication, registration and service routing was essential to enable citizens, businesses, and investors to interact with multiple ministries and organizations. A '**No Wrong Door Policy**' was implemented to ensure that all queries and requests on the Bawaba portal are automatically routed to the relevant ministry/external organization seamlessly and transparently.

Single Sign-On and Public Key Infrastructure

A single sign-on platform is provided through the Bawaba gateway for all government services offered on the portal. The Bawaba gateway is designed and built to be integrated seamlessly with the **PKI** (Public Key Infrastructure) should it exist. Through a variety of encryption techniques and algorithms, the gateway secures sensitive data while communicating with users and ministries over the Internet.

Intelligent Routing and Cross-Service Linking Based on Open Standards

Based on **Open Standards**, the Bawaba fully harnesses the power of XML (Extended Markup Language), SOAP (Simple Object Access Protocol) and Web Services to integrate seamlessly with any ministry's back-end to deliver **cross platform application integration** and leverage the internal investments of each connected ministry. Through the intelligent routing tracking and prioritizing engines in the Bawaba gateway, citizen, business and ministry requests are fulfilled.

Encouraging Service Adoption

Back-end services are connected to the Bawaba gateway via a layer called 'Bawaba Service Connector'. Transparency of published standards and documentation of service integration encourages new service adoption and increases the breadth of services offered. Keeping the service back-end as a *black box*, integration with gateway is actualized seamlessly.

G2B and G2C Services

All government services are expected to be completely rolled-out by 2007. Of the services developed by LINKdotNET, and offered online since the official launch in January 2004, are those of the Ministry of Electricity. Other services will be developed and integrated consequently.

Ministry of Electricity

In integration with the Egyptian Bawaba portal, a suite of G2B online services was created for the Ministry of Electricity. Companies and factories can check their electricity utilization statistics online, as well as request other G2C services provided through other ministries and governmental bodies.

Benefits

- Consistent branding and online presence for the Egyptian government
- Integrated government offering through a unified one-stop-shop
- Uniform foundation supporting multiple portals, services, and devices
- Greater service adoption due to transparency through standards publishing
- Technology independence via open standards

Technologies

Servers

- MS Windows 2000 Advanced Server
- MS SQL Server 2000
- MS MQ
- MS ISA Server
- BizTalk Server 2002

Languages/Technologies

- Web services
- XML
- SOAP
- ASP
- Visual Studio.Net
- HTML and DHTML

The Road to E-Enablement

Substantial benefits are indeed incurred through the implementation of end-to-end solutions that capitalize on existing resources and integrate them into a single unified portal serving targeted customers. The e-government project establishes common standards in delivering hundreds of services more effectively, efficiently and more reliably, irrespective of the service or the providing ministry. It is a viable example that Enterprise Application Integration (EAI) solutions can be designed successfully on a significantly large scale.

The robustness of any EAI solution lies in its ability to adhere to critical benchmarks in security, scalability, functionality and extensibility, while bridging technological boundaries to unleash the power behind integration. With such standards intertwined within the core architecture, data becomes easily manageable, service response-time is radically reduced, and future service provisioning is a simple matter.

Awards

LINKdotNET at the top of the Middle East, Africa, and Eastern Europe region in Microsoft's Global 2003 Certified Partner Award in EAI, in recognition for its outstanding Bawaba Gateway solution, central to the development of Egypt's E-Government project

