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Next-Generation  
ICT Parks  
*Bridging the GCC  
Technology Gap*



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**Contact Information**

**Beirut**

**Ramez Shehadi**

Partner

+961-1-985-655

ramez.shehadi@booz.com

**Dubai**

**Karim Sabbagh**

Partner

+971-4-390-0260

karim.sabbagh@booz.com

**Shant Oknayan**

Associate

+971-4-390-0260

shant.oknayan@booz.com

*Ramy Sfeir, Philip Stork, and Sandeep Ganediwalla also contributed to this Perspective.*

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## EXECUTIVE SUMMARY

*As the countries of the Gulf Cooperation Council (GCC) seek ways to diversify their economies, information and communications technology parks (ICT parks) will continue to play a central role. ICT parks—which typically house clusters of technology companies in cities or near universities—help to nurture fledgling technology industries by building pools of both native and evolving talent.*

*The GCC's existing ICT parks focus on either achieving commercial success or fostering the development of local talent, but not both at once. To be more effective, the GCC's next-generation ICT parks will need to combine and broaden their objectives to create stronger links between government, education, and industry in the ICT arena. In order to attract and retain talent, these parks will also need excellent lifestyle amenities such as schools, housing, landscaping, and retail and entertainment outlets. Structured correctly, these new ICT parks will be able to operate along the full ICT value chain, from ideation to commercialization, and will be well positioned to help fulfill the expanding economic missions of the GCC.*

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## ICT PARKS PLAY A SIGNIFICANT ROLE IN ENABLING NASCENT TECHNOLOGY INDUSTRIES

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### Key Findings

The GCC region will need to grow its own technology talent—not dominantly import it from other countries—in order to diversify its economies.

Many countries rely on ICT parks—which provide office space to hundreds of technology companies, researchers, and academics—to improve their indigenous technology capabilities.

The GCC's ICT parks tend to focus on either driving rental fees or incubating local talent—but usually not both.

Next-generation ICT parks can be used to create a vital link between government, education, and industry, and to address pressing lifestyle needs of the talent they attract.

In the 1990s and well into this decade, the South Korean government reaffirmed its commitment to Daedeok Innopolis—a research and development district initially established in 1973—with political backing and funding. South Korea did so because, like many developing countries, it had arrived at a point in its economic development when it needed a more mature technology industry in order to advance. The effort and investment paid off; South Korea has been listed first on the International Telecommunication Union's Digital Opportunity Index, between 2000 and 2006,<sup>1</sup> and rose to sixth place on the

UN's e-Government Readiness Index in 2008, up from 13th place in 2003 (both indexes measure the maturity of ICT in a region).

Today, the countries of the GCC find themselves in a similar position of being full of economic potential and asset-rich, but still needing a far more mature technology industry to thrive. Indeed, because the region relies considerably on imported skilled labor, most of the technology projects in the GCC, by default, go to foreign contractors. Typically, these contractors are not committed to the long-term effort of building a grass-roots technology industry in the GCC.

To change this dynamic and to organically grow and enhance technology skills and knowledge in the region, the GCC—like South Korea before it—is turning to the model of ICT parks. ICT parks enable a concerted leap into the digital age by creating a dynamic environment in which local talent is incubated, cultivated, and shared. The GCC's next-generation ICT parks—with broader and more advanced missions than existing ICT parks—will be able to serve as prime drivers in the GCC's diversification efforts.

*ICT parks enable a concerted leap into the digital age.*

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## THE GROWING NEED FOR LOCAL ICT TALENT

There is no question as to the raw potential of the GCC. The GCC economies continue to grow at an unprecedented pace. Over the past five years, oil revenue has allowed the GCC to start a number of large development projects intended to spur growth in non-oil sectors in order to diversify its economies and lessen their dependence on hydrocarbons. Of the GCC's US\$1.5 trillion pipeline of projects, 78 percent exists outside the oil industry, predominantly mega-infrastructure projects.<sup>2</sup> These investments have multiplier effects. They provide opportunities to grow secondary sectors and services as well as inject liquidity into the market, ultimately serving to create a more sustainable socioeconomic environment.

The growth of non-oil sectors creates increasing demand for sophisticated expertise. Most of this expertise has not been available locally. The resulting gap is filled with an influx of foreign skilled labor often lured by the opportunity to earn a lot of money on a particular project. Many expatriate workers do not stay long, rendering the GCC countries dependent on a continuous cycle of "knowledge through acquisition." This is not ideal for establishing a knowledge-based society.

What is needed, as the GCC countries take steps toward economic diversification generally and toward becoming knowledge economies specifically, is an investment in local talent development. ICT needs to be a primary focus, as economic growth depends on technology.

