

Growing Talent for the Knowledge Economy: The Experience of Saudi Arabia

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The Saudi National e-Government Program, YESSER, was launched to provide better government services, enhance efficiency and effectiveness in the public sector, and contribute to creating a Saudi information and knowledge-based society. Simultaneously, a large number of regulatory and policy actions focused on fostering competitiveness and establishing a business environment supportive of information and communication technologies (ICT) were adopted (see Box 1). These combined efforts constitute a strategy designed to rapidly introduce effective e-government concepts in the largest Middle Eastern country by taking on best practices and avoiding pitfalls other nations experienced while remaining focused on developing Saudi expertise to engage and lead in the technology sector. Many successes have been attained in a short time, but also many lessons have been learned while pursuing excellence.

In its first five years of operation, YESSER achieved progress on two important fronts: implementing robust shared services that ensure secure government information flows and the delivery of secure online services,¹ and providing organizational infrastructure to help government agencies successfully develop and implement their e-Government Transformation Plans—the transformation of traditional services to online ones, with the consequent benefits in terms of convenience, timeliness, and lower costs.²

The Saudi National e-Government Program is entering its second five-year phase as of 2011. It will continue to build on the technical achievements made thus far, but with a renewed focus on creating a skilled workforce. The development of Saudi human capital is at the center of the next five-year plan as the country continues to advance toward the next generation of a technology-enabled government and knowledge society.

The purpose of this chapter is to outline the journey of a nation that entered the e-government race a little later than most, yet is responsibly executing strategies to advance rapidly. The chapter considers Saudi Arabia's route through the building of advanced infrastructures, deploying effective governance mechanisms, and incorporating the practices of “continuous improvement” by addressing the “human factor”—often the most challenging part of any e-government transformation—into its actions and future direction. The Saudi e-government journey is taken, by a young nation with deep cultural and societal traditions, on an ambitious time scale and with a high degree of determination from its leadership. It provides an interesting example for other economies around the world faced with similar challenges.

Public-sector transformation and skills growth

When Saudi Arabia launched YESSER in 2005, the main objectives of the program were to raise the productivity and efficiency of the public sector and to provide better

Box 1: Saudi Arabia's ICT development

With a population of approximately 28 million and an area of over 2 million square kilometers, Saudi Arabia is the largest country in the Middle East. Its economy is petroleum based, with roughly 75 percent of budget revenues and 90 percent of export earnings coming from the oil industry. It is therefore not surprising that the Saudi authorities have granted priority to diversifying and modernizing their economy, starting in 1999 with the privatization of the power and telecommunications industries.

Everywhere, developments in the ICT industry continue to accelerate, bringing about a great variety of services with better quality and more secure uses. Service providers are adapting their strategies and reordering their priorities to satisfy new requirements of customers, be they individuals or organizations. As the world rapidly evolves, access to a modern ICT infrastructure, supported by strong regulation and active competition, is key to reducing geographic and cultural barriers and furthering knowledge that helps to bridge gaps between cultures, economies, and societies. Saudi Arabia has not been insulated from these global trends. The state of its ICT sector is now very advanced. The evolution to a more competitive environment has resulted in greater investment, more service providers, a variety of innovative services, improved quality, lower costs, and greater accessibility—all of which have had a positive impact on employment and the national economy.

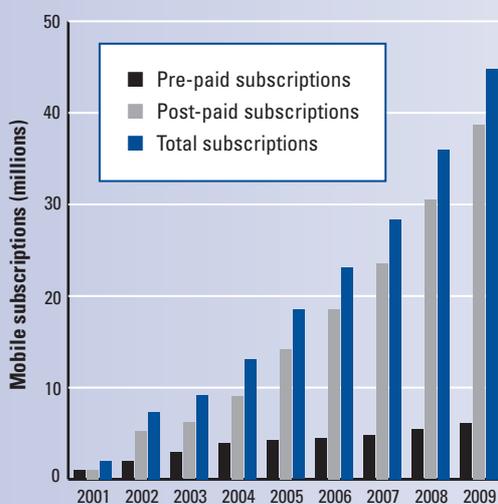
Increased competition in the telecommunications sector has resulted in better service offerings and customer care, and

reduced prices and subscription charges (see Figure A). By the end of 2009, the total number of mobile subscriptions stood at just under 45 million, up from only 2.5 million in 2001 when the Communications & Information Technology Commission (CITC) was established. Mobile penetration by the end of that year stood at 175 percent, as compared with 67 percent for the world average, 57 percent for developing countries, and 114 percent for developed countries.

