

# Next Generation Economic Clusters

Incubating and driving economic development





**A**round the world, in emerging and mature markets, Economic Clusters (ECs) have been used to jumpstart industries and accelerate the economic development journey by creating ripe economic environments for business, academia, and innovation to flourish. In response to global power shifts, Next Generation Economic Clusters (NECs) are emerging. These clusters will transcend old practices and truly differentiate themselves in order to meet the new economic development requirements under increasing capital, talent and environmental demands.

Globally, Economic Clusters (ECs) are abundant in a variety of forms: Special Economic Zones, Industrial Zones, Free Zones, Economic Cities, Technology Clusters. Yet, too many ECs have started without a clear strategy to meet their economic development objectives.

In many cases, world class infrastructure and business and industrial facilities have been built and tenants have filled the space to different degrees, taking advantage of favorable business conditions and local market demand. However, to become true incubators of economic development many ECs face an opportunity to define clearly their playing field and truly differentiate themselves. To do so, some key considerations are:

- **Focus on sectors and parts of the value chain aligned with the long term local/regional economic development agenda.** Beyond defining the sectors of focus, the efforts should be concentrated in parts of the value chain of the sector

where the country or region has built, or can build, a competitive advantage and sustain it in the foreseeable future.

- **Orchestrate the right ecosystem to enable sector and value chain growth.** Clusters should provide or facilitate the necessary cluster “enablers,” secure government endorsements, and instill the right governance with a business model that manages an economic development mandate and commercial sustainability objectives.
- **Create a sustainable link to the host country economy.** This ensures that the benefits of the EC permeate beyond the boundaries of the EC, that local talent and technology is developed and that local small- and medium-sized enterprises (SMEs) and start-ups are promoted. After all, an incubator would not be viable without direct correlation with overall GDP growth and sustainability of the competitiveness it creates.

**Figure 1**

Six “ecosystem” enablers facilitate access to local, regional and global markets



Note: SME = small- and medium-sized enterprises

Source: A.T. Kearney analysis

For the incubator to flourish, it must function as an ecosystem, bringing together and balancing various *enablers* to access a market. These enablers, include a focused strategy, sound facilities and infrastructure, favorable regulations and ease of doing business, talent and technology development, access to capital and financing, and promotion of SMEs and entrepreneurs (see figure 1).

In mature markets, these enablers are provided by numerous stakeholders—both public and private. In developing markets, where these enablers are absent to different degrees, the EC fills a void by providing some or all of the missing enablers seeking to be a “one-stop-shop” for companies and investors. Most successful ECs consistently deliver superior performance across *all* rather than *some* ecosystem enablers.

Examples of successful ECs abound across industry sectors and geographic regions. These

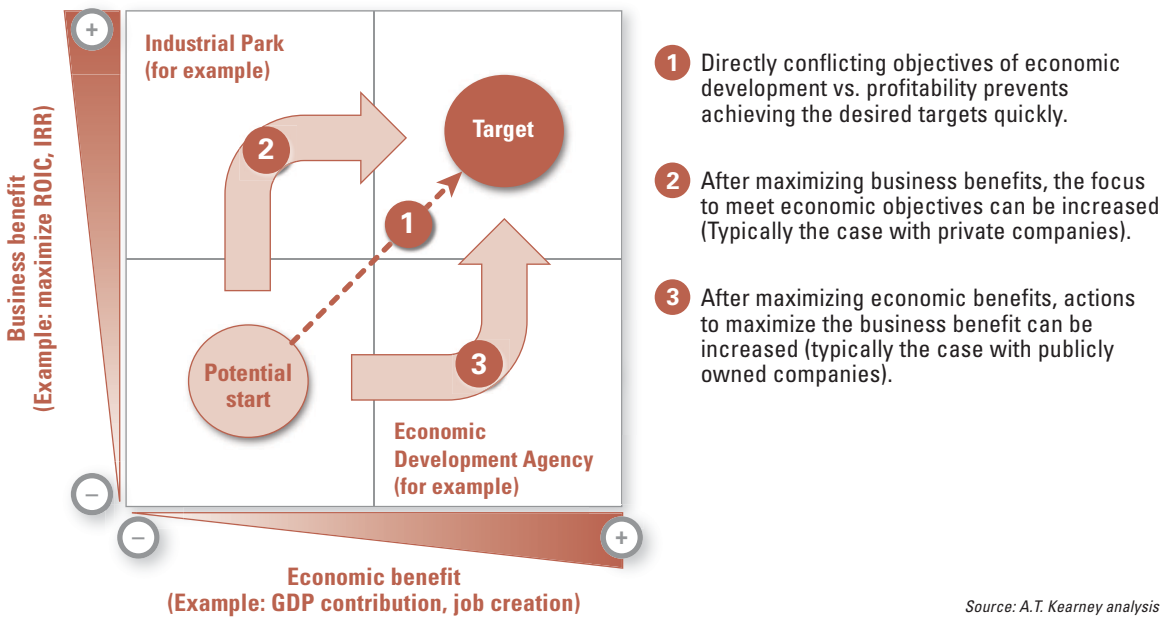
range from aerospace in Brazil’s Embraer Cluster to biomedical applications in Singapore’s Biopolis, to shared services in Ireland’s Shannon Free Zone, to information and communication technology (ICT) in Egypt’s Smart Village, to petrochemicals and steel products at the Jubail and Yanbu Industrial Cities. ECs also play a role in developed economies. In the United States, for example, Michigan’s Economic Development Corporation helped transform the automotive prowess of the state by developing high-tech and clean-tech emerging skills and capabilities.

