Intellectual Capital
for Communities
In the Knowledge
Economy

United Nations
Educational, Scientific and
Cultural Organization

Information for All
Programme

CONFERENCE REPORT

The World Conference on Intellectual Capital for Communities
13th Edition

«Information and Knowledge for All: Towards an Inclusive Innovation»

Organised by
The European Chair on Intellectual Capital, the University Paris-Sud
And UNESCO's Intergovernmental Information for All programme (IFAP)

Paris, July 3 & 4 2017

With a Regional Focus:
JAPAN

BETTER POLICIES FOR BETTER LIVES

PRESENTATION

The central theme of the 13th Edition of the World Intellectual Capital (IC) Conference is **"Information and Knowledge for All: Towards An Inclusive Innovation"**. The topic of this year is largely justified by the increasing gap in revenues distribution at the global level. Hence among others the development of the concept of "inclusive Innovation", generally defined as the innovation supplied by a group of people- generally low-income- excluded from it (OECD 2013, Kaplinsky, 2011, Foster, Heeks, 2013). Hence the interest paid by scholars, policy makers and industry to the Base of the Economy Pyramid, a market which represents $5 trillion income segment (Aalto Global Impact). The inclusiveness concerns not only developing countries but also developed ones. Hence the issue of looking at innovation , not as a generally linear process, with stable roles for organizations and institutions, but more importantly as a way of improving living the conditions for excluded people. Inclusive innovation is therefore a way of creating / exploring new markets for products and services for people, and hence for improving their living conditions. From *the policy perspective*, inclusive innovation might raise several conflicting issues, especially with regards to the fairness in distribution of income and growth, job creation and competitiveness, growth maximization and equity considerations (Mohnen & Stare). From *the business perspective*, innovation inclusiveness opens the way for considering the issue of innovation from the new perspective: creating new markets, developing new learning and ideas, and bridging local resources with global ones. From the *societal perspective*, the development of societal innovation approaches and practices, attests to the limits of the traditional organizational- centric approach, and to the growing role of society as a hub for innovation. These approaches open new spaces for ideas, information circulation and social links.

The critical role of information, data & digital resources

In this context, information (and data) play a critical role: information accessibility and circulation are critical resources. Innovation is possible only if information – and data- are shared. Hence the importance of considering the way information is made available for all. This means accessibility, transparency, trust and also the deployment of public data policy, the implementation of ad hoc platforms and the considerations of the way collective intelligence is mobilized. We can see from here that *innovation for all* and *Information for All* are the facets of the same phenomenon: the initiation and deployment of innovative ecosystem, where transaction and organicity play complementary roles. As it has been attested by many innovation, information technology, data and digital platforms play a critical role. This is typically the case for known and successful experiences such as MPESA payment system in Kenya, or of specific IFAP projects such as the Computing Clubs for Young People in Cuba, or the Library watchwords in Ghana. There is a learning process to be organized around the issue of the relationship between dissemination of information, its transparency and reliability and the capacity of communities to innovate in terms of outputs, processes and relationships.

Institutional innovation

The outcomes of these changes in the way communities organize for improving their wellbeing is closely related to the way "institutions" orchestrate their roles and contributions to the design of new instruments and roles for themselves as well as for the other members of the communities. The city of Chicago for instance is developing innovations by selecting "lead users" (Von Hippel) for such innovations, which is a process far away from the way these institutions

traditionally act and intervene. Several innovations are underway in different contexts, which attest to the importance of institutional innovation the consideration of a variety of roles for these institutions.

The *IC for Communities* conference series have discussed some of these issues in their earlier editions. However, they are the focus of IC 13, which looks at them from different angles: geographical (Asia, Europe, North and South America, and Africa), institutional (large companies, large international institutions, small firms) and professional (scholars, policy and private sector decision-makers).

We propose a set of themes that we consider to be highly relevant for decision-making. Among these:

- **Approaching "inclusive innovation" in concrete settings:** we need to characterize and understand how "inclusive innovation" work in concrete setting. We need to delineate its framework conditions and the respective role of key players.

- **Data and information for all and impact:** How data and information can be shared and disseminated to all. What impact on innovation capabilities of communities and nations? What specific role for institutions?

