The European Investment Bank (EIB) through the Marseille Centre for Mediterranean Integration (CMI) and the Islamic Educational, Scientific and Cultural Organization (ISESCO) co-organised a regional workshop on the 4th and 5th of November, 2013 in Casablanca Morocco.

The objectives of the workshop were to address the challenges faced by Science and Technology Parks (STP) in terms of governance, management, and business strategies, and to take stock of possible governance and management models. The event infused best practices through the contribution of international experts such as the International Association of Science Parks and Areas of Innovation (IASP), and successful European STPs such as ODTÜ Teknokent in Turkey, Manchester Science Park, AREA Trieste in Italy, and Krakow Klaster & LifeScience Park.

Fourteen countries and nine parks from different countries were represented during the workshop enabling a regional benchmarking of STPs and mutual learning from best practices but also failures from both national delegates and experts. The contributions of the MENA park managers revealed the differences in scope and scale of the activity characterising their STPs while also identifying common challenges putting them in a comparative perspective. The workshop consisted of six sessions, each being divided in two parts: presentation of case studies followed by a discussion among the national delegates.

The seminar clearly illustrated how a comparative perspective can help find answers to the challenges STP manager face in managing and governing their parks. Input and know-how from international experts and other park managers allow these latter to shorten their learning curve and get new insights on how to overcome challenges and get the best value from a Science and Technology Park. Besides the technical value the workshop offered, it is hoped that this event is the first step in the creation of a regional network of STP managers in the MENA region.
SCIENCE AND TECHNOLOGY PARKS ARE TOOLS FOR THE DEVELOPMENT OF KNOWLEDGE ECONOMIES

Science and Technology Parks (STP) are special places especially conceived to host academics, research centres, entrepreneurs, businessmen, business support services, incubators, or accelerators under the same roof. They are an effective policy tool to realise returns on a country’s investments in Research, Development, and Innovation.

A Science and Technology Park finds its foundation in the rationale that physical proximity, shared facilities, services, and co-working space for the different residents of the park facilitate the transformation and the transition of ideas from universities, R&D institutions, and companies to private markets, thus creating economic value. Effective STPs have the potential to stimulate regional growth, create employment, start up new companies and enhance existing ones’ competitiveness by insuring an innovation friendly environment. They are an efficient vehicle towards building up knowledge based economies.

STPs are alternatively referred to as research parks, science parks, technology parks, technopoles, technoparks, science centers, industrial zones, etc. Indeed these structures vary not only in their appellation and definition but also in term of scope and objectives, and there is no “one size fits all” type of park.

The International Association of Science Parks and Areas of Innovation (IASP) has the following definition: “A Science Park is an organization managed by specialised professionals whose main aim is to increase the wealth of its community by promoting the culture of innovation and competitiveness of its associated businesses and knowledge based institutions. To enable these goals to be met, a Science Park manages the flow of knowledge and technology amongst universities, R&D institutions, companies and markets; it facilitates the creation and growth of innovation-based companies through incubation and spin-off processes; and provides other value-added services together with high quality space and facilities.”

### Roles of Science & Technology Parks
- Knowledge creation and economic value creation
- Transition knowledge directly to the market
- Support companies and enhance their competitiveness
- Encourage collaboration among companies, universities, and research centres
- Build research capacities
- Commercialize university research
- Facilitate the conversion of new ideas into the innovative technologies for the market.

### Science and Technology Parks offer
- State of the art infrastructure
- Access to research and development facilities
- Access to on-site estates services, office services
- Access to communities of science, technology or business
- Intelligent brokerage, network management & hosting
- Access to innovation networks
- Access to business support (marketing, legal, finance, HR, intellectual property, networking, entrepreneurial training)
- Inward investors, seed capital
- International reputation of the park

### Roles of a Science & Technology Park Manager
The workshop emphasised the multi-faceted role of a STP manager:
- a champion, leader, manager
- a real estate developer
- a knowledge broker
- a middle man between different stakeholders
- a catalyst of partnerships
- a knowledge flow facilitator
- a strategic networking enabler, etc.
Choosing the right model and strategy is crucial for the success of a science park. The IASP Director General presented the fundamentals and building blocks of a Science and Technology Park in seven elements, which were discussed all along the two days’ workshop:

1. **Location and Environment**: it refers not only to the geographical situation of the park but also to its attractiveness from an employee and a tenant company’s perspective. The living environment, the proximity of universities, networks, housing zones, services, and cultural activities become important arguments to attract talented and creative people. A friendly STP environment eventually facilitates the creation of innovation.

