UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

General Conference
16th Session
30 November – 4 December 2015, Vienna, Austria

AIDE-MEMOIRE

General Conference Side Event:

"Role of innovation hubs for sustainable industrialization and shared prosperity"

M Building, Committee Room
1 December 2015, 6-7:30 p.m.
Vienna International Centre

SUSTAINABLE DEVELOPMENT GOALS

UNIDO focusing on **Sustainable Development Goals**

#Goal9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

UNIDO General Conference, 30 November – 4 December 2015

The role of innovation hubs for sustainable industrialization and shared prosperity

Tuesday, 1 December 2015, 6pm

Introduction

As part of the GC16 in Vienna from 30 November – 4 December 2015 on the theme ***Sustainable Industrialization for shared prosperity,*** the Europe and Central Asia Bureau[1] is organising a side event on Tuesday, 1 December at 6:00 pm, in conjunction with the Permanent Mission of Kazakhstan. The event will take the form of a 90-minute panel, comprising six experts who will discuss the role of innovation hubs for fostering knowledge-driven and entrepreneurial economic growth, and inclusive and sustainable industrialization.

With the globalization of manufacturing, new forms of business and innovation infrastructure, such as urban knowledge and technology parks, are developing, often within large scale real estate projects. Precursors of this architecture were industrial districts and suburban science or research parks. The latest model is for innovation districts or hubs to be living laboratories for smart living – to test new solutions and experiments with new technologies that can be applied to society, either in mega cities or less urban and rural regions.

Hubs tend to have a global outlook and kinship with international entrepreneurship and innovation values. This shared understanding facilitates collaboration and common understandings of the concepts and instruments of innovation and entrepreneurship. In these innovative geographic areas, communities, or work spaces, leading-edge anchor institutions and companies cluster and connect with start-ups, business incubators and accelerators, and foster collaboration, open system innovation, and high-tech development. Hubs represent an intentional effort to create new products, technologies and market solutions through the convergence of disparate sectors and specializations (e.g. information technology and bioscience, energy or education). They enable face-to-face interactions and knowledge transfer between researchers, business, industry, investors, government and representatives of academia, allowing decision makers to meet with scientists and business experts and discuss business solutions. In this way, they facilitate industrial diversification by giving people with different knowledge the opportunity to work together and commercialize ideas, creating demand for other professional and commercial services and jobs. Hubs empower entrepreneurs, as a key vehicle for job creation.

Hubs also have a unique potential to address challenges of social inequality, environmental degradation and to spur inclusive and sustainable industrial development. They can reduce carbon emissions by promoting sustainable projects and uptake of renewably energy and create new employment and educational opportunities for disadvantaged populations in urban areas.

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[1] The Europe and Central Asia Bureau covers countries from Eastern Europe, the Caucasus and Central Asia (EECCA) + EU New Member States (NMS) + South East Europe (SEE), and also Malta and Cyprus.

The potential for innovation hubs to drive inclusive and sustainable industrial and economic development requires a better understanding of what drives them and how to capitalize on their potential advantages. The side event panel, comprising representatives from different continents, will discuss this emerging trend, explore critical forces behind it, share local practices, and provide viewpoints from practitioners on the ground.

Issues to be addressed and discussion points

The overall objective of this panel is to discuss catalysts of technology oriented innovation and development. The expected outcome is increased awareness of stakeholders to deliver and bring innovation hubs to self-sufficiency, acting as a catalyst for innovation and technology at the regional and national level, and generating wider economic activity in the country.

The panel will address the following issues relating to the establishment, management and sustainability of science, industry and technology parks and innovation hubs:

- Pitfalls and best practices in setting up and managing urban science and technology parks and innovation hubs.
- Bringing innovation hubs to self-sufficiency and sustainability.
- Role of institutions and individuals in driving the growth of innovation hubs, such a mayors and local government, real estate developers, universities and research institutions, investors, and business incubators and accelerators.
- Leveraging multi-stakeholder partnerships (the role of government policies and programmes, private investors, academia) to provide high quality services supporting entrepreneurship, research and technology transfer.
- Examples from established innovation hubs, as well as experiences of organizations and leaders with a proven track record in establishing, managing, and promoting innovation hubs.

