Building Knowledge Economy through Innovation Ecosystem: The Role of Innovation Hubs

Forum Resolution & Recommendations
# Table of Contents

KEN Forum 2014 Resolution 3  
KEN Forum 2014 Recommendations 7  
Additional KEN Forum documents 10  
  — Programme 10  
  — List of Registered Participants 10  
  — Select Bibliography 10  
  — Analytical Compendium 10  
  — Presentations 10
KEN Forum 2014 Resolution

Innovation Hubs - A Key Component of Innovation Ecosystems

Participants of the 4th annual Forum of the Knowledge Economy Network in Ljubljana, Slovenia on 25-26 November 2014 have adopted the following Resolution:

1. Innovation for the 21st Century

Over the last few decades the nature of innovation has changed dramatically, and has become recognized as the critical determinant of economic growth, international competitiveness, and job creation.

According to “Innovation Ireland – Report of the Innovation Taskforce”, the new characteristics of innovation are:

— Speed - reflecting the fact that overall our stock of knowledge now doubles already in 3-5 years;
— Multi- and interdisciplinary - most valuable innovations come from combination of areas of knowledge and research:
— Collaboration of small and large teams – in response to growing complexity of research challenges, requiring active collaboration and communication among scientists, researchers, developers, as well as users of innovative solutions;
— Democratization – innovation is not limited to laboratories and research institutes, more than ever before innovative ideas come from everybody: including factory floor workers, consultants, professors and students, and even users of products and services which are changing rapidly in response to new conditions at the markets.

Human society has never been so focused on innovation, and realizing its dependence on the ability to innovate productively in order to improve its general performance and upgrade its economic competitiveness.

The changed nature of innovation is increasingly understood by policy makers, intermediaries and innovation actors. Countries which have realized these changes earlier and better, enjoy an enormous advantage over others.

2. The Role of Innovation Ecosystem

Gradually, the general understanding of the innovation process is improving. The simplified model, where everything starts with invention, developed through basic science, and is expected to end with products and services accepted at the market, has to a large extent been replaced by a systemic, complex and dynamic model, in which innovation is generated through sophisticated interactions among individuals, organizations and their operating environment.

Parallel to increased complexity of the social and economic system, the innovation
process is to be understood as an intricate feature depending on numerous multifaceted components of the innovation portfolio. Three bigger categories or functions: knowledge generation & cultivation, catalyzing entrepreneurship, and securing investment and reducing risk.

There is no commonly accepted model of a successful Innovation Ecosystem, but it can be defined as a complex network consisting of various components, which can be defined by different criteria:

(a) There are 6 categories of innovation players and entities, with the entrepreneurs and enterprise being in the very centre. The remaining 5 components are: R&D investment, Public Policy and Institutions, Education, Risk Capital, and Tax & Regulatory Environment.

(b) On a more generic level, an innovation ecosystem can be subdivided into three components: innovation players/contributors, organizations, and the enabling conditions.

There is no innovation without an element of research, commercial and financial risk, and the function of the innovation ecosystem is to reduce it to acceptable levels, and bring it to the proportion of the potential benefits for the respective innovation actors. The objective of the modern innovation ecosystem is also to facilitate and encourage collaboration among various categories of innovation actors and intermediaries.

3. **Mobilizing all Resources for the Innovation Process**

Upgrading the innovative capacity of a country, a region or city is impossible without addressing the operating conditions of all segments of innovation actors, from research, development, demonstration, and deployment.

Such a broad-based, holistic approach requires policy makers’ undivided attention to domains as diversified as: education and training, basic science and applied research, R&D in the private sector, business environment, particularly conditions for start-ups, risk capital investors, role of NGOs and professional associations in creating innovation culture, as well as others.

Government departments and division of responsibilities among ministries and portfolios in most cases follows traditional patterns, and do not correspond to the changes in the sphere of innovation. Traditionally, there are ministries for higher education and science, and often the domain of technology is added to the portfolio of industry, sometimes it goes together with science and research. Innovation is still somehow undefined – with very few countries where it is an explicit part of the portfolio. The Korean approach to involve “Planning of the Future” in a strategic ministry together with science and ICT is inspiring.

Another important issue is inter-ministerial coordination, and one solution is definitely to do it under the overall coordination of the Prime Minister.

Though creating the required enabling and support environment is essential, and innovation actors need to be very active through dialogue with legislators and the
executive branch, the final responsibility for successful innovative performance remains with the respective innovation actors themselves.

In demanding the right conditions for their operations the innovation actors should take into account the respective conditions and limitations in terms of public finance, and keep their credibility unchallenged. At the same time they should present in their demands the potential benefits of requested measures, not just for themselves, but for the entire community, particularly in terms of enhancing knowledge-based competitiveness.