# THE GCC'S ICT OUTLOOK

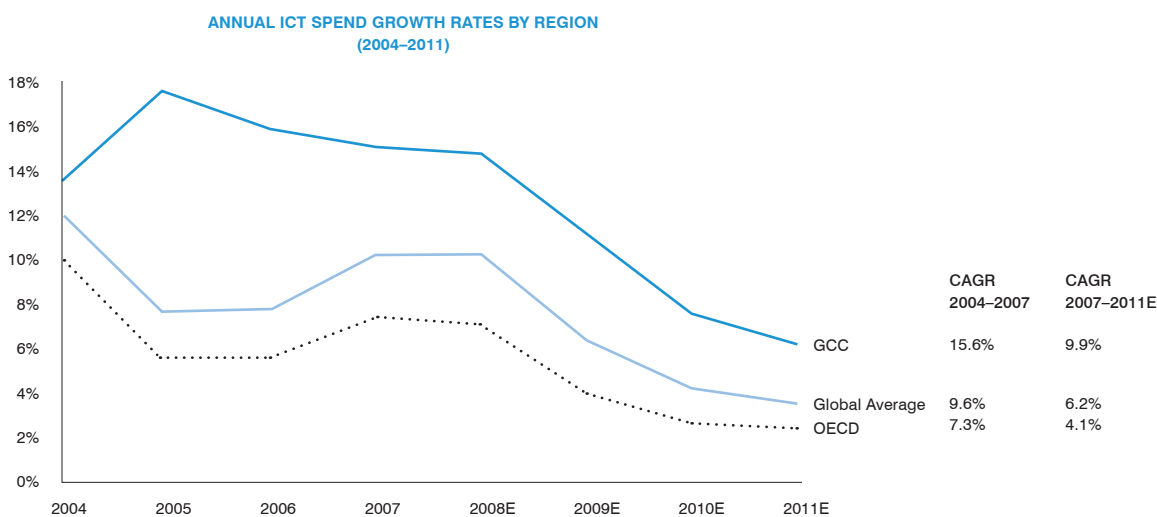
ICT, according to its technical definition, consists of the hardware, software, networks, and media necessary for the collection, storage, processing, transmission, and presentation of information (voice, data, text, images), as well as related services. It can be both a core industry and an enabling one. As a core industry, ICT offers products and services that improve people's lives through the use of technology. As an enabling industry, ICT provides technology solutions to other sectors of an economy, allowing them to operate more efficiently and improve their services.

Since 2003, ICT spending in the GCC has grown by a double-digit percentage, to \$33 billion in 2007. The rapid growth—more than twice the average of the Organisation for Economic Co-operation and Development (OECD) countries, and 50 percent higher than the global average—is expected to continue in the coming years (*see Exhibit 1*).

This growth is driven by increased demand for ICT from both the public and private sectors. ICT now plays a key transformation role in telecommunications, oil and gas (digital oil fields), construction (smart-city technologies), healthcare (integrated health networks), and public institutions (e-government). These projects help bridge the digital divide in a region in which most households have yet to use ICT to its full range and potential.

The current ICT effort in the GCC remains mostly imported, a good or service provided by international companies that have limited understanding of the local environment and culture, and little incentive to settle in the region and contribute to the development of a grassroots industry. This is a major impediment to progress and produces significant challenges. Inconsistent quality of service is one; a lack of responsiveness to some of the region's most important development projects is another. The issue is exac-

**Exhibit 1**  
*ICT Spending Continues to Grow*



Note: OECD data excludes Iceland and Luxembourg; global average includes the 75 countries with the largest ICT spend  
Source: WITSA, *Digital Planet 2008*; Booz & Company analysis

erated by most GCC countries' lack of an actionable national ICT agenda to help develop ICT capabilities, limiting the positive role the region's educational institutions might play. Furthermore, the GCC still lacks transparent policies and regulations pertaining to intellectual property (IP) and copyright protection and does not have a mature venture capital infrastructure. Currently these factors make the environment for startups suboptimal.

To overcome these gaps and further ignite the development of a regional ICT industry, GCC countries are beginning to apply the lessons learned from more advanced countries. For instance, the GCC countries now direct some investments toward state-of-the-art ICT research and development (R&D) and are forging partnerships with world-class technology universities, similar to the South Korean approach with Daedeok Innopolis ICT park. Furthermore, there is an additional drive to improve availability of ICT services and capabilities through ICT parks in several countries within the GCC, designed to house technology companies. These ICT parks, like Dubai Internet City and Qatar Science & Technology Park (QSTP), encourage the development of local ICT resources and cater to their countries' fast-changing ICT needs. They often set up as Special Economic Zones (SEZs) to create favorable economic and regulatory climates for both local and international ICT companies.

## Characteristics and Trends of ICT Parks

ICT parks are geographically delimited, physically secure areas, operated by a single administration, that house companies in the ICT business. The following six characteristics determine the construct of ICT parks and help determine the type of tenants that ultimately move there:

- Vision
- ICT Clusters
- Infrastructure & Services
- Enablers & Stakeholders
- Regulations & Governance
- Target Markets

1. *Vision*: This refers to the purpose, overall objectives, and focus of the ICT park. An ICT park's vision is typically aligned with the host country's economic development needs and aspirations.