Broadband penetration was also promoted and new regulations in the area of regulatory frameworks for mergers, acquisitions, and bankruptcy in the ICT sector were adopted. Moreover, programs to support the country's ICT industry were launched; these included the introduction of tariff regulations, anti-spam guidelines, and an awareness campaign to foster the correct use of ICT products and services. All necessary requirements in building an affordable and trusted service provider environment were put in place as the broader public-sector e-transformation efforts were launched.

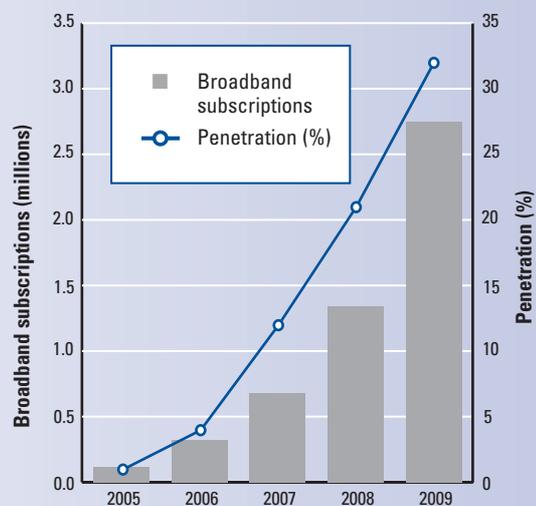
Broadband subscriptions in Saudi Arabia have grown 86-fold from 2006 to 2009, bringing the total number of subscribers to 2.75 million from 32,000 (Figure B). This indicates that about a third of households has now broadband connections. Even though there has been tremendous broadband usage/growth in the past few years, the potential for further growth is there, as some parts of the country remain underserved by broadband services.

Figure A: Mobile subscriptions, 2001–09

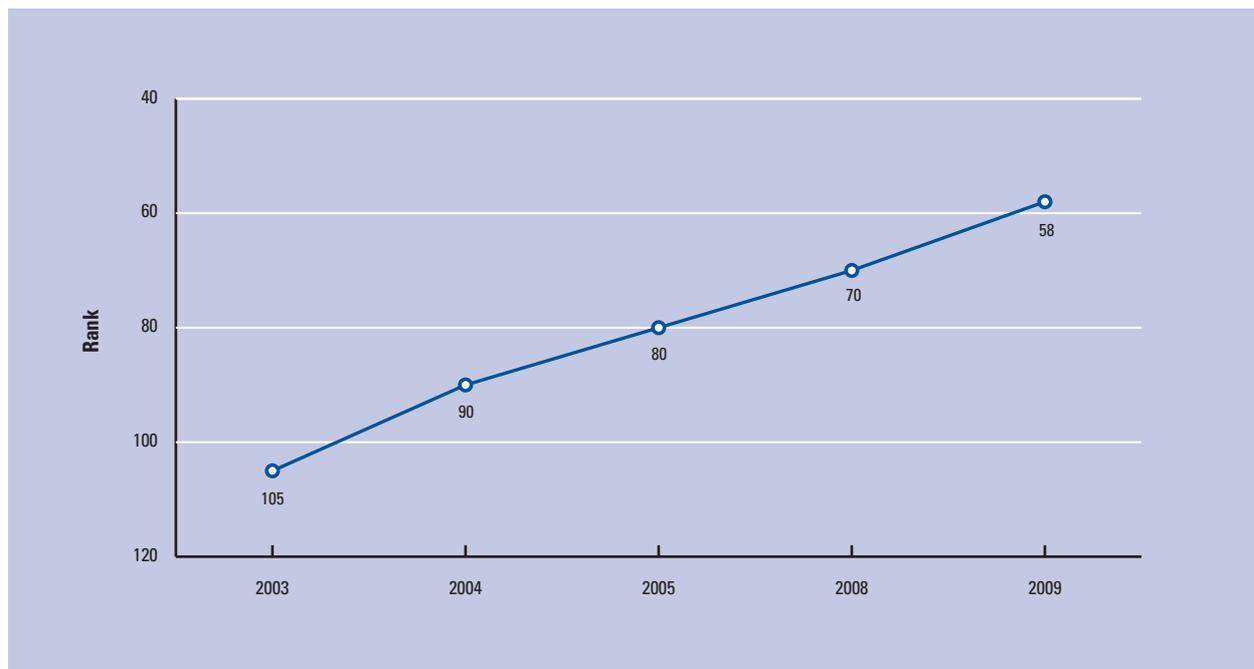


Source: YESSER, 2010.

