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The Government Summit Thought Leadership Series
Innovations from across the Arab World:

Making Government "Smarter", Cutting Red-tape, and Creating Value Partnerships

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Prepared by

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Introduction

In an era characterized by mounting socio-economic constraints and transformational technological changes, re-inventing public services has become a pressing priority for governments worldwide. This report of carefully selected case studies from across the Arab region captures several trends of innovation in public service delivery. It complements wider regional surveys of government agencies and citizens, conducted by the Governance and Innovation Program at the Mohammed Bin Rashid School of Government[1]. The report addresses the need to document and shed light on public sector innovation in the Arab region, and the context-specific opportunities and challenges inherent to Arab government. The cases presented in this report provide promising examples of innovations on both the front and back-office sides of public service delivery, and span a wide variety of sectors – many of which requisite attention and are undergoing profound change.

- The case studies highlighted in this report emphasize the potential impact and role that innovative initiatives in public service design and delivery, and which span smart government, networked government, open government and creative public-private partnerships can have in transforming government services. This is in line with global trends, which emphasize the potential for innovation brought about by increased citizen engagement, cross-agency collaboration, 'customer' centricity and creative value partnerships.
- Visionary leadership across different levels of government coupled with an ability to execute in-time and on-budget is a foundational requirement to the success of any service design and delivery initiative. Spanning all levels of government, leadership is essential to empowering the employees and enthusing the community to act in a cohesive manner. A key aspect of leadership entails effectively vision of "what success looks like", setting and managing the appropriate metrics and performance measures to ensure that the said targets are met.
- The transformational role played by information and communication technologies (ICT) will shape innovation through the "nexus" of forces that is increasingly being adopted and leveraged by various entities: the combined synergies between citizen centric applications, mobility and social technologies, as well as increased data availability & analytics.
- The efficiency and effectiveness of the next generation of Arab public services will be shaped by the increased availability and uptake of big data, predictive analytics, and possibly, cloud computing. While big data and predictive analytics are still in their formative stages in the in the Arab region, the volume, velocity and variety of data is increasing exponentially and harnessing its power holds the key to improved decision making. Predictive Analytics answering "what if" questions and uncovering relationships between various set of data should provide channels to make the right economic or social decision at the right time for the right community. Similarly, cloud computing, although still nascent in the region, can potentially drive ease of use and adoption and will increase returns on investment made in the design and delivery of services – both from a monetary and quality of service point of view.

There is no one prescription for innovation in government services to thrive in the Arab world; however, there are trends that are clearly evolving on a regional level and which will impact Arab governments in the immediate future:

Customer Centricity and Citizen Engagement in the Design and Delivery of Government Services: A culture of customer engagement in government organizations needs to be infused into the design and delivery processes of services. This should be accompanied by integrating customer needs-assessment goals into overall government strategies and performance management systems. With a critical mass of users of the internet, mobile devices and social media in most Arab countries, adapting these technologies and incorporating them into the customer needs assessment process should provide a better service experience, a wider spectrum of channels and accessibility; and eventually minimized costs of service design and improvement.

Collaboration for Better Services: Many governments are reaping the fruits of transition away from the traditional 'silo' and 'competitive' models of service delivery across government agencies that limit the level of information sharing among government institutions with negative impact on the flow of information, ideas, knowledge and innovations. New 'collaborative' frameworks that utilize information and communication technologies (ICT) in government have already enabled cross-agency information and knowledge

[1] See: "The Arab Government Services Outlook 2014". Governance and Innovation Program, MBR School of Government, The 2nd Government Summit 2014. Dubai

sharing and have opened Arab governments to new possibilities which challenge the rigidly hierarchical and silos-based culture that has traditionally dominated public sector service delivery.

The opportunities and potential that cross-agency collaboration offers is reflected in the fact that the success of almost all of the cases presented in the report was based on the formation of strong collaboration frameworks within government agencies and their implementation by undertaking the appropriate cultural shifts in the modus operandi within the Arab agencies. To overcome the barriers to better collaborative service delivery models, departmental goals were aligned with the overall government strategies and cross-government communication channels made available at horizontal levels.

From Electronic to Smart Services: Arab citizens and government agencies alike are embracing information and communication technologies at ever-increasing rates. The transformational power of such technologies in service design and delivery and the increased availability of information and data due to the adoption of these technologies is giving way to new forms of 'partnerships' with citizens. Such transformations also present the promise of innovative customer-centric approaches to service design and improvement; and more efficient, reliable, relevant and highly accessible services.

In this context, the main themes that public sector leaders in the Arab world may take into consideration as they look to the future of government service design and delivery include:

- **Increased Data Availability:** With the increased digitization in Arab public sectors and ever-growing information flows within Arab governments and societies, successful implementation of avant-garde government service delivery initiatives, largely rely on the existence of well-developed data availability frameworks on a national level. Even in sectors such as education and healthcare, better data availability has already increased innovations and service quality by making these sectors more transparent. Indeed, the cases provided outlined in the report show how increased data availability allowed schools and hospitals to benchmark their performance against others as well as identify trends and shifts that would not otherwise be apparent.
- If a clear data availability framework is put in place and the tools for harnessing 'big data' made available, many public sector leaders in the Arab world will be provided with opportunities to develop the next generation government services and further public sector innovation. With the right analysis tools, precious data flows can provide valuable insight into the collective and segmented needs of citizens, paving the path for delivering citizen-centric services at an unprecedented level.
- **Mobility and Social Technologies for Service Delivery:** The increased adoption of information communication technologies, whether mobile technologies, internet or social media in the Arab region, has created new forms and scopes of information flows. This rewiring of information flows and the ubiquity of mobile devices has opened the door to new modes of service delivery, primarily by paving the way for the emergence of new citizen engagement models. Technology has enabled the Arab public (or customers of government services) to become a 'co-creators' of new and enhanced government services, customized to fit their needs and preferences.
- Our research indicates that there is a strong linkage between ICT integration in service delivery and citizen satisfaction with public services in the Arab world. Mobile devices and social networking technologies are popular across large segments of Arab populations[2]. In addition to internet-based services, societal readiness and growing trends in utilizing these technologies in public services delivery at institutional scales provide unprecedented opportunities for Arab governments. To ensure the widest possible impact on service quality, relevance and efficiency, service design and delivery cycles need to take advantage of these trends both for citizen engagement on service design as well as delivery channels for services that can facilitate wider accessibility and larger efficiency gains.
- **Value Creation Partnerships:** The benefits from collaboration will eventually extend beyond the agencies to set up value creation partnerships between the various stakeholders in the economy and society – be they the private sector or the community. "Empowered" by the availability of transformational technologies and data, businesses and citizens can constructively contribute more to economic growth. The implementation of these partnerships is key for the economic and social sustainability of government services.

[2] See the Arab Social Media Report series: www.arabsocialmediareport.com

Ultimately, the cases presented in this report should provide Arab policy makers with thought-provoking examples of how public sector organizations have adapted their systems to solve pressing challenges in a fast changing Arab region. To maximize the impact, 'organically'-grown local innovations for service design and delivery should be linked to iterative learning processes and embedded in collaborative frameworks for wider government implementation. They also need to be fully aligned with 'customer' needs through systematic citizen engagement approaches, facilitated by technological advances. For public administrators striving to pave the way towards better government services in the Arab region, the key lessons provided through these cases are the following: citizen engagement and customer-centricity are key foundations for better services; leading an innovation culture is mandatory for better efficiency, accessibility and quality of public services; cross-agency collaboration and better data availability are instrumental for innovations to emerge; and finally information and communication technologies are the sine qua non for the 'government of the future' in the Arab World. Harnessing these lessons promise to provide the Arab region with 'smarter' government services with less red-tape and higher value to citizens.

Chapter 1

Making Government "Smarter"

UAE: Excellence in Smart Government Services

eBorder[1]: Next Generation Passport Control and Airport Experience

Background

Over the past four decades, the United Arab Emirates has established itself as a global center for tourism and trade. The diversified economy of the UAE continued to grow during the past few years at relatively high annual rates, reaching 4.4% of real growth in 2012. In 2011 the population of the UAE reached 8.4 million, the majority of which are expatriates residents in the country[2].

With visionary leadership in applying 'future of government' service delivery approaches, the United Arab Emirates enjoys a clear leading position in adoption of information and communication technologies (ICT) by the government. Successful government policies in promoting ICT use in service delivery are a key factor that contributing to the country's continued high global rankings in ICT adoption. For example, according to the UN e-Government Readiness Index[3], the UAE is highlighted as a "global leader" and ranks 28th worldwide overall and among the top 20 in "e-participation" index. More recently, the World Economic Forum[4] ranked the UAE 3rd worldwide on the level of "Importance of ICT to Government Vision"; and also ranked 1st among 144 countries in "Government Success in ICT Promotion", as well as 9th on "Government Online Services".

The Problem

One facet of the strong economic growth in the UAE is the fast growing tourism and commercial industries. This growth rapidly increased the numbers of travelers using the country's multiple airports. The number of travelers via Abu Dhabi's airport for example reached 16.7 million in 2013. Meanwhile, the number of passengers travelling through Dubai airports reached 60.3 million in 2013*.

This continuous increase in number of travelers in the UAE has increased the pressure on the country's airports and the ability to smoothly and efficiently manage the process of clearing the traveler's passports. As a result, passengers had to queue in long lines in front

This continuous increase in number of travelers in the UAE has increased the pressure on the country's airports and the ability to smoothly and efficiently manage the process of clearing the traveler's passports. As a result, passengers had to queue in long lines in front of the passport counters and once reaching the immigration counters, the processing time was around 50 seconds per passengers on average. The old mechanism of processing passports and clearing passports manually through the counters was not capable of dealing with the increased numbers of travelers efficiently.

As tourism and commerce are cornerstones of the UAE fast growing economy, the efficiency and quality of travelers experience was seen as key. Solving this mounting problem required an innovative solution where the quality of traveler's experience is preserved, efficiency in processing the passports is provided and the required levels of control and security were maintained. This has to be carried out at a national level, in which travelers arriving at the many airports of the UAE were receiving the same level of service.

To solve this challenge, the Ministry of Interior Affairs (MoI) initiated the eBorder project with a testing phase in July 2010.

Objectives, Stakeholders and Process

The key objective of the eBorder project launched and managed by Ministry of Interior Affairs, is to minimize the time needed by passengers to get their passports cleared in

[1] The case study is based on several interviews with Maj. Mohammed Al Zaabi, Project Leader, Ministry of Interior, UAE, as well as the project team.

[2] Ministry of Economy, UAE,

[3] UNDESA. E-Government Survey 2012: E-Government for the People. United Nations Department of Economic and Social Affairs, 2012.