### EC Supply and Demand Imbalances and Challenges

Many ECs exist in the developed world—Germany alone has more than 190. The booming economy prior to the 2008-2009 financial crisis afforded a mushrooming of ECs, in particular

**Figure 2**

The most successful ECs have clear paths for gradual achievement of both economic and financial goals



in the CHIMEA region (China, India, Middle East and Africa). Indeed, the CHIMEA region has more than 300 ECs, with more than 100 in China, 100 in India, and another 85 in the Gulf Cooperation Council (GCC) countries and the Levant by 2015, and more than 50 free zones in Africa.

Post crisis, ECs have had mixed success, because owners—and to some degree operators—have often failed to use the right planning horizon for achieving economic development and commercial returns.

The path and time horizon for achieving both economic development and business goals is not clearly laid out in many ECs operating models (see figure 2). Several ECs have completed their infrastructure development, and are seeking tenants, but they are still unable to claim a true

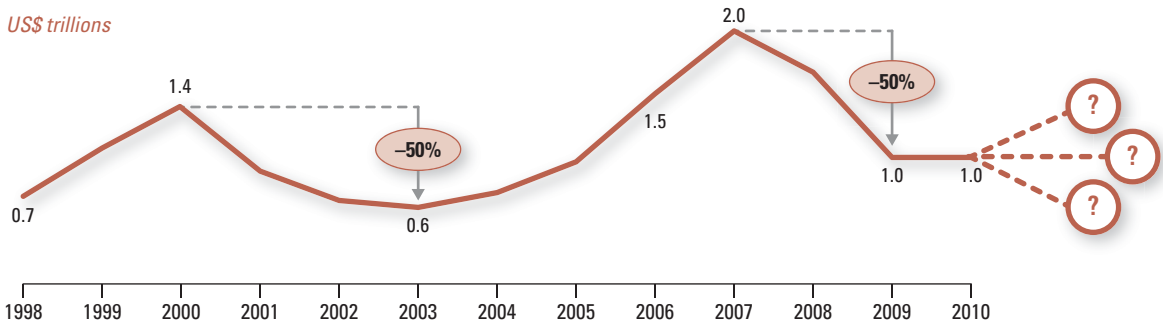
impact on economic development. One reason for this situation is the competing priorities of economic development and profitability. Real estate is profit-driven and akin to the private sector, while economic development is measured by GDP, FDI and employment, and akin to the government’s role. In a best-practice model, real estate is best left to real estate developers, under a clear mandate, with services and quality often regulated.

The separation between real estate development and economic development is a requirement. Regardless of the model, a clear path and investment horizon with reasonable return expectations is necessary.