- **Institutional innovation.** The role of institutions is considered as a key component of intangible capital of nations (World Bank, 2000). There is a need to delineate the role of institutions and the innovations in institutional settings, and how such a change impact innovation capabilities and outcomes for nations, regions cities and other communities**.**

We will also continue to discuss some of the key topics still on the agenda for decision making, and explored in ic12. Among these:

- **Approaches for value creation and public investment in platforms for innovation.** How to invest in platforms? How to identify emerging start-ups? What rationale for public investment in early-stage? All these questions are on the agenda on public decision makers, especially for large public institutions in charge of long term investment.

- **Modelling and valuing data as digital assets.** How concretely to modelise value creation as a data driven process, beyond the general discourse on big data? Are there relevant practices to be shared? Is there a potential for developing a common language (and possibly standards) for data driven value creation? Are the approaches necessarily sectoral or organizational specific? What governance structure and rules to be considered and implemented?
- **Analysing platforms and hybrid organizations.** The hybridation of resources is accelerated by the critical role of data. This is clear in the case of digital platforms (Gafa and alike) where this is a market power around which innovations are concentrated and organized. But this also the case for hybrid organizations with a mix of private and public resources or market and non-market oriented organizations. Beyond establishing typologies of such organizing forms, we need to document further their governance

structure and processes, and the impact of innovation capabilities and sustainability of ecosystems and the society in general.

- ***Data and Cloud computing business models.*** Cloud computing emerged as a new form of organizational design. What are its determining factors? What types of "organizational fits" (structure, culture, processes,) to be put forward? How data intervene in value creation processes and design for cloud computing?
- **Intangibility and digitality.** The question here relates to the type of exchange instruments used by people, especially in a context where acceluction becomes a major production system. Due to the multiplicity of spaces for value creation and the ubiquity of digitality, we can expect exchange and social interaction to become organized along intangibles such as brands, data, and reputation. We can also expect traditional forms of knowledge to become digitized and therefore more easily disseminated worldwide (an example is the way the Massai café, as community product, has been branded). At the global level, we can expect to see the emergence of collective goods such as collective brands, or collective knowledge that is relevant to specific communities and is widely disseminated via digital artifacts. In this context, joint IPRs will become a major lever for knowledge dissemination. Finally, as can already be observed in many spaces, monetisable and non-monetisable assets will coexist in different value spaces (markets, networks, communities, territories). The question will be considered among others, from the "inclusiveness" point of view.
- **Digitality and IPRs.** The emergence of the platformic enterprise if it paves the way for the joint intangibles phenomenon. This creates opportunities for innovation, but also poses important problems in terms IPRs frameworks and practices. Furthermore, development of practices such as counterfeiting challenges value of intangibles of large sectors of activities.
- **Intangibles complementarities.** The key issues here are related to the determination of criteria of success, based on observable bundles of intangibles (e.g. digital versus organisational), the way public and private intangibles complement each other and the relative contingency factors ; This will help formulating policy recommendations on how to allocate and monitor public resources.

- **Organisational forms for the future: the 2030 enterprise.** This is a transversal issue. By looking at the organising, can we identify new types of relevant intangibles? What issues related to their monitoring and management? What new policy instruments are needed?
  - **The status of entrepreneurship.** How to characterize entrepreneurship under the accelucted regime? What are its value creation spaces? What implications for start-ups? How entrepreneurs can leverage intangible assets under the accelucted regime?

This year, following the success of IC8 (South Korea), IC9 (the Mediterranean), IC10 (Brazil), IC11 (China), Africa (IC12), we focus this year on a leading country in intangibles /Intellectual capital economics and management: **Japan**.

As at former IC conferences, these questions are addressed at various levels: countries, regions and territories, cities, firms and networks. Similarly, as before the conference alternates plenary sessions with keynote speeches and parallel workshops. This structure allows time for more detailed discussions on the various topics of interest to the different IC communities.

Welcome address

The Conference was opened on behalf of UNESCO by **Dr. Boyan Radoykov**, who welcomed the participants and pointed out the relevance of this year's subject and its substantial contribution to the work of UNESCO on promoting peace and development, reducing divides and building inclusive societies. He reminded the audience that since its foundation, UNESCO has been the most effective UN Agency for advancing the development agenda through education, the sciences, culture and communication and information, and one of the major actors for stimulating innovation, generating creative ideas and building synergies and intellectual partnerships worldwide.

In her welcoming address, **Chafica Haddad**, the Chair of UNESCO's intergovernmental Information for All Programme (IFAP), discussed the initiatives undertaken within the programme's six priorities which address the challenges of knowledge society policies in national plans for sustainable development. She also highlighted the importance of universal access to information and knowledge sharing for making any innovation possible, thus stimulating social equality, development, economic growth, and prosperity. Furthermore, she pointed out that the IC conference is one of the many activities that the IFAP chair has been organizing together with the European Chair on Intellectual Capital. She concluded by emphasizing that the resulting discussion of new research paths and recommendations for policy makers come at a crucial time in light of the 2030 Sustainable Development Agenda.