[4] WEF. Global Information Technology Report 2013, World Economic Forum, 2013

* Abu Dhabi Airports Company (www.ADAC.ae, January 2014), Dubai Airports (www.DubaiAirport.com, January 2014)

any airport in the UAE. The target is to streamline processing the passports, heavily reduce the traveler's waiting time inline and enable the passengers to get their passports cleared within 11 - 20 seconds as compared to 50 seconds. This will ensure higher quality and satisfaction in the service, and a pleasant experience for the customer receiving the service. In addition to achieving this key efficiency objective, the new service will bring additional real-time levels of security and efficiency for the different authorities.

The eBorder solution is comprised an Electronic Gate and a Smart Counter that includes the following components:

Passport reader, Face print reader, IRIS image reader and Finger print reader.

One additional back-office objective of the eBorder system was to ensure that the existing systems which were working successfully, however in silos, are integrated into one system that enable fast, secure and efficient delivery of the service. For this reason, the successful implementation of the eBorder system required the integration between the following five electronic systems managed by the Ministry of Interior:

- The Electronic Gate (eGate)
- IRIS image system
- Face print system
- Naturalization system
- Ministry of Interior Unified System

To achieve these targets, the eBorder project required the coordination of multiple departments within the Ministry as well as external authorities in the country. For example, to enable UAE nationals to use their national ID cards for travel, the project also required coordination with the Emirates ID Authority (EIDA). This was achieved by establishing a joint committee that ensured high levels of coordination.

To be able to use the system, passengers need to be registered once, either in one of the registration centers created for this purpose in various locations around the country (such as shopping malls) or this process will take place automatically once the passenger passes through the Smart Counter once in her or his next trip. The customers registration process itself is free and straightforward and doesn't need more than 20 seconds, in which the passenger will submit a copy of his/her passport and registering three types of the bio-metric data: IRIS image print, face print and finger prints on the spot.

Ensuring Take-up through Awareness

Such a new system needs to be marketed and promoted across the target users, and the project team ran an intensive awareness campaigns in most cities around the country. The campaign aimed to introduce the eBorder system to the public and explain its objectives and benefits, as well as promote the culture of using the Smart Gate and self-service at the airports instead of the 'slower' traditional passport counters mostly used in the country airports.

The campaign was implemented to target the public through the following methods:

- To reach out to the public in shopping malls across the country
- To reach out to government employees in various government departments.
- To reach out to Residents of different communities around the country

In all these cases, the project team offered the target audience detailed information about the eBorder system and its benefits and encouraged them to start using it. Moreover, the target audiences were able to register themselves immediately to be able to use the eBorder System the next time they travel.

Achievements

"With this setup, eBorder is the only system in the world that uses 3 biometrics: fingerprint, IRIS image print, face scan" This ensured multiple levels of flexibility and security. More importantly, this multi-metric approach ensured efficient and accessible service in the overwhelming majority of scenarios, regardless of the passenger's physical characteristics.

In addition, the original design of the service has three other important features to make the experience smooth and convenient for all passengers:

- Families: The system can enable family members including children over 5 years old to go through the Smart Gate without the need to go through the traditional counter or asking for help from the airport staff.
- Travelers with special needs: The system is designed to be universally accessible and enable passengers with special needs to use it similar to other passengers without the need for any help. The dimensions and standards of the electronic gate took into consideration international accessibility standards.
- Convenience and Safety: in case of a passenger losing the passport before arriving to the eBorder system, his/her biometric data stored in the system can be used to issue a copy of his/her passport in compliance with the related international rules and procedures.

Previously, many UAE airports had already installed electronic self-operated passport control gates for travelers. The older service; called eGate, was an optional paid service that enables customers to use a specially issued smart card to pass through passport control faster using a designated electronic gate. Compared to the old eGate system, the new eBorder System offered several key benefits for the customers including:

- Passengers need to use only to their passports, they don't need to carry the eGate smart card as in the old eGate system.
- Anyone who uses a Smart Counter will be registered automatically to use the eBorder system in his or her next travel.
- The registration for using the eBorder system is free of charge; not a special paid 'privileged' service like eGate.
- Young travelers under 17 years old can use the system, unlike the case of the eGate system, which was geared towards business travelers.
- The eBorder service is designed to be accessible for people with special needs

The project was officially launched in 2012 after several months of pilot implementation and successful proof-of-concept. The key objective of the project has already been achieved; the passengers using eBorder can get their passports cleared in 11 seconds on average as compared to around 50 seconds in the older service.

By end of 2013 and since its launch in Abu Dhabi in October, 2012 and in Dubai in January, 2013 the following progress has been achieved:

- More than 500,000 users were registered in the system
- 14 Smart Counters and 9 eGates were installed in Abu Dhabi airport.
- 41 Smart Counters and 5 eGates were installed in Dubai airport.
- On average, the uptake has increased to around 2,000 monthly uses of the system.

Additionally, the Ministry commissioned two studies conducted by an external entity that assessed the financial return on investment for operating the service. The first study projected the cost of operating 10 traditional passport counters for seven years as compared to the cost of operating 10 Smart Counters for the same periods; while the second simulated replacing 50% of the passport counters in Abu Dhabi's two airports. The findings of both studies clearly showed that the overall cost of operating the new eBorder system was 70% less than the cost of running the older system; a huge potential saving in the hundreds of millions of Dirhams over the period of the study.

The awareness and marketing campaign carried out by the Ministry was highly successful in promoting the new system and encouraging potential customers to get registered to use the system. The numbers of registered customers during the campaign reached around 30,000 potential users of the service.

After more than a year of operation, the project success was clear at all levels. From the government side, major savings are forecasted in terms of man/hour and cost. For example, once put fully in operation, the annual operating costs are estimated to be cut by around 54 percent for the implemented eBorder counters and gates compared to the manual one. In terms of operating time, the system should enable saving up to 68 percent of the time compared to the old manual system.

More importantly, the gains were clear in terms of travelers' satisfaction, service efficiency, public up-take and time saving for travelers. The project team conducted a survey among new users of the service specifically asking about the actual time saving. The majority of respondents said that in-fact; going through immigration points in UAE airport took them no more than 20 seconds.

Obstacles and Challenges:

Throughout the various phases of the project, The Ministry of Interior managed to overcome several challenges on various aspects:

- **Public readiness:** There are more than 200 nationalities living in the UAE and crossing its airports from and into the country. This large number of nationalities brings huge cultural and linguistic differences in addition to the varied levels of education and people readiness to use the advanced technologies introduced in the eBorder system. The intensive awareness and marketing campaigns ensured uptake across all targeted customers of the service.
- **Technological challenges:** Integrating six technologically complex systems together was no easy process. The project team had to ensure smooth, secure and reliable exchange of data and information across these systems. This challenge was approached via various methods including having committees of all stakeholders from inside and outside the Ministry and developing Proof of Concept (PoC) models of the system and deploying and testing pilot phase between 2011 and 2012.
- **Logistical challenges:** The Ministry has launched the eBorder system with a plan to deploy it across all UAE airports. However, the readiness levels of these airports to successfully have the system installed are not the same. A good example of this is the variation in the available space can be allocated to setup the system two components. These logistical challenges were overcome with close coordination with the management of each of the country's airports.

Lessons Learned

Throughout the various phases of designing and implementing the eBorder project, the following key lessons were extracted by the Ministry:

- Alignment with the overall strategic objectives and vision of the country: Such a critical service and innovation should be aligned with the country top agenda and priorities and should contribute to the achievements of the set strategic objectives. Given its expanding economy, developed infrastructure and geographic location, the traffic across UAE airport is already among the highest in the world and it is projected to continue its growth in line with the economic growth of the country as a business and tourism destination. The innovation provided by the eBorder service became a necessity to ensure that this critical service meets the country's future growth.
- Build a business case that respond to developmental and societal needs: Planning cutting-edge change of a critical service such as this should be based on a clear business case that confirms key aspects such as the objectives of the systems (e.g. cost and time reduction), the accessibility, efficiency and quality needs of the customers and meets a projected Return on Investment (ROI).
- Engage and consult the targeted customers: The customer segments targeted by the system had diverse needs that should be captured and analyzed to develop an innovative service that meets their needs. It's important to communicate with the public who are targeted by the system to get their opinions on the service and the way it's used, and to capture any possible issues or exceptions. As an example, the project team discovered that some travelers might have health issues in their eyes which might affect the process of scanning. This was incorporated in improving the systems level of inclusiveness. Engaging with the customers is crucial to ensure the successful implementation of the service and high level usage by those targeted. The satisfaction levels achieved by customers wouldn't have been achieved if no inclusive efforts of engagement and need-assessment took place.

Way Forward and Next steps:

After more than a year of successful implementation, the project team has set even higher and more ambitious goals for the future, including:

- To customize and expand the project to cover UAE's land and sea ports
- To deploy the system at all UAE airports replacing 55% of all manual counters with Smart Counters, with a target is 100 eGate & 100 Smart Counters.
- Electronic kiosks will be installed in public locations for travelers to self-update their personal information, such as new passports.

Bahrain: Electronic Services for Increased Public Service Efficiency

eBirth Certification Service

Background

Bahrain is a high-income country with a population size of 1.3 million; the country consists of five governorates and nearly 60 governmental entities; including ministries and organizations providing public services. As part of the country's aim to make the Bahrain Economic Vision for 2030 a reality, the eGovernment Authority (EGA) has been established to deliver on its eGovernment strategy[5].

The Kingdom made leading advances in the implementation of the e-government initiatives. Having just launched its eGovernment Agency in 2007, Bahrain was already ranking 13th worldwide in eGovernment development in the UN eGovernment Survey 2010 – thanks to the advanced eParticipation features accessible through portal sites. In the 2012 edition of UN's eGovernment Survey, Bahrain ranked 10th worldwide on the Online Service Index and 8th on the eParticipation index[6].

Bahrain has continued to house international e-government initiatives; one of these being the world's first Global Expert Workshop in 2012 that discussed all the UN eGovernment indexes with the participation of the UN and the International Telecommunication Union (ITU)[7]. On the other hand, the country's internal mobile government services have marked several milestones, the most recent of these being the eGovernment Authority's launch of 'the Government Apps Store'; a unified window that consists of all government applications for integrated mobile phone portfolio in December 2013.

The eBirth online service is an award-winning[8] and widely used online service in Bahrain. This eService is an example of how public sector organizations can utilize Information and Communication Technology (ICT) to improve efficiency of services provided to citizens.

The Problem

The process of registering a birth and issuance of the birth certificate was a long process and citizens needed to visit several government offices in person to finalize it. The process used to take up to 4 weeks for full issuance of the certificate and the new-born's personal number.

The key reason behind this inefficiency is the fact that the process of registering a birth and issuance of the birth certificate was a complete manual process. The information was first gathered in the labor room manually using the special hard-copy forms and attaching copies of the parent's identification cards. This form would then be sent via fax to Central Informatics Organization for updating in their back-end systems manually and then issuing the personal number for the new born. Once this number has been created, the same form is faxed back to the Hospital Administration Office who in turn would send it to Birth Section for manual processing. The back-end system available at the Birth Section did not have real-time interface with the Central Informatics Organization, which is a main factor in causing delays in issuing the Birth Certificate.

