Policy and Strategy Roundtable
30 January, 2012

Developing Innovation-based Clusters for Enhancing Competitiveness of Arab States

Report
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Foreword

This report is the outcome of Hamdan Bin Mohammed e-University’s pioneering initiative to organize an annual Policy and Strategy Roundtable for gathering and analysing useful information to guide policy making in the Arab World. Published every year in English and Arabic, the report offers comprehensive information about the pressing issues facing policy makers in the Arab World. With its analysis supported by expertise and experience of eminent academics, practitioners, consultants, and experts drawn from UN agencies, the report is the authoritative reference for policy makers. In fact, this report is designed to deepen understanding of innovation-based clusters for enhancing competitiveness of Arab states.

As the world market becomes increasingly competitive, new questions have emerged for the Arab states. For instance, why can’t Arab countries effectively compete in international markets? There is virtual unanimity among experts suggesting that some of these countries lack necessary policies and strategies or, worse, have ineffective policies for international competitiveness. Indeed, recent evidence from the GCC countries suggests that industrial clusters seem to enhance both international competitiveness and greater economic stability. The establishment of free trade zones and business clusters in the UAE, for instance, has paid good dividends to policy makers.

‘Clusters matter’, cannot by itself, explain international competitiveness of nations. International competitiveness would then be simply a matter of establishing industrial clusters. We need another explanation for international competitiveness. It pertains to innovation. Many Arab states are unable to compete effectively in international markets simply because they have not initiated any serious innovation programs to unleash the process of rapid economic growth and social development.

Lessons of experience from several developed and fast-developing countries seem to suggest that the innovation programs certainly expand opportunities for international business. They also lead to inclusive growth. The Arab states can of course learn important lessons from the competitiveness experience of the developed and some developing countries. Clearly, the notion of ‘fixing the policy’ is undoubtedly correct. However, ‘Fix the innovation-based clusters policy’ appears to be right on the mark in the context of the Roundtable theme. Why? The success stories from emerging economies such as China and India, among others, clearly suggest that industrial clusters can of course enhance international competitiveness of firms and improve overall economic performance.

Let me recollect here the idea of disruptive innovation introduced by Clayton M. Christensen and Joseph L. Bower in a 1995 Harvard Business Review article (See Figure 1). It is still valid and certainly provides a deeper insight into innovation. The decision makers in the Arab World ought to realize that established multinational firms or global giants can be challenged by those offerings from industrial clusters that fulfill the needs of ‘over-served’ customers in global markets. Through
innovations, the offerings could improve overtime. Hence, Arab states cannot afford to delay the start of any kinds of innovation programs to improve international business competitiveness.

Figure 1. Distruptive Innovation


This report is bold in its advocacy of a strategy to establish innovation-based clusters in the Arab states. It has argued quite sensibly that successful implementation of any innovation-based clusters strategy in the Arab World requires simultaneous and concerted action on different fronts by the various policy actors concerned. But effective concerted action needs a common policy framework agreed between the public and private sectors. Indeed, the success of any innovation-based clusters strategy lies precisely in developing such a framework.

I hope, this thoughtful and forward-looking report would be of interest to policy makers, academics, corporate sector managers, UN agencies, media organizations, NGOs and ordinary people in the Arab World.
Executive Summary

This report is based on the deliberations at the Policy and Strategy Roundtable titled, ‘Developing innovation-based clusters for enhancing competitiveness of Arab states’ organized by HBMeU on 30 January, 2012 at its campus in Dubai. The Roundtable is an annual event bringing together eminent academics, government policy makers, UN agencies, media organizations and a number of eminent practitioners.

This Roundtable, attended by distinguished participants drawn from all over the world, focused on innovation-based clusters for enhancing competitiveness of Arab states. The hope of better economic management, more efficient allocation of capital, more productive investment in innovation-based clusters, and ultimately higher standards of living for the people of the Arab World motivated the participants in the Roundtable to explore fruitful connections between industrial clusters and international business competitiveness. The Arab economies, particularly the GCC economies, are taking an active part in the quest for enhancing international business competitiveness at both the regional and global levels. However, they have to go a long way to outflank their competitors in the internal markets.

The Roundtable noted that the Arab policy makers have launched several initiatives to establish industrial clusters to enhance their competitiveness in international markets. Nonetheless, additional steps are needed to foster the development of industrial clusters. Further developing the clusters requires policy reforms to liberalize foreign direct investment (FDI) policy, broaden the investor base, and build infrastructure in line with Porter’s Diamond. The reforms must be in line with international best practices and a framework for consolidated clusters needs to accompany cross-border consolidation in the Arab World.

The GCC customs union has come a long way in liberalizing trade and investment policies and policy makers understand how the GCC nations can benefit from deeper integration through free trade zones and other clusters. The GCC is a global player in international business and a significant recipient of FDI. The development of innovation-based industrial clusters offers remarkable payoffs, particularly as it facilitates better economic integration of the GCC economies.

Nonetheless, many challenges remain for the GCC countries and indeed other Arab states to improve their competitiveness in global markets. Clearly, the policy agenda is extensive. The Roundtable noted that in the course of moving forward, policymakers are likely to tackle difficult issues, including the appropriate sequencing of reforms across the Arab states, the desirable balance between national and regional priorities, possible trade-offs between borrowing innovation and developing their own innovation base, and the relative roles of governments and private sector in shaping the path forward.
“But innovation comes from people meeting up in the hallways or calling each other at 10:30 at night with a new idea, or because they realized something that shoots holes in how we've been thinking about a problem. ”

Steve Jobs
Introduction

Innovation has certainly come to determine economic performance of nations. It is an important source of competitive advantage for any organization or nation in the global economy. Interestingly, innovations do not necessarily typify product or service innovation; they may encompass leadership, business processes and models, technologies, quality of life and even strategic partnerships.

A remarkable development in contemporary literature has been related to a new way of dividing and understanding an economy and formulating policies and strategies. This new way of thinking is about economic development based on innovation. In a basic sense, innovation may be defined as the successful exploitation of new ideas pertaining to products, services, business models, enabling technologies and of course marketing strategies. Without doubt, science and technology are an important source of innovation.

Why is Innovation Important?

While it is important for the nations to grow the economy, create jobs, and increase the quality of life without causing uncontrollable inflation, they must also promote innovation (in terms of new ideas, new technologies, new products and new services) to stay relevant and competitive in the world economy. Gone are the days when natural resources, size of territory and population were considered all important indices of prosperity of nations. Today, innovative policies, good governance, effective management of financial resources, and the extent to which nations are able to harness the creativity and talent of their human resources have emerged important indicators of success. In fact, a new paradigm of innovation has come to exist to create a hierarchy of nations (Table 1).