Professor **Étienne Augé**, Vice-president of Université Paris-Sud, began by stating that research topics that study society and its development is a great subject of research. He explained that the initial focus on mathematics and physics at the Université Paris-Sud has been developing to be infinitely more complex today. In his first point, he underlined the importance of the social sciences and interdisciplinary research to understand the dynamic, complexities and challenges in light of the digital transformation that organisations and societies are subject to today. In his second point, he discussed the new ways of learning that have been developing because of new technologies and digitalization, which have been challenging top-down processes. In his conclusion, he conveyed the message that today's problem is to find the right scale to solve multidimensional problems.
Professor **Ahmed Bounfour**, underlined the relevance of the inclusive innovation in the context of "information for all" and invite participants to discuss into details the key points of the agenda of ic13.

Session 1- Inclusive innovation – antecedents and future directions

Session 1

Moderator

- **Boyan Radoykov,** UNESCO

Speakers

- **Indrajit Banerjee,** UNESCO
- **Dominique Guellec,** OECD
- **Natalia Agapitova**, the World Bank
- **Andrés Barreneche Garcia & Sandra Planes Satorra,** OECD
- **Daniel Wyler**, University of Zürich

The session on inclusive innovation – antecedents and future directions was moderated by **Dr. Boyan Radoykov**, UNESCO.

In his intervention, **Indrajit Banerjee**, Director of UNESCO's Knowledge Societies Division, spoke about the Organization's future perspectives of innovation inclusiveness in creating new formal and non-formal educational opportunities, developing new learning models and ideas for societal innovation approaches and practices as well as on the critical role of information in building sustainable knowledge societies. He explained that there have been huge productivity and efficiency gains in all sectors of human activities thanks to information and communication technologies. More recently, big data, artificial intelligence, cloud computing are transforming aspects of our lives and at the same time the nature of innovation has been changing in light of the unprecedented scale and pace of innovation which is not evenly spread globally, leading to the exclusion of large parts of the human population in particular in African developing countries, as he elucidated by referring to the greatest global innovation index by WIPO (world intellectual property organization) with 81 indicators, covering 127 countries. Consequently, there is a need to address these disparities by spreading innovation in developing countries while ensuring that the benefits of innovation

are accessible to those who need it most. He went on to discuss the programme 'open access to scientific information' of UNESCO to ensure universal access to information and knowledge which pays particular attention to African and other developing countries where, notwithstanding important gains in ICT availability, prevalence of open access, both in terms of output and usage, remains low. They are the first United Nations agency which ensures that all their publications are open access which required a long process and the creation of a new license for creative commons that spans across national borders. The next point of Mr. Banerjee was about UNESCO's efforts for open education resources (OER) in the form of a conference in Slovenia in 2017 as well as the creation of a global OER Community Wiki in 2005 to share information and work collaboratively on issues surrounding the production and use of OER. Another aspect that UNESCO addresses is access for people with disabilities, in fact 15% of the world population are with disabilities according to the WHO and UNESCO is one of the UN agencies that promotes and supports the Convention on the Rights of Persons with Disabilities adopted in 2006. According to Mr. Banerjee, ICT have the potential for making significant improvements in the lives of these persons, allowing them to enhance their social and economic integration in communities by enlarging the scope of activities available to them. Furthermore, he underscored the importance of ensuring a push to creativity and innovation through "Open solutions" approaches (SDG 10.2), in line with the UN 2030 Agenda.