[5] eGovernment Authority, Kingdom of Bahrain (2011), [online], http://www.ega.gov.bh [22 Dec 2013].

[6] United Nations Department of Economic and Social Affairs (UNDESA) (2012) United Nations E-Government Survey 2012: e-Government for the People, New York, United Nations Publications.

[7] United Nations Public Administration Network (2012), [online] http://www.unpan.org/PublicAdministrationNews/tabid/651/mctl/ArticleView/ModuleID/1555/articleId/34431/default.aspx [25 December 2013]

[8] The eBirth service won GCC eGovernment Award (eServices category), in 2009 and Arab Golden Chip Awards -Best eGovernment Application in the Arab world in 2010.

Stakeholders and Process

A fully automated solution was planned to allow parents of newborns to receive both their child's personal number and birth certificate without the need to visit any government entity after being discharged from the Hospital.

The design and launch of the eBirth service "required seamless integration between the biggest two stakeholders - Bahrain Central Informatics Organization & Ministry of Health to ensure transference of data between both systems was accurate and done in a timely manner." The e-service should provide birth certificate to the new born babies through integrated electronic workflow. This is done through an online Birth Certificate Request which fully automates the entry of delivery data, the creation of a new-born's personal number, the payment of the birth certificate and the printing and mailing of the Birth Certificate to the parents.

The process was designed to ensure that the data entered is consistent across all the various entities that process this information, and that it is kept confidential in a secure repository (where data does not get misplaced), rather than on paper sheets left around on counters and by fax machines. Most importantly, given the nature of the service in this case, the project ensured accessibility and 24/7 availability of the service.

The issuance of the national personal number required checking more than 30 business rule combinations. The integration of the e-service ensured that the personal number is issued with minimal errors due to full automation of the process. With the new process, the personal number is generated within seconds of submission and the birth certificate is printed within 2 to 5 business days from receipt.

	Before eBirth	After eBirth
Man Power	At least 10 employees to complete the administrative procedures	No more than 6 employees to complete the administrative procedures
Fault percentage	Fault percentage of data entry reaches 40%	Fault percentage of data entry does not exceed 5%
Time	- Time to issue the Central Population Registration (CPR) may reach 10 days - Time needed to register and issue birth certificate may reach 4 weeks	- It takes less than an hour to issue the CPR - Time needed to register and issue birth certificate does not exceed 5 days
Convenience	It is requested to attach copies of the identification documents multiple times, and being passed to more than 4 government agencies, which my result in loss or damage	No need to attach copies of the identification documents, except in very few legally required cases

Achievements

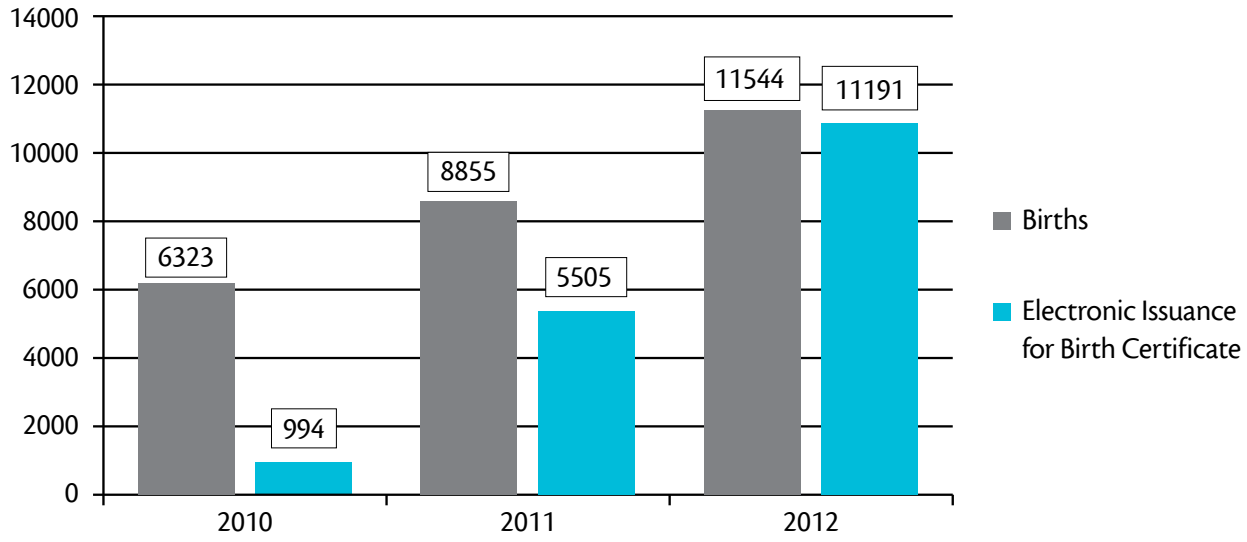
To illustrate the improvements on the process as a result of launching the eBirth service, the table offers a comparison between the process before and after the launch of eBirth service.

In addition, the customer no longer needs to visit multiple areas and pay in several locations to obtain the Birth Certificate & Personal Number of their new born. They are now also able to review the information submitted about the delivery to ensure the data is accurate once submitted. Within a day or two of delivery, the parents will receive an SMS notification of the Personal Number generated for their new-born and a request for them to finalize the Hospital Admission requirements. Once that is done, the parent can then pay the certificate fees (and select the number of copies they require) online via the eGovernment Portal. Upon successful payment, the request will then be automatically rerouted to the various involved parties who would process the birth certificate and send it via Bahrain Post to the address provided by the parent.

On the uptake side, the figure below shows an increase in the usage of eBirth as compared to the manual process of issuing birth certificate between 2010 and 2012.

Table No. 2

Number of eBirth certificates issued as compared to normal certificates



Obstacles & Challenges

- **Resistance to Change by Employees:** At first, employees responsible of inputting the required delivery information were resisting changing their current tried and tested methods. They were skeptical of the advantages of entering all the information online, automated verification and processing. This was solved by conducting several training sessions to present the idea to them and the benefits of having an online form versus the traditional method. Having a change management strategy was key since it helped the technological deployment process and minimized the risk of resistances.
- **Trust by Customers:** Parents of new borns were reluctant to sign-off on an online generated form that contained data of their child and his/her delivery. The concept of receiving the personal number automatically via SMS was a foreign idea and due to its sensitivity, some parents were weary of its success. Citizens were also reluctant to pay online for the Birth Certificate fees. This was overcome by carrying out awareness campaigns on the success rates of online transactions and building their trust in the benefits of automated solutions. This was coupled with a continuous communication process with parents which increased satisfaction with the service overtime.
- **Readiness of the public:** The users are required to request the service through the internet. To overcome accessibility issues for those with no internet access, social centers were distributed all over the Kingdom and free training campaigns was offered by the e-Government Authority to all citizens to enhance their basic knowledge to use the automated services.
- **Information Security:** This service had numerous integrations across different stakeholders which would access sensitive and personal data. The implementation had to ensure that the connections did not pose any threat to the data integrity and that no external connections could breach this secure line. The implementation ensured that all security standards in place within the Government Data Network were implemented and that all access points were granted based on various permissions such as IP Address, User Accounts and location of use.
- **Change Management:** The transition period was challenging. In such a complex deployment, the implementation team encountered many situations in which both systems, the old traditional one (manual paper bassed) and the new one (electronic) live together in the same hospital, areas such as the labor room, administration office, cashier, etc. This generated interoperability difficulties and confusion among staff which could only be overcome with time, training, building up experience, constant communication and a strong technical support. As such, a help desk was made available at the disposal of end users around the clock.

The project leaders did not see the electronic service as just that of technological process to go through. This was about "empowering organizations to reach critical business

objectives by providing people with technical capabilities that make new things possible and by engaging people in changing their behavior to effectively use the new capabilities to generate results." As such, in the case of the eBirth service, three different and parallel approaches were implemented:

» A network of key professionals and advisors was created for frequent and open communication on the status of the project.

» An internal communication plan was designed and implemented to empower the affected employees and ensure they carry a unified and coordinated message and minimize resistance to change.

» The purpose and benefits of meaningful use of the eService were clearly outlined at all levels publicly and internally.

Lessons Learned and Way Forward

The key elements were the seamless integration across various stakeholders and the increased efficiency and turnaround in producing newborn personal number regardless of place or time, such as weekends or public holidays. Additionally, the elimination of unnecessary steps on the parents allowed them to receive their child's Birth Certificate with higher efficiency and in a significantly shorter time and lower cost than the previous manual method.

With vision to expand the service capability the following improvements and enhancements are planned:

- To provide the capability of the service to the private hospitals
- To make the eBirth certificate payment completely online.
- Integrate the service with passport issuance and smartcard issuance on national levels.

Sources:

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Oman: Enabling Better Educational Services through ICT

National Educational Portal[9]

Background

The development of Oman's education system mirrors the rapid emergence of Oman as a developing nation. From only 1 all boys' school in 1970, today Oman has about 1,043 schools catering to both boys and girls. The Ministry of Education (MOE) is responsible of educating and building the capacity of the Omani youth.

The Problem

With 1043 schools, 53,000 teachers and 515,000 students spread all over the country in 11 educational zones[10], management and administrative functions were daunting. About 1,730 administrators were also appointed in response to the demand for more trained teachers and administrative staff. As Oman is a vast country of about 309,500 square kilometers and these zones are spread far away from each other, large amount of information is communicated on a daily basis. This presents many challenges in communications and exchanges between the staff, students and parents in each zone. Efforts were often duplicated as the administrative processes were mostly paper-based, with bureaucratic red tapes and unnecessary workflow.

The geographical distance also created a connectivity problem. Apart from poor connection or no connection to the internet, schools could not interact and communicate with each other and with the Ministry headquarters which is situated in the capital, Muscat, in real time. The previous School Management Program that was supposed to handle the administrative processes was a standalone system that did not support any online exchanged data. There were also no proper document tracing, achieving and management in the old system. This resulted in insufficient data for planning and decision making which directly affect implementation of projects and program. This in turn leads to human and financial resources not being fully optimized.

Teachers were also loaded with administration and paperwork daily which resulted in less time dedicated to innovating classroom instructions. With the fear of changes brought about by new technologies, most were resistant to change and not receptive to use new technologies in teaching. Students, on the other hand, were very comfortable with using technology for learning and communication.

With advances in technology and the proliferation of digital lifestyle, improvement to teaching and school administration were needed to prevent the "Analogue Teachers, Digital Students" syndrome. The total penetration rates of registered internet users (both fixed and mobile) in the Sultanate increased by the 1000% between 2007 and 2012 from 6.1 per 100 inhabitants into about 78 in 2012. In addition, PC penetration rates increased by a whopping 1,500% from 5.06 per 100 inhabitants in 2003 to 80 in 2013. This changing technical and social landscape is visible today as children are more proficient in using mobile devices; tablets and iPads, they get instant information from internet sites, they collaborate with friends from across the globe via social media networks, sharing discussions and feedback which is beyond physical borders, regardless of language and religion.