4. The Potential of Innovation Hubs

Experience of many successful Innovation Hubs around the world demonstrate the huge potential of this form of concentration & integration of research, innovation, funding, commercialization and promotion - backed by efficient instruments of government support. Hubs, as the latest manifestation of trends to aggregate innovation capabilities in order to achieve critical mass, can be developed in many ways, but the most important condition of their success remains that each Hub must be designed and implemented in accordance with local conditions. They have to focus on areas of present strength and future potential of the respective territory.

With full respect for all these elements, Innovation Hubs can strongly enhance the innovation performance of a country or region. This can be achieved by:

— encouraging and facilitating focused collaboration & partnership, and further specialization among Hub members, as well as closer international cooperation;
— attracting world class talent;
— attracting international investors;
— Increasing the international visibility of innovation activities.

Seven conditions for a successful Innovation Hub have been identified:

— Governance – coordination of public and private actors;
— Connectivity – facilitated links and cooperation with relevant partners;
— Clustering environment -- encouraging climate for clustering among all relevant actors;
— Talent and social environment -- required to attract and retain talent;
— Active promotion of entrepreneurial culture, and destigmatizing failure – defining it as a learning experience;
— Built environment – physical infrastructure;
— Cultural environment – quality of social life;
— Natural environment – attractive location and surroundings.

5. Endorsement for Slovenian Innovation Hub

Slovenia’s lack of critical mass, particularly in areas where international excellence has been achieved, as well as insufficient long term linkages with best global actors – together with lack of focus on areas of promising potential – are major factors
preventing needed breakthroughs in country’s innovative performance. Further deterioration of Slovenia’s international knowledge economy ranking could and definitely should be prevented.

Based on views and recommendations of the KEN Task Force, led by Prof. R. A. Mashelkar, participants of the Forum felt that this project properly addresses the issues and challenges of improving Slovenia’s economic and innovative performance.

Positive assessment of the potential of this project by Slovenian Minister without Portfolio for Development, Strategic Projects and Cohesion Mrs. Alenka Smerkolj, has been warmly welcomed and appreciated.

KEN members, the Network’s Secretariat, and the Task Force remain available for further support to the future Slovenian Innovation Hub and particularly its members created for this purpose.

6. In recognition of the globally exceptional achievements in knowledge economy domains, KEN has awarded in 2014 the following organizations:

<table>
<thead>
<tr>
<th>Category</th>
<th>Awardee</th>
<th>Country/HQ</th>
<th>Area of Excellence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication, media &amp; NGOs</td>
<td>Technopolis – The Flemish Science Centre</td>
<td>Mechelen, Flanders-Belgium</td>
<td>Science promotion and communication, Global Science Summit</td>
</tr>
<tr>
<td>Education</td>
<td>Joanneum GmbH - University of Applied Sciences</td>
<td>Graz, Austria</td>
<td>Intensive, practice-oriented education at high academic standards</td>
</tr>
<tr>
<td>Entrepreneurship</td>
<td>GEM, Global Entrepreneurship Research Association</td>
<td>International / GERA HQ in London</td>
<td>15 years of GEM-monitoring entrepreneurship worldwide</td>
</tr>
<tr>
<td>Innovation</td>
<td>ISRO, Indian Space Research Organisation</td>
<td>Delhi, India</td>
<td>Successful Mars Orbiter Mission 2014, with 10% of NASA’s respective budget</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Information and Communication Technology Development Centre, Savinja Žalec</td>
<td>Žalec, Slovenia</td>
<td>Development of mobile application for complex monitoring of personal health</td>
</tr>
</tbody>
</table>
KEN Forum 2014 Recommendations

- Policy recommendations were drafted by the five Thematic Tables -

Table A: Education and Training for Innovative Thinking

1. In order to modernize tertiary education Faculty members should be encouraged to collaborate with industry, and universities should offer programmes and other incentives to facilitate this process;
2. Given unprecedented access to vast abundance of knowledge in our increasingly connected and shrinking world, and technological leaps both in software and hardware – teaching methods should adapt accordingly, and greater emphasis and use should be made of free online courses, such as MOOCs (Massive Open Online Courses);
3. Similarly, lifelong learning must and should be embraced by all – irrespective of generation, academic background, social status or geography.
4. Tacit knowledge should be emphasized more, especially in university curricula, as greater intergenerational dialogue is rewarding for all. Life experience should be passed down, similarly, students too can teach and pass on their knowledge to older generations. Age should not be a learning and teaching barrier.
5. Entrepreneurship should be motivated, especially in the primary schools.