Notable examples of this separation are Aerospace Valley in France and the Michigan Economic Development Corporation in the United States. Both orchestrate programs to

### Figure 3

Global foreign direct investment (FDI) in 2009 was roughly half of 2007 levels



Sources: United Nations Conference on Trade and Development; A.T. Kearney analysis

promote investment in explicit industry clusters and provide platforms for investors to access their markets, but are not owners and operators of infrastructure or facilities.

On the other hand, the limited availability (or flow) of investment following the global economic crisis is making it more difficult for ECs to reach their potential and end goal. Indeed, the rising number of ECs worldwide has increased competition for a pool of foreign investment, which has shrunk due to post-crisis risk aversion (see figure 3).

Foreign and domestic investment is the principal engine to make ECs commercially viable and to develop the necessary capabilities within the sector in the form of human capital, technology development or transfer, and efficient use of natural resources.

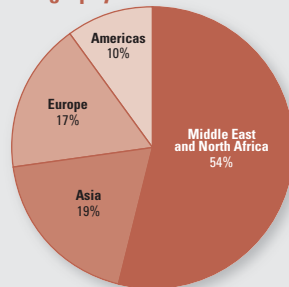
In the midterm, we expect a renewed flow of global investments. There is a positive bias for future FDI in the minds of executives, according to A.T. Kearney studies. Countries must prepare to capitalize on future growth and define how

### About the study

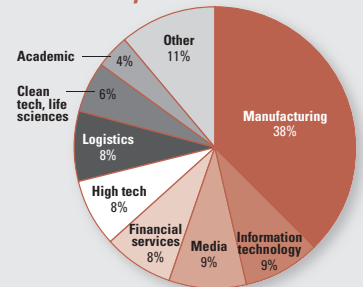
A.T. Kearney studied more than 50 economic clusters across geographies and sectors. Through multiple client examples and this research, A.T. Kearney has identified success enablers and ranked ECs based on their performance for each enabler. To maintain confidentiality of client and survey information, the ranking does not reveal individual cluster names.

Geographic and industry spread of special economic clusters studied (% of sample)

#### Geography



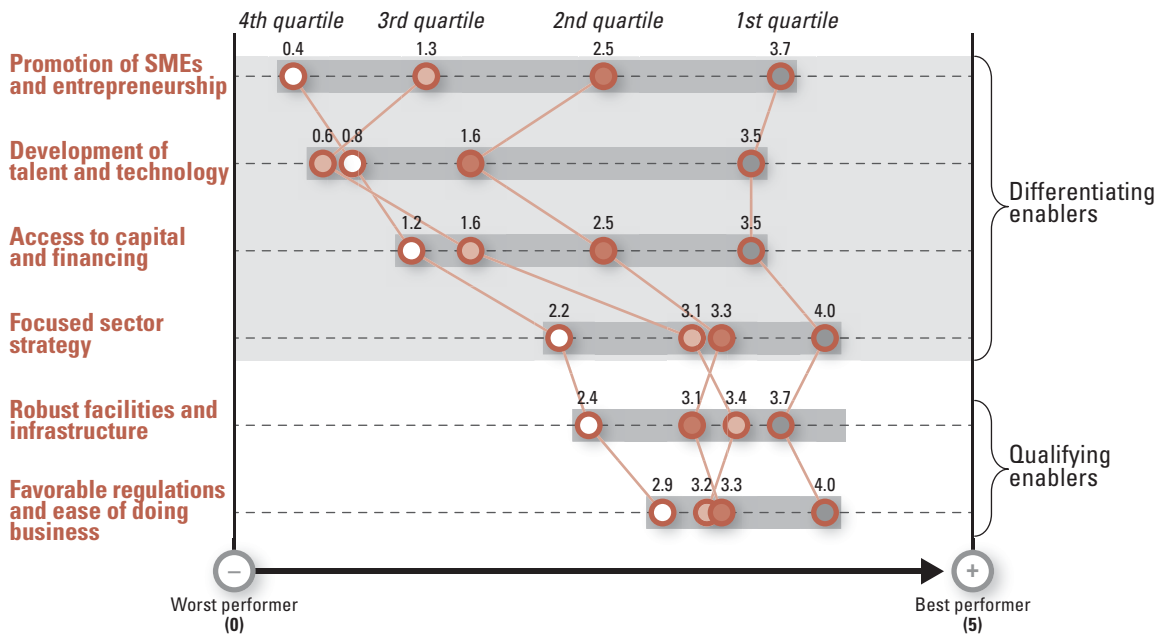
#### Industry



Note: Sample does not represent market share distribution.