Figure B: Growth of the Saudi broadband market, 2005–09



Source: YESSER, 2010.

Figure 1: Saudi Arabia in the United Nations' e-government assessment, 2003–10

Source: http://www.unpan.org/egovkb/global_reports/08report.htm.

and easier access to services for individuals and businesses alike.

The initiative consisted of a National e-Government Strategy and Action Plan covering the period 2006 to 2010. Leadership of the strategy and action plan was assigned to the nation's e-government program, YESSER, a directorate within the Ministry of Communications and Information Technology (MCIT).³

Significant progress has been made since 2005, as reflected in Saudi Arabia's ranking in United Nations e-government survey (Figure 1).

Over 1,000 e-services, ranging from informative to transactional, are now available on the national portal. There is good support for e-government at the most senior levels.

But there is still need for improvement to increase the speed of implementations and build on the momentum that has been established. Critical to enabling and facilitating progress is YESSER's operating strategy, which is designed to anticipate government needs and respond with new services that fill a wide variety of skill gaps. This organic development is characteristic of YESSER's evolution; it has gone from developing the core infrastructure to becoming a knowledge- and skill-based enabling organization. However, ongoing e-transformation surveys and governance feedback revealed greater human competency needs. These emerging needs were not ignored as the second five-year e-government strategy and action plan were developed.

The plan consists of four strategic themes, as follows:

- build a sustainable e-government workforce,
- improve the experience of the public in their interactions with government,
- develop a culture of collaboration and innovation, and
- improve government efficiency.

Of the six workstreams designed to achieve these goals, the one devoted to human resources development has been identified as the most critical. Entitled "Human Capital, Communications and Change Management (HCCCM)," this workstream aims at ensuring that the leadership, communications, and resources required to achieve the second action plan are in place.

Three critical factors have been identified for the success of this plan:

- the implementation of improved human capital and communications practices,
- the leadership of e-government by government agencies, and
- the regular measurement of the progress made by the strategy.

Human capital management (HCM) is the number one priority for the second action plan. There is a

critical need to identify options for increasing the number of skilled and experienced people available to lead the delivery of e-government in the country.

Leadership by individual government agencies is also crucial to the success of e-government: leadership in the implementation of e-services, in the use of shared infrastructure, and in communication with employees and the public. The e-government committee established within each government agency is responsible for:

- developing a vision and e-government strategy in support of the second action plan,
- publishing a roadmap of e-services,
- advising the Office of Strategy Management (OSM) about progress on the roadmap on quarterly basis,
- participating in collaborative and joint initiatives with other agencies both within the sector and with YESSER when involved in national applications, and
- providing leadership within the agency and within a sector when required.

Four agencies have a particular role in supporting the success of the second national e-government action plan: the Ministry of Finance, the Ministry of Civil Service, the MCIT, and the CITC. The changes that will result from the second action plan will affect all government agencies. Implementing these changes will need to be coordinated among the agencies.

Measuring the progress of the strategy against the goals of the second action plan will be undertaken by the OSM, which will emphasize the importance of working across agencies and sharing experiences. The roles of the OSM include the following:

- maintaining oversight of progress based on monthly reports by the relevant project manager and aggregating the results into a dashboard report,
- developing indicators for tracking progress against strategic objectives,
- maintaining relationships with sector strategies and tracking their alignment with the national e-government strategy on an annual basis,
- assessing the content of e-government strategies prepared by agencies,
- developing risk mitigation approaches and maintaining the risk register, and
- reporting to the Steering Committee each quarter on progress against milestones and on strategic objectives measures and risk management.

The OSM will build capacity to undertake these roles across all the initiatives in the second action plan,

covering both YESSER projects and e-government projects undertaken by agencies.

E-government success is fundamental to the government transformation and the development of Saudi Arabia as an information economy. The Saudi government also recognizes that e-government initiatives are as much about changing people, culture, and public administration as they are about technology. The general strategies outlined above attempt to address human capacity development through a number of mechanisms. However, the starting point for implementation emerges from effective management of change and all that it requires: leadership, communication, and training.

From vision to implementation: Nurturing change and leadership

The implementation of the Saudi e-Government Strategy and Action Plan will require monumental changes in government processes, technologies, organizational design, and job roles. The most important factor for success is the ability to institute change.