[9] Part of eOman strategy - Case Study by Ministry of Education, Sultanate of Oman.

[10] Source: The Statistical Yearbook 2013, National Center for Statistics and Information, Section 19, pg 4

Objectives of the Educational Portal

The Education Portal is the umbrella term to collate all the IT initiatives and services within the MOE IT Masterplan which enables the Administration, Curriculum and Assessment, Content and Learning Resources, Physical & Technological Infrastructure and Human Capital Development.

The main objectives of the Education Portal are to link all components of the educational system using a group of programs and services through the internet, facilitates communication within the educational process and present it in an effective and attractive manner for students, teachers, parents and administrators and facilitates the administrative work within the ministry through a number of systems such as electronic requests and document archive.

The implementation strategy is based on the international benchmark in adapting ICT in education, so as to move MOE in the right direction of having a robust infrastructure that leads to having high quality performance which includes having a National IT Masterplan for Education.

Achievements

This web-based application is tied to a centralized database which enables a single entry point from the portal for all application related to the users within the MOE. Through a centralized application, MOE is able to achieve the following benefits:

a. It streamlined administrative processes and allow different transactions to be carried out online by the different users; the administrators, the teachers, the students and even the parents.

b. Via the portal, users can access the following applications.

   i. The School Management System (SMS) which transformed all the administrative work in schools into electronic form. It provides comprehensive information on schools, students, teachers and ministry's employees and offers a range of electronic services for them. This allows critical data and information to be collected and facilitate planning from the Ministry level. Many administrative applications and services with regard to MOE employees have also been designed in the portal; teachers' transfer, vacations, exams, supervision, training, qualification, budget, etc., culminate in one comprehensive portal. For example, it saves around 3 weeks for generating students' evaluation reports.

   ii. The Learning Management System (LMS) handles all educational aspects publishing eLearning content like digital text, e-books, audio and video materials to present the subject in an attractive way for the teachers and the students.

   iii. The Documents Management System (DMS) tracks and archived electronic documents sent by the users. This provides audit trail to all documents transmitted between the users, it also cuts down a lot of paper transactions within the users and saves a lot of expenses for papers and storage space for the Ministry.

c. Through automation and the portal services, MOE saves around OMR 200,000[11] of storage shelves. The online portal also eliminates redundant procedures and provides eServices efficiently and effectively. Today, more than half a million students, about 80,000 teachers and staff are registered and have access to the portal. More than 200,000 parents are also registered and have access to the portal.

In a nutshell the Educational Portal has provided transparency, accuracy, rapidity, availability and cost reduction to the Ministry which promotes efficiency and effectiveness of their services to the students, teachers and staff as well as other government agencies.

Stakeholders and the process

The project was driven by Directorate General of Information Technology at the MOE. The implementation of this project is carried out by a dedicated in-house education team which has the experience dealing with such programs in their schools and has the necessary experience in the educational environment. This facilitates the understanding of the schools' requirements; therefore updating and improving the system in view of that. A database specialist also is placed in each school to ensure that the system runs effectively and efficiently.

[11] One OMR equals 2.6 USD

In 2006 - 2008, the Educational Portal started with three governorates, then implemented throughout the 11 governorates by 2013. About 90% of schools are connected to the portal with exception of schools in remote regions without internet connectivity. For these schools, mobile and satellite communication are being implemented to bring them online.

The stakeholders of this project are teachers, students, parents, employees, visitors and educational zones. These stakeholders are interacting via MOE G2C application in which they can communicate, interact and also carry out transactions on specific services. One award winner application on the portal is the SMS services for parents in which parents can obtain information about the students' attendance and performance records.

Obstacles and challenges

There are some unpredicted obstacles encountered along the way. MOE has tried to resolve those obstacles that are within its jurisdiction but some issues need to be tackled in association with other organizations. The main obstacles are:

a. **Infrastructure** - Geographically, Oman is a vast country covering about 309,500 sq km. Internet and mobile connectivity is still an issue in some remote regions. It is necessary to have connectivity between the schools and later throughout the country to implement this project in all educational zones. Therefore, MOE is aggressively moving with Information Technology Authority to provide the internet via the satellite for those areas do not have the internet.

b. **Human resources** - As MOE implementing new technology, the training part should be met so as to enhance teachers' technological capabilities. By letting them acquire new skills in teaching their subjects effectively helps reduce the resistance and will direct MOE to learning organization with effective change management. In this aspect, MOE embarked on an initiative with some established companies to enhance teachers' ICT capabilities in their daily activities.

c. **E-curriculum** – Lack of education contents for the portal. MOE is building Centre of excellence oriented towards improving teachers' skills in eContent besides involving teachers in some dedicated courses to build eContent adhering to international standards.

d. **Technical** – Business process re-engineering had to be done before automation was carried out to eradicate redundant processes, streamline the procedures and linked all educational components online.

Lessons Learned

a. Introducing such technological project needs an effective strategic planning to ensure achieving the required goals. With the IT Masterplan, MOE was able to strategies and implement the initiative in stages while training the end users and developing the infrastructures.

A common shared vision is essential to drive the initiative and having the entire educational sector acquainted with the shared vision of the project is vital to unify the efforts.

c. Providing training for the targeted stakeholders so as to get them technologically prepared and to reduce the resistance of a particular segment and to increase take-up of the service.

d. Support from top management is another essential factor as they will be able to drive the vision at the strategic level and support the implementation plan with decisive actions.

e. Public awareness campaign to reach out to parents, teachers and students ensure that the concept and services offered through the portal are acceptable and meet their requirements. This includes a paradigm shift in the teaching with technology and using eServices to interact, communicate and transact with MOE.

Future Plans and Way Forward

MoE used the portal in different aspects whether in shifting the traditional practices to ePractices, to raise ICT awareness and to put eServices in action in all educational governorates throughout the country. The MOE has been working closely with the IT Authority to obtain the updated knowledge in various topics to guarantee working in parallel in driving the eGovernment policy.

In addition, MOE will be embarking on development of eLearning contents to complement the curriculum via the Open Educational Resources (OER). The portal is also connected to different governmental establishments such as Ministry of Health, Ministry of Manpower, and Ministry of Civil Services. Other G2G connections are still in progress.

The Ministry of Education took an important step when it opened an educational portal on the internet as part of the Sultanate's move towards a fully-fledged eGovernment system. The portal provides easy access and communication links between users. It enables information to be transferred efficiently between the Ministry of Education and other government ministries and departments and offers employees additional opportunities for using and developing their skills and creative potential in the workplace. In UNPSA Award 2011, the Education Portal won first place in the category of 'Improving the Delivery of Public Services'.

Chapter 2

Cutting Red-tape

Lebanon: Streamlining Licensing Services

Licensing Healthcare Professionals through a 'one stop shop'

Background

After the end of the civil war in 1990, efforts were launched aiming at the economic recovery of Lebanon. In parallel, initiatives were launched to reform the archaic public sector. The Office of the Minister of State for Administrative Reform (OMSAR) was the main agency entrusted with such drives. International donors contributed to the funding of such efforts and provided guidance and council.

In 2002, OMSAR launched an initiative focusing on the Ministry of Public Health (MOPH) and 3 other Ministries. The project was part of a larger Administrative Reform Program, funded and supported by the European Union. The aim was to identify and improve workflows and simplify procedures selected based on the following criteria:

1) They have a high positive impact on citizens needs
2) They can be drastically improved
3) They are simple to reengineer

One of these procedures was the process of Licensing Medical Professionals in the Medical Professions Section in the Hospital, Dispensaries and Medical Professions Department in the Directorate of Medical Care.

The following are key milestones in the project:

- 2000-2001: the project was defined and launched which aimed at setting up a One Stop Shop for citizens wishing to apply for a Medical Professional License.
- 2003-2004: the licensing process was reengineered.
- 2003-2005: the Transaction Workflow Management System (TWFS) was defined and implemented in 2005 to manage the registry of various transactions and their tracking. This also allowed citizens to track the progress of their requests. The IT application was acquired from the World Health Organization and adapted locally
- 2004-2005: the Human Resources for Health system (HRH) was defined and implemented in 2005 to manage the workflow of the licensing process itself. This application was funded by the EU and developed locally.
- 2005: the licensing process was implemented and has been running successfully since then.

The Problem

Any citizen or expatriate with a medical or paramedical specialization wishing to work or setup medical services in Lebanon has to be licensed by the Ministry of Public Health.

There are 19 medical professions (including dentistry and pharmaceutical specializations) in addition to paramedical professions. The Medicine profession is broken down into 108 sub-professions. Some of these licenses require reviews by committees in various Medical orders/Syndicates. Others require special examinations committees. Yearly, the Ministry receives around 3000 licensing applications. Overall the process was complex and time-consuming.

Objectives of the Project

The project had one global objective: to establish a One Stop Shop for the licensing process. An applicant only has to go through two steps: submission and collection. Submission can be through:

a) a single "window" in the Ministry,
b) an online page
c) by applying at LibanPost; Lebanon's postal carrier.

The applicant then can track the progress of the application on the web. Collection can be done through the same window or through delivery by LibanPost to a specified address.

Additionally, there were other related and critical objectives of the project:

1) To drastically reduce the turnaround time
2) To decentralize the process by interfacing electronically with other agencies. This is streamlined with the 'Interoperability initiative' that is currently being addressed by OMSAR.
3) To decentralize the Mail Register (known as Diwan or central administrative department) so each unit can control its receipts
4) To automate the process
5) To provide facilities to archive documents for current work as well as for licenses issued in the past.
6) To reduce the required paperwork
7) To increase transparency and accountability in the process and hence prevent misconduct.

Stakeholders

The early identification of the project's stakeholders ensured consensus and clarity of its requirements. These stakeholders were:

- The Ministry of Interior (to verify ID and judicial records)
- Hospitals and health centers (to verify training certificates)
- The Ministry of Higher Education (to provide equivalences to academic diplomas and the results of a yearly examination required of some professions).
- Universities and educational institutes (to verify diplomas and transcripts)
- LibanPost (for collection and delivery of licenses)
- The Ministry of Justice, the Municipalities, the Council for Public Notaries, etc.)
- Various Medical Orders/Syndicates

Challenges

Many challenges were met during planning and implementation phase. The manual existing process created several inefficiencies that needed to be overcome:

1) Extensive time to complete the process and repeated visits by the Citizen due to: (a) lack of clarity of required documentation, (b) lack of clearly defined steps in the workflow, (c) non-standardized and ambiguous forms and (d) the centralization and non-specialization of the Mail Registry (Diwan) which also resulted in erroneous submissions.
2) Legislation posed many problems such as: a) it was complex and required frequent re-interpretation, (b) coding did not include modern practices currently part of academic programs.
3) Even though the workflow was sequential, it was not possible to track the transaction. This reduced accountability and transparency.
4) The need to deal with related agencies which were neither manually nor electronically interfaced with the Ministry. This placed that burden on the Citizen.
5) The lack of automation resulting in errors, loss of data and manual archiving.
6) Certificates were issued on regular paper opening the possibility of fraud.