2. **Position in the Knowledge & Technology Stream**: STP managers should look for the right balance between academia and industry, and act as interpreters between the two spheres. They should drive new and enhanced mechanisms to stimulate the transfer of knowledge and technology. Setting incubation targets, investing in technology facilities, and pushing for more entrepreneurial trainings is also a responsibility of STP managers.

3. **Target Firms**: a STP manager has to make decision on whether the STP will focus on start-ups creation (e.g. incubation schemes, seed capital funding, etc.) or on attracting mature companies (e.g. create own STP branch abroad).

4. **Degree of Specialisation**: decide whether the STP will specialise in a sector (e.g. Textile industry) or have a general orientation.

5. **Target Markets**: decide whether the STP aims to attract only domestic companies or also regional and foreign companies. Prioritise and adapt the corresponding marketing strategies.

6. **Networking**: strategic networking is an essential part of the park’s business model, and a specific budget must be allocated to this activity. A STP can become a regional and an international structural node. STP managers are knowledge flow facilitators, catalysts of partnerships, and middlemen between different stakeholders. Because of the importance of these functions in the innovation process, STSP managers need to analyse, get to know, and increase the density and value of their networks.

   "**NETWORKS: A FORMIDABLE MULTIPLIER OF RESOURCES**" Luis Sanz, IASP

   "**NETWORKING WITH THE CHAMPIONS IS A MUST**" Enzo Moi, AREA Trieste Park

7. **Governance & Management Model**: The governance of a STP must determine the right mix of people and institutions that will have decision making capacity in the park. There should be a clear distinction between shareholders who are mere investors, and stakeholders who have an interest in developing the park. Both the composition of the board and the profile of the management team determine the park success. Who seats in the board, what is its role, and the competencies of its member are decisive factors. A highly competent, committed and specialised manager and management team is similarly vital for the park success. The team profile is decisive: whether its members have a previous experience in the business or in the academia sectors, their risk taking level, or their empowerment level, etc. are all determining success factors. Deciding about the degree of involvement of the public sector, the ownership structure, and about the roles and competences of each stakeholder is important. Control mechanisms need to be established as accountability and responsibility should be central in the governance of STPs. Besides, managers need to be ready to adapt their governance and management model to their local environment and to the ever growing internationalisation of parks.
AREA Trieste Science Park, Italy

AREA Trieste is the leading STP in Italy, with two main campuses, 90,000 sqm of labs and offices, 92 tenants, 2400 researchers and staff employed in resident organization and EUR 180 Million total turnover. Based on his experience managing AREA Trieste Science Park, Enzo Moi shared ten steps for the successful management of a STP:

1. **Analyse the Context**
   Carry out a critical analysis of your scientific as well as business environment. Are there some points of strength in at least one of them (i.e. Universities or local companies)? Is there potential for endogenous development? Are there talented, young people, entrepreneurs, and researchers willing to bring their own ideas and research results to the market? Do you have local institutions strongly willing to support the establishment of a knowledge economy? Is there a need to cover gaps in the “innovation supply chain”?

2. **Shape an Ambitious but Realistic Plan**
   Once you have analysed your context and demonstrated a STP could actively contribute to the competitive growth of your country or region, fix ambitious strategic goals for your STP. Plan the development of your STP in line with human and financial resources.

3. **Define a Value Proposition**
   Ask yourself: which kind of tenants would you like to have and which kind of services should you offer to attract them? Why should a tenant choose your STP? Is your STP flexible and cost-effective to meet the needs of your target tenants? What can you do to differentiate your service-offer from other STPs? For each customer segment develop a specific service matching its need.

4. **Valorise your Territorial Assets**
   Avoid competition with other knowledge providers. Establish links with the existing institutions. Use a networking approach in order to increase the critical mass of your STP.

5. **Attract and Select your Tenants**
   Select your park tenants but attract new talented ones as well. For e.g. in AREA Trieste, research activity is a pre-requisite to become a tenant; both the research capacity and the economic strength of candidates are evaluated, and only those with a higher score are selected. The park also supports ambitious “would be” entrepreneurs interested in creating their own business and works with them to transform an innovative idea into a successful business through R&D, management and financial support in the earliest stages.

6. **Pay Attention to your Budget but Don’t let it Rule your Strategy**

7. **Collaborate With your Tenants and Help them to Collaborate with Each Other**

8. **Work Hard to Improve your Services, but Be Patient About Results**

9. **Take Care of your Tenants’ Evolving Needs: Their Success is your Success**

10. **Don’t Limit your Goals to the (Successful) Management of the STP**
LifeScience Krakow Klaster and LifeScience Park

The LifeScience Technology Park is the first technology park in Poland dedicated to life sciences. It was developed by the Jagiellonian Center of Innovation company (JCI), a first in a class ‘university company’ in Poland established by Jagiellonian University in 2004. LifeScience Klaster Krakow (LSK) initiative was created in 2006 and is today the network of institutions from Krakow and Małopolska Region which agreed to collaborate in order to develop and deliver to the market innovations in the field of life sciences. The park was intended for people interested in transforming a research project into commercial activities and for sectoral companies seeking funds for new areas of activity.