After a comprehensive assessment of concerns, four top areas of focus emerged for government improvement. These are:

- development of a sustainable workforce,
- providing a better experience for citizens when dealing with government,
- collaboration and innovation, and
- increased government efficiency.

To achieve improvements in those strategic areas, there needs to be a major shift—a long-term and government-wide shift—in the way government agencies think and behave. Building the capacity for this shift is not like installing a new system or technology. It is a complete transformation in the way each agency operates, leads, and motivates its people. It requires individuals to learn new skills, take on new roles, and work to new performance standards. The rest of this section will explore the main dimensions of the transformation required.

Confronting the need for change

Saudi citizens experience customer service and online services in their personal lives and their interactions with private-sector organizations. They have a right to expect similar levels and channels of service from the government, and it has now become key for every public-sector employee to deliver service excellence to their public. More importantly, e-government becomes a vehicle for developing the nation's future.

Although the financial resources necessary for establishing e-government have been allocated, achieving international standards is difficult. Traditional work

methods, based on ingrained social and cultural values, need to change if end-users are to be enabled to exercise their preferences. Significant change that will transform the very fabric of work design and execution across the public sector is required. This will be achieved through a series of initiatives that have been designed to ensure that the necessary changes are managed as a structured program of work.

The themes of the Saudi Change and Capacity Building initiative are meant to drive:

- a common approach for leadership of e-government across agencies,
- a qualified and skilled pool of resources to meet e-government demands,
- agencies that work together to share knowledge and experience, and
- recognition of the e-government workforce as a high-performing and motivated community of government employees.⁴

Creating Saudi Arabia's capacity building and change programs

To deliver on these themes, the Second Saudi Action Plan has identified 22 strategic objectives that cover all aspects of e-government. The Human Capacity Building and Change set of initiatives are focused on supporting the following six strategic objectives related to the leadership and the workforce:⁵

1. to establish and maintain an effective and skilled workforce of people working on e-government,
2. to maintain e-government leadership by ministers and senior executives across agencies,
3. to create a new culture across the e-government workforce using performance- and achievement-based human capital management,
4. to increase e-government awareness among all government employees,
5. to improve collaboration and increase knowledge exchange and sharing of experience between agencies, and
6. to build capacity for e-government research and innovation.⁶

Leading change through connected leadership

The Second National e-Government Action Plan will deliver value as a well-defined but demanding business/technology strategy. However, it is the capacity and competencies of the executive leadership that will determine their success.

It is not primarily the number or quality of individual executive leaders that determines organizational success, but—more importantly—it is the ability of formal and informal leaders to work together in the support of e-government goals. Such a concept is termed *connected leadership*: leaders act together in groups and across agency boundaries to implement strategies, solve problems, respond to threats, adapt to change, and support innovation. Delivery on promised concepts cannot be realistically projected without ensuring that all members of government learn and understand the concept of transformation and understand also how each member must contribute. To accomplish this requires comprehensive training.

Figure 2 shows how the leadership development strategy is both related to and driven by the e-government strategy and tied to e-government results. It also makes clear that the development of leaders should be thought of systemically, not simply as a curriculum composed of programs.

Saudi leadership development strategy reflects the challenges and content inherent in the context of the transformation needed for the workforce in this particular country. A unique approach has to be taken to address the special cultural environment of Saudi Arabia, which makes “off-the-shelf” executive development programs or experiences inadequate. A strong link among e-government strategy, leadership strategy, and leadership development strategy is essential. By providing an understanding of these crucial factors, the YESSER program is offering a fitting response in this regard.