The panellists will discuss how partnerships, including with international organisations such as UNIDO, can help countries access best practice in setting up and managing innovation hubs and related services, such as entrepreneurship support, R&D, management, networking, education, technology transfer, and others. The experts will share examples of best practice from established innovation hubs, as well as experiences of organizations with a proven track record of establishing, managing and promoting innovation hubs. The panellists will be asked to consider the following questions, among others:

- How do we foresee the evolution of innovation hubs in the coming years?
- What are the common elements required for an innovation hub to succeed, i.e. infrastructure, real estate management, regulation, human capital, institutions, leading firms, SMEs, start-ups, universities, business incubators and accelerators, technology transfer offices, and venture capital firms?
- In countries that lack traditions of entrepreneurial behaviour, how can innovation hubs encourage members to behave in socially entrepreneurial and innovative ways,

particularly the range of stakeholders in the complete knowledge and industry eco-system?

- How to overcome a lack of shared understanding of the workings of open innovation models in order to create environments for collaboration?

UNIDO experience and competences

UNIDO has accumulated knowledge and experience in this field and responds to the needs of its Member States with unique tools and methodologies, and in collaboration and partnership with a large pool of experts, practitioners, representatives of academia, private sector and civil society.

In the past few years, UNIDO has successfully organised several global and regional forum events to discuss and exchange best practices and lessons learned on national industrialization strategies and experiences in setting up a new generation of science, industry and technology parks in their various forms, and areas of innovation. These platforms have also shared information on how to green existing industrial parks and zones and transform them into eco-industrial parks, focusing on reductions of waste, pollution and emissions, as well as on minimization of resource use at the company level. UNIDO is currently also preparing guidelines on establishing new eco-industrial park and technology parks focusing on green industries and services.

Panel scenario

The event will take the form of a 90 minute panel comprising six experts who will discuss the role of innovation hubs and related business infrastructure for fostering innovative and entrepreneurial economies and inclusive and sustainable industrialization.

- Keynote speech (15 minutes)
- Interactive expert panel discussion (1 hour)
- Questions and answers session (15 minutes)

Biographies of panelists

Catherine Johns

Innovation and Business Growth Director, Business Durham, United Kingdom

Catherine Johns is Innovation and Business Growth Director at Business Durham, the economic development company for County Durham, UK, that works with partners from academia, government and the private sector to deliver an environment that accelerates business growth. In 2010, Ms. Johns joined the board of the United Kingdom Science Park Association and is currently vice chairman. She is a member of the International Board of Directors of the International Association of Science Parks and Areas of Innovation. Ms. Johns won the North East England Key Woman Award in 2013 for "harnessing an impressive entrepreneurial instinct to a commitment and drive to deliver for public good". She holds a BA and MA in Ancient History from Newcastle University.

Sanzhar Kettebekov

CEO, Autonomous Cluster Fund (Almaty Tech Garden), Kazakhstan

Mr. Kettebekov has been CEO of Kazakhstan's National Innovation Cluster management company since 2015, which focuses on smart environment and industry, new materials and energy, e-commerce and new media. Previously, he has held positions in innovative companies and startups working on cutting-edge interactive and intelligence technologies. Mr. Kettebekov is co-founder of Segment Interactive - a technology incubator focused on next generation solutions for media monetization and e-commerce using behavioural analytics. He holds a doctorate degree from Pennsylvania State University and a research faculty position at MIT Computer Science and Artificial Intelligence Lab working in collaboration with Harvard Medical on multimodal monitoring and interaction.