These required the following changes to be implemented:

- Decentralization of the Mail Registry (Diwan) to allow each section to handle its own transactions
- Increase in and acquisition of new resources: human and technical
- Changes in legislation related to the issue and processing of Medical Licenses as well as revised classification of professions.
- Reengineering existing workflows
- Standardization of forms
- Use of anti-fraud print forms
- Delegation of authority (Minister to Director, etc.) to shorten the approval cycle
- Establishment of an automated registration unit outside the Mail Registry (Diwan).
- IT systems to check, track and archive documents.
- Improve interfaces with related agencies for inter-operability or the exchange of information.

Process and Achievements

The Implemented Process concluded with the following outcomes:

- The One Stop Shop was implemented in 2005.
- The applicant fills an online application that validates inputs and defines clear requirements. The data is used for printing and not stored in a database.
- Submission is registered through the Transaction and Workflow Management System (TWFS).

- Application and document submission can be in the One Stop Shop, through an online page (awaiting final legalization) or at LibanPost. The Human Resources for Health (HRH) then processes the workflow.
- The applicant can track the progress of licensing using the Transaction Workflow Management System (TWFS).
- The applicant can collect the certificate from the One Stop Shop or through delivery by LibanPost.

In parallel, the Medical Professions Section has been scanning and archiving Licenses from 1993 until 2005, when the new system was initiated.

During the planning and implementation process there were additional challenges that were addressed:

1) The large number of laws and decrees covering professional licensing. To reengineer such laws requires lengthy and complex approval cycles in the Council of Ministers, the Parliament, etc.
   Result: major legislative and regulatory improvements were postponed till future stages.
2) The resistance of employees to changes in the process coupled with the need to recruit new personnel.
   Result: existing staff were retrained and through change management were assured job security. Additional staff was recruited.
3) The lack of technical resources was a major challenge.
   Result: the required software and hardware was provided through grants or loans from international donors (WHO and the EU).
4) The need to implement a totally automated online process was challenged by the lack of resources and the absence of interoperability between Ministries whose input was required for full processing.
   Result: this remains an issue. E-Government projects are slowly improving the status of such agencies readying them for interoperability.
5) The resistance of Control Agencies (Civil Servants Bureau, the State Bureau of Accounting, etc.) who viewed decentralization of the Mail Registry as a loss of control by the Ministry.
   Result: the decentralized process was demonstrated to be robust and was accepted by the Control Agencies.

The project achieved its objectives. However, as highlighted above, some challenges caused some objectives to be restricted in scope. The main achievements since 2005 were the following:

1) Internally, the process required 11 steps which were not clear and were subject to re-interpretation. The reengineered process reduced these down to 5 steps with very clear inputs, outputs and processing.
2) The total time for the licensing process was reduced from 20 to around 2 to 5 days depending on whether additional reviews in the Orders/ Syndicates or examinations by special committees (applied for medical specialties) were required.
3) The forms and required documentation were neither standardized nor clear. These were redeveloped and made available on MOPH's website[12] as well on OMSAR's INFORMS website[13] where all such forms in the Lebanese public sector are provided.
4) The manual and irregular printing of the final certificate was replaced by the HRH application which uses enhanced security techniques to avoid falsification.
5) Earlier manual archiving made documents difficult to retrieve. For the period 1993-2005 prior to implementation, around 32,000 applications (with related documents) were archived using the new HRH application. 24,000 new applications were processed since 2005.
6) The One Stop Shop was replicated in the Pharmacy Service within MOPH and is being considered for Healthcare Facilities licenses.

[12] www.moph.gov.lb

[13] www.informs.gov.lb

Lessons Learned

During planning and implementation activities, the following lessons were learned:

1) It is preferable to address changes in legislation which are practical and short termed. Implementing major legal changes would require long approval cycles and would hinder the efficiency of the project.
2) Older staff are not difficult to train as commonly held. Change management resulted in upgrading their competence without losing their valuable experience.
3) Centralization was not necessary as is commonly held in the Lebanese public sector. Many aspects of the process were decentralized. Examples: the involvement of a private company (LibanPost), interoperability and the segregation of the Mail Register (Diwan).
4) Multiple signatures are not required. Major time was saved when the Minister authorized Directors and managers of lower ranks to sign on his behalf.

Way Forward and Next Steps

The envisaged extensions of the project at OMSAR include the following:

1) Finalizing the legal framework needed to allow the full process to be available online.
2) Relocation of the registration offices to the new offices of the Ministry in a location that is easier to access by the Citizen.
3) Improved interoperability with other agencies. For example, an interface would be established with the Ministry of Higher Education would allow online verification of diplomas. With the Ministry of Interior, online verification of Citizen ID's, judiciary records and residence documents for non-Lebanese professionals can be checked.

Finally, having reaped the efficient results of the TWFS, its generic design allows it to be implemented in other government Agencies and Ministries.

Morocco: Online Portal for Scheduling Doctors' Appointments

Increased Accessibility to Healthcare Services through ICT

Background

The public health system in Morocco has witnessed many improvements over the past decade, including extending health insurance coverage to larger parts in society and a drop in infant mortality. However, there is much still to be done, including increasing hiring at hospitals, expanding health services in rural areas and providing better quality of care[14].

The Moroccan government spends more than $5 billion a year on health care which amounted to 3.2 percent of its budget in 2013[15]. The population stands at nearly 33 million inhabitants, of which more than half live in urban areas, with the country covering 706,550 sq km^2. There is a disparity between urban and rural locations, and between regions. In 12 regions, the average number of doctors per 10,000 inhabitants is below the national average of 3.3.

To improve efficiency and effectiveness and to cope with some of these difficulties, the public sector has embarked on a journey to modernize itself through e-services delivery that would lead to making public services more customer-oriented, simplified, automated, and less costly in terms of delivery and processing of public information. Under the "e-health" umbrella, the initiative for online scheduling of doctors' appointments[16] falls under the mandate of the Moroccan Ministry of Industry, Commerce and New Technologies and the Ministry of Health.

The initiative's objective is to create a website to improve and facilitate access to public health care for Moroccans around the country. The idea is to provide a free service that allows patients to find the nearest and 'best' doctors who suits their needs. It enables the patient to know the doctor's schedules in real time, to plan consultations and to instantly make appointments online and reduce the waiting time, which usually takes several weeks. Moreover, the initiative is designed to introduce more competition among doctors in favor of the patients' satisfaction, which in turn would lead to higher quality of service.

The Problem

Non-satisfactory management of public hospitals, which suffer from a range of inefficiencies, has made them unable to cope with the increasing workload. Absenteeism is often reported as being high in public health care facilities. However, no information is available to estimate the impact of these issues in terms of workdays lost as well as its impact on the productivity of the health care establishment. As such, the traditional public system for management of appointments in hospitals and public health centers face several inconveniences:

- Obtaining an appointment requires from the citizen to repeatedly visit a doctor's office to schedule an appointment, resulting in a fairly high cost in terms of money and time;
- The manual non-computerized management makes it difficult to optimize the organization of appointments and results in a high congestion at the level of the healthcare unit concerned;
- With limited patient information management systems, the quality of healthcare services at the public hospitals is difficult to measure, making the assessment with the existing manual status almost impossible.

This led the Ministry of Health, in collaboration with the Ministry of Industry, Commerce and New Technologies to launch the project in order to computerize the management of medical appointments and allows patients to make appointments via internet or by the telephone.

[14] Yves Souteyrand, World Health Organization. Interview with the New Observer, July 11, 2013.

[15] http://www.finances.gov.ma/fr/Pages/Statistiques.aspx?Active=FP&m=vous%20êtes?

[16] http://srvweb.sante.gov.ma/Pages/RDV.aspx

The project started in April 2011 by establishing a Steering Committee of the e-government program (DPGOV Direction de Pilotage du programme e-gouvernement) which is an integral part of a comprehensive program consisting of 89 projects and services.

Implementation phases of the project were as follows:

- Create a core team made of DHSA (Department of Hospitals and Ambulatory Care, DIM (Division of Information Technology and Methods) and DPGOV;
- Define a goal of implementing the project in four piloting hospitals (Casablanca, Rabat, Meknes and Safi) before June 20, 2011, by the date of the sixth e-government inter-ministerial committee meeting (CIGOV)

Follow-up and support through field visits were carried out by the core team to the different stakeholders and hospital managers before the start of the project and during the weeks afterwards.

Objectives and Outcomes

Through using e-health systems, the Ministry seeks to improve the quality, increase efficiency and expand access to its services. The key expectation from such an 'e-health' system is to increase the efficiency of services, which significantly reduces costs by avoiding redundant or unnecessary diagnostic or therapeutic interventions thanks to better communication between health care institutions. Thus, improving the quality of healthcare is a natural consequence, through facilitating comparisons between the performance of different institutions and hospitals.

One potential outcome for example, is redirecting the flow of patients to the best and more capable institutions. Such an approach allows for systematic evaluation based on the quality and the performance of these public utilities.

The availability of information and personal data accessible via the patient's electronic records, offers new perspectives for patient-centered care. The idea is that medical decisions based on processing medical data is greatly enriched if the data includes information related to the patient's marital status, occupational status, medical history. etc.

The potential outcomes from implementing the electronic platform subsequently exceeds the intended direct benefits, and could promote the emergence of a new relationship between the patient and healthcare professionals. The communication lines converge towards a partnership where decisions are made in a shared and concerted manner between the two parties. Generally, e-health implementations aim to extend the scope of services offered, both geographically and conceptually; by making possibilities for cross-agency data connectivity to enhance service delivery.

Stakeholders, Processes and Achievements

The project required the establishment of several entities. Each entity is tasked by elements of planning and implementation and reporting progress at the frequency determined in the following table:

Entity	Composition	Frequency	Tasks
Strategic Committee	Minister, General Secretariat; DHSA[17]; DIM [18]; Regional Directors; DPGOV[19]	Every six months	√ Starts up the project and sets goals √ Evaluates and conducts arbitrations
Steering Committee	General Secretariat; DHSA; DIM; DPGOV	Every two months	√ Sets operational objectives √ Evaluates the achievement of objectives √ Conducts the necessary arbitrations
Monitoring Committee	DHSA; DIM ; DPGOV	Every week and then every 15 days	√ Monitors objectives √ Sends reminders to hospitals in case of missed deadlines √ Reports problems/difficulties to the steering committee √ Develops the IT solution to cope with the necessary changes
Technical assistance cell	DIM/DHSA	Permanent	√ Provides remote technical assistance to hospitals (related to the use of the IT solution) √ Reports problems/difficulties to the monitoring committee
Regional Steering Committee	Regional Director, Deputies, Directors of hospitals in the region	Every 15 days then every month	√ Monitors the achievement of objectives at the regional level √ Provides material and logistical support to hospitals (hardware, connection, etc.). √ Reports problems/ difficulties to the monitoring committee
Local monitoring committee	Hospital directors, admissions services, medical body, nursing body, administrative body, monitoring and evaluation committee, operators.	Weekly	√ Installs the facility (IT solution) at the level of the hospital √ Reports problems/difficulties to the regional steering committee

Primarily, time (and cost) saving for both patients and doctors is the key objective of the project. The waiting time for patients who adopted the system has been remarkably reduced, from several weeks to 72 or even 24 hours in some cases. The system allows reducing expenses related to transportation and accommodation sometimes necessary to obtain an appointment and increase competition in terms of quality among doctors in favor of patients' satisfaction.