<table>
<thead>
<tr>
<th>Country</th>
<th>ICI Rank</th>
<th>ICI Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>1</td>
<td>80.3</td>
</tr>
<tr>
<td>Switzerland</td>
<td>2</td>
<td>78.1</td>
</tr>
<tr>
<td>Singapore</td>
<td>3</td>
<td>76.7</td>
</tr>
<tr>
<td>Finland</td>
<td>4</td>
<td>76.1</td>
</tr>
<tr>
<td>USA</td>
<td>5</td>
<td>74.8</td>
</tr>
<tr>
<td>Kuwait</td>
<td>59</td>
<td>51.3</td>
</tr>
<tr>
<td>Egypt</td>
<td>75</td>
<td>46.6</td>
</tr>
<tr>
<td>Algeria</td>
<td>83</td>
<td>42.5</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>48</td>
<td>54.1</td>
</tr>
<tr>
<td>Oman</td>
<td>58</td>
<td>51.8</td>
</tr>
<tr>
<td>Jordan</td>
<td>51</td>
<td>53.7</td>
</tr>
<tr>
<td>Lebanon</td>
<td>87</td>
<td>44.3</td>
</tr>
<tr>
<td>Syria</td>
<td>97</td>
<td>42.0</td>
</tr>
<tr>
<td>UAE</td>
<td>28</td>
<td>58.9</td>
</tr>
</tbody>
</table>

In this kind of hierarchy, it is not the size of the territory or population or natural resource endowments that matter most; rather, it is the creativity and innovation that matter most. Table 1 shows that smaller nations such as Sweden, Switzerland, Singapore and Finland occupy top 4 positions ahead of the United States in the hierarchy of prosperous nations that rely on innovation. In fact, innovation in these countries is strongly associated with cutting-edge scientific knowledge and productivity. These countries have prioritized the promotion of physical and digital infrastructure and improved their human capital. The policy makers have played a critical role in the development of national science and technology policies and promotion of technological innovation in industries with a strong local, regional and global linkages.

In the present era characterised inter alia by globalization of markets, innovation is quite often the function of outsourcing and networking. Firms in the innovation business are taking advantage of the availability of scientific knowledge and talent in any part of the world. Interestingly, a value-based approach to innovation has emerged as a consequence of internationalisation of the innovation paradigm.

**Why is Innovation Important for Building Sustainable Competitiveness?**

Innovation is a key factor that leads to sustainable competitiveness. This kind of competitiveness is based on differentiation and is possible only through innovation. In view of the emergence of the knowledge economy, policy makers in several parts of the world have tried to improve productivity in a regenerative way based on unique strengths, resources and opportunities. The experience of the first five nations in Table 1 suggests that they have tried to create abundance and renewal of resources by creating innovative value chains in the global markets.

The outstanding dimensions of innovation (product, process and organisation) enhance competitiveness of the firm by making it more adaptive to change in a dynamic environment. In other words, sustainability is inculcated into competitiveness of the firm when it starts participating in the change process characterised by innovation.

**Towards a New Model of Economic Development**

Policy makers need to appreciate that current economic performance does not necessarily assure a similar performance in future. In fact, improving standard of living of people requires a sustained growth of productivity. It is the innovation that leads to improved productivity levels and is absolutely important if a nation wants to compete internationally. Consider Figure 2. It suggests that the innovative capacity of a nation interacts with competitiveness improvement, thus contributing to economic growth. In any nation these days, the goal is to increase productivity, international business presence and opportunities to build sustainable prosperity. To achieve this, it must carve a circular economy (Figure 2) for sustainable competitiveness.
With reference to policy, it can be inferred from Figure 2 that policy conclusions involve building innovative capacity to conduct meaningful competitiveness improvement exercises, ensuring buy-in from all actors to the effective functioning of growth mechanism. The spotlight, however, remains on innovation.

The role of innovation and its effective interactions constitute a useful complement to the basic mechanism in allocating resources and promoting efficient wealth creation. Effective innovation mechanism can address market competition through new ideas, and can reduce policy uncertainty. When the innovation mechanisms and business interact effectively, they can lead to more efficient allocation of scarce resources, conduct a more appropriate industrial policy, remove the biggest obstacles to socio-economic development and create wealth more efficiently.

The innovation-based model can promote economic performance, e.g. through improved allocative efficiency of government spending and better growth and industrial policies (Singapore, for instance). Yet, innovation-based strategies designed in tandem with a traditional model of development need to be disciplined by a set of competition principles, or risk becoming collusive.

A traditional model of economic growth depends directly on economic fundamentals such as GDP, skills and capital formation as well as the efficiency through which factors of production is put together, but innovation is a crucial factor behind efficient skills development, capital formation and sustainability of higher productivity and incomes.

Lessons of experience from economic history of nations suggest that the determinants of competitiveness are many and complex. Macro-economic fundamentals, firm-level strategies, human and social capital, technological progress and innovation, conducive business environments, firm sophistication and demand conditions, product and market diversification are all considered important in enabling competitiveness of nations. There is virtual unanimity among scholars, practitioners and policy makers that many of these economic management issues are not mutually exclusive but they actually support each other in carving competitiveness.

Examples from recent economic history of nations show that innovation-based clusters can of course play a vital role in enhancing competitiveness, economic growth and development.
Defining Clusters

A cluster is a combination of a wide range of firms, suppliers, service providers, and institutions in a particular business activity. These organizations are linked by supply and value chains and are usually located near each other. Because of their proximity and linkages, cluster firms enjoy synergetic advantages. Such benefits include access to skilled human resources and suppliers, scientific knowledge acquisition, and policy environment for improving performance. The clusters eventually get integrated into the overall economy.

Establishing successful innovation-based clusters requires an appropriate paradigm which allows the state to support industrial development and technological upgrading but also creates opportunities for the private sector and educational institutions.

The World Economic Forum has categorised the UAE and Bahrain as innovation-driven economies. Saudi Arabia, Tunisia, Oman, Jordan, Morocco and Lebanon have been categorised as efficiency-driven economies. The factor endowments-driven economies include Kuwait, Egypt, Algeria and Libya (WEF, Global Competitiveness Report 2010-11). For countries already on the innovation track (UAE, for instance), the question is how to sustain innovation? For others, the question is how to fast-track in the direction of innovation-based competitiveness. For all Arab states, however, it is strategically important to develop clusters for enhancing international competitiveness of firms and attain what is called quality growth. This kind of strategy surely brings in its wake opportunities as well as challenges for policy makers. In view of these opportunities and challenges, this Roundtable addressed the following thematic questions.
Thematic Question 1

Does the cluster-building policy provide a vehicle to drive existing businesses to a more competitive position?

This thematic question paved the way for the following questions.

a) Does the cluster strategy create the potential for new industries?

b) Does the cluster strategy enhance quality of products and services?

c) Do clusters create international value chains?

d) Do clusters create multiplier effects for the economy?

Thematic Question 2

How can cluster-building add value to policy tracks?

This thematic question logically led to the following questions.

a) Will cluster-building lead to inclusive growth?

b) Will the cluster strategy integrate the local economy into the world economy in the globalization era?

c) Can clusters prove invaluable in addressing the research and development (R&D) needs of the Arab states?

The Roundtable provided a forum for fully exploring the policy logic behind clusters and to test the argument for a stronger focus on clusters, rather than just competitiveness based on innovation. The discussants at the Roundtable painted a more informed scenario of the challenges facing policy makers in the Arab states, and recommend effective policies for enhancing competitiveness of the Arab states through innovation-based clusters. Moreover, the distinguished experts at the Roundtable were able to construct arguments in support of their recommendations for a sustainable cluster-based competitive edge for the Arab states.

Clusters: Some Success Stories

Recent years have witnessed a compelling body of evidence suggesting that clusters have paid rich dividends to policy makers. We cite here some success stories in support of the thematic questions and to bring home the point that clusters have the potential to contribute to innovations and competitiveness.

The Clusters of Innovation Initiative launched in the United States nearly 2 decades ago focused on five regions: Atlanta, Pittsburgh, the Research Triangle, San Diego and Wichita. These regions were selected in view of a diversity of size, geography, economic maturity, and economic success. The Initiative was undertaken in the belief that productivity and innovative capacity occur in the regions where business organizations are based and competition actually happens. It was observed that America’s ability to produce high-value products and services depended on the creation of regional clusters of industries anchored in innovation.