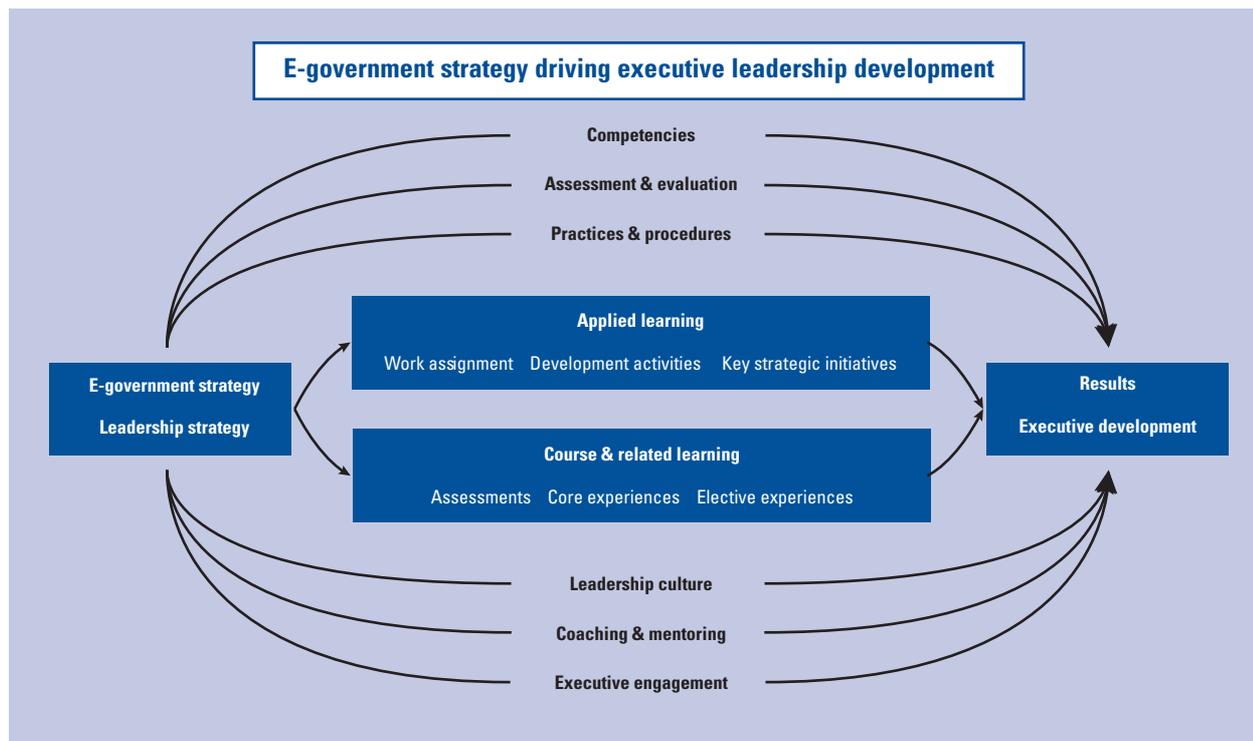
Transformative training strategy

CITC's 2009 annual report projects a significant shortfall in skilled people across the ICT sector in Saudi Arabia;⁷ this shortfall is even worse for those qualified to implement the e-government program. Agencies consistently report a significant shortage of skills as a primary constraint to implementation progress. The development of ICT professionals needs priority attention, and a training strategy has been designed to respond to these impediments.

There are currently estimated to be up to 5,000 program and project employees, employed by over 250 agencies, dispersed throughout the country.⁸ The second Action Plan creates a demand for many additional staff to implement and maintain the project nationally.

In addition to training technical staff, the strategy covers the training of business leaders in agencies, equipping them with the skills and expertise to provide the necessary leadership for the changes they will face. Without focused, timely training, agencies will continue to struggle to effectively implement their e-government projects.

Successful implementation of the training strategy demands a significant transition to needs-based training and on-the-job learning through competency reinforcement.

Figure 2: Leadership development strategy from the National e-Government Strategy and Action Plan, 2011–15

Source: YESSER, 2010.

This will be a change in culture for both the agency and the individual, and will involve raising awareness, observing the results of targeted training, and establishing support networks.

Above all, this new culture of technical, managerial, and leadership learning must be driven by effective executive leadership. To accomplish these objectives, the YESSER Center for Excellence and Research and Development (CERD) is being strengthened to serve as a focal point for all program related learning activities (see Box 2).

Factors of change in the public sector

In the context of e-government, the target is “Better services for Saudi citizens.” This means determining the drivers of citizen satisfaction with government services, assessing how current services measure up to these drivers, and understanding the role of e-government in meeting these expectations for improvement. Extensive surveys have been conducted to determine what satisfies the Saudi e-government consumers and what is most important for serving their needs. Based on this knowledge, public managers can build a change plan for their agency, using tools and resources developed for use on a government-wide basis, as outlined in the initiatives.

A national change management initiative has been collaboratively designed to support ministers and executives within government agencies to enhance their ability to champion the rationale for change. Elements of this initiative include:

- articulating the vision and case for change by clearly and regularly communicating through a variety of executive support mechanisms,
- delegating and holding senior managers accountable for ensuring that projects actually happen and positive effects are realized,
- enhancing program and agency intellectual capacity and competency, and
- driving cultural change and demonstrating new management systems and leadership behaviors that embody the new e-government values.