Additionally, in this early implementation stages, the application of the system created 32 jobs related to e-health within the medical bodies and Health Ministry departments, with potential for growth in employment as wider implementation of the system takes place.

From Experimentation to Wider Implementation

This experimental phase ended with a relative success: 4 hospitals have launched the service, with integrated specialties. The figures reflect an evolution of appointments through the system taken in the cities of Casablanca (+9,500 appointments), Rabat (+9,900 appointments), Meknes (+37,700 appointments) and Safi (+44,000 appointments). It should be noted that hospital undergoing the pilot project in Rabat stopped using the service on 04/19/2013 due to the restructuring that specific hospital[20].

[17] DHSA (Department of Hospitals and Ambulatory Care)

[18] DIM (Division of Information Technology and Methods).

[19] Steering Committee of the e-government program (DPGOV Direction de Pilotage du programme e-gouvernement)

[20] Working document and interviews with communication department of the Steering Committee of the E-Government and with communication department, Ministry of Health, Department of Management of Hospitals and Ambulatory Care; Monitoring and Evaluation.

These absolute figures provide an indicator of the take-up levels, however they do not provide a relative view on the extent of the overall evolution of the service.

The initiative's website allows citizens to learn about the provision of medical care by region or per type of care. It also allows them to make appointments online at the level of health facilities other than the four aforementioned institutions.

The successful wider-implementation of the appointment management service is based on several key factors:

- Establishment of appropriate governance: involvement of central, regional and provincial levels;
- Establishment of project plans and assigning tasks with deadlines to appointed owners.
- Communication to internal stakeholders and external clients.

Some inconsistencies emerged during the transition from the pilot phase to generalization given that the former phase was not followed with an evaluation highlighting strengths and weaknesses.

Challenges and Lessons Learned

After few years of a pilot project, the project has not yet been fully implemented on wide national scale. Feedback from stakeholders revealed several challenges:

- The lack of suitable premises for the installation of the operator
- Lack of capacity and human resources
- Low level of take-up and coordination from some doctors' side, concerning their timetables and agendas

Resistance of doctors and professionals to new technologies is a major obstacle to the development and continuity of the online service. Like many forms of resistance to change, it manifests itself in indirect ways. In this case, these manifestations affect both the micro level (professionals and patients) and the macro level (organizations and entities).

Overall, the project provides more transparency and visibility as far as the quality of services and doctors' performance are concerned. However, the European Union[21] has recently argued that the implementation of e-health strategies has proven to be much more complex and time consuming than expected, almost everywhere,.

This project has influenced private initiatives with similar objectives. For example, a private sector project was founded in 2013, aiming to improve and facilitate access to health care for Moroccans as a free service that allows patients to find the closest and doctors that best meet their needs (both in the public and private sectors). Such initiatives allow patients to better access the doctor's profiles and schedules in real time, to plan consultations and appointments instantly online. In this case, the project includes 19,275 medical addresses, 82 medical specialties and more than 1,300 patients registered[22]. The platform allows patients to leave comments, recommendations and express the degree of their satisfaction. In addition, competition and the increasing networking opportunities between doctors are all elements that work in favor of the patient.

Based on the experiences of this pilot project, one of the key areas for improvements going forward, is the need to define or adapt regulations and rules in the context of an integrated healthcare management system for the two sectors: the public and the private one.

Additionally, while such an e-health system promises to enhance service delivery, effectively it can also raise the risks of widening the gap between those patients who can gain access to it and those who can't. The digital landscape in the country currently differentiates between different demographics, such as urban and rural populations, rich and poor, young and old, men and women, etc. Indeed, some recipients of healthcare services have neither the financial means nor the required skills or connectivity to benefit from an electronic facility. Therefore, the patients most in need to access the service are ultimately excluded, in the absence of policy measures guaranteeing equal access for all.

[21] R. Watson, European Union leads way on e-health goal REMAIN obstacles. British Medical Journal.2010; 341: c5195. doi: 10.1136/bmj.c5195. http://dx.doi.org/10.1136/bmj.c5195

[22] Internal paper and interview with founder of the website: http://www.santeaumaroc.com

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Chapter 3

Partnership for Customer Value

Jordan: Enhancing Educational Infrastructure through Partnership

Madrasati: Community-based Engagement for Better Schools

Background

Jordan is a country with almost 40% of the population under the age of 15, and an estimated 30% of the young people unemployed. Clearly, education is key (if not the key) to unlocking future prosperity. However, in 2007, approximately 15% of the 3,257 public schools in Jordan (serving around 300,000 students), needed major structural improvement; most of those schools had pitted playgrounds, broken water taps, no shelter from the sun, dreary classrooms, not enough textbooks, light-fittings hanging from the wall, peeling paintwork – overall, most basic amenities were not in good condition (such as bathrooms, doors, windows, and furniture). Moreover, many of these schools did not adhere to national safety requirements.

Not only did this state deprive the students from a school environment that is fun, enjoyable, or informative -as a school experience should be-, it also affected the educational outcomes, motivation of the teachers, and willingness of the students to attend school (affecting dropout rates).

The challenge was clearly a complex one; one that required the engagement of various stakeholders, and major funding. The Jordanian Government (represented by the Ministry of Education) was not been able to tackle this challenge on its own; with budgetary challenges, increasing numbers of students, increasing demands and expectations from parents, and lack of the required capacity in the Ministry, the schools' situation was getting worse.

Clearly, using old tools to solve new problems was not going to work. A different (innovative) approach was needed. This this is when "Madrasati" was born[23]. Initiated by HMQ Rania Al Abdulla, and supported by various private sector players providing funding, local NGO's, parents, and UNICEF, Madrasati started as a community based partnership aimed at improving the physical state, and management of the local schools. At its inception, HM Queen Rania Al Abdullah of Jordan noted that "going to school should be a memorable mixture of experiences: learning and laughter, creativity and critical thinking, .

nurturing and increasing independence, enjoying today while planning for tomorrow". This was the underlying objective that the initiative would aim to achieve.

A Community Partnership Model for Better Services

The thinking that underpins Madrasati is about engaging the community in public service delivery and sharing the responsibility for creating public value between citizens and the state. By sharing responsibility for the children's education, the initiatives moves the model away from the parental state and sole government responsibility to a co-creation model; an essential component in the future of government.

In operational terms, Madrasati is a grassroots initiative that brought together businesses, non-governmental organizations, and communities, as well as the Ministry of Education, to rejuvenate schools in need. Since its inception, the primary concern of Madrasati has been infrastructure - with a parallel track being quality learning environment and tools.

In terms of infrastructure, Madrasati tackles the physical state of public schools. This entails involving the stakeholders at the community level in everything from assessing the needs of the school, fundraising, carrying out the repairs, to maintaining the school after completion. To ensure the effective management of such an engagement, each school is required

[23] For more details on Madrasati, please log on to www.madrasati.jo

to set up a local committee that involves students, youth, teachers, parents and community members to coordinate its efforts and to liaise closely with the project management unit of the initiative. This 'governance structure' has resulted in many creative approaches to mobilizing efforts including twinning of private and public schools in Jordan and abroad. Furthermore, each school is sponsored by a private sector partner corporation, providing school(s) with better access to necessary financial support as well as exchange of skills, knowledge and experiences.

In parallel to infrastructure improvement and maintenance, Madrasati aims to enhance the quality of the learning environment and tools in the same schools. Non-governmental organizations like Jordan River Foundation offer their existing programs in several thematic areas of focus that include: child safety, healthy schools, technology, skills training amongst others. These programs are implemented in the Madrasati schools based on their respective needs assessment. A parallel initiative (with Jordan Education Society) focuses on teacher training to improve the overall quality of teaching in public schools.

Public Private Partnership: The 'secret sauce':

At the center of the partnership model is the Ministry of Education. Madrasati initiative aims to build on the efforts of the Ministry in renovating schools and improving the overall learning environment through effectively generating new support and momentum in the form of finances and community ownership that ease the burden on the Ministry and assist it in accelerating desired results. Working with the Ministry is a large number of public and private partners.

To date, the following public sector and civil society partners have been involved:

- Children's Museum Jordan which provides support to promote reading throughout the schools. Additionally, the museum help schools achieve their learning objectives through various means such as providing innovative resources, experience, and activity based learning opportunities at the museum.
- Greater Amman Municipality/The Child Friendly City initiative generates knowledge of the issues and needs of children in cities. In collaboration with Madrasati, the Executive Agency for a Child Friendly City strives to improve the well-being of students and children by enhancing the quality of the municipal services, ensuring children's participation in decisions related to them, continue supplying nutritional snacks and foods to the schools, and carrying out library related activities. Finally, the municipality provides the Madrasati initiative with engineers to help assess the needs of the schools.
- INJAZ is a non-profit entity that inspires and prepares youth and enhances their opportunities to join the job market as competitive employees and entrepreneurs.
- Jordan Education Initiative provides teachers and students e-content development skills as well as other types of skills as well as the training they need in order to compete and succeed in the global information economy. In Parallel, the Jordan Education Society runs a parallel initiative in teacher training, complimenting efforts carried out under Madrasati
- The Jordan River Foundation /Child Safety program is designed to address intervention, prevention and awareness needs of children in Jordan.
- Royal Health Awareness Society/Healthy Schools Project (RHAS) implements the healthy school project in partnership with the Ministry of Health (MoH) and Ministry of Education (MoE). It aims to support the achievement and well-being of schools through meeting the requirements and guidance of the newly developed National Health Schools Standards.
- Ruwwad works to improve living conditions in marginalized areas in Jordan and the Arab region through programs focusing on education, child-development, entrepreneurship and employment. Through the Madrasati initiative, Ruwwad aims to support schools through innovative volunteer programs.
- Private Schools Council/School Twinning Program contribute to the development of the educational process by strengthening ties among the public and private schools. Their relationship allows an exchange in resources as well as an exchange in experience in all aspects: cultural, education, academic, social, and in the fields of sports and arts, therefore developing the proficiency of teachers, administrators, and

students through a two way interaction and exchange of experience process.
- The Queen Rania Award for Excellence works in partnership with Madrasati to identify the distinguished teachers and support them to pass on their expertise by training other instructors.
- UNICEF – Student Councils (SCs) and Parent Teacher Associations (PTAs) are two main forums through which adolescents and their parents can influence, improve and interact with school life. UNICEF implements these forums in the Madrasati schools.