Table B: Entrepreneurship – A State of Mind

1. Partnerships, mentorship, and the open peer-to-peer exchange of ideas is key to creating successful businesses; openness should be imbedded in a society’s culture;
2. Policy changes; the overwhelming amount of bureaucracy for starting new business hinders entrepreneurship and innovation; businesses must be given greater flexibility in their operations and that should be a government priority;
3. Entrepreneurship should be taught from an early age, and is an absolute must of primary school education; teachers too must be re-educated on the pivotal importance of entrepreneurship;
4. Entrepreneurship and business achievement should be celebrated. Governments must showcase their nation’s entrepreneurial successes, and recognize entrepreneur as a societal hero – risking their time and capital in the name of success. On the other hand, failure must be de-stigmatized and accepted as learning experience. These role models will further encourage others to take that leap;
5. Access to finance should not be downplayed, opportunity to acquire seed funding is the lifeblood of any business;
6. Governments do not understand the nature of entrepreneurship, thereby they should not pick winners and losers – this is the function of the market.
Table C – Non-Technological Innovation

1. Technological and non-technological innovations are complements not substitutes. Both are required to bring ideas to the market and meet consumers’ needs. In some cases NTI occur without TI – e.g. social innovations. Service sectors dominate value creation – more often use NTI than TI to strengthen competitiveness. Since there is a deficient knowledge and awareness about the benefits of NTI, governments should integrate support measures for NTI into innovation policy design and monitor the implementation;

2. Governments should develop criteria for and enhance the volume of public financing of NTI;

3. Similarly, broad understanding of innovation into entrepreneurship training should be introduced;

4. Promotion of good practice cases should be made a priority, to improve knowledge and understanding of NTI (and the impact it has on jobs, the value added, wellbeing of citizens, etc.);

5. NTI should be included in assessing the global innovation rankings (e.g. Global Innovation Index);

6. KEN members should identify and share good practice cases of NTI (both at local and national level), and be broadly disseminated via KEN Bulletin;

7. The KEN Award should showcase and focus on NTI (in the category of innovation).

Table D – Support Environment for Innovation Hubs

1. The success of Innovation Hubs depends to a large degree on the support environment, which has to be a component of governments’ commitment to develop knowledge-based competitiveness. The key component is support to business-academia collaboration, but it includes also adequate tax system, proactive attracting of international talent, etc.;

2. Innovation Hubs are Cooperation Platforms, and their success depends on scope, nature and effectiveness of networking, co-creation and collaboration among stakeholders-members of the respective Hub – not only at the national, but also at the international level.

3. Access to early-stage funding and support in marketing strategy is essentially important to technology start-ups and experience has demonstrated that Innovation Hubs with critical mass can provide both, specially by attracting MNCs and other sources of FDIs;

4. The proposal to create the Slovenian Innovation Hub has been strongly supported, as it can contribute to overcoming fragmentation and better mobilization of innovation resources. The Hub should be able to put more focus and support to areas of research excellence and promising potential, and connect them to similar centres abroad, and particularly along the axis Trieste-Ljubljana-Maribor-Graz.
Table E – Securing Venture Capital Support for Promising Projects

1. Money and capital should follow good projects as proactively as possible, and both governments and the financial systems should operate accordingly;

2. Most countries, including European economies – and particularly those in transition, like Slovenia, seriously lack venture capital. Therefore, governments should actively intervene to enhance various categories of venture investing; however at the same time, governments must have appropriate exit strategies, being able to “walk away” after successful start of individual ventures;

3. Due to lack of experience, skills and international connections, local venture schemes should seek support and collaboration with experienced international venture capital funds.

4. SMEs should have the following options for financing:
   — Friends and Family
   — Banks, Credit Unions
   — Small Business Administration (SBA) Loans
   — Equity Based Crowd-funding
   — Credit Based Crowd-funding (also known as a part of Shadow banking)
   — Private Equity (PE) Types or Stages
   — Micro-Cap
   — Angels
   — Venture Capital
   — Growth Capital
   — Buyout
   — Special situations like Mezzanine
   — Different OTC Markets (‘slow PO’, OTCQX, OTCQB, OTCPINK, GREY OTC, other)
   — Stock Exchange IPO (main or alternative one);

5. On the other hand, start ups have primarily the following options for financing:
   — Friends and Family:
   — SBA loans
   — Crowd-funding
   — Angels
   — Venture Capital
   — Corporate Venture Capital Partnerships.

6. Each of the above options have advantages and disadvantages, which have been discussed ‘forever’. However, particularly with the recent economic and financial crisis (especially in Europe), the issues concerning profiling and accessibility of these options have recently again became of paramount importance. Both governments and the financial sector should work together to make these facilities work better in support of start-ups and innovative SMEs.
Additional KEN Forum documents

Programme
List of Registered Participants
Select Bibliography
Analytical Compendium
Presentations