Source: A.T. Kearney analysis

**Figure 4**  
Economic clusters excel in the “differentiating” enablers



Note: SME = small- and medium-sized enterprise

Source: A.T. Kearney analysis

to structure and leverage ECs to achieve their economic development aspirations.

### Economic Cluster Qualifiers and Differentiators

A.T. Kearney studied and worked with ECs globally to form a perspective on the qualifying and differentiating elements that make ECs sustainable.

Our research identified the *qualifying* ecosystem enablers, which allow an EC to enter the field of competition, and *differentiating* ecosystem enablers, which allow ECs to create a truly unique value proposition and flourish. Next Generation Economic Clusters (NECs, for short) are the select group of economic clusters that can claim differentiation by outperforming in all enablers.

Top-quartile NECs score highest across qualifying and differentiating enablers, while

lower-quartile zones only perform well in qualifying enablers, showing consistent limitations. Figure 4 illustrates the performance of the ECs in our study across the six ecosystem enablers.

The findings reveal significant distance between the leaders and the laggards with regard to four enablers: focused strategy, access to capital and financing, development of talent and technology, and promotion of SMEs and entrepreneurship. Laggards in our sample have further to go to catch up to the leaders in order to perform on par with them.

### Qualifying ecosystem enablers

Two ecosystem enablers are “must-haves” for any Economic Cluster.

**Facilities and infrastructure.** Access to airports, ports, road networks and, in some cases,

railroads is the minimum common denominator of ECs. Likewise, it is a must to offer pre-built or built-to-suit investment-grade real estate. Many ECs around the world have mastered this enabler. In A.T. Kearney's analysis, second-, third- and fourth-quartile ECs score high in this area. This indicates that few can stand out because of their real estate offerings and access to transport, telecom or social infrastructure alone. However, some differentiation can come from the breadth and depth of the social infrastructure provided in the cluster. Particularly, in developed markets, offering differentiated children's day-care, clinics, banks and other basic necessity outfits will influence the decision of a company to relocate to a specific cluster.

***Favorable regulations and ease of doing business.*** Access to local markets, ease of doing

business, tax breaks and ease of employee mobility are standard offerings sought by international and global companies seeking to set up operations. As a result, one-stop-shops are an industry standard and are hardly a differentiator. Self-regulation of free zones that offer tax breaks or allow foreign ownership in countries that otherwise do not allow it is a differentiator only in select cases. In Abu Dhabi, for example, where free zones that allow foreign ownership are only nascent, this status is currently a differentiator. However, as soon as it becomes the norm, or when the country allows more foreign ownership, this advantage becomes an industry standard. Clusters that score highest in this area are those that allow a combination of foreign ownership, enforce intellectual property protection laws and contracts, instill

## Hsinchu Science Park: A Clear Strategy and Growth Plan

From 1994 to 2004, Taiwan's Hsinchu Science Park (HSP) experienced a tenfold increase in capital while doubling the number of companies within the park. Its key to success was a clear vision, an industrial and product focus on growing technology sectors, and a phased approach to development.

The HSP had four main objectives: create a world-class science cluster; increase the population of engineers, scientists and other high-tech professionals; increase enrollment in university engineering programs; and promote research-based industrial and innovative activity. These objectives formed the basis

of all major decisions relating to the park—from acquiring tenants to infrastructure development, financing and investments.

From the outset, the HSP focused on six industries: integrated circuits, PC/peripherals, telecommunications, optoelectronics, precision machinery and biotechnology. The complementary nature of these six industries helped create an environment dedicated to the evolution and growth of the EC, and helped draw the right companies at each of its phases of development. This focus was a contributing factor for its successful organic growth and self-sustainable ecosystem.