In addition to these public sector entities and NGO's, private sector organizations in Jordan, including small, medium, large and subsidiaries of multinational corporations are critical and active partners. By sharing resources, expertise, or employee time, corporations make a big difference to students in schools in Jordan. In this regard, Madrasati represents an opportunity for corporations to invest their resources in a results oriented approach. Corporations tend to focus their corporate social responsibility efforts by investing in multiple coordinated programs aimed at improving education in a holistic manner. A company that sponsors a school typically see positive changes in a short period of time.

"Madrasati provides the private sector with an ideal opportunity to become an active partner in rejuvenating under-performing public schools. Companies contribute financially to upgrade the infrastructure and improve the education environment through a series of remedial programs. Companies that also donate staff time for extra-curricular activities, skills development and mentoring report high employee satisfaction from their engagement in Madrasati"[24].

Private sector organizations contribute in many ways, including:

- Sponsor school(s) financially: contributions vary 15,000 to 100,000 JD which make a transformational impact on the physical infrastructure and the learning environment in schools.
- Provide in-kind donations: renovation materials, stationary, classroom supplies, and computer hardware and software.
- Support one or more of the partner organizations to implement educational programs that assist the students beyond academia, helping them develop their personalities and characters into productive adults.
- Sharing expertise on planning and management skills to help better manage the schools in the long run.
- Taking an active part in the local community committee and provide them with fresh ideas in getting the community better involved
- Participating in programs such as INJAZ; or with other partners based on your interests and areas of focus.
- Tutoring students who are in need of extra assistance;
- Fundraising through payroll deductions and special events;

Achievements, Challenges, and Lessons

Launched in 2008, Madrasati has – to date - impacted over 700 schools and attracted millions of Jordanian Dinars from the private sector – all working towards improving schools conditions, teaching equipment, and providing a better service to the students.

During its first 5 years, the initiative needed to overcome many challenges including:

1) The belief that education was the sole responsibility of the government.

All partners - government, the private sector, civil society as well as teachers, parents and students - had to learn to work together in newly established community committees at the school level to develop and roll out effective plans of action.

2) The lack of engagement by teachers, students and parents.

The initiative made the expectations of teachers, students and parents clear from the outset. They were discouraged from simply making demands. Instead, they were empowered to own the process and to be active in developing realistic solutions to the challenges in their school. This shift in culture was essential to the success and sustainability of the initiative.

3) The potential for diluting the focus/results of the program.

The high level of interest by all sectors to participate in Madrasati meant that the initiative had to entertain the possibility of hosting many sponsored programs. While creativity and adaptation to the needs of each school were encouraged, a focus on key priorities was essential. These included: teacher training; community capacity development training; ICT in education; health and nutrition; and safe schools.

[24] Maysa Jalbout, CEO of Queen Rania Foundation (2010-2012)

Many lessons have been learned so far. The most important one is that for such initiatives to succeed, there must be real shared ownership. Madrasati worked because it was more than a one time, top-down infusion of resources; it is a true community-based initiative that is sustainable, and inclusive. Madrasati's success has fostered a network of partners, and it is a practical example of the 'co-creation of public value'.

Another key lesson in this regard has been the importance of communication - locally, regionally, and globally - to ensure the right messages are heard, to build and maintain momentum, to thank the stakeholders, and to share the results and encourage others to innovate. Madrasati has multiple communication channels (inc. all social media channels) and also relies on the wide-network of stakeholders to 'co-communicate' to increase awareness.

Another important lesson is that innovation breeds innovation. While Madrasati started as an initiative to help in repairing broken windows, providing new chairs, painting classrooms, and creating safe and fun playgrounds, it grew to become an initiative that designs programs to enhance existing curricula and enrich every child's learning for the long-term. NGOs now offer expertise in issues like bullying and abuse; confidence and self-expression are inspired through drama classes, art, and problem solving in the local Children's Museum; computers are installed and technical skills are taught by IT graduates who train teachers to ensure technologies liven up lessons, not lie latent; CEOs share their entrepreneurial experience and teach students how to find their dream job; and health and nutrition classes reach out to parents and children encouraging them to be more active and eat a balanced diet, together.

Madrasati is an embodiment of the 'future of governance': a collaborative, local community-driven initiative to improve government services; with shared responsibility for the future. – The results for both students and companies have surpassed expectations and the initiative has become an international model for public-private partnerships in schools.

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Egypt: Nurturing Innovation in the ICT Sector

The Technology Incubation Program

Background

Since the early 1990s, the Egyptian government has embarked on numerous ICT driven initiatives in an attempt to modernize and boost the Egyptian economy and to create an encouraging legal and regulatory environment for new businesses. The Ministry of Communication and Information these programs and acted as a facilitator among the involved stakeholders. One of the successful initiatives is the Technology Incubation Program (TIP) established firstly by Egypt's Information Technology Industry Development Agency (ITIDA) and transferred later to the Technology Innovation and Entrepreneurship Center (TIEC). The core idea behind this initiative is to enhance the capacity of innovative ICT projects and to develop the skills required for future success and partnerships with national and international partners. As such, the program provides an innovative mechanism designed by the government to encourage new ICT projects and to incubate new ideas in this sector. It is also a new way to link private businesses and academic institutions under the umbrella of government sponsorship[25].

What is innovation in this context? Innovation is a multidimensional concept which means different things to different people. For the purpose of this case study, the definition used here is in accordance with that of the TIEC, which broadly describes innovation as "the introduction of a new product, service, or a process through a certain business model into the marketplace either by utilization or commercialization"[26]. This broad concept of innovation extends to cover innovative practices in all areas of production, service delivery, processes development and business models in ICT companies.

In ICT sectors, innovation could be achieved in different ways and by applying different tools and mechanisms. One of those mechanisms is the Technology Incubation Program (TIP) which was designed and implemented by the MCIT in collaboration with other government agencies such as ITIDA and TIEC in an attempt to encourage, identify and reward innovation in ICT sectors. From this angle, innovation in service delivery here was realized in two different ways: On the one hand, the institution of the TIP is a process that did not exist before, aiming to deliver government services and support ICT companies. At the same time, because of the broad definition of innovation adopted by the TIEC, a wide range of the beneficiaries from the TIP provide different innovative services to consumers either directly or indirectly. As such, the TIP became a win-win solution for the government and the private sector as well as consumers who now have access to new smarter services that did not exist before. Hence, the TIP can be conceived as a partnership between the government, the private sector and academic institutions. Such a partnership enables each party to play to its strength and to excel in the area(s) wherein it enjoys a competitive advantage.

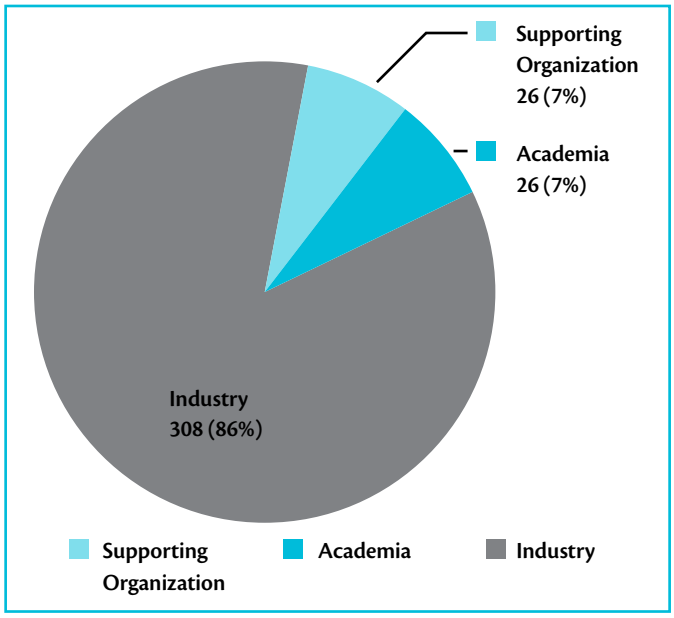
Stakeholders, Objectives and Processes

The idea for a TIP was first conceived in 2006 when ITIDA started the TIP and established the first incubation center in the Smart Village. The TIP was regarded as a means to encourage innovations and to sponsor young and talented projects in the ICT sector. The aim was to create a suitable environment for seed and start-up ICT companies with strong potential for success to grow and flourish in the marketplace. To this end, the government assists incubated projects by providing technical and managerial support besides other facilities and infrastructure services. Since its inception, the TIP was seen as a means for achieving other ends in the ICT sector such as creating new jobs, increasing IT exports, and increasing Egypt patent recognition. In 2010, the TIEC was instituted with a broad mandate to drive innovation and entrepreneurship in ICT sectors. The ownership and the management of the TIP have been transferred to the TIEC which is running the program at the moment alongside other initiatives to encourage and nurture innovations in ICT. An expansion of the TIP has taken place and three new university-based incubation centers were established in leading universities: Cairo University, Assuit University, and

[25] MCIT Year Book (2012), http://www.mcit.gov.eg/default.aspx?aspxerrorpath=/info_Innovation.aspx.

[26] Dalia Gamal, Tarek Salah, and Nesreen Elrayyes (2011) How to measure organization innovativeness? An overview of innovation measurement frameworks and innovation audit/management tools, innovation support department, TIEC.

Alexandria University[27]. As a facilitator for innovation, TIEC works as a link between different groups of stakeholders including private ICT companies and academic institutions. In this regard, one of the main tasks for the incubation unit in the TIEC is to develop and maintain such a network of stakeholders as well as building-up a mentorship community to support the TIP and help incubators in building their technical and managerial capacities. The collaboration innovation network facilitated by TIEC provides a good platform for connecting all ICT stakeholders as shown in the figure[28].



In order to stimulate innovation in ICT sectors and encourage action-based entrepreneurship among young talented people, the TIEC organizes a nationwide competition under the name of "Start IT Business Plan Competition". All ICT companies and entrepreneurs are invited to provide their innovative ideas to the TIEC with the potential of transforming those ideas into actual enterprises via a one year incubation period in case they pass the evaluation process and meet the selection criteria. The competition is open for teams with prototypes or startups which entered the ICT market in less than a year. Applicants can submit their proposals at any time during the year and submissions are evaluated every three month. Those who succeed in passing the evaluation processes are invited to pitch their projects in one of the TIEC's incubation centers and benefit from the incubation program which provides access to: up to 120,000 EGP[29] in services such as consultancy, marketing, and software or hardware tools; a working space with internet access; technical support and subject-matter advisory alongside business consulting and mentoring. Additionally, the TIP provides a platform for networking between incubators and other ICT companies at the domestic and international levels.