A remarkable success story of clusters is related to the China’s Haidian Science Park (HSP) in Beijing including high-tech firms, universities, Research & Development Centers and a sound knowledge-base. It is set to become a global technology and innovation cluster. HSP is at the heart of the innovation-based development policy designed by China. It had revenues topping US$110 billion in 2010, nearly twice the revenues achieved in 2005 (China Daily, 14 September, 2011, p S4).

The Hong Kong government has invited applications for the Cyber-Port. This cluster will be able to accommodate nearly 200 firms of different sizes. According to the Information Technology and Broadcasting Bureau (ITBB), a large number of firms have shown interest in leasing at cyber port which includes IBM, Legend, Microsoft, Oracle, Silicon Graphics, Softbank, Sybase and Yahoo.

Available information indicates that some European clusters have attracted a large number of FDI projects in recent years. They include Dublin in software, Stockholm and the Cote d’Azur that have developed sound
clusters of information and communications technology design. Ireland, Scotland and Holland remain quite attractive for call centres in the European Union.

The concept of innovation-driven competitiveness has brought in its wake the strategic relevance of a cluster approach. Clusters can of course contribute to the foundation of knowledge and promote technological innovation. Success stories include IT clusters in Silicon Valley, Hyderabad and Bangalore. They have also led to creativity and innovation. Consider, for instance, fashion designing clusters in Paris, New York, Milan and London. Clusters can also accelerate the pace of commercial activities (as has happened in UAE’s free trade zones) and facilitate the formation of new businesses through spinoffs. The case in point is Dubai Media City, among others.

Cluster Policies in the Arab World: Some Examples

Clusters have a long history in Egypt. There exist major organic clusters including Damietta Furniture Cluster, Sha’a El Te’aban District Marble and Granite Cluster, Sharm El Sheikh Tourism Cluster, El-Mahalla El-Kubra Textile Cluster and Robiky Leather Manufacturing Cluster. One of the noteworthy clusters is the furniture manufacturing industry in Damietta. In this sector, Egypt has been successful to connect local industry to global value chains. The Smart Village in Cairo is another business park. It offers a wide array of services including business support to athletic facilities.

Evidence from Saudi Arabia indicates that policymakers have adopted innovation-based cluster approach to enhance competitiveness. Consider the following initiatives.

- King Abdullah University of Science and Technology
- King Abdul Aziz City for Science and Technology
- King Fahad University of Petroleum and Minerals
- King Abdullah University of Science and Technology Research Park and Innovation Cluster
- Dhahran Techno-Valley
- Riyadh Techno-Valley

Qatar has been quite active in establishing clusters to promote industrial activity based on innovation. Doha unveiled a forum on ‘International Experiences in Industrial Clusters Development’ to gain deeper insights into the mechanics and dynamics of industrial clusters.

Data collected by GOIC—an eminent consulting firm, suggest that ‘SMIs in the GCC countries have achieved growth in terms of number from 7000 factories in 2002 to nearly 10,000 in 2007; i.e. an average growth rate of 43%, and an average annual growth rate of 7.4%. According to initial statistics organized by GOIC, the number of industrial clusters in GCC member states is nearly 200 in areas such as petrochemicals, traditional industries, cement, aluminium, fertilizers and service-based clusters.

Cluster initiatives in any Arab country have the potential to contribute to innovations in the economy and aggressive national competitiveness efforts including policy reforms, business capacity building, regional business dialogues, regional economic development and human resource development. They might become a catalyst, thus generating broad public understanding and support for non-traditional economic policies by working closely with media organizations, institutions of higher learning, knowledge and technology creation firms, business leaders and policy makers. When designed carefully and implemented smartly, cluster initiatives may turn out to be some of the most effective policy tools in a broader context of policy making in the Arab states.

The UAE has embraced clusters as a means of enhancing innovation-based competitiveness. The UAE has successfully used policy interventions based on value chains and free economic zones. It has also pursued ambitious development projects, and has integrated industrial policy and entrepreneurship development strategies into clusters. The UAE model is worth considering because of its focus on actively engaging the stakeholders throughout the process, from cluster design to strategy formulation and policy implementation.
McKinsey has estimated that nearly 70% of developing country exports, including some Arab countries’ exports are entering the global markets through six clusters: agribusiness, mining, light engineering, tourism, ICTs, and retail distribution. A study by the Harvard Business School suggests that locational patterns of export-oriented clusters seem to reflect the underlying elements of linkages rather than economic geography. The cluster-driven export patterns generally reflect a high degree of innovation leading to enhanced competitiveness (Porter et al, 2007).

Although several research studies have contributed interesting ideas for promoting the cause of clusters with great intellectual emphasis, Porter’s Diamond presented in Figure 3 has been used extensively in several parts of the world.

**Figure 3. Porter’s Diamond**

The Diamond offers a very promising framework that can be used by the Arab states to identify and tackle questions relating to competitiveness. He suggests guidelines to assure the success of cluster-based analyses and puts forth the rationale for cluster initiatives. In specific terms, Porter’s Diamond measures competitiveness in terms of four interrelated areas as follows: (1) quality of factor conditions, (ii) context for firm strategy, structure and rivalry, (iii) quality of local demand conditions, and (iv) the presence of related and supporting industries (typically found in clusters).

Porter has argued that improving a clusters’ competitiveness would depend on the pace at which firms within the cluster move from competing on basic endowments to competing on advantages arising from efficient and innovative processes and products that contain as much added value as possible. At the heart of the Diamond is innovation and creativity. The business environment is remarkably depicted in the Diamond as a complex interplay among the four factors.
Adding Value to Policy Tracks

Policy makers quite often argue in favour of a well-knit value chain. A value-chain approach is transaction-based and focuses on transactional efficiency within the chain. On the other hand, a cluster-oriented approach is systemic and includes a robust analysis of a cluster’s value chain. Clusters are strategic in character and are meant to solve coordination and information bottlenecks through a well-organized participation of supporting policy tracks outside the value chain.

Clusters may include local as well as national firms. Therefore, government agencies at all levels can be involved. However, central coordination is necessary because of the inherent externalities of cluster activities including most notably innovation, knowledge, and value-chain construction.

Opportunities and Challenges for the Arab World

Cluster-oriented initiatives differ from traditional policy tracks pursued by a large number of Arab states in a significant manner. Traditional policy is based on a notion of zero-sum game in which some industries offer better prospects than others and hence must be protected until they acquire the necessary scale and sophistication to compete internationally on their own. Cluster initiatives, on the other hand, are designed on a more dynamic view of competition among firms and their coordination with associated institutions.

A cluster-based model adopted by the GCC countries does not seek entry barriers—be they against local or multinational enterprises. In fact, the model of a cluster-oriented strategy highlights the challenge and the need for the timely and steady opening of the local market to imports of goods, services and technology, which in turn might improve supply chain (or value chain) efficiency, refine local demand conditions, and stimulate competition, resulting in a positive sum view of innovation-driven competitiveness.

The GCC countries, most notably the UAE, have established free trade zones and industrial clusters to attract FDI. How are important are clusters in the determinants of FDI in the GCC countries? To tackle this question, an HBMeU faculty conducted an empirical exercise in 2009. A questionnaire was developed for this purpose. During the first phase of the research, an exhaustive list of variables that influenced FDI inflows was prepared. The list was largely based on insights derived from the literature.

To refine the list of variables, a focus group interview was conducted. Eight managers of multinational enterprises operating in the UAE were invited to form a focus group. They were briefed about the purpose of the meeting. The discussion lasted nearly two hours. The discussion was led by a moderator and included two observers. The exhaustive list of constructs on determinants of FDI, identified following a review of literature, was revealed to the participants. They were asked to select and assess the variables they felt were important when determining FDI flows in one of the GCC countries. The findings from focus group research were used to refine the survey instrument design.