In his presentation "Digital Innovation and the Distribution of Income", **Dominique Guellec** Head of Division, Directorate for Science, Technology and Innovation at the OECD, started by reporting that inequalities as well as digitalization are on the rise in OECD countries. He then went on to discuss the hypothesis that both phenomena may be connected because of the increasing importance of digital innovation which magnifies innovation-based market rents and these rents contribute to increasing the income share of top income groups. His first point to support this was that market concentration plays an important role in this regard in light of massive economies of scale which knowledge production is subject to. He reminded the audience that knowledge is a 'non-rivalry'good which makes its market production different from the tangible goods and results in 'winner takes all markets'. In fact, the dynamics of knowledge are magnified by globalisation that allows for global – hence bigger – markets. His second point in 'winner takes all markets' was creative destruction, a concept introduced by Schumpeter, referring to the ability of incumbents to bring about disruptive change. Mr. Guellec emphasized the importance of the point because entry barriers have been reduced with lower costs of producing, managing and communicating knowledge. In fact, creative destruction does not necessarily mitigate the impact of market concentration on rents because competition is not about prices but about radical product innovations. The effect with regard to the distribution of income and social mobility is that those contributors to winning digital innovations have higher returns. However, these rents are not necessarily "excessive"; they are providing rewards to those taking risks. Mr. Guellec presented evidence of a decreasing labour share in industries with high and medium R&D intensity between 1971 and 2011 in the United States. He closed his presentation with policy recommendations and by summarizing two principles from his investigations: First, rents are needed for innovation and innovation is necessary to growth, innovation-based rents should not be pushed down, but "excess" rents only. Second, many policies are designed for economy in which tangible activities were dominant and innovation-based rents lower requiring a reassessment.

Natalia Agapitova from the World Bank focused on three aspects in her intervention : First Approaches to inclusive innovation in low-income markets; Second, areas of support that the World Bank provides to entrepreneurs together with examples of initiatives; Third the innovation policy platform (jointly with OECD). She started with example to define 'inclusive innovation' by showing a picture of farmers that suffer from poor flow of real-time market information among farmers and traders that affects supply and demand and who consequently participate in the Esoko Extension Service Model which empowers farmers with information on weather, market prices and farming prices via SMS messages. She went on to highlight that one of the questions which the World Bank is looking to address is about how to position 'inclusive innovation' in the best possible ways in light of for-profit and social innovation. The important role that governments play in this regard was stressed with a view to the blended nature of the subject – the generation of profits and endowment of public policies. In this regard, Mrs Agapitova highlighted a number of policy levers for governments and corresponding World Bank partnerships. For example, the tailoring of financial instruments to the needs and development level of entrepreneurs which the World Bank addresses with efforts to accelerate access to microfinance. Another point she made concerned the crucial access to infrastructure, such as internet and electricity. The two initiatives she stated as examples of the World Bank's direct funding of entrepreneurs are grant funding for entrepreneurs and crowdsourcing innovations, such a Hackathons. She concluded by discussing the innovation policy platform which the World Bank has been jointly developing with the OECD. After registration, one can access 6,000 examples of 'inclusive innovation' which are supporting the attainment of the 2030 SD goals.

In their joint presentation, **Andrés Barreneche Garcia** and **Sandra Planes Satorra** from the OECD discussed innovation for inclusive growth and presented concrete case studies from several countries that exemplify the work that OECD has been doing on the subject matter. They promoted two OECD projects, one focusing on developing economies (Innovation Policies for Inclusive Growth) and the other focusing on OECD countries (Making Innovation Benefit All: Policies for Inclusive Growth). They can be found online (http://oe.cd/inclusive). In the first part of their presentation, Andrés Barreneche Garcia began by discussing the central role of innovation policies which is to tackle the misallocation of resources due to rising inequalities and exclusion by creating jobs and economic growth throughout society. These policies help to ensure "that disadvantaged groups of society have the capacities and opportunities to participate in innovation activities" and allow these group to participate in the growth process. He stated examples of underrepresented groups in innovation activities such as women, minority groups and disadvantaged social groups, in short those with lower capacities or lower opportunities to be involved in innovation activities. Furthermore, he went on to explain that inclusiveness consists of three pillars: social, territorial and industrial inclusiveness (see slide 8, for sample rationales for each). In the second part of their presentation, Sandra Planes Satorra presented

concrete examples of inclusiveness policy cases from different countries for each inclusiveness dimension. A programme in Japan to support research activities of female researchers so as to increase the number of women in leading research positions (social inclusiveness). The second example focused on industrial inclusiveness, a programme in Israel that is encouraging traditional industries to invest in R&D. The third example from Chile focused on territorial inclusiveness by solving regional social challenges through an online open innovation platform. She explained that more than 30 cases were gathered across the whole project, thereby developing typologies to address four challenges: ensure involvement of target group in policy programmes, appropriate selection criteria to reach the target group, build capabilities in target groups to participate (not just funding, but also capacity building activities) and building the expertise of experts deploying the programme which has been suffering from high turnover rates. In their conclusion, they emphasized that innovation policies can contribute to inclusive growth by fostering integration of disadvantages groups in innovation activities. They tackle the misallocation of resources in the economy, but for the policies to be effective, implementation challenges need to be addressed. Finally, they promoted the Inclusive Innovation Policy Toolkit – available on the Innovation Policy Platform – which consists of 33 examples from 15 countries, including statistics and case explanations.