Tadeusz Peczek

President of the Board, EPRD Office for Economic Policy and Regional Development Ltd, Poland

Mr. Peczek is an expert on agriculture, business, entrepreneurship and economic policy, with experience of multi-functional regional development, and managing programmes and projects financed by the EU, Norway, USAID and the World Bank, among others. He is the founder of the Business Cluster Chamber of Commerce 'Grono Targowe Kielce' and co-founder of the Foundation for Education and Social Dialogue 'Pro Civis', the Institute of Techniques' Technology and Management, and the Institute of Sustainable Development. Mr. Peczek has been President of the Board at the EPRD since 1995. Mr. Peczek is a graduate of Warsaw Agriculture University and Minnesota State University.

Yerbol Shormanov

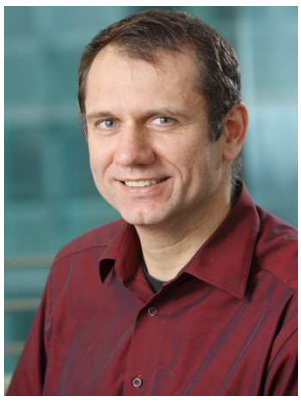
Deputy Chairman of Astana EXPO-2017, Kazakhstan

Yerbol Shormanov is Deputy Chairman of the board of Astana EXPO 2017 in charge of marketing, promotion, sponsorship and participating countries since August 2015. In 1991 he graduated from the Almaty Institute of National Economy with the specialty of economist. Over the years, Mr. Shormanov has worked as Deputy Mayor of Almaty, head of the Almaty mayor's administration, and director of the Almaty Department of Business and Industry. He has many years of experience in customs administration for the Republic of Kazakhstan.

Valery Tsepkalo

Director, High-Tech Park (HTP), Republic of Belarus

Mr. Tsepkalo is a graduate of the Belarusian Technological Institute and Moscow State Institute of International Relations. He has extensive experience with the Government of Belarus, including as First Deputy Foreign Minister, Ambassador to the USA and Mexico, and Assistant to the President of Belarus in the sphere of science and technology. Since 2005, Mr. Tsepkalo has been Director of the Belarus High-Tech Park. He is Member of the Strategic Council of the United Nations Global Alliance for ICT and Development and Governmental expert to the UN Secretary General in the field of information and communication technologies. He holds a Ph.D. in International Law and is an author of 80 articles on information technologies and global economics and author of 20 publications on e-government, hi-tech development and intellectual property rights.



Matthias Weber

Head of Research, Technology and Innovation Policy Unit and Deputy Head of Department, Austrian Institute of Technology AIT, Innovation Systems Department

Matthias Weber has worked in research, technology and innovation and the transformation of innovation systems for more than 20 years. His experience covers a broad range of thematic areas and industrial sectors, in particular processes of priority-setting and science-industry relations. He regularly advises governments, the European Commission and international organisations, including the OECD and UNIDO. Mr. Weber is currently a member of the Research, Innovation and Science Policy High-Level Expert Group (RISE), advising the European Research Commissioner. He has authored over 30 scientific articles on transformative innovation policy, foresight, and the governance of research and innovation policy.

Summary of the General Conference Side Event
"Role of innovation hubs for sustainable industrialization and shared prosperity"

The event was opened by Olga Memedovic, Chief, Europe & Central Asia Bureau, United Nations Industrial Development Organization (UNIDO), who outlined the theme of the event: how best to understand the issues concerning the setting up and running of the new knowledge and science and technology parks in order to identify the drivers of innovation linkages and to maximize their potential for helping to create jobs, bringing new products to market and promoting diversified industrial development. She briefly introduced the six expert panellists:

Catherine Johns, Innovation and Business Growth Director, Business Durham, United Kingdom, the economic development company for County Durham, UK, that works with partners from academia, government and the private sector to deliver an environment that accelerates business growth. In 2010, Ms. Johns joined the board of the United Kingdom Science Park Association and is currently vice chairman. She is a member of the International Board of Directors of the International Association of Science Parks and areas of Innovation. She holds a BA and MA in Ancient History from Newcastle University. Ms Johns was the event Moderator.