During the second phase of the research exercise, a survey instrument was developed to identify the perceived determinants of FDI. The focus group acted as a basis for the development of the questionnaire. The survey instrument sought information from the respondents on a total of thirty-two items identified from the literature and perceived to be determinants of FDI. The items were recorded on a 5 point scale in which ‘1’ indicated ‘Strongly disagree’ and ‘5’ indicated ‘Strongly agree.’

Managers from multinational firms operating in the UAE participated in the study. Questionnaires were administered on randomly selected managers, after being told that the researchers were interested to know their perceptions of the determinants of FDI and were asked to respond to the questionnaire that was provided. The respondents were told that their participation was voluntary and complete confidentiality was assured as no responses were separately identifiable. A total of 53 responses were obtained.
In order to group the thirty-two items into meaningful clusters, factor analysis was conducted via principal component analysis. Principal component analysis was used because it seeks to include as many factors as there are in the analysis. In considering the suitable rotation strategy, orthogonal varimax rotation was used because it minimizes the number of variables which have high loadings on any one given factor, resulting in easier identification of each variable with a single factor. Apart from that, orthogonal rotation of items also increases the generalization of the research findings, which is deemed important in an empirical research.

Only items with factor loading of 0.40 and above were considered significant in interpreting the factors. Of the items, 22 of them correlated with factorial groups produced. Out of the thirty-two items, 7 factors were produced. In selecting the number of factorial groups to be extracted, the Kaiser criterion was adopted. Kaiser criterion, which was proposed in the 1960s, states that all components with eigen values under 1.0 are to be dropped. Thus, all the 6 factors that had eigen values greater than 1 were extracted. These 6 factors accounted for 74.58 % of the total variance. The 7 factorial groups extracted were given the appropriate name in accordance with the criteria, namely, infrastructure, market potential, incentives, low cost of operations, political stability, and productive use of capital. Table 2 shows the results of the factor analysis in terms of factor name and the variance explained by each factor.

<table>
<thead>
<tr>
<th>Factor name</th>
<th>Variance explained</th>
<th>Cronbach’s coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1 Infrastructure (including cluster infrastructure)</td>
<td>16.30</td>
<td>0.77</td>
</tr>
<tr>
<td>F2 Market Potential</td>
<td>14.29</td>
<td>0.82</td>
</tr>
<tr>
<td>F3 Incentives</td>
<td>11.20</td>
<td>0.69</td>
</tr>
<tr>
<td>F4 Low Cost of Operation</td>
<td>9.70</td>
<td>0.73</td>
</tr>
<tr>
<td>F5 Political Stability</td>
<td>9.54</td>
<td>0.81</td>
</tr>
<tr>
<td>F6 Productive use of capital</td>
<td>7.24</td>
<td>0.82</td>
</tr>
<tr>
<td>F7 Access to sources of raw materials</td>
<td>6.31</td>
<td>0.78</td>
</tr>
<tr>
<td>Total Percentage of Variance Explained</td>
<td>74.58</td>
<td></td>
</tr>
</tbody>
</table>

The items in the factorial groups were then tested for reliability. Reliability test was undertaken to ensure that the research findings has the ability to provide consistent results in repeated incidences. To check the reliability aspect of the items and its factorial groups, internal consistency analysis using SPSS was performed. The items were grouped into its respective factorial group and coefficient alpha (Cronbach’s) was computed. The coefficients ranged between 0.69 (factor group Incentives) and 0.82 (factor group Market potential). This indicates that all items and factorial groups in this study are sufficient reliable measures, as all of these are above the value of 0.6 (Nunally 1967). The results of Cronbach’s reliability coefficients are also shown in Table 2.
Table 3. Degree of Agreement on the Importance of the Determining Factors for Investors in the UAE

<table>
<thead>
<tr>
<th>Motivating Factors</th>
<th>Mean Values</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Cluster Infrastructure (including cluster infrastructure)</td>
<td>4.16</td>
<td>0.63</td>
</tr>
<tr>
<td></td>
<td>3.91</td>
<td>0.97</td>
</tr>
<tr>
<td>2) Market Potential</td>
<td>3.88</td>
<td>0.91</td>
</tr>
<tr>
<td>3) Incentives</td>
<td>3.61</td>
<td>0.95</td>
</tr>
<tr>
<td>4) Low Cost of Operation</td>
<td>3.40</td>
<td>0.88</td>
</tr>
<tr>
<td>5) Political Stability</td>
<td>3.36</td>
<td>0.97</td>
</tr>
<tr>
<td>6) Productive Use of Capital</td>
<td>3.28</td>
<td>1.00</td>
</tr>
<tr>
<td>7) Access to Sources of Raw Materials</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5-point Likert scale: 1= Strongly Disagree, 5= Strongly Agree

Table 3 provides an overview of the mean scores and standard deviations for the 7 factors. The mean score of the factor infrastructure is 4.16, indicating that there is a strong degree of agreement by respondents on its importance as a determining factor of FDI in UAE.

During the qualitative interviews, some managers explicitly mentioned that the UAE continues to attract FDI because it is perceived that supply constraints are not pervasive, particularly in the clusters. This particular factor gives a competitive edge to the UAE compared to many developing countries in the Middle East.

Should other Arab states follow the successful initiatives and adopt the cluster-based strategy to enhance competitiveness? What types of problems can a cluster strategy address effectively and what are its limitations? How would policy makers go about developing such a strategy systematically to achieve sustainability? What is the relevance of clusters, in terms of bridging the gap that often exists between the private and public sectors, in formulating economic policies? What should be the size and dominance of clusters in an economy? Should clusters be more specialised than the rest of the economy? What kinds of linkages should be created through clusters across the Arab states to promote intra-Arab trade and investment? These are challenging questions in addition to the thematic questions designed for the Roundtable.

The developed countries quite often drive innovation from their R&D units, thus translating breakthroughs into new products. On the other hand, innovation by Arab countries looks somewhat different. In general, the innovations come not from product technology but from the business models that surround the technology. Examples include manufacturing, logistics, distribution, banking and finance. A challenge for the Arab
countries in this context is how to enhance their research and development (R&D) capability. Surely, university-industry partnership can play a key role in enhancing R&D capability of the Arab states. The German model (where all institutions of higher learning must collaborate with industry for enhancing R&D activities) is worth considering in the Arab World.

A great challenge for policy makers in the Arab World is that policies and strategies are not always directly observable, yet there are ways to identify the key factors behind effective cluster strategies by providing a Roundtable forum at the HBMeU Quality Congress 2012 for the business and government officials to discuss issues of common interest and eventually agree on a common policy agenda.

**The Actors in Policy**

Who are the key actors in developing policies and institutional architecture that obviously come into play for enhancing innovation-based competitiveness in the Arab World? Government organizations do not always have perfect information. The private sector in the Arab World, on the other hand, also suffers from several dilemmas and may not be capable of creating public goods and services alone. Therefore, policy making exercises require collaboration among government ministries and departments at all levels, business organizations, universities and research institutions, service-providers, quality standards-setting bodies, and of course the private sector. An approach in which a wide array of public and private institutions shoulder joint responsibility for enhancing competitiveness is likely to be effective in the Arab World. A cluster approach is desirable for initiating this process and for attaining innovation-based competitiveness. Lessons from several developed countries (highlighted earlier in this paper) suggest that institutional architecture can play a vital role in knowledge generation and application, eventually leading to a sense of policy identification or policy branding.