Professor **Daniel Wyler** from the University of Zurich who spoke about citizen science – the inclusion of citizens in science and research. Citizen Science is a term that describes 'the active involvement of non-professional scientists in research'. In his presentation, Professor Wyler reports that it has been rapidly evolving and presents many opportunities. He starts with an historical example in the days of Lavoisier to underline that early science was 'gentlemen science' and it professionalized by 1900 with the creation of laboratories. Then, popular science was trying to bridge the public and professional science. Professor Wyler goes on to explain that citizen science traces back to article 27 in the Declaration of Human Rights - the right to participate in cultural life which is valid to think about today, as he argues, despite hunger and conflicts in the world. In fact, as early as 1952, the United Nations conducted a study on the 'right to participate in cultural life'. Nowadays, there is a resurgence of citizen participation owing to scepticism against 'official' science and enabler role of new technologies. An example in this regard is the initiative by citizens to set up a system to monitor the oil spill of 2010 which used a balloon with camera to take pictures of remote areas which were not accessible otherwise. There are also other areas in which professional scientists and non-professional scientists collaborate, such as biodiversity. All in all, high quality citizen sciences presents opportunities for universities such as the chance to profile themselves, to enhance public education and understanding of science, to enlarge the scope of research in all fields of science, to foster technical advances and by doing so, to extend the relation to society. At the same time, citizen science allows citizens to influence, or at least put into question the issues to be looked at. Professor Wyler concludes with recommendations for universities, institutions and policy makers. His recent paper on the subject can be found here.

Session 2 – Information and knowledge for all – initiatives and policy agenda

Session 2

Moderator

- **Frédéric Caillaud, INPI**

Speakers

- ***Chafica Haddad,*** *IFAP*
- ***Jean-Éric Aubert,*** *Former Lead Specialist, The World Bank*
- ***Stefan Güldenberg,*** *University of Liechtenstein*
- ***Jaideep Prabhu,*** *University of Cambridge*

Session 2 on 'Information and knowledge for all – initiatives and policy agenda' was opened by moderator **Frédéric Caillaud** from INPI who stated that information assymetrie is a big problem today with regard to patents and the delivery of services to SMEs and start-ups. They struggle to get access to tools that provide them with information to help them to position their invention in the environment and to understand competition.

The presentation of **Chafica Haddad**, chair of the UNESCO Information for All Program (IFAP), was about how the IFAP priorities contribute to policy agenda of member states. In the first part of her presentation, Mrs. Haddad introduced the intergovernmental programme – IFAP - which had been created by UNESCO in 2001. IFAP is led by a vision that societies are one day open and inclusive, to reach that it is crucial to improve and expand access to the benefits of knowledge societies for all individuals. This is vital for addressing key development challenges and the realization of the 2030 SDGs. Consequently, one of the main focuses of the program is the design and implementation of solutions to bridge the digital divide by addressing the needs of disadvantaged and marginalized groups that are often excluded. To achieve this goals, IFAP addresses six information priority areas, namely information for development, literacy, dissemination, ethics, accessibility and multilingualism in cyberspace. Mrs Haddad went on to emphasize that because the terms information and knowledge are closely related, they tend to be understood as equal while they are different. For the creation of knowledge, information

needs to be selected, contextualized and linked to other pieces of information. In this regard, IFAP promotes the human dimension to UNESCO's vision to the notion of knowledge society in which information is not only created and disseminated but put on the benefit of human development. Mrs Haddad stressed the leading role that IFAP has played in the international policy landscape by providing a platform for international policy dialog, cooperation and the development and promotion of standard-setting instruments and other mechanisms. She explained that current 5-year vision and strategic plan of the program, strives to contribute to the attainment of several SDGs by adapting strategies to local priorities given the specific needs, as well as establishing enabling policies and regulatory frameworks for information and communication so as to transmit the goals of the UN2030 agenda from the global to the national context. Furthermore, IFAP considers gender equality as a fundamental human right and a critical factor for the achievement of all internationally agreed development goals. Thus, IFAP supports empowering women and girls to be critical thinker and develop their full potential. She concludes by point out that technological advancement and the application of innovative solutions is not enough for building sustainable, adaptive and resilient societies because solidarity and collective efforts are needed in order to move humanity forward.