An agreement with 32 institutions representing regional stakeholders was signed within the framework of the LSK.

The governance structure

Cluster Board: representatives of each institutional partner. It deals with overall strategy issues.

Cluster Executive Committee: representatives of each meritorious group, advisory body to Cluster Manager. It addresses on-going operational issues.

Interdisciplinary thematic groups: teams initiated to address specific lifescience problems and interests (e.g. innovative hospitals, Medical diagnostics).

Managing Director: appointed by the Cluster Board to coordinate everyday activities.

JCI’s operations are based on four pillars:

Financing and supporting the development of new, innovative science companies and projects in the field of life science.

Providing access to the resources of Krakow’s universities, in particular the Jagiellonian University (JU), as part of the contract research offer.

Executing educational projects preparing a group of managers to operate an enterprise in the life science industry.

Managing the Life Science Park and providing access to laboratory spaces.

The park directly addresses goals included in the Regional Innovation Strategy mission statement which aims to increase the level of innovation and competitiveness through stimulating the cooperation of SME’s with a wide range of institutions in the field of science, research & development, and transfer of technology.
ODTÜ Teknokent, Turkey

ODTÜ Teknokent is Turkey’s leading innovative Science and Technology Park. It hosts 300 companies, with more than 50% started up in ODTU Teknokent. It employs a total number of personnel of 4100 among which 3250 is Research Technology & Development personnel (75% engineers), and around 700 projects are carried out at a time. As of August 2013, 460 million USD is the figure of export (excluding manufacturing numbers). Entrepreneurship, industry-university collaboration, and internationalisation are important components in the park model.

STP - University - Industry Relation

"A NEED TO SHIFT THE UNIVERSITY CURRICULA TOWARDS MORE APPLIED RESEARCH"

University – Industry Collaboration

"UNDERSTAND THE MARKET AND THE INDUSTRY NEEDS"

University – STP Relation

Entrepreneurship

"WE BELIEVE IN SMALL COMPANIES"
The Business Model Canvas

The workshop fourth session was a group assignment about designing and improving STP models using the “Business Model Generation” methodology. The output of the session was completed canvases that were presented the following morning by the five groups, and discussed among the participants.

The Business Model Canvas concept provides a visual look at the nine building blocks of an effective business plan mapped out in a restructured canvas. These nine basic building blocks show the logic of how a model intends to generate revenues and these are: customer segments, customer relationships, key partners, key resources, key activities, channels, revenue stream, cost structure, and value proposition.

Understanding each block, the interrelations between each other, and the resulting or potential implications is very important for a STP manager and was the main objective of this assignment.

The assignment showed that the park managers ought to innovate in designing, rethinking, and improving their own parks business models taking into account the insight of the different factors of their environment.
PARTICIPANTS INPUT AND RECOMMENDATIONS

- A clearly defined strategic plan and a long-term vision for the park are crucial. Having a short mission statement is a smart way to focus on achieving the *raison d'etre* of your park.

  "A STRATEGY SHOULD NOT BE A DEMOCRATIC PROCESS" Kazimierz Murzyn, Krakow Klaster & LifeScience Park

- Increase your national policy-makers’ understanding of STPs role as sources of innovation and regional growth, while also reviewing your contributions to government missions. Use media to convey the message that your park is a community project and a common good. Provide them with facts and results. Invest in a good communication policy and lobby for new public policies. Cooperate between all STPs of your country to have more weight on policy formulation related to your parks.

  "A VERY SOLID COMMUNICATION STRATEGY TOWARDS PUBLIC INSTITUTIONS. PROVIDE HARD FACTS TO SUPPORT YOUR LEGITIMATE RIGHTS. HAVE ASSESSMENT AND EVALUATION SYSTEMS TO SUPPORT YOUR CLAIM" Luis Sanz, IASP

- Involve as many stakeholders as possible in your park.

  "STRATEGIC PARTNERS WHO BELIEVE IN YOUR APPROACH HELPS TREMENDOUSLY" Nejib Abida, Sfax technopole

- It is important to understand the culture of different institutions and stakeholders nodded to your park ecosystem.

- Choose distributive methods of managing your park. Your management team and staff should be able to use innovative methods of management. They should be entrepreneurial themselves. Your tenants and your start-ups can help too.