To be considered for admission to the program, applicants should demonstrate innovative ideas in the area of ICT or technology-based services. The provided ideas should be supported by a concrete business plan in which applicants indicate the economic viability of the project, the scope (national, regional or international), and the targeted markets. Although the TIP encourages all teams with innovative ideas to apply, those with prototypes or beta products are privileged. Another criterion to privilege potential candidates is the experience in the area of the project. Applicants with previous experience are favored over those with no experience. All submitted applications go through a selection process in which proposals are measured against eight maim criteria (see table below).

[27] See The Technology Innovation and Entrepreneurship Center (TIEC), http://www.tiec.gov.eg/en-us/Pages/default.aspx

[28] Source: TIEC, http://www.tiec.gov.eg/en-us/Pages/default.aspx

[29] 1 USD equals around 7 Egyptian Pounds (EGP)

Selection criteria	Definition
ICT-based or ICT-related	Serving any of the broad ICT categories
Innovativeness	Originality in comparison to the other solution readily - available in the industry.
Readiness	Applicable via a working prototype based on a clear conceptualization
Entrepreneur - led	Demonstrate entrepreneurial traits and leadership in development and conceptualization phases.
Sloving a real problem	Addressing existing problems in the marketplace or meeting future needs.
Commercialization Potential	A clear idea about how to enter and grow in the targeted markets.
Economic Viability	Persuasive economic rationale for the proposed idea(s)
Scalability	The ability of the proposed idea to survive and flourish horizontally and vertically.

Each application is given a score based on these selection criteria and those which pass the selection phase normally subject to more scrutiny during the next evaluation phases in which evaluators look at the uniqueness of the selected ideas and their ability to survive competition in the marketplace.

The application process includes six main stages. Applicants have to make sure that they have consolidated and encapsulate the essence their ideas in the provided overview in a manner that allows evaluators to make an informed decision regarding their projects without the need to see the detailed submission. The submitted forms go through an initial evaluation and those which show potential success are notified by the TIP team and asked to provide full proposals for their ideas. The provided detailed proposals are evaluated by the judges according to the previously mentioned criteria and each proposal is given an overall score.

The presentations of shortlisted candidates are evaluated by the selection panel and those which pass that final stage become the winners of the competition and are notified by the TIEC to start their incubation period in one of the TIEC incubation centers and to make use of the benefits and facilities provided by the TIP. As reported by an innovation support manager in TIEC, 21 companies have benefited so far from the TIP and there is an intention to increase the incubation capacity of the existing incubation centers to reach 50 companies[30].

As per the terms and conditions of the TIP, winners have to testify that they will dedicate their full-time and efforts to lead their projects during the incubation period and that there are no constraints which might prevent them from doing so[31]. The winners also have to sign an agreement with the TIEC to show their acceptance of the prize and their compliance with the rules and regulations of the TIP[32]. Successful applicants have three main sources to finance their projects. For start-ups which have limited experience and low risk projects they can apply for a developmental fund fully supported by the MCIT and other NGOs. Applicants with prior experience and more risky projects can have access to the funds available from the Social Fund for Development (SFD). Another source of funding is the Venture Capital which provides funds to certain economic sectors including ICT provided that applicants have a very strong business case.

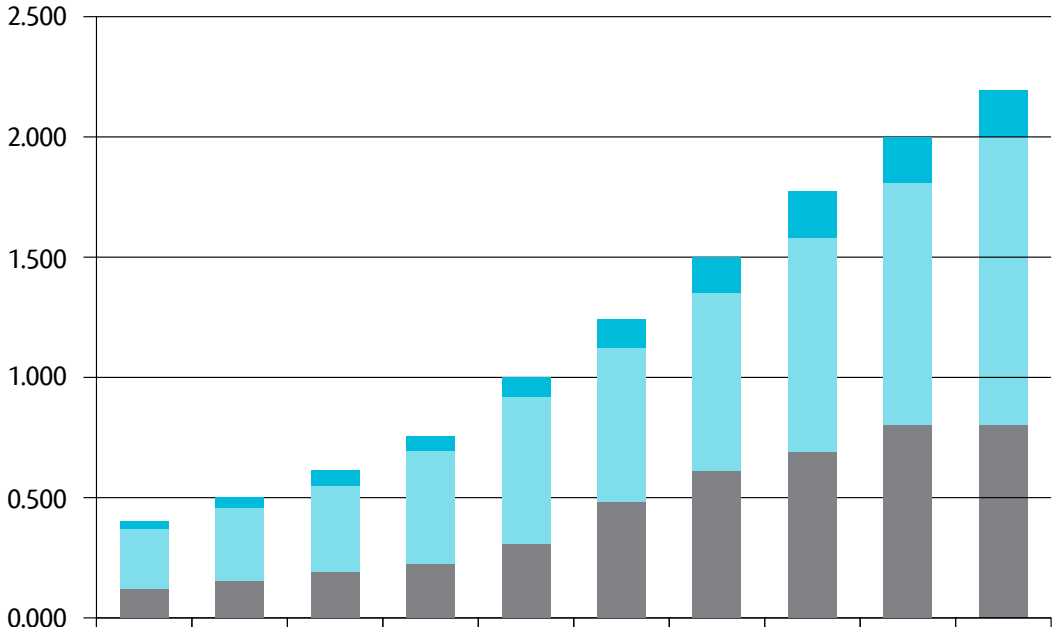
[30] Sally Metwally Mohamed "Innovation Support Manager Technology Innovation & Entrepreneurship Center (Tiec)", www.Tiec.Gov.Eg.

[31] In this regard, the TIEC has the right to disqualify or hold the prize from any team in case they do not make enough efforts to implement their idea. In such a case, the TIEC may reallocate the prize to another applicant based on the judgment of the evaluation team.

[32] The TIEC holds the right to exclude any entrant which does not comply with the terms and conditions of the TIP.

[33] Source: TIEC, "technology innovation and entrepreneurship strategy 2011-2014"

Incremental revenues from ICT sector innovation by mechanism ($ Bn)



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Licensing	0.032	0.040	0.048	0.060	0.080	0.125	0.150	0.175	0.200	0.200
Application level Outsourcing	0.240	0.300	0.360	0.450	0.600	0.625	0.750	0.875	1.000	1.200
New Technology Firms	0.128	0.160	0.192	0.240	0.320	0.500	0.600	0.700	0.800	0.800

Achievements

Overall, innovation has steadily contributed to the revenues of the ICT sector in Egypt since 2011 through its different mechanism as indicated in the figure below[33].

Regarding the TIP, the documentary analysis and the interview material has indicated that:

- Beneficiaries from the TIP have agreed that the program provided them with the support they needed to launch and develop their businesses. According to their views, they have received technical as well as managerial support during the incubation period.
- The TIP has also enabled new business to connect and forge links with existing well-established companies and acted as a networking platform with national and multi-national companies[34].
- Beneficiaries have also appreciated the fact that they can apply more than one time even if they have already received assistance as long as they present innovative ideas.
- The clear selection mechanisms and the transparency of the evaluation process have been acknowledged by a number of the beneficiaries.

[34] Interview with a senior telecoms engineer, the NTRA.

[35] Interview with the CEO of an incubator company.

Obstacles and Challenges

- Some companies have raised concerns about the value added of incubation in general.
- Incubations according to some enhance the dependability of new companies to incubators in relation to infrastructure and initial funding which weakens their ability to compete in the marketplace.
- Opponents also cast doubts on those who benefit from the TIP and raised a question regarding whether or not they are the companies that deserve to receive support.
- Some previous beneficiaries have also referred to rigidity, bureaucracy, and red tap in the way that TIEC is dealing with incubators to the point that in some cases the fund has been cut.

Overall, ICT companies have noted that despite the benefits provided by the program, more responsiveness and flexibility is still required to accommodate the demands of the incubators and the challenges they face when they start the implementation process[35].

The Way Forward

In conclusion, the TIP represents an innovative way to deliver ICT services in a collaborative partnership between the Egyptian government and the private sector.

- This partnership benefits both parties and allows for building-up an innovative ICT sector by helping start-ups to launch and develop their innovative ideas in order to address the pressing problems in the marketplace and provide customers with new services and technologies.
- The MCIT and the TIEC may need to allocate more resources to expand the TIP and more incubators may be needed to support pioneer ideas.

The issues raised by the incubated ICT companies is to be taken into account and the shortcomings of previous applications should be addressed and avoided in designing the new incubators.

Authors[36]

UAE: Excellence in Smart Government Services

Fadi Salem and Ibrahim Elbadawi

Jordan: Enhancing Educational Infrastructure through Partnership

Yasar Jarrar

Bahrain: Electronic Services for Increased Public Service Efficiency

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Oman: Enabling Better Educational Services through ICT

Alinah Aman

Lebanon: Streamlining Licensing Services

Akram Najjar

Egypt: Nurturing Innovation in the ICT Sector

Ahmed Badran

Morocco: Online Portal for Scheduling Doctors' Appointments

Nouh ElHarmouzi

[36] In alphabetical order based on Arabic country names

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The Governance and Innovation Program

The Governance and Innovation Program[37] at the MBRSG conducts research and programmatic activities focusing on policies for government innovation and development through information technologies in the Arab states. The objectives of the program are aligned with regional objectives towards nurturing a culture of innovation in society, promoting participatory, inclusive and transparent government models; and enabling more responsive and efficient governance through effective adoption of information technologies.

The program works on three tracks:

- **Policy and Scholarly Research:** Conducting research focusing on government policies and societal transformation through technological innovation in the Arab region.
- **Policy Advisory:** The ultimate objective of the Program is to inform present and future Arab policy makers in assessing the impact of the ongoing transformations in their societies and governments; and to help develop locally fitting policies for future governance initiatives.
- **Regional Development Activities:** The Program brings together regional and international networks of practitioners and scholars working in related areas through programmatic and educational activities, in order to encourage proactive regional knowledge sharing and bridge the gap between policy and research.

The Mohammed Bin Rashid School of Government

The Mohammed Bin Rashid School of Government (MBRSG) is a research and teaching institution focusing on public policy in the Arab world. Established in 2005 under the patronage of HH Sheikh Mohammed Bin Rashid Al Maktoum, Vice President and Prime Minister of the United Arab Emirates and Ruler of Dubai, MBRSG aims to promote good governance through enhancing the region's capacity for effective public policy.

Toward this goal, the Mohammed Bin Rashid School of Government also collaborates with regional and global institutions in delivering its research and training programs. In addition, the School organizes policy forums and international conferences to facilitate the exchange of ideas and promote critical debate on public policy in the Arab world.

The School is committed to the creation of knowledge, the dissemination of best practice and the training of policy makers in the Arab world. To achieve this mission, the School is developing strong capabilities to support research and teaching programs, including

- applied research in public policy and management;
- master's degrees in public policy and public administration;
- executive education for senior officials and executives; and,
- knowledge forums for scholars and policy makers.

[37] The Governance and Innovation Program also authors the Arab Social Media Report Series, which can be found in the website: http://www.ArabSocialMediaReport.com

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