Admittedly, several Arab states are constrained by a lack a solid technology base of trained scientists and internationally-competitive research universities. They may not be in a position to earmark robust funds for R&D activities in all sectors of the economy. A clusters approach in policy making could mitigate these constraints and trigger innovation activity in certain well-defined economic sectors for enhancing international competitiveness.

The practicing managers in the Arab states may not feel the need for innovation due to constraints related to budgets and R&D activities. However, a clusters strategy might create opportunities to innovate in other areas including FDI, value chains, logistics, marketing, service quality and managerial leadership.

In the final analysis, no decision maker can afford to ignore the enormous potential of innovation for surviving, competing, growing and sustaining profitability in the present-day competitive world.
Wherever competition comes from….things can change fast – Today’s peacock can be tomorrow’s feather duster !
The Roundtable panel provided not just an analysis of industrial clusters in recent years but also a lucid primer on innovation and socio-economic development. After extending a warm welcome to the distinguished members of the panel and the participants in the Roundtable, Professor Khalid Hafeez expounded on the importance of innovation-based clusters in the Arab World and went to dabble into the normative terrain (“what ought to be”) in the Arab World. He argued with emphasis that the sources of competitiveness must include innovation, knowledge, creativity, risk, speed, reputation, quality and of course values.

Professor Mohammed Zairi chaired the panel and provided illuminating ideas that paved the way for the Roundtable discussion. He gave an incisive and objective account of innovation, knowledge-based economic development and industrial clusters in the Arab World. According to him, the idea of innovation has been around for a number of years now, as has the inference that international competition has been affected by it. However, the question of incorporating innovation-based industrial clusters in competitiveness models is refreshingly interesting as it has great implications for policy tracks in the Arab World.

Professor Zairi highlighted that the thematic questions prepared for the Roundtable discussions are important and relevant in the context of the emergence of the knowledge-based paradigm for attaining socio-economic development in the Arab World. He shared with the participants that innovation has come to occupy center stage in the discussion relating to competitiveness and economic development. He urged the participants in the Roundtable to examine what is appropriate for the region. In the years ahead, the Arab World is expected to account for a big slice of the world economy. It is, therefore, necessary for policy makers in the Arab World to explore what will make their economies internationally competitive. He encouraged the Roundtable to probe Arab World’s key challenges including developing knowledge-based economies, establishing research-based institutions, strengthening regional integration, preventing financial crises, ensuring that the gains from clusters-driven international business are more evenly shared in the economy, harnessing global trends of innovation and creativity, seizing the opportunities created by oil wealth, and connecting profitably with the global economy.

Following introductory comments, the chair invited the external moderators to make their presentations.

Professor Alan Brown appreciated the importance of clusters, particularly in the context of trade and investment. He emphasized the potential of innovation-driven clusters—reflecting the current widespread euphoria about their merits. He explained the following types of clusters.

- **Trade-driven clusters**
The trade-driven clusters tend to promote collaboration and accelerate the pace of trade between members. Evidence from North American Free Trade Area (NAFTA), ASEAN Free trade Area (AFTA), Asia-Pacific Economic Co-operation (APEC), and the Gulf Co-operation Council (GCC), among other groupings, seem to suggest that trade-driven clusters facilitate exports and create business opportunities.

- **Knowledge-driven clusters**

Professor Brown highlighted that clusters have come to exist to provide access to new knowledge based on research and also create access channels for knowledge held by other organizations. All sorts of combinations and permutations exist including private, public, national, international, intra and inter-industry firms. Even virtual clusters have been formed to achieve some common objectives.

Professor Brown recognized that it was not easy to arrive at a simple judgment about industrial clusters. Questions such as, who drives clusters? and what benefits and outcomes are expected of clusters?, must be addressed comprehensively, he said. Evidence has emerged to suggest that industry umbrella groups, national and local government policy tracks, regional initiatives, individual organizations, strategic alliances in areas including education and business have contributed to the establishment of clusters in various parts of the world, he explained.

Professor Brown went on to expound on the importance of innovation by citing evidence from Australia, which has unveiled a 10-year plan in 2009 for implementing the innovation agenda for the 21st century. The salient features of the plan include the following.

- a) Availability of public research funding
- b) Strong base of skilled researchers
- c) Fostering industries of the future
- d) Effective dissemination of new technologies, processes and ideas, especially for the SMEs
- e) Encouraging a culture of collaboration in the research sector and between researchers and industry
- f) Fostering international collaboration on R&D activities
- g) Promoting collaboration between public and community sectors in the area of innovation system for improving policy development and service delivery

Professor Brown opined that the Middle East had the geographical advantage for establishing business clusters. He argued that policy makers in the Arab World must identify (a) cultural enhancers and inhibitors, (b) policy enhancers and inhibitors, and (c) economic enhancers and inhibitors in the context of clusters. Moreover, it would be helpful to identify which sectors to build through clusters. He cited the example of Singapore, which has neatly identified the sectors where clusters would play a vital role. In the final analysis, he agreed with the chair that innovation must play a leading role in building business clusters for enhancing the competitiveness of the Arab states in the years to come.

The second external moderator, Professor Rick Edgeman made a presentation titled, ‘Sustainovation or Innovability: Innovation for a Sustainable Future’. He cited evidence from well-known multinational firms to argue that there is a strong link between innovation and sustainability. Consider the following cases.

- **MAERSK**

This multinational firm relies heavily on innovation to attain sustainability. It has 108,000 employees in 30 countries.

- **GRUNDFOS**

The organization upholds innovation in its strategy. It has 80 companies in 55 countries.
• **NOVOZYMES**

The organization is number 1 in DOW Jones World and STOXX sustainability rankings for bio-technology. It has nearly 5,500 employees in 130 countries.

• **NOKIA**

Sustainability is a driver for future innovation in Nokia. This well-known organization has designed new ways of material use, packaging reduction and energy efficiency. It also reflects innovation in take-back services. It has 124,000 employees worldwide.

• **AARHUS, DENMARK COMMUNE**

This organization has developed active clusters within sectors such as energy and environment, medicine, health and food development, architecture and design. It has planned to involve more public and private sector players, including players from other clusters to stimulate and support collaborative projects across clusters (e.g. between energy, architecture and the construction sectors). Interestingly, the organization has planned to become CO2 neutral by the year 2030.

• **AARHUS UNIVERSITY**

The Interdisciplinary Center for Organizational Architecture (ICOA) is making all possible efforts to facilitate cluster activity in sustainability. Its objective is also to achieve excellence in process and performance, organizational architecture, and cognition and leadership development.

Why are these organizations acting in a way that ensures innovation and sustainability? Clearly, there are substantial business reasons, according to Professor Edgeman. In the absence of innovation, the goal of sustainability cannot be achieved, he argued. Many of the innovation and sustainability initiatives of firms help to cut costs, improve product/service performance, sustain supplies, retain customers, and improve brand equity. Policy makers in the Arab World can of course learn important lessons from the success stories in several countries of the world.

Professor Edgeman emphasized that the role of the organization is critical in creating a sustainable society. Therefore, firm-level strategies anchored in innovation and sustainability are important as they interact with society.
The participants in the Roundtable were divided into two groups in order to tackle the thematic questions.

**Working Group 1**  
**Professor Tito Conti, Professor Syed Aziz Anwar, Dr. Souma Alhaj (rapporteur), Professor Peter Heines, Professor Khalid Hafeez and Ibrahim Al Badawi**

The group members, at the outset, agreed that cluster was a generic term and all sorts of groupings, associations, combinations and alliances can be included in it. However, the group unanimously agreed that industrial clusters have come to play a key role in enhancing national and international competitiveness of organizations. They argued that the essence of clusters strategy is to enable the members to be prepared for, and to respond effectively to, competitive onslaughts. It was also argued that clusters may offer a number of forms of success to the participating organizations. For instance, they can assist organizations in exploiting emerging opportunities. They can also provide safety nets for the organizations against all sorts of business risks. And, they can offer valuable platforms for learning innovation techniques.