Sanzhar Kettebekov, CEO, Autonomous Cluster Fund (Almaty Tech Garden), Kazakhstan. Mr. Kettebekov has been CEO of Kazakhstan's National Innovation Cluster management company since 2015. The company focuses on smart environment and industry, new materials and energy, e-commerce and new media. Previously, he has held positions in innovative companies and startups working on cutting edge interactive and intelligence technologies. Mr. Kettebekov is co-founder of Segment Interactive—a technology incubator focused on next generation solutions for media monetization and e-commerce using behavioural analytics. He holds a doctorate from Pennsylvania State University and a research faculty position at MIT Computer Science and Artificial Intelligence Lab, working in collaboration with Harvard Medical on multimodal monitoring and interaction.

Tadeusz Peczek, President of the Board, EPRD Office for Economic Policy and Regional Development Ltd, Poland. Mr. Peczek is an expert on agriculture, business, entrepreneurship and economic policy, with experience of multi-functional regional development, and managing programmes and projects financed by the EU, Norway, USAID and the World Bank, among others. He is the founder of the Business Cluster Chamber of Commerce "Grono Targowe Kielce" and co-founder of the Foundation for Education and Social Dialogue "Pro Civis", the Institute of Techniques' Technology and Management, and the Institute of Sustainable Development. Mr. Peczek has been President of the Board at the EPRD since 1995. Mr. Peczek is a graduate of Warsaw Agriculture University and Minnesota State University.

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Valery Tsepkalo, Director, High-Tech Park (HTP), Republic of Belarus. Mr. Tsepkalo is a graduate of the Belarusian Technological Institute and Moscow State Institute of International Relations. He has extensive experience with the Government of Belarus, including as First Deputy Foreign Minister, Ambassador to the USA and Mexico, and Assistant to the President of Belarus in the sphere of science and technology. Since 2005, Mr. Tsepkalo has been Director of the Belarus High-Tech Park. He is a member of the Strategic Council of the United Nations Global Alliance for ICT and Development and Governmental expert to the UN Secretary General in the field of information and communication technologies.

Matthias Weber, Head of Research, Technology and Innovation Policy Unit and Deputy Head of Department, Austrian Institute of Technology AIT, Innovation Systems Department. Matthias Weber has worked in research, technology and innovation and the transformation of innovation systems for more than 20 years. His experience covers a broad range of thematic areas and industrial sectors, in particular processes of priority-setting and science-industry relations. Mr. Weber is currently a member of the Research, Innovation and Science Policy High-Level Expert Group (RISE), advising the European Research Commissioner.

1. Opening proceedings: The moderator, Catherine Johns, noted the aim of the event was to help, through examples from established innovation hubs, to identify pitfalls and best practices in bringing innovation hubs to self-sufficiency and sustainability and to highlight the potential role of institutions and individuals in the growth of business hubs by stimulating and leveraging multi-stakeholder partnerships. Successful innovation hubs, she added, provide high quality services supporting entrepreneurship, research and technology transfer. The event format was to move from scene setting to sharing of expertise by panellists and to end with a reception hosted by the Permanent Mission of Kazakhstan.

2. Scene Setting: The International Association of Science Parks and Areas of Innovation has been active since 1984 and now has 422 members serving over 142,000 companies in 74 countries. It provides an expert platform for building partnerships and sharing best practice.

There are many definitions of innovation. Contrary to one conventional approach, which sees productivity and efficiency–enhancing technical innovation as a potential threat to jobs, Ms. Johns sees innovation as the translation of ideas into wealth and prosperity. This keeps the focus on the social and economic impact of innovation as part of the process of sustainable industrial development.

3. The Northeast Technology Park, (Netpark) in the north east of the UK, faces the challenge of a low skills equilibrium and low levels of enterprise and entrepreneurship, despite the presence of Durham University, one of the 100 top world universities. The region still depends on manufacturing for 20 per cent of its economy, but traditional industry has been in decline there for 30 years. It is the third poorest region in northern Europe (nine of the ten poorest regions in Europe are in the UK); its GVA is only 59 per cent of the UK average and implementation of an innovation infrastructure has only started recently. Netpark aims to create high-skill, high-paid jobs and to stimulate indirect job creation. Raising aspirations is a key function of Netpark, building a new community of inclusive opportunities.