2. *ICT Clusters*: The different companies drawn to an ICT park can be grouped in "clusters" depending on the customers they serve or the pieces of the technology solution they provide. For instance, an ICT cluster could serve the needs of the energy industry, as many of the ICT parks in the GCC do, or it might serve the needs of the government sector. ICT clusters might also serve industries like finance, aviation, and aerospace and defense. The companies in the cluster typically include specialized suppliers, providers, and R&D outfits that are connected

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geographically and also by common customer bases. These connections create a self-reinforcing ecosystem in which the sum is truly greater than the parts.

ICT clusters can also provide “core” benefits to a region’s population. A core benefit is one that consumers use in their home or personal lives. Internet services, mobile cellular applications, and nanotechnology are all examples.

3. *Infrastructure & Services*: To attract the best talent and most compelling companies, an ICT park should provide the best possible business environment. This includes infrastructure and services of many types, from good parking facilities and well-designed office spaces to more advanced services like travel reservations and access to physicians (see *Exhibit 2*).

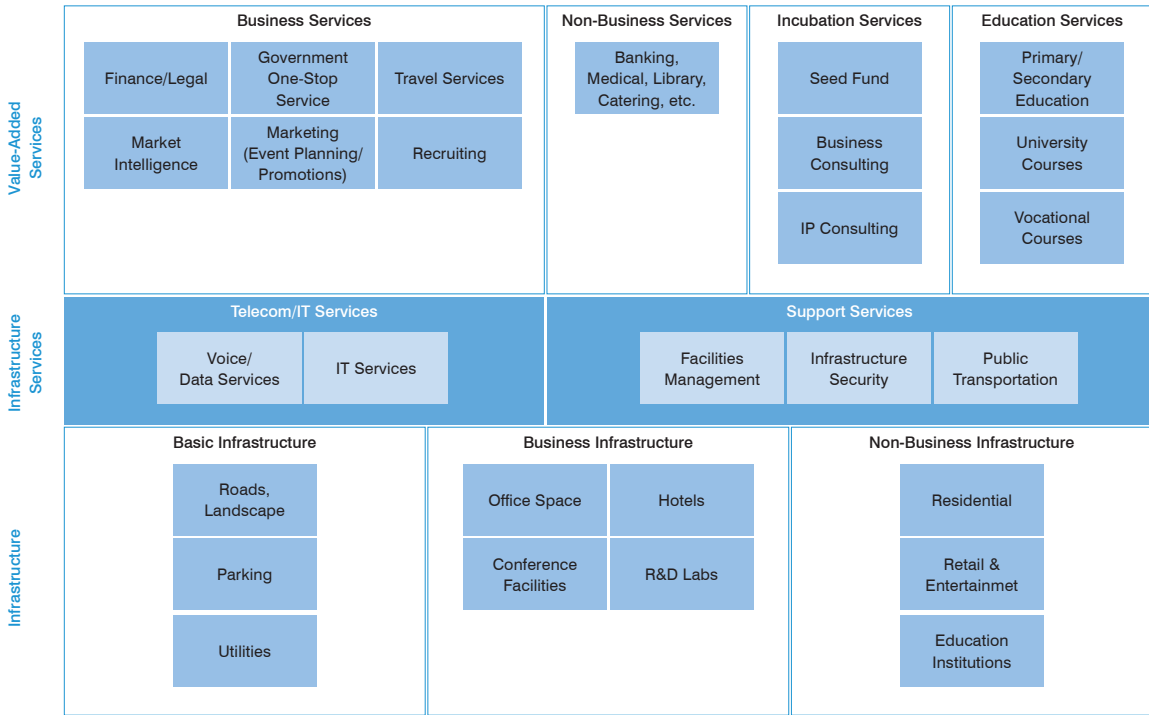
4. *Enablers & Stakeholders*: No ICT park can thrive on its own; it needs to be connected to outside organizations that support its development. Depending on an ICT park’s focus, these stakeholders can include local and national governments, regulators, educational institutions, incubators, service providers, and trade and ICT park associations. How big a stake these organizations feel they have in the ICT park can determine the kind of access the ICT park’s tenants have to talent, financing, markets, value-added services, and expertise.

5. *Regulations & Governance*: ICT parks are usually set up as Special Economic Zones. This designation allows them to make special accommodations and offer regulatory, fiscal, and administrative incentives to their tenants. These include facilitation of business setup, adherence to international labor laws, full foreign ownership and repatriation of profits, lower taxes and tariffs, relaxed telecom regulations, and adherence to intellectual property laws. It is important that these incentives be administered in a way that reflects the economic and cultural sensitivities of the host country (see *Exhibit 3*).