Another success factor: HSP started small and controlled growth. Often, the battle to build an industrial area can be lost before a single building is constructed because there is no clear or sustainable growth plan. HSP did not fall into this trap. It began with a 10-year, \$500 million development plan. All activities were aligned with the park vision so the pace of growth would not reduce the park's value to its companies. There were some short-term costs, though—stringent procedures for attracting and evaluating tenants often meant turning away potential companies and sacrificing immediate revenue.

clear rules to access and operate in the local market, and have clear employment regulations in place that are favorable to ECs' citizens.

Case in point: The Dubai International Financial Center (DIFC) created specialized laws, regulations and enforcement mechanisms to forge an atmosphere of trust. This increases the inflow of foreign direct investments and caters to financial services firms. The DIFC even established a court system based on international best practices to increase the confidence of international firms to invest in the cluster.

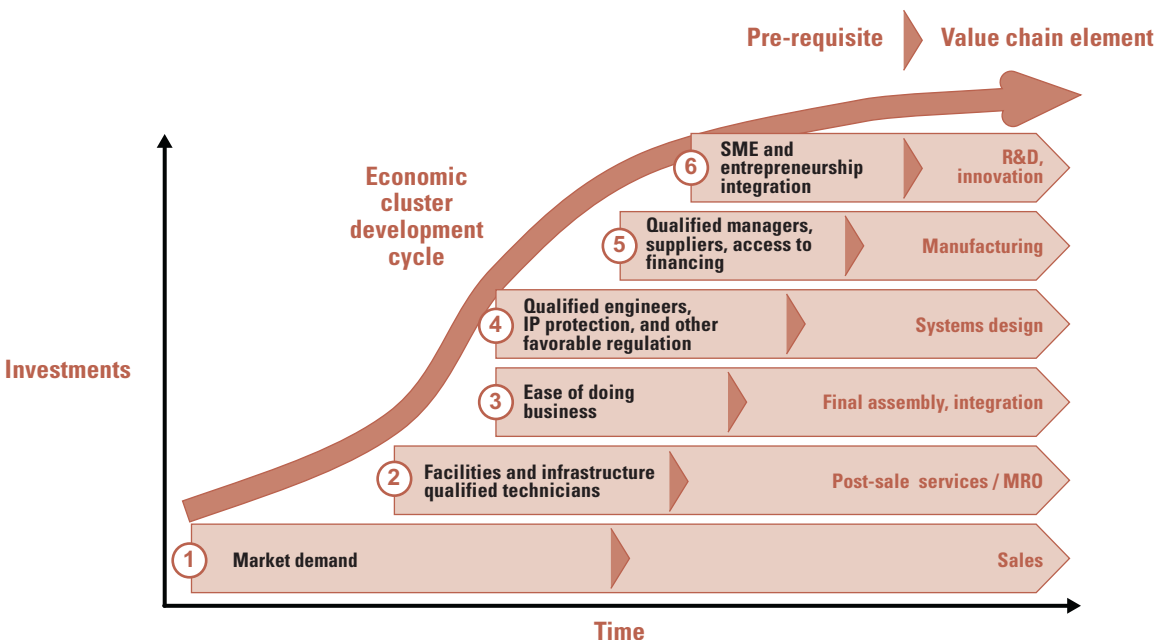
**Differentiating ecosystem enablers**

Beyond the “must-have” enablers, the following four enablers will go a long way to differentiate the leading ECs.

**Focused sector strategy.** A focused strategy is not only necessary to define the key business sectors but also to identify their respective value chain focus areas and their development phases. Development phases are crucial as there are various prerequisites needed to convince industry leaders that an emerging location is adequate to house their local or regional operations. Furthermore, a focused strategy with development phases forces EC operators to collaborate regionally and globally instead of only locally. Figure 5 illustrates the typical development cycle for a manufacturing cluster. The prerequisites shown in the figure have been compiled from interviews with executives across the aerospace, automotive, electrical equipment, software and IT hardware industries. The conclusion is that a value

**Figure 5**

Economic cluster development cycle: pre-requisites for building a value chain



Source: Interviews with industry leaders, A.T. Kearney analysis, 2011.

chain is generally built in a certain order, frequently starting with sales, moving on to post-sales services, and eventually to R&D and innovation.