Human capital management: Preparing and equipping the Saudi workforce

Saudi government employees need more training to develop capability in support of e-transformation. E-government is one aspect of a wider set of changes needed to improve customer service in government, and many other countries have included e-government as part of a broader service-improvement program.

The change program will be assisted by the introduction of suitable rewards and incentives. The opportunity to learn from others who have introduced change successfully in government is another effective method of accelerating change. This approach is being instituted in significant ways. For example, the Saudi e-Government award Enjaz was entirely organized and designed to reward “change characteristics” and incentivize others to pursue Saudi best practices to accelerate

and communicate successful results of changed processes and collaborative efforts in “Serving People Better.”

Within YESSER, a Change Management Program (CMP) has been designed to remedy the acute skill shortage and competency levels in the area of e-government, as well as to mitigate market compensation sensitivities. Two chief elements define the core goals of the program:

1. Training, which is so vital to e-government design, implementation, and maintenance, is given a strategic emphasis. Contemporary, proven mechanisms are responding to the magnitude and complexity of ensuring the right competencies for thousands of affected employees.
2. Culture definition programs offered through CMP contribute to a better alignment of employee attitudes. Human capital experts will be deployed to provide guidance and coaching at program and agency levels.

Successful change will require a steady flow of citizen and employee feedback to allow YESSER and agency leaders to verify the success of the change program and shape any revisions to it. A stakeholder analysis has been conducted and is used as the foundation for building a communications strategy and plan.

In summary, the development of the training and leadership strategy is based on collaboration with all leaders and recipients of the training. It will be a dynamic process, fueled and intensified as the understanding of national importance is absorbed and sparks new innovation, as indicated in Figure 3.

CERD will orchestrate learning content for all core programs and customize them according to agency segments. Training initiatives for employees involved in e-government will be designed and delivered at a national level as well as for an individual agency. This will be guided by effective operating concepts, as follows:

National learning concept: The national training strategy will provide a broad core framework within which agencies can identify their training needs in relation to the e-government program. Appropriate content and delivery channels will be nationally enabled to deliver requisite and consistent training to all staff, as required.

This national strategic model draws attention to three different levels at which the learning strategy needs to operate:

1. *Knowledge, skills, and information:* These comprise the facts, the regulatory issues, and technical as well as managerial and executive knowledge and information about procedures and processes.

Box 2: The YESSER Center of Excellence for Research and Development

The YESSER Center of Excellence for Research and Development (CERD) will offer accredited and non-accredited training programs and courses to all affected employees. CERD will operate in parallel with existing Ministry of Civil Service offerings, while its e-government-specific curricula will augment those offered by the Institute of Public Administration in Saudi Arabia.

Several other programs focused on growing ITC and e-government capabilities, such as the Future Experts Program and CIO Workshops, are currently underway. However, the size of Saudi government (approximately 1 million employees) and the extent of the demand for talent calls on further investment in training across a broad spectrum of needs.

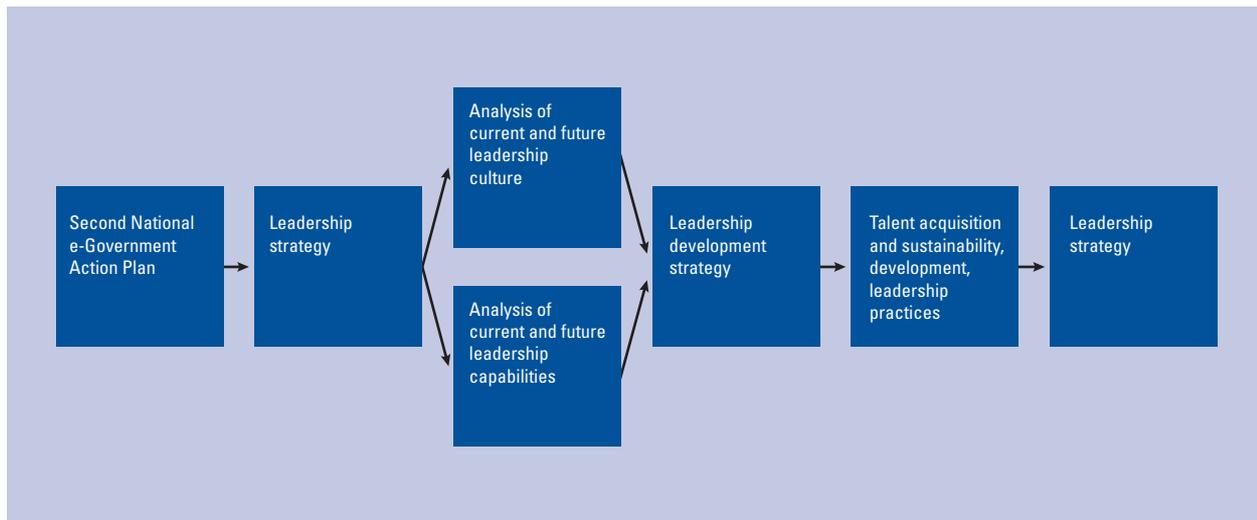
This training strategy, championed by the CERD, is sensitive to these competing demands on staff and resources. The strategy provides guidance to ensure that investment in e-government training is focused on producing efficient and effective results. More specifically, it clarifies the need for training and identifies those who should receive particular levels of training.