6. *Target Markets*: An ICT park typically caters to specific markets—whether in the immediate vicinity, the region, or globally. Market access is based on the trading ties of the host country, the geographic accessibility of the markets, the size and growth of ICT markets, and the competition in these markets. A clear identification of target markets helps tenants and the ICT park administration understand the park’s value proposition and the available business opportunities.

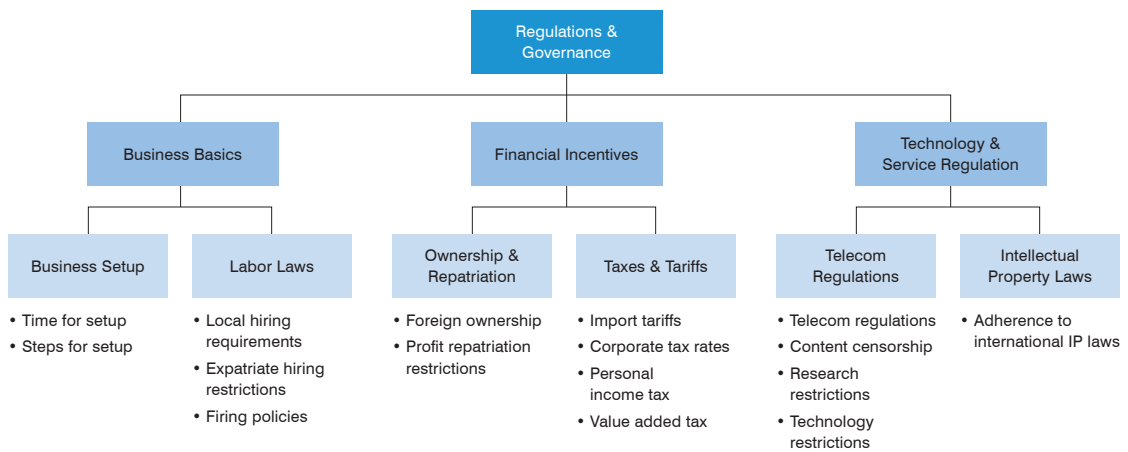


**Exhibit 2**  
**ICT Park Infrastructure and Services**



Source: Booz & Company analysis

**Exhibit 3**  
**Regulations and Governance**



Source: Booz & Company analysis

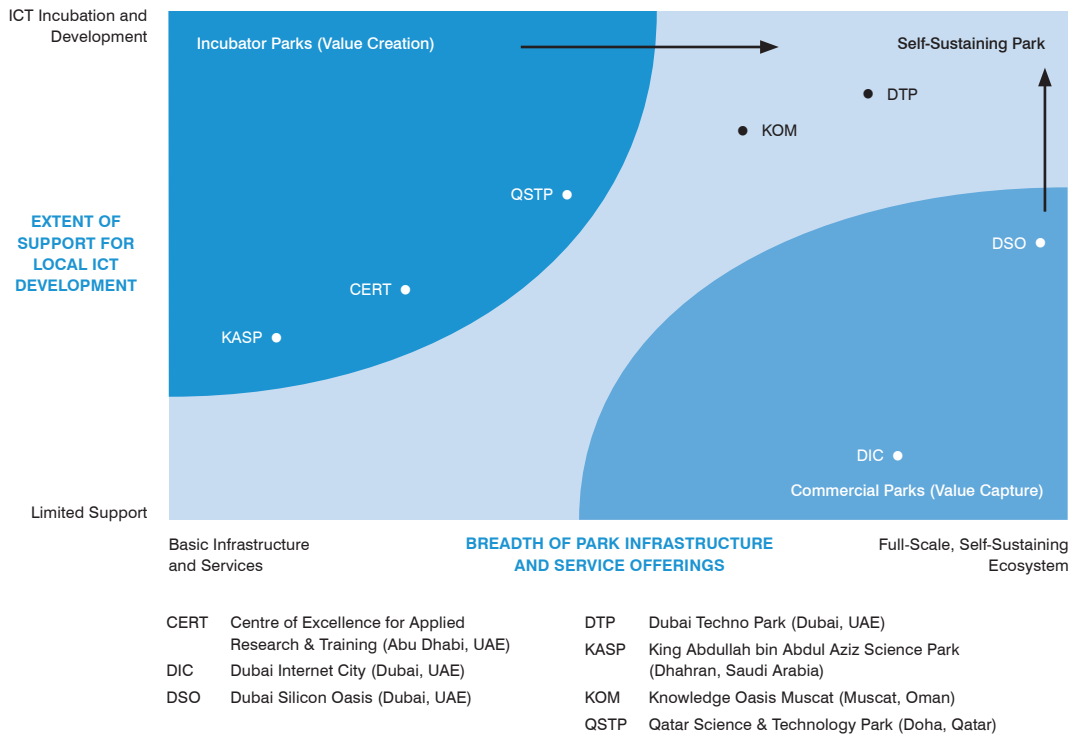
# THE MAIN BUSINESS MODELS OF GCC ICT PARKS

Overall, the GCC has more than a half dozen parks that, to one degree or another, focus on ICT (see Exhibit 4). These parks follow one of two basic business models: commercial ICT parks, which focus on immediate

financial returns, and incubator ICT parks, which focus on helping drive development of the local ICT sector.