In the context of any economic policy, it is always desirable to ask: can clusters make a difference? It was pointed out that there were good and bad clusters in the UK. A lot of public money had gone into clusters in the UK. Some areas paid rich dividends, while others were not so successful. In the UAE, JAFZA has been a success story; Dubai Healthcare City has remained below expectation, however. In Japan, strategic alliances in the automobiles sector produced good results. These alliances helped Japanese organizations spread their wings far and wide in the world, explained some discussants. Toyota City was cited as a shining example of clusters in the world.

In response to thematic question 1, it was observed that clusters do enhance competitiveness of organizations and the nations at large. Evidence from China and India was cited in support of this observation. The UAE experience was highlighted to suggest that business firms operating in the free zones have actually improved their competitiveness in regional and global markets. Indeed, they have been able to connect with the global supply chains and market their products and services all over the world.

Based on lessons of experience from all parts of the world, the group identified the following determinants of success of industrial clusters.

- Conducive policy environment
- Need-based clusters strategy
- Availability of infrastructure for clusters
- Buoyant university-industry collaboration
- Availability of incentives for innovation and creativity
- Open trade and investment policies
- Availability of auxiliary industries
- Existence of policy regime for integrating the clusters into the economy

Addressing thematic question 2, the group members generally agreed that a key measure of cluster effectiveness is value chain that it creates. The value chain can of course transcend national, regional and extra-regional boundaries. For instance, financial and telecommunications clusters operating in the UAE have become global in operation. Admittedly, value chains bring benefits but also require sound policies and governance system, as well as effective mechanisms to contain new risks that could arise from transcending geographical boundaries.
Professor Conti enriched the discussion by sharing his value generation cluster (Figure 5) with the fellow discussants. He also highlighted that it is the open system (depicted in Figure 4) that helps the sub-systems of a modern organization interact with each other to achieve the synergy. The open system can of course help the organization integrate into the global economy. In the absence of healthy interactions of subsystems within an organization, managers cannot achieve the goal of innovation, he argued.

Figure 4. Interactions of Subsystems

Professor Conti’s value generation cluster can be explained as follows.

- Joining a cluster-based organization requires top down, shared cultural changes within its members. Such changes become even more critical if innovation is the main cluster purpose.
- Understanding which are the critical factors to create positive synergy is a precondition: synergy is the cluster driving force.
- Leaders should think in terms of systems: the cluster should be seen as a higher level system which the lower member systems are part of.
- Systems’ value generation capability is not equal to the sum of its parts’ value generation capabilities. It can be much more or less, depending on the fitness for purpose of its internal relation systems. Relations are key to the achievement of outstanding results.
- As J. Gharajedaghi puts it: Leaders should care more of interactions, less of action. Leaders can delegate full responsibility for actions to their managers.
- Building and supervising fit for purpose relations should be the task of the cluster leaders, who themselves are bound to operate as a team.
- Prospective cluster member leaders should have joint preliminary learning and discussion sessions to reach a common view on the cluster architecture (the relations’ network in particular).
- All those who are part of the cluster network should be trained in cluster management. It is fundamental that people do not enter the ‘cluster adventure’ with a store of old style management concepts, as the pyramidal, functional view of the organization
- Management should learn to think in terms of ‘value generation cluster’. A set of values, like mutual respect and trust and transparent cooperation should be agreed upon to that purpose. If such attitudes are not shared, positive synergy will not take place, let alone innovation.
- Clusters are the ideal incubators for innovations. No doubt then that decent clusters generate innovation. But the issue is: how much innovation? And how significant? The critical factor for innovation – beside the quality of the cluster members – is the system’s environment. Experience shows that innovation strongly depends on what kind of environment the leaders create.
- If the environment is favorable to value creation, innovation will more easily take place. If the
conditions set in the Figure 5 are present, the environment will be certainly more favorable. If the basic building blocks of the organization are value generation cluster, not hierarchical functions, innovation will find a more fertile soil.

- If a positive environment is created within an organization, R&D is likely to be facilitated.

Figure 5

The “Conti Value Generation Cluster”, the synergetic process of value generation in relations.

For many Arab World watchers including members of the group, industrial clusters are seen as heralding a new policy framework for innovation, growth and socio-economic development. The group discussion concluded with the remark that a clear commitment to the industrial clusters strategy in the Arab World can of course provide a positive environment in which the policy discussion presented in this Roundtable report could flourish in the years to come.

Working Group 2
Professor Mohammed Zairi, Professor Alan Brown, Dr. Masood Al Awar, Dr. Abdel Kader Mazouz, Dr. Sanjai Parahoo (rapporteur), Professor Charles Aubrey and Dr. Abdullah Al Sagheer
This group added great depth to the discussion and highlighted that although some Arab nations have made considerable progress in creating industrial clusters, the situation remains rather fragmented. It was highlighted that if the Arab World is to boost growth and get competitive in the global economy, it would require to establish industrial clusters in certain specific areas of competitive advantage. Indeed, at a time when several countries of the world are moving toward free trade zones and industrial clusters, many Arab states are still lagging behind.

With reference to thematic question 1, it was observed that Jebel Ali Free Zone Authority (JAFZA) is a successful cluster. Other success stories in areas such as tourism, healthcare, real estate, education, and banking and finance in Dubai were cited. It was pointed out that Dubai has been able successfully to position its clusters internationally mainly due to neat identification of customer segments and their needs. Moreover, a stable and conducive political environment proved extremely helpful in establishing and promoting business clusters. Interestingly, the clusters in Dubai have attracted different organizations due to the availability of incentives and positive policy environment, it was pointed out.

Figure 5. Cluster of Educational Institutions in the Dubai Knowledge Village

The participants in group discussion pointed out the following benefits stemming from clusters.

- Improvement in the quality of products and services
- Improvement in service quality
- Intra-industry sharing of knowledge
- Sharing of facilities across organizations
- Liberalization of rules and regulations for international business
- Emergence of positive conditions for innovation and creativity

Some discussants compared the clusters in Abu Dhabi with those in Dubai and other Emirates. They pointed out that most of the clusters are in the same product/service categories. They are, therefore, bound to compete with each other. Competition was described as a healthy sign as it would improve quality of products and services and reduce costs, thus improving conditions for innovation.

The member of the group pointed out that good governance of clusters demands clear rules and expectations, transparency in communication to monitor performance and incentives to attract and reward successful firms. More attention was needed to in areas such as financial management and competitive strategy.

The group made following recommendations for policy.

- Strengthen industry-university partnership to develop skills
- Promote competition as well as co-operation for improving consumer welfare
- Design and implement strategy relating to business incubators
- Promote intra and inter-industry networking
• Develop international business tracks within clusters
• Bring business organizations and people together through clusters

With reference to thematic question 2, the group members generally agreed that industrial clusters can of course add value to the policy tracks. The experience of UAE in exploring the potential of the clusters suggests that the economy stabilizes as the clusters start achieving their avowed objectives. The policies relating to clusters can have long-lasting effects on the economy. For instance, Silicon Valley has had considerable impact on the economy of San Francisco, USA and Route 128 positively affected the economy of Boston, USA.