At the agency level, establishing clear training objectives will provide the foundation of effective training and development. With support from the CERD, every agency will be required to set clear objectives for its competency training.

2. *Project behaviors:* These include what individuals need to be able to do in order to implement the practice and spirit of the agency’s e-government projects.
3. *Culture and commitment:* These concern the medium- to long-term development of attitudes, especially at senior levels, that will ensure agencies are being proactive in implementing the spirit of the learning strategy.

To ensure consistency throughout the development of the learning strategies, CERD will offer central support from subject experts. Such support will include the design and provision of core material that allows flexible delivery—for example, classrooms, mobile learning centers, conferences, and e-learning or computer-based training options.

Agency learning concept: Agencies must respect the importance of alignment between training and their overall vision and e-government action plan. Training can

Figure 3: Leadership strategy development process

Source: YESSER, 2010.

create the capabilities needed to implement and sustain e-service delivery. The agency training strategy must define how these capabilities will be developed so that learning is seen as supporting its strategy.

Clear statements must be made by managers in each agency to reinforce the view that staff development is vitally important. Such statements provide a vision of learning and investment in staff development that can dramatically increase the level of employee recruitment, engagement, performance, and innovation.

Individual agencies are identifying what training is essential, preferential, or desirable within the available resources. Each agency is creating a training plan that aligns with its project and service delivery imperatives. The starting point for this is to reference the vision and e-government action plan of the agency, and then to capture any gaps evidenced by applying a project and employee performance planning and review cycle as well as project job holder competency models in order to produce a defensible time- and priority-based training needs analysis.

Figure 4 sets out the relationship between the role of YESSER in facilitating agency project training needs analysis and core learning delivery.

This design model creates consistent, global best practice training needs analysis and core learning to all government agencies nationally.