Commercial ICT parks typically attract large multinational compa-

*Exhibit 4  
A Sample of Regional ICT Parks in 2008*



Source: Booz & Company analysis

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nies that focus on the latter stages of the ICT value chain, including sales, implementation, and operations. These ICT parks tend to be successful in environments where there is intrinsic regional demand for ICT services and the supply of office space is tight. They are, in a sense, commercial clusters within the ICT industry. The ICT park operator's main objectives are to offer the best commercial environment, attract the largest number of tenants, and maximize the financial returns from leasing or selling land and buildings. An example of a commercial ICT park in the GCC is Dubai Internet City, where many ICT players (local, regional, and global) have located regional sales offices.

Incubator ICT parks are built around ICT research and development and are as such less focused on financial results. ICT parks in this case often house satellite campuses of renowned technical universities, the thinking being that the academic influence will lead to innovation and entrepreneur-

ship and provide a steady supply of technical expertise. The primary purpose of these ICT parks is to develop local ICT talent and by so doing create greater socioeconomic development. Along the way, incubator ICT parks often play a pivotal role in integrating government, industry, and educational institutions. QSTP is a good example; it has relationships with some global ICT educational institutions—such as Carnegie Mellon and Texas A&M—which have set up satellite campuses in Education City, part of Qatar Foundation, located adjacent to QSTP.

Those that have opted for the commercial model and desire rapid financial growth generally do not have the incentive to embrace the broader opportunity to grow a grassroots ICT industry. Incubator ICT parks, conversely, focus on creating a broader economic value. However, the path for incubator parks is more challenging and often lacks critical commercial traction in the early years.

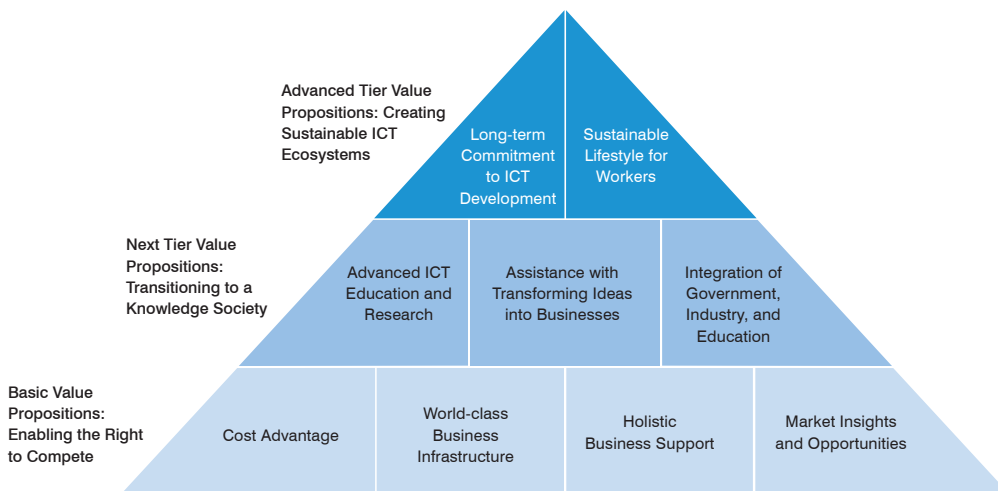
In order to develop a grassroots ICT industry, and to change the inefficient pattern of relying on transient foreign talent, the GCC will need to create self-sustaining ICT parks—parks that combine the characteristics of both commercial and incubator ICT parks. These next-generation ICT parks will create value through research and incubation of ICT projects, and will also capture value by commercializing ICT products and services. They will have lifestyle facilities—such as housing, schools, and retail and entertainment complexes—that will help them attract and retain the companies and the talent whose early-stage development they are helping. By providing all these benefits, next-generation ICT parks will create self-sustaining ecosystems. These ecosystems will expedite the development of an indigenous ICT industry in the GCC and help the GCC countries transform themselves into knowledge-based societies.

# VALUE PROPOSITIONS THAT SET APART ICT PARKS OF THE FUTURE

For GCC countries to create self-sustaining ICT parks, they must put in place a hierarchy of value propositions (see Exhibit 5). It starts with a set of value propositions that are relatively basic and that give the ICT parks' tenants the "right to compete." It then graduates to value propositions that are critical to the GCC's transition to a knowledge-based society. Last come value propositions that give the ICT parks sustainable ecosystems that ensure their long-term viability.