For example, the Bahrain Logistics Zone, a boutique light manufacturing and logistics zone in the Gulf, developed a strategy around its location, the market demand it can help its partners access, and the available capacity of its new port. It began with a focus on explicit value-added logistics activities, with more ambitious plans for the future. Today, the zone is ranked number nine globally in the *Global Free Zones of the Future 2010-2011*, published by *fDi Magazine* (see sidebar: *Hsinchu Science Park: A Clear Strategy and Growth Plan on page 6*).

**Access to capital and financing.** An EC can significantly differentiate its offerings and improve its attractiveness (and in turn, improve its ability to achieve economic development goals) by providing access for its citizens to both capital and debt financing—access that otherwise would not be possible. Successful ECs facilitate and bring together various options of financing, suitable for companies in different stages of maturity, from start-ups to multinationals. The various financing options include:

- **Co-investments.** Provide seed funds with public or private funds for co-investments in (a) major facilities or shared facilities, such as testing labs or co-manufacturing facilities, and (b) taking equity stakes in select companies of the EC. It is important to note that the role of “patient” capital from dedicated pools mostly funded by the government is intrinsic to the success of greenfield EC projects. In a time of cautious investing, government support becomes even more important. Government funding can be conditional on certain economic development goals, such as employment of nationals, development of

technology, skill-transfer programs or R&D co-financing. Conditional mechanisms can be particularly useful in zero- or low-tax environments to support the EC’s economic development goals, substituting the classic tax incentives used in other countries.

- **Private capital.** Provide private capital through the creation of partnerships with various groups, including angel investors, venture capital and private-equity funds dedicated to the industry sector, to cater to the various types of companies being promoted in the cluster.
- **Public and private debt programs.** Facilitate public and private debt programs through synergistic relationships with specialized private debt providers to benefit all parties involved. Specific debt programs, such as export-promotion financing, SME growth financing and others, will help attract investment into the EC.

All of these financial stakeholders have an interest in the EC because it brings together viable businesses in one location, and the stakeholders benefit from the “pre-screening” the EC does before accepting the tenants in the first place. Finally, EC public seed funds can serve as underwriting for private financing programs, opening the gates to financing that otherwise would not occur.

**Talent and technology development.** Access to diverse, adequately skilled and competitively priced pools of technicians, engineers, managers and support staff is vital for any executive making an investment decision. The study reveals significant opportunities for ECs to differentiate by focusing on improving their human capital. Indeed, developing a sector should go hand-in-hand with developing talent. ECs are in a unique position to create programs that bring together government efforts, academia and industry

to increase the pool of qualified and readily employable professionals and technicians.

Each sector has its unique requirements, but generally a mix of programs is necessary to train technicians, engineers, and project managers. Egypt’s Smart City in the outskirts of Cairo offers an array of such programs to increase both the size and the skills of the talent pool. Furthermore, clusters that effectively build talent in their regions also focus on developing soft skills, such as project management and people management. Although the needed skills will vary by location, the need to bridge the skills gap in a particular location is urgent across most locations. As a result, countries often need comprehensive plans to address their skills gaps in the short-, medium- and long-term. In figure 6, note how investments are directed not only at making current knowledge workers employable today, but also at strengthening the

skills base of the country in the future by addressing the K-12 population.

Hand-in-hand with talent development is technology development. For technology development to take place three areas need to be promoted in the Economic Cluster: Scientific Research, Research & Development and Commercialization. ECs that differentiate in the area of technology development typically have a program where they implement a portfolio of activities covering these three areas. Programs funded within clusters have been successful in not only developing new patents, but also commercializing them successfully.