4. Innovation can be expensive and requires complex and sustained high levels of support if it is to have high impact; product failure is not the generally result of inappropriate or inadequate technology. Large amounts of patient capital, with a five-year plus horizon, are needed to bring complex R&D to market. Innovation hubs are conventionally seen as managed by specialists aiming to increase community wealth by fostering the culture of innovation and the competitiveness of associated industries. Ms Johns sees an innovation hub as giving companies involved in new products and services room to breathe and as helping companies to focus on innovation.

Successful hubs need to be location specific; Silicon valley is not a blueprint; government subsidies and support have often been significant, including to Apple in the USA, which has successfully integrated publically-funded technologies. Governments have a role to play in funding development of technologies and in creating markets.

It is important to retain as well as to create value and to be inclusive; innovation happens everywhere and there are no hard boundaries between the parks and their surroundings. It is also important to adopt a holistic approach to the innovation hub and its relationship with institutions, services and skills in the surrounding areas.

3. Sharing of expertise:

3.1: Tadeusz Pęczek: **Innovation Hubs Poland**

The main pillars of the business development system, both state and private sector, in Poland:

- PARP—State Agency for Business Development;

- NCBR— National Center for Research and Development;
- CTT—Centers for Technology Transfer at Universities;
- BI— Business Incubators;
- EEN— Enterprise Europe Network;
- Preferential credits and guarantee funds;
- Banks and Venture Capital;
- Business education and advisory services;
- TI—-Technical Infrastructure.

And examples of innovation hubs are:

- TP— Technology Parks;
- BI— Business Incubators;
- SEZs—Special Economic Zones;
- TP—Technology Platforms;
- BSC— Business Science Clusters;
- BMG Business and Marketing Groups;
- LBC—Leading Businesses Consortia.

On the subject of LBCs, Mr Pęczek noted that some companies in Poland have reached a size that makes the domestic market too small; they need to invest abroad and to cooperate in order to reduce the risk. His office facilitates this by helping companies form consortia to conduct joint studies of potential opportunities. Mr Pęczek described the economic role of innovation hubs in Poland, which depend on public-sector support, as integrating science, administration and business. Innovation hubs disseminate public support in various ways. Full scale support is given for startups for a limited time, after which there is a process of transfer from innovation hubs to the open market where the startups will be self-sustaining. One of the great dilemmas innovators and innovation hubs face is whether to be “first” or “best”. Young companies often spend too much time trying to be best. Tax incentives are no longer the major policy tool or key to investment decisions, other than in the case of local communities, which still use them. Often, considerations such as the availability of appropriate educational facilities are more important than the existence of tax holidays or other financial incentives.

3.2: Valery Tsepkalo: **High-Tech Park (HTP), Republic of Belarus**

Mr Tsepkalo described how discussions in Belarus about which sector to seek to specialize in started about 10 years ago, when he advocated software development. This is relatively inexpensive and technologically accessible compared with life sciences or biotech or laser technologies.

The HTP started small in 2006 and now adds about 3,000 new software engineers a year with revenue growth of 40-50 per cent. Exports are expected to exceed US$1 billion in 2016. There are now 148 companies employing 22,000 software engineers.

Referring to the Joseph Stiglitz argument that innovation/adoption of new technology reduces (local) employment, eg the use of robots, Mr Tsepkalo argued that innovation cannot cease and that the solution is to create industries that will absorb excess labour.

Among the HTP's clients are Viber Media and Apalon, a leading mobile development company that creates apps for App Store, Google Play and the Amazon Appstore among others. Another example of a company that has grown to success in the HTP is Wargaming, a world leader in the gaming field.

Although it started with a loan from the president of Belarus of US$300,000 (repaid in two years) HTP has never had direct government funding because the park considers that governments do not know where to invest and lack the perspective to make internationally competitive investments. The park encourages its companies to seek investment directly from abroad, where funds are ample, noting that this encourages the development of global products.