The GCC's commercial ICT parks already offer most of the basic value propositions, and its incubator ICT parks also maintain these attributes as well as some others that are more sophisticated. The challenge for next-generation ICT parks however will be to bridge remaining value proposition gaps and get beyond where they are today.

*Exhibit 5*  
*Hierarchy of ICT Park Value Propositions*



Source: Booz & Company analysis

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## BASIC VALUE PROPOSITIONS: ENABLING THE RIGHT TO COMPETE

Four basic value propositions are essential to ICT parks if they hope to compete: cost advantage, world-class business infrastructure, holistic business support, and market insights and opportunities.

*Cost advantage.* Where possible, ICT parks can attract companies by offering financial incentives. Tax benefits, full foreign ownership, and repatriation are important regulatory concessions that ICT parks can offer if their governments are supportive. Many ICT parks have moved beyond just being tax havens for their tenants and offer advanced incentives on real estate costs, employee salaries, and business support services. Some ICT parks single out strategically important tenants (usually startups, export-oriented companies, or research institutes) and offer them the best incentives.

For example, South Korea's Daedeok Innopolis charges select foreign companies a rent equivalent to 1 percent of the purchase price of the office space—a bargain price. InnovationWorks, an incubator within

Shannon Development in Ireland, supplements salaries at startup companies by as much as \$30,000 in the startups' first year of operation. Most ICT parks in the GCC provide regulatory incentives to tenants, including 100 percent tax exemption and the elimination of import duties.

*World-class business infrastructure.* Most ICT parks offer infrastructure that makes it easy for tenants to set up operations, including customizable office spaces, conference facilities, high-speed telecommunications and IT networks, and convenient access to transportation hubs. For example, Singapore Science Park provides ready-built units for any area of technology development, leased without furnishings so that companies can configure them according to their needs. MSC Malaysia features 10/100 Mbps (megabytes per second) broadband fiber optic connectivity and Kuala Lumpur International Airport is located on its grounds. Dubai Internet City features an advanced Metro Ethernet broadband infrastructure and has the world's largest commercial IP telephony network.

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Furthermore, the newer ICT parks benefit from smart-city technologies, including traffic monitoring systems, pipe-leak detection systems, and buildings that automatically regulate heating and light. Such advanced business infrastructure improves the efficiency, creativity, and productivity of the tenants in the ICT park. South Korea's new Songdo City and India's Smart City Kochi are early adopters of such technologies.

*Holistic business support.* Modern ICT parks support their world-class infrastructure by providing value-added services. These include corporate services (such as recruiting, market intelligence, event planning, and IT operations), streamlined government services (facilitated company registration and work-permit issuance), and support services (cleaning, security, transportation).

These services, essential to tenants' day-to-day operations, are especially important for startups and smaller enterprises that lack the scale to run a full-fledged support division. The fact that the services are available through a single point of contact at the ICT park is a major benefit to tenants, sparing them the frustration of having to call different agencies to get their problems solved.

MSC Malaysia, Singapore Science Park, and Shannon Development parks have property management teams to maintain facilities. MSC Malaysia also offers quick turnarounds on governmental services such as licenses for opening businesses and visas for foreign knowledge workers. Its government liaison arm—a sort of one-stop shop—is connected to all relevant external government entities. For its part, Singapore Science Park offers

companies help in recruiting personnel. QSTP provides secretarial and document production services.

*Market insights and opportunities.* ICT parks play an important role in identifying business opportunities for tenants by providing insights on, and entry into, local and regional markets. These services are important for all tenants, but especially for startups and smaller enterprises. MSC Malaysia benefits by participating in trade groups such as the Association of Southeast Asian Nations (ASEAN) and the Asia-Pacific Economic Cooperation (APEC). Singapore Science Park has partnerships with leading science and research parks and incubator centers, such as Sophia Antipolis in France and Technopolis in Finland, allowing the parks' tenants to share knowledge and information about business opportunities.

*ICT parks identify business opportunities for tenants by providing insights on, and entry into, local and regional markets.*

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## NEXT TIER VALUE PROPOSITIONS: TRANSITIONING TO A KNOWLEDGE SOCIETY

After they have established the basic value propositions that give them the right to compete, ICT parks can begin to implement the elements that are critical to the transition to a knowledge-based society: advanced ICT education and research; assistance with transforming ideas into businesses; and integration of government, industry, and education.

*Advanced ICT education and research.* Links to universities allow ICT parks to play a role in helping their host countries transition to knowledge-based societies. QSTP, for example, liases with a local satellite branch of Carnegie Mellon University, an educational institution renowned for its engineering curriculum. Other ICT parks, such as MSC Malaysia with its multimedia courses, have set up their own universities, offering a wide variety of IT, media, and telecommunications courses. Shannon Development also cultivates ICT-specific talent, attracting both local and international students through the University of Limerick and the Limerick Institute of Technology (LIT). Shannon also provides vocational training and educational programs for workers who want to continue their education and keep their skills fresh.