Is balanced economic growth in Arab countries possible through clusters? The group members thought so. Some members of the group expressed that clusters can produce multiplier effects for the economy. The UAE economy was cited as an example. Can business clusters help integrate the local economy into the global economy? Again, the response to this question was yes. Many of the clusters in Dubai are already operating in the global arena. Examples include healthcare, education, tourism, real estate and telecommunications, among others.

Are clusters more attractive to foreign investors? In response to this question, the group explained that clusters give credibility to international trade and investment policies of the country. The success stories of JAFZA and SAIF zone in Sharjah were cited.

Finally, some group members expressed a word of caution saying that what has worked for Dubai may not automatically work for other countries. In policy making, what is required is a clear sense of the needs of the economy, a willingness to process information about those needs, and the ability to prepare a calculated response to meet those needs.
Thematic question 1

Innovation is an important driver for socio-economic development in some Arab countries. Economic growth in such countries is associated with international business activities. True, oil exports have certainly played a key role in the development of international business in several Arab countries. In policy discussions and debates, the focus has been on the accumulation of physical capital through oil revenues. In today’s global hi-technology environment, however, we observe a process in which knowledge and innovation have at least partially displaced conventional wisdom about oil income-driven economic development. Policy makers in some Arab countries, particularly the GCC counties, have taken significant steps in the direction of diversifying their economies. For instance, business clusters have been established to generate international business, particularly in services.

There are convincing reasons for establishing these clusters. The first is simply that the intensity and dynamics of global competition can arguably be handled effectively through innovation-driven business clusters. Second, for almost any organization, the supply chain is increasingly a global one which might necessitate establishment of networks or clusters. Third, it is important for policy makers to appreciate that globalization has brought within its wake vast new markets, millions of new consumers, and new sources of innovation. Business clusters can of course help firms tap into the international sources of innovation and knowledge. Finally, clusters can offer a valuable form of learning for the organizations operating in the Middle East.

Despite all the discussions at the Roundtable, innovation-based clusters seem to b explained largely by their ability to enhance the firm’s capacity to compete in international markets, albeit a sophisticated version of strategy in which the quality of products and services is improved, international value chains are created and multiplier effects for the economy are created.

While addressing thematic question 1, the participants in the Roundtable recognized that cluster development in the Arab World as a differentiated network of distinct firms, affiliates, alliances, subsidiaries, and contracts has opened up a variety of new policy directions. The responses of innovation-based clusters to the demands of competitive markets and international sources of products, services and knowledge are going to be rather complex and require a wide array of strategies.

The participants in the Roundtable shared the UAE experience with reference to thematic question 1 as follows.
• Creating free trade zones and business clusters to attract sector-specific FDI from all parts of the world.
• Adopting a portfolio approach to iron out unnecessary intangible transaction costs related to management and consultancy practices, technological differences and financial transactions.
• Establishing proper corporate governance system, financial, regulatory and accounting infrastructure that is in line with the best practice.

The participants argued that the Arab states should inculcate innovation in their value-chain activities. They cited success stories of Dell Computers, Toyota, Taco Bell Restaurants, Cemex, Wal-Mart, JAFZA, Emirates Airlines, GM and FedEx, among others to argue that innovation in value-chain activities can certainly help clusters compete in global markets.

There was virtual unanimity among the participants about the positive role of innovation-based clusters in improving the competitive position of firms in global markets. A compelling body of evidence was highlighted to suggest that organizations such as CNN, The Body Shop, Easy Jet, IKEA, Canon, Starbucks, Federal Express, Home Depot, Komatsu, Wal Mart, Dell, Nucor, USA Today, and Edward Jones, among others, have been able to improve their competitive position due to innovation. They designed non-traditional strategies in international clusters to compete and grow in global markets.

**Thematic Question 2**

Clusters are an attractive option for any Arab nation in search of improved competitiveness performance. Despite the complexity of linking innovation-based clusters with economic activities of a nation, firms can reap significant benefits through the value chains generated by the business clusters. For instance, the exploitation of R&D knowledge inputs from industrial clusters has a positive effect on economic results, especially in the area of international competitiveness. As expected, industrial clusters produce better results, but Arab nations can also turn to look at the consequences of linking the results of those clusters with other policy tracks with confidence.

The discussants at the Roundtable generally agreed with the notion that if an Arab nation decided to locate R&D activities in industrial clusters, it would have interesting value-adding results. For instance, if cluster-based firms decided to work through affiliates elsewhere in the country, innovation performance would be better. But if this is not possible, presumably due to regulatory constraints, looking for a third party would also bring gains—though modest—in terms of innovation and competitiveness. Nonetheless, it was agreed by the discussants that R&D activities in industrial clusters have the potential to trigger creativity and innovation across the entire economy. The case in point is clusters in the telecommunications and financial sectors.

Some discussants argued that ‘captive clusters’ established through rather inward-looking restrictive policy regimes may not create the desired value for the economy as a whole. It was argued that even the ‘captive clusters’ should occasionally maintain some type of informal collaborative relationship with firms operating elsewhere in the economy with a view to creating value chains and for improving efficiency and competitiveness.

The rise of industrial clusters and free trade zones in the UAE is helping the country to not only grow but to get more integrated into the world economy. The GCC countries are working to create a cohesive Arab community that promotes complementary economic growth, innovation and healthy competition. The discussants suggested that policy makers in the Arab World should consider the following options.

• Industrial clusters must continue to catalyze business and economic integration in the Arab World;
• The GCC countries and other Arab states must continue to integrate their economies into the global economy by designing open trade and investment policies, and
• The Arab region must not become a business rival to other regions; rather, it should become a globally connected and engaged partner in the growth of the global economy.

As the Arab states reach out to engage the world, they must ensure that their economic policies are anchored in innovation in order to compete effectively in the world economy, the discussants agreed.
The Roundtable organized by HBMeU is surely defined by the results it produces. Following careful and well-informed deliberations at the Roundtable, eleven anchor questions were addressed to the participants in the Roundtable through an electronic voting device. The questions were selected by a focus group of 5 experts formed by the Assistant Chancellor, Learning and Academic Development, HBMeU. The questions were unanimously mentioned by the group as of critical importance in the context of the Policy and Strategy Roundtable. A 5-point Likert scale, with A representing ‘strongly agree’, B representing ‘agree’, C representing ‘neutral’, D representing ‘disagree’ and E representing ‘strongly disagree’ was used to measure responses.

The responses are presented in charts 1 through 11. Interestingly, 60% of the participants agreed and 20% of them strongly agreed with the statement that ‘the importance of innovation-based clusters is appreciated in my country (chart1). Admittedly, the respondents did not represent all the Arab states. Nevertheless, the respondents were a cross-section of some influential Arab nations including the UAE. A majority of respondents (53%) agreed in chart 2 that there was a need for clusters-based policy for economic development. This kind of response lends support to the argument that clusters can of course accelerate the pace of economic development in the Arab World. On the question relating to international competitiveness, 33% of the respondents strongly agreed and 20% of the respondents agreed that a large number of Arab nations were unable to compete due to absence of innovation-based clusters. However, 13% of the respondents strongly disagreed with the statement, presumably due to other factors such as a narrow base of industrialization, lack of innovation-based policies, and inward-looking trade and investment strategies. Chart 4 shows that 50% of the respondents agreed that promising conditions for clusters existed in their countries. In other words, these countries appear to satisfy the conditions laid out by Porter in his Diamond (Figure 3). Arguably, a large number of Arab states have to go a long way in developing their economies along the lines suggested by Porter for competing in international markets. Chart 5 explicitly shows that 40% of the respondents disagreed and an equal number strongly disagreed with the statement that a clusters-based approach to economic development cannot work across the Arab states. In other words, clusters have the potential to enhance the competitiveness of Arab nations, in general.