Mr Tsepkalo stressed the vital importance of education as the pillar of a successful park. Belarus has no natural resources and must rely on human capital. He made the point that big technology successes- Microsoft, Apple, started small and relied on engineers to fulfill their ideas. When parks are looking for companies to foster, it is wise to avoid relying on big players because they will want to sell their products; instead the focus should be on local, small scale developers in young companies which will form the base for future success.

3.3: Matthias Weber: **Clusters and Innovation Systems: Some insights from Austria**

Innovation is expected to deliver a solution to a multitude of often contradictory policy goals, including industrial development as well as social and equity-based goals.

Innovation is only the first step in a process that has impact only when there is uptake and diffusion. Technology is not all there is to innovation, especially when social goals are being considered.

Several elements of the innovation system need to be built in parallel: education; the research base; a conducive milieu; financing mechanisms; a reliable institutional framework; demand for innovation products, initially at the local level, to keep the innovators on site; and an innovation infrastructure. It is important to build momentum and create path dependencies in the innovation system in urban agglomerations. There are about 50 clusters in Austria, some e.g. automotive, building on traditional competencies and some, e.g. the creative industries, being new. There is a National Cluster Platform, established in 2008, to facilitate exhange of knowledge, experience and ideas.

What role for government is justified, appropriate, effective and efficient? Generally, its role is restricted to incentive creation, education, guidance and enabling.

The role of international organizations can include: facilitation; support and provision of learning opportunities based on international practice; support for the devising of policy; building a knowledge base; fostering innovation; and helping with diffusion and replication of best practice.

3.4: Sanzhar Kettebekov: **Kazakhstan's Innovation Clusters: Almaty Tech Garden**

Mr Kettebekov focused on the problems faced by Kazakhstan and the solutions chosen to deal with the ecosystem that was a legacy of the former Soviet Union.

There are two national innovation clusters, one in Astana, the new capital and also in Almaty, the former capital, which is the subject the present discussion. Almaty Tech Garden is one of the two National Innovation Clusters/SEZs launched in 2006. A number of tax incentives were established. Nevertheless only 150 companies were attracted to the park. One reason for this is that the SEZ was 30 km from the city, making access problematic. Almaty City itself has good potential; it has 168,000 students, 58 universities and 67 research laboratories.

The aim is to streamline the intellectual potential of the city and direct it into the park. High tech manufacturing companies located in the park are offered tax incentives; IT companies are now permitted to register in the park and access tax benefits, but can remain in the city.

To help attract investment and diversify the economy away from the current, resource-based "middle-income trap", a new management company was created in April, 2015. The new company is directing 1 per cent of total annual revenue from oil and gas and mining companies to innovation projects.

The largest problems are: a low level of competitiveness of domestic technology companies; limited integration into the global supply chain; lack of critical mass creating a shortage of innovative businesses and little involvement of private capital. Identified areas of core competence are mining, energy, ICT and

e-commerce (the Silk Road corridor) and the target is to attract key multinational companies in these areas to help create growth points around which to build critical mass. As an incentive, the park will co-finance 50 per cent of the R&D costs of the multinational companies with the aim of becoming a regional hub. In 2016, the "Startup Kazakhstan" programme will begin. This borrows from the "Startup Chile" programme and will involve provision of venture funding (up to 70 per cent) and continuing support for five technology centres.

4. Astana Expo

4.1 Yerbol Shormanov: **Future Energy: Solutions for Tackling Mankind's Greatest Challenge**

Mr Shormanov previewed the plans for Astana Expo 2017, to be held in June-September and for the future of the exhibition site as an innovation hub. The theme of the exhibition will be access to sustainable and renewable energy sources. Kazakhstan has considerable potential in this area and is moving, since 2013, towards a Green Economy; the target is for 20 per cent of total energy resources to be renewable by 2030. Energy efficiency is the driver for growth in Kazakhstan. Expo 2017 is expected to involve the participation of about 100 countries; of which about 60 are developing countries. Mr Shormanov expressed gratitude to UNIDO for playing a role in Expo 2017 and invited participants to visit the exhibition.

The meeting rose at 8 pm.