- Attracting talented people and businesses with high growth potential is essential for the STP sustainability and competitiveness. Successful STPs have put in place selection criteria and entry conditions for applicants. The Manchester Science Park (MSP) requires that its tenants 1) operate in the knowledge sector with strong innovation potential, 2) partner with local knowledge base, and 3) establish their R&D on site.

- Work towards developing and fostering an innovation ecosystem that shape how your tenants and companies create knowledge and collaborate to bring new products and services to market. Nurture an entrepreneurship culture and work towards creating a critical mass of entrepreneurial students, researchers, engineers, scientists and social scientists who might be your next park tenants.

  "THE BUZZ WORD WE HEAR IS FUNDING, RESOURCES, AND MONEY. THE REAL AND BEST RESOURCE A PARK CAN HAVE IS HUMAN CAPITAL" Ufuk Batum, ODTÜ Teknokent
- Provide incentives to encourage the transition of new knowledge and new technologies to the markets. Align objectives and incentives of STPs and universities. Improve university-industry rules of collaboration. Leverage existing governmental programs and structures.

- “THERE IS A STRUGGLE BETWEEN PROPERTY MANAGEMENT AND INNOVATION/KNOWLEDGE CREATION” Ghassan Bouhia, Casanearshore Park. The linkage between development agencies and parks should be established in a more systematic way. Separate the management of the real estate from the management of the park activities.

- **Performance Indicators and Accountability**: establishing metrics of evaluation is needed to measure STPs performance and impact. They are valuable for managing strategy implementation, communicating and motivating. They are twofold: On one hand they allow to understand, improve, measure, and communicate results and benefits to the public and in particular to stakeholders (government, economy, universities, businesses); on the other hand, they reveal ways of increasing efficiency.

These indicators are only valuable if they are derived from strategic objectives endorsed by the owners of the park, if they are derived by the staff that have responsibility for delivering them, and if they are regularly reviewed and discussed. There are several metrics that can gauge the park success and they will differ from one park to the other and from one country to the other. Some possible metrics can be: the return on public investment (e.g. changes in tax rolls compared to the opportunity cost of a land acquired by the government vs. other types of uses; the value of the park to its tenants (e.g. annual tenant surveys); firm performance (e.g. change in income or corporate taxes collected by local administrations, number of jobs created); or university performance (e.g. number of joint ventures between with firms, or number of joint patents and publications).

“IF YOU DON’T MEASURE YOU CAN’T MANAGE” Jane Davies, Manchester Science Park

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<tr>
<th>Stakeholder</th>
<th>Productivity of Tenant companies</th>
<th>Average salary paid by park companies cf. average salary in region</th>
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<td>Brand &amp; Reputation</td>
<td>Referrals from other organisations</td>
<td>% of enquiries from referrals</td>
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<td>Internal Processes</td>
<td>Employee Satisfaction</td>
<td>Staff turnover – 3y average Sickness days/employee</td>
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<th>Commercial</th>
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Jane Davies, IASP

- The national delegates articulated their countries’ need to invest in developing entrepreneurship skills at all levels, especially for scientists, engineers, and researchers. They also expressed an interest in having access to benchmarking studies about SMEs development strategies and key performance indicators for STPs.

A SCIENCE PARK IS MORE THAN THE SUM OF ITS CAPITAL INVESTMENTS.
CONCLUSIONS

Science and Technology Parks are the offspring of the knowledge economy the region would like to attain. They have the potential to stimulate regional growth, create employment, start up new companies and enhance the competitiveness of existing ones. They are an effective policy tool to realise returns on a country’s investments in Research, Development, and Innovation.

A combination of the following elements must be present if the benefits of a Science and Technology Park are to be realised:

- **Champions**: infrastructure and expertise are not sufficient to ensure a park success. Committed champions with a long-term vision and the ability to continuously direct resources to the park are needed.

- **Leadership**: strong and committed leadership and staff to guide the development of the park, facilitate networking among the entrepreneurs, researchers, investors, and others within and around the park innovation ecosystem.

- **Funding**: sustained public funding but also active private participation, combined with effective national policies to support start-ups and SMEs that seek to convert ideas and innovations into products for the market.

- **Collaborations**: the opportunity to collaborate among universities, industries, RDI institutions and other organisations. The ability to manage stakeholders’ complexity is required.

- **Human Capital**: the human capital is built over many years of public investments in education and public policies that encourage an entrepreneurial culture. Skilled entrepreneurs, managers and teams with experience in the private sector are needed to commercialise the knowledge generated within the park.

- **Metrics**: Effective metrics to help management set clear goals and gauge the effectiveness of the research park.

- **Adaptation**: to be ready to modify and adapt the STP model to new realities in terms of technological changes and fast growing competitive global markets.

- **Patience and patience**: Science and Technology Parks are a long-term project.