**Promotion of SMEs and entrepreneurship.**

This is the principal differentiator for ECs. Clusters start to flourish only when SMEs are succeeding. Facilitating the creation and supporting the growth of SMEs, therefore, is not only a platform for ECs

**Figure 6**

Example of a skill development program (ICT skills) catering to immediate and long-term needs of the cluster

	Short-term impact (0 to 2 years)	Medium-term impact (2 to 5 years)	Long-term impact (>5 years)
Develop experienced hires	Attract and employ experienced expats  Improve skill development	Offer courses to convert non-IT project managers from other fields	
Improve quality of fresh graduates	Establish online registry to link employers and candidates  Increase corporate input to universities  Support corporate-backed academies and certification programs	Attract specialized training firms  Overhaul university curricula	Encourage foreign universities to establish in country  Attract and retain top professors  Strengthen and reform K-12 education
Increase quantity of fresh graduates	Hire fresh foreign graduates  Promote technical diploma training institutes	Sponsor study-abroad programs  Increase enrollment at existing universities	

Source: A.T. Kearney analysis

to meet their economic development objectives, but also to catalyze innovation, connect the cluster to the national economy, and provide a robust, sustainable base that creates employment and increases GDP four and six times faster, respectively, than the rate of large corporations.

*Much work is still to be done in clusters spanning from Ontario to Hsinchu to promote and capitalize on the power of entrepreneurship and SMEs in regional economies.*

In addition, in many industries, anchor tenants are concerned about the availability of high quality local suppliers for their businesses. In many cases, the respective supply chains require various levels of capabilities, which are often provided by a mix of lower-tier international companies and local SMEs.

Integrating entrepreneurship and SMEs into the fabric of the cluster can take many forms, including angel investor programs and dedicated SME financing programs, service offerings tailored for them, and business development support. Take, for example, the grassroots *Angel Investor Networks* that the government of Ontario, Canada, is promoting under the auspices

of the Ministry of Research and Innovation. The objective is to close a “pre-commercialization” capital availability gap—estimated at \$5 billion by Sustainable Development Technology Canada—by developing angel investment networks in each of the province’s technology clusters, and by providing knowledge, standardized procedures and resources to invest wisely into the various clusters’ high-potential companies.

Pan to the Arabian Gulf, where RAKFZ, the free zone of the Emirate of Ras Al Khaimah, has successfully attracted nearly 7,000 companies since its formation in 2000. RAKFZ prides itself on being the perfect place for SMEs to prosper—and rightfully so, as 70 percent of its clients are SMEs and entrepreneurs, many of them consisting of one or two employees. This EC has found a unique niche in the free zone market of the UAE, capitalizing on it by providing tailor-made licensing, real estate packages and business services that fit SMEs’ budgets and needs.

No doubt, much work is still to be done in clusters spanning from Ontario to Hsinchu to promote and capitalize on the power of entrepreneurship and SMEs in regional economies. ECs can play a leading role in accomplishing this work.

### **Next Generation Economic Clusters**

After the recession of 2008-2009 the game has changed for greenfield and established economic clusters around the world. Investments have become more difficult to attract, margins have compressed, and international scrutiny has increased, while demand on ECs to create sustainable employment and economic prosperity has peaked.

Successful Next Generation Economic Clusters will not only qualify with world-class infrastructure and real estate, one-stop-shops, and incentives that attract businesses in the short-term, but also truly differentiate themselves. They will focus on strategies for a choice sector and its value chain, driven by industry veterans who are experts in their fields; facilitate

access to capital and financing for their citizens; partner with them to develop the talent and technology that will drive their competitiveness; and relentlessly incubate start-ups and promote the SME base.

True NECs are not a temporary fix or a fashion. They are true catalysts of economic prosperity, and they are here to stay.

## Authors

*Dr. Omar Sawaya is a principal based in the Middle East office and can be reached at [omar.sawaya@atkearney.com](mailto:omar.sawaya@atkearney.com).*

*Mauricio Zuazua is a senior consultant based in the Middle East office and can be reached at [mauricio.zuazua@atkearney.com](mailto:mauricio.zuazua@atkearney.com).*

*Matthieu De Clercq is a principal based in the Middle East office and can be reached at [matthieu.de.clercq@atkearney.com](mailto:matthieu.de.clercq@atkearney.com).*

*Robert Ziegler is a partner based in the Berlin office and can be reached at [robert.ziegler@atkearney.com](mailto:robert.ziegler@atkearney.com).*



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Marketing & Communications  
222 West Adams Street  
Chicago, Illinois 60606 U.S.A.  
1 312 648 0111  
email: [insight@atkearney.com](mailto:insight@atkearney.com)  
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