An overwhelming number of respondents (73%) strongly agreed with the statement that the Arab states should neatly define categories of innovation-based clusters depending on their needs. The UAE, for instance, has established clusters in the services sector in order to diversify the economy. Saudi Arabia has also taken steps to establish clusters in the services sector. Larger countries such as Egypt and Sudan might consider establishing labor-intensive clusters to compete internationally. The respondents also agreed (54% in chart 7) that scenarios should be carved for the next 10 years to achieve a balanced economic growth. In other words, clusters could complement other policy tracks. The respondents strongly agreed (79% in chart 8) that budgets for research in institutions of higher learning must be increased to facilitate innovation. Surely, it is these institutions that have contributed
immensely to creative endeavors and innovations in industrial countries. There was a mixed response to question 9, suggesting that the Arab nations should design their own clusters-based policies to suit their needs. Some oft-quoted emerging economies such as China and India have designed clusters to suit their specific needs. The Arab states should also do the same, according the majority of participants in the Roundtable. Again, a rather mixed response emerged with reference to the penultimate question. 20% of the respondents strongly disagreed that government subsidy should be provided to promote innovation-based clusters. Perhaps implicit in this response lies the argument for the entrepreneurial zeal in promoting innovation-based clusters.

A majority of respondents (40%) strongly agreed that innovation-based clusters should be established in the free trade zones for attracting foreign direct investment (FDI). The UAE has been successful in attracting FDI in these zones. Other Arab nations can of course consider UAE’s successful experience and establish innovation-based clusters in the free zones for attracting FDI.

1. The importance of innovation-based clusters is appreciated in my country

2. My country needs a clusters-based policy for economic development

3. A large number of Arab states cannot compete internationally due to absence of innovation-based clusters

4. In my country, promising conditions for clusters (existence of related industries and research institutions (for instance) exist

5.
5. A clusters-based approach to economic development cannot work across the Arab World

6. The Arab states should define categories of innovation-based clusters to suit their needs

7. Carve scenarios (including innovation-based clusters) for the next 10 years for achieving a balanced growth

8. Increase budget for research and development (R&D) activities in colleges, universities and research institutes

9. Benchmark the clusters strategy to the strategy designed and implemented by successful emerging economies such as China and India

10. Provide government subsidy to promote innovation-based clusters
11. Establish innovation-based clusters in free trade zones for attracting foreign direct investment (FDI)
The Way Forward

The journey that some countries of the Middle East, most notably the GCC countries, have covered to attain innovation, growth and economic prosperity in the past couple of decades is remarkable. Many ingredients of that success story are likely to remain relevant for the future—the adoption of business clusters, the embrace of open trade and investment policies, the commitment to compete internationally, and the strategy to adapt and reform in response to changing global circumstances. While already reaping the benefits of clusters, the Arab states could make additional gains by adopting the following strategies.

- More liberalization of business clusters
  Although, some Arab countries have already taken bold steps to liberalize cluster policies and strategies, it would go a long way to remove tariff and non-tariff barriers for the business community seeking to enter the business clusters including the free trade zones.

- Strengthening financial integration
  Deeper and better connected financial markets would benefit clusters in the Arab World. Admittedly, the financial systems in the Arab World are mostly bank-based, with the stock markets relatively smaller compared to the markets in developed and fast-developing countries. New initiatives are needed to deepen domestic stock markets and establish a pan-Arab system for countries where the financial markets are still struggling to grow. Greater financial linkages bring gains but require mechanisms to ward-off investment risks.

- Developing human capital and talent
  Innovative skills to manage business clusters in most Arab countries are tapped from the developed countries. Although business management skills are improving in the Arab World, considerable planning and investment are needed to develop local knowledge and skills for managing the clusters in a competitive environment.

- Reducing reliance on the international banking system
  Lessons from the 2008 crisis suggest that undue reliance on the international banking system must be the of managers operating in the business clusters. Loans of short duration or on foreign currency borrowings must be avoided to the extent possible.

- Enhancing manufacturing capability
  In order to compete in the global economy in a sustained manner, it is strategically desirable on the part of the Arab states to build up a formidable manufacturing capability, complete with production supply chains in the clusters, and owned and controlled by the Arab firms. The clusters must become competitive centers of global production (similar to Chinese clusters) and be attractive for investment.

- Reconfiguring value chains
  The international dispersion of value creation, the rise of new enters of international business activity in clusters, and the integration of a growing number of MENA countries into the global economy all call for new policy tracks focusing on offshoring/outsourcing of increasingly sophisticated and innovative business activities to industrial clusters.

- Broadening and deepening entrepreneurship research
  The emergence of clusters, particularly in the GCC countries is associated with international entrepreneurship, which reflects innovative, proactive and risk-taking behavior across countries. Therefore, it is important in the emerging scenario to focus on international entrepreneurship research in the Arab World.

- Creating and managing innovation and knowledge
  Conventional wisdom suggests that knowledge is created transferred, assimilated and applied through the processes of innovation, life-long learning, and Research and Development (R&D) activities. The decision makers in the Arab World must understand and facilitate the interactions between global and local clusters for innovation, knowledge creation and exchange and the governance mechanisms for knowledge creation and application.

- Integrating innovation-based clusters into the political agenda
  As knowledge-based economies start emerging in the Arab World, it would be desirable to integrate policies related to innovation into the political agendas of the Arab nations. Indeed, the role of
industrial clusters will have to be carefully examined and analyzed in the context of innovation-driven policy tracks.

In his concluding remarks, Professor Zairi argued that the question of striking a balance between the priorities of multinational firms and national clusters has surfaced. The clusters located within a country might be interested in attracting FDI to boost innovations and exports. The multinational firms, on the other hand, might prefer locating R&D activities in their home countries. He urged policy makers in the Arab World to motivate domestic clusters (preferably through incentives) to promote creativity and innovation. As industrial clusters compete to lure capital and technology and stimulate innovation to enhance their international competitiveness in the global economy, a conducive policy environment must be created.

Professor Zairi suggested that social innovation must be promoted in the Arab World. He cited the success story of e-Bay, where social networking plays a powerful role. Policy makers, business leaders, chambers of commerce, and entrepreneurs must collaborate in their quest for innovation, he argued. “Keep the agenda for innovation alive” was his advice to policy makers in the Arab World.

Finally, this report does not seek to minimise the challenge of promoting innovation-driven competitiveness in highly unequal economies of the Arab World. However, some GCC countries that have successfully launched the business clusters can of course provide lessons of successful experience to other Arab states. In the final analysis, it is the policy makers who have to design bold and innovative policy tracks to create new opportunities through business clusters for the Arab states to compete in the global economy effectively.
References


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## Directory of Participants

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Secretary, e-School of Business and Quality Management, HBMeU, UAE

### Participants

<table>
<thead>
<tr>
<th>Participants</th>
<th>Job Title</th>
<th>Organization</th>
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<tbody>
<tr>
<td>Professor Charles Aubrey</td>
<td>Vice President</td>
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<tr>
<td>Dr. Tito Conti</td>
<td>Quality Expert and Consultant</td>
<td>International Academy for Quality</td>
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<tr>
<td>Name</td>
<td>Position</td>
<td>Institution/Government</td>
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<td>The Executive Council, Dubai, UAE</td>
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<tr>
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<td>Strategic Planning Specialist</td>
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<td>Dr. Abdullah Al-Sagheer</td>
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<tr>
<td>Dolly Otaky</td>
<td>Head, Quality and Accreditation</td>
<td>HBMeU</td>
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