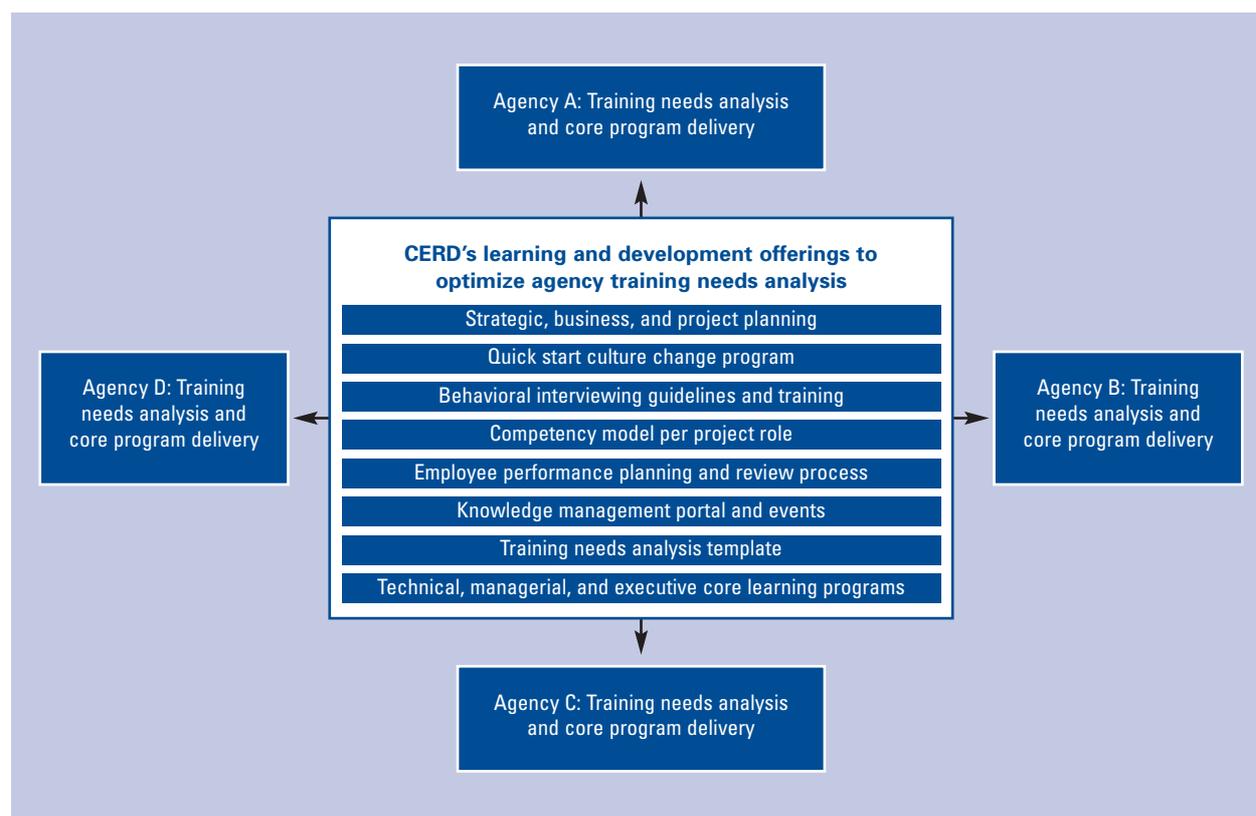
Conclusion: The way forward

There can be no underestimating the task at hand for Saudi Arabia and its growing needs for developing a sleeker and well-equipped IT workforce. Pinning these

growth strategies for ITC competency development to e-government brings many advantages to the country. Creating a friendlier, easier-to-use set of e-services improves access to government while growing awareness of the need for higher technical competencies internal to government operations. It also places new service-level expectations on the private providers working with government agencies. All of these efforts are focusing on meeting higher user expectations.

At the same time, the ability of national public entities and private businesses to consider IT skills as a part of the bigger whole of meeting the national strategic goals needed to compete in a global knowledge-based economy will remain one of its major strengths in the future. The experience of YESSER is remarkable in such a context. By considering and promoting e-government not just as a set of measures to bring more public services online, but as a transformative tool to improve the relationship among government, business, and citizens, YESSER had to develop specific human resources policies and design innovative ways to attract and retain talents within its own team.

Today, the experience gathered by Saudi Arabia in this area cannot be a source of inspiration only for other parts of the government, but also for other countries around the world. Combining this experience with the latest advances made in other contexts (in the area of curricula, global knowledge economy skills, and skills for innovation, for example) represents yet another potential source for huge benefits to Saudi economy and society.

Figure 4: Core competency training delivery and agency training needs analysis

Source: YESSER, 2010.

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Notes

- 1 Notably the Government Service Bus (GSB) to provide common information exchange protocols, and the Government Secure Network (GSN), a dedicated secure network linking government agencies.
- 2 Examples include the e-Services Department to help agencies identify key services they need to transform to online services, the YESSER Consulting Group to help agencies define their projects through proven frameworks such as the development of an enterprise architecture, the integration and development of units of onboard agencies that are information providers or consumers to the GSB/GSN, and many others.
- 3 See <http://www.yesser.gov.sa/en/MechanismsandRegulations/strategy/Pages/default.aspx>.
- 4 See http://www.yesser.gov.sa/en/BuildingBlocks/Pages/capacity_building_initiative.aspx.
- 5 See <http://www.yesser.gov.sa/en/MechanismsandRegulations/strategy/Pages/default.aspx>.
- 6 See <http://www.yesser.gov.sa/en/MechanismsandRegulations/strategy/Pages/default.aspx>.
- 7 See http://www.citc.gov.sa/NR/rdonlyres/37A65D75-BB3B-4263-B566-2B9726C60DF4/0/CITC_Annual_Report_2009_En.pdf.
- 8 The Ministry of Civil Service advised in September 2010 that there are 16,094 employees in IT job classifications, of whom 11,625 are employed in data entry, and 1,327 are women.
- 9 See Enjaz descriptions, available at http://www.yesser.gov.sa/en/Award/Pages/about_eAward.aspx.

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