ICT parks are also an integral part of the applied research infrastructure in most countries. South Korea's Daedeok Innopolis is home to more than 20 major research institutes and 40 corporate research centers. Its tenants do business and participate in

joint ventures with many of the 230 research and educational institutions in the area, and the 5,000 doctoral researchers who work nearby.

Another example is Centre of Excellence for Applied Research & Training (CERT) in Abu Dhabi, which was set up as the commercial arm of the UAE's Higher Colleges of Technology. The organization supports technology development through the CERT Centre for Supercomputing, the Embedded Systems Application Development Center, and other dedicated research units.

*Assistance with transforming ideas into businesses.* Incubation services and business accelerators are important catalysts of innovation, providing business advice and mentorship to companies that need them. They are part and parcel of many incubator ICT parks. For example, Daedeok Innopolis hosts a Technology Commercialization Committee that supports startups with planning, coordination, commercialization, and cooperation teams. InnovationWorks and VentureStart are two incubation services that Shannon Development offers in its technology parks to encourage and support development of new, indigenous, high-potential startups. The Knowledge Mine, a business incubator facility at Knowledge Oasis Muscat in Oman, supports and encourages the creation of knowledge-based and technology-based startups by providing an affordable working environment and

a host of other services, including strategic and financial planning, interim management resources, and extensive business connections.

Funding for startups is also a key enabler of innovation. Dubai TechnoPark (DTP) set up a \$300 million venture capital fund to attract early-stage tenants with viable commercial projects. The Dhahran Techno-Valley Business Incubation Services, linked to Saudi Arabia's King Abdullah bin Abdulaziz Science Park (KASP), has established a proof-of-concept fund for its startups.

*Integration of government, industry, and education.* Next-generation ICT parks should provide access to government ICT initiatives, help drive the enhancement of the ICT curriculum in universities, and serve as a liaison between industry and education through placement programs, career fairs, and joint ventures. Singapore Science Park sponsors cross-border internships in which tenant companies receive access to undergraduate and post-graduate students. In some developing countries, government-led policy reform is such a core part of the ICT park agenda that government agencies set up satellite offices in the ICT parks. This is true in Oman, where the Omani government IT authority—responsible for setting ICT policies and strategy—is an anchor tenant of Knowledge Oasis Muscat.

## ADVANCED TIER VALUE PROPOSITIONS: CREATING SUSTAINABLE ICT ECOSYSTEMS

The final and most advanced tier of value propositions makes it possible for an ICT park to ensure its own long-term viability. This is achieved via a long-term commitment to ICT development and a sustainable lifestyle for workers.

*Long-term commitment to ICT development.* Like commercial ICT parks, next-generation ICT parks are partly in the real estate leasing business. That cannot be their sole focus, however. Their focus must be on long-term partnerships that attract and retain strategic tenants. The factors that help with this include

some already mentioned above, like the availability of capital and the promotion of an innovation culture. Other factors of influence include a clear and unwavering respect for intellectual property and copyright protection laws, and proven processes to attract quality ICT companies and the workforces needed to staff them.

MSC Malaysia, the ICT park operator in Malaysia, evinces some of these characteristics. The ICT park employs a stringent filter to make sure its benefits, such as research grants, apply to only the prospective tenants that are most strategic. Singapore Science Park uses its links to nearby universities and business institutions to identify skilled workers and help tenants recruit them. Dubai TechnoPark has promised to fund R&D projects that address major socioeconomic challenges in the region.

*Sustainable lifestyle for workers.* The temporary stays of most foreign ICT workers point up the need for better non-work amenities. In particular, the GCC's ICT parks must provide facilities that make life easier and more interesting, such as ample green space, retail and entertainment



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## THREE IMPERATIVES: CLEAR FOCUS, LONG-TERM COMMITMENT, AND PRIME LOCATION AND LAYOUT

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complexes, and recreational facilities. Many ICT parks seem to intrinsically understand the benefit of trees and grass; 40 percent of ICT parks in the world devote a third or more of their space to green areas, according to a survey by the International Association of Science Parks. And 93 percent of all ICT parks are in or near a city, the same survey showed, offering easy access to cultural facilities, residential areas, shopping, and schools.

Dubai Internet City, for example, provides a strategic geographical location. Although this ICT park does not offer residential complexes or entertainment facilities on its grounds, it was built near the new Dubai Marina, which has high-rise residential complexes, shopping centers and restaurants, beaches, and entertainment facilities. Likewise, Singapore Science Park is located minutes away from the center of vibrant Singapore. When ICT parks are farther from major international cities or recreational areas, they need to encourage the growth of these types of amenities and services in their neighborhoods—if not directly on their grounds.

As GCC policymakers plan ICT parks that could move their countries in the direction of knowledge societies, they should be sure to integrate three elements in their plans.

*A clear direction for individual ICT parks.* A next-generation ICT park should have dedicated clusters. Clusters represent a new way of thinking about national, state, and local economies, incentivizing industry, government, and other institutions to interact in new ways. These ICT clusters should be selected to meet market demand, with an understanding of what's already available from competitors. ICT parks must integrate their mission with those of their host countries, as the economic benefits of zone development are reduced when zones function in isolation from larger national objectives. The benefits are multiplied, however, when ICT parks

conform to national economic policies and help increase the competitiveness of domestic enterprises. The benefits are further multiplied when the integration goes beyond the business environment to include government and education institutions. Such integration efforts can be pivotal in moving the host country towards a knowledge-based economy.

*A focus on long-term commitment rather than short-term profitability.* Creating an indigenous ICT industry in the GCC will require a long-term commitment. Although decision makers should not throw away short-term measures of success such as the internal rate of return on the investment made in the ICT park, they should also look at longer-term measures, such as the number of new tenants joining the ICT park, the number of local startups, the number of patents awarded, and the number of local ICT university graduates.

Furthermore, financial support for an ICT park's development should be secured early on, ensuring that the capital funding needed (both equity and debt) is in place. Support from senior government officials is critical in this regard.

The long-term success of an ICT park will also be determined by the strength of the ICT park's management team. This team should have expertise in both business and technical areas, with clearly defined roles

and responsibilities, and should be supported by a Board of Directors that can help steer the ICT park towards its vision and objectives.

*Selection of prime location and layout.* We have already noted the importance of ICT park location to giving workers what they need in their personal as well as their professional lives. A convenient location can also be important in letting the ICT park's tenants connect with their suppliers and customers, and thus helps keep labor and materials costs under control.

The building of the ICT park should be entrusted to a world-class master planner versed in the latest smart-city technologies and urban-planning concepts. Given the development's divergent needs (smart offices, conference facilities, and R&D laboratories on the one hand, residential areas and schools on the other), this is no easy assignment. The ICT park layout should be campus-like, focusing on "groundscrapers"—low- or medium-rise buildings with a ground floor and a maximum of four additional levels. Such architecture fosters communication and collaboration: It is essential for innovation and helps integrate the different businesses in the ICT park.

It is also vital that the ICT park operator accurately gauge future demand—how quickly the ICT park is likely to grow and the infrastructure and services that will be required. A phased growth plan offers the best chance to avoid overcrowding or empty spaces.

## CONCLUSION

The ICT sector in the GCC region continues to grow quickly, fueled by large ICT transformation projects in the public and private sectors. The growth reveals an opportunity for the GCC countries to better fulfill their ICT needs.

A number of ICT parks in the region bridge the supply-demand gap for ICT products and services, and raise the overall level and quality of the work being delivered. Some ICT parks that were initially set up as commercial plays are now seeking an expanded role of incubating ICT capabilities and industries, even at the expense of short-term profits. The net result is a sustainable grassroots ICT industry.

Moving forward, the GCC should focus on building a new generation of ICT parks that encompasses all the elements of current ICT parks, while also positioning them to remain viable

over the long term. Structured correctly, these new ICT parks will operate along the full ICT value chain, from ideation to commercialization. And by explicitly addressing lifestyle needs—that is, the needs workers have for well-appointed offices as well as desirable living accommodations and other consumer services—the ICT parks will greatly improve their ability to attract and retain tenants, creating the self-reinforcing ecosystems that will achieve long-term objectives.

In order to succeed, these ICT parks will have to address some critical issues. They need to be integrated with the larger economic forces in their countries, including government, industry, and educational institutions. They will have to devise new success metrics that reflect their long-term missions. They will need appropriate architectural designs. And they will have to develop strong management teams and put skillful boards in place. By taking these measures, next-generation ICT parks will contribute to the overall development of ICT in their regions, help drive the formation of knowledge-based societies, and spur the diversification of their countries' economies.

## Endnotes

<sup>1</sup> World Information Society Report 2007 (<http://www.itu.int/osg/spu/publications/worldinformationsociety/2007/>)

<sup>2</sup> NCB Capital, "Capitalizing on the Petrodollar Windfall," 2008

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## About the Authors

**Karim Sabbagh** is a partner with Booz & Company in Dubai and Riyadh. He leads the firm's communications, media, and technology practice globally. He specializes in sector-level development strategies, institutional and regulatory reforms, large-scale privatization programs, and strategy-based transformations focused on strategic planning, partnerships and alliances, marketing, and business process redesign.

**Ramez Shehadi** is a partner with Booz & Company in Beirut. He leads the information technology practice in the Middle East. He specializes in e-government, e-business, and IT-enabled transformation helping corporations and government organizations maximize leverage of IT, achieve operational efficiencies, and improve governance of IT services.

**Shant Oknayan** is an associate with Booz & Company in Dubai. He specializes in technology park development, IT, and e-government strategy, as well as operating and governance model definition, typically serving clients in the technology, public, and telecom sectors.

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