Jean-Éric Aubert, former lead specialist at the World Bank, spoke about inclusive innovation in relation to the different cultures and countries of the world. With his experience of having worked in 50 countries, he found that the notion of inclusive innovation is not so obvious. In fact, he noted that the term has relatively recent appeared as rather a 'catch word' because of the increasing inequality in the world and within countries. At the same time, the appearance of the digital economy created an impression that information can be disseminated to large segments in society and to also change this negative trend of increasing inequality. In fact, before the creation of the term 'inclusive innovation, the impression existed that innovation was naturally inclusive. In the next part of his presention, Mr. Aubert discusses the increasing and differing uses of the term in different cultures. He reported that while in 1973 when he was involved in the creation of the first innovation policy survey, very few programs existed in this regard, the way in which it has been developing differed significantly. Mr.Aubert begins by explaining that the anglo-saxon cultures are more naturally linked to social entrepreneurs and social innovators than other cultures where the term 'inclusive innovation' is a rather fuzzy word which is also due to the fact that the government influence is higher. He argued that in the Nordic countries, the term is not so much used, because they are inclusive by nature, whereas the Germanic culture focuses on the corporative society and the concept of the social market economy which is expressed in the close cooperation between the public and private sectors, such as the good link between the education and business word. In Japan, the integration of female in the workforce as well as urbanization and new technologies, like robotics, are on the rise. In India, the notion of inclusive innovation started and had grown there and spread throughout the world, in China it is not part of the vocabulary which is why, as Mr. Aubert projected, there will be experimental government programs and the term will emerge in the near future. He concluded with the outlook that the future for inclusive innovation in Africa is bright and by pointing out the importance of contextual conditions.

Professor **Stefan Güldenberg** delivered about "What the Business World can Learn from CSR Initiatives in Professional Football". In this research project, a large project team from his university had been working together with the Football is More foundation from Lichtenstein as well as the sport university Cologne to bring people together, by organizing conferences, and confront early career players in football to with other groups in society, such as the disabled community. They challenged each participant to think about their role in light of the much needed new goals; professor Güldenberg commended the 2030 SDGs from the United Nations and pointed out that his project focussd on goals 4 (quality education), 10 (reduced inequalities),16 (peace, justice and strong institutions). He goes on to elaborate on a leadership crises which is a reflection of a growing divide between firms and people. This leads to his second point which was about the level of emotions at people's work place. With data from the 2011 Gallup Engagement Index, he underlined that a high emotional bonding matters and that the paradigm has been shifting from management by results to management by attention and the need to cultivate a management attention culture. Furthermore, professor Güldenberg answered the question What can companies learn from sport? By presenting an 'average' football team, after having transferred empirical results of how organisations work today. Next, he gave examples of real CSR initiatives of football clubs and the requirement of UK clubs to become involved in these kinds of projects. Their study then aimed to identify the relationship between fans/supporters and CSR managers which they both interviewed in six clubs across Europe. They found that the interviewed clubs give a high priority to CSR initiatives which is in line with spectators who want to see more CSR initiatives of their football clubs. However, while clubs lamented about scarce financial and human resources for these projects, spectators would be prepared to become involved on a voluntary basis and lack opportunities to do so. Professor Güldenberg closed his presentation by discussing the internal and external benefits of CSR in companies and pointing to the huge potential that CSR presents for soccer clubs, with regards to future talents, fans and sponsors because it is about creating a win-win situation between stakeholders.

The presentation of Professor **Jaideep Prabhu** from the University of Cambridge on "Inclusive and Frugal Innovation in Emerging Markets" was engaging and consisted of a wide range of examples. His main point was that frugal, flexible, and inclusive innovation can help the world achieve the SDGs. He started with the approach of frugal innovation in India which is characterized by 'doing more with less' (frugal), a flexible mindset and the fact that solutions were designed to be inclusive. Example of high-end as well as frugal products were a fridge and a baby warmer. He went on to explain that in India there is a term which describes 'the art of overcoming harsh constraints by improvising an effective solution using limited resources' (Jugaad) which exists with similar meanings in other countries, such as DIY in the US and System D in France. In India, Jugaad innovations tap into a large market (initially estimated as 5trill.USD, now closer to 10trill. USD) as the class structure has been rapidly changing, with the majority of the Indian population to be in the emerging or middle class by 2020. Professor Prabhu emphasized that it is not just these classes in society that are interested in highly affordable solutions, it is also the western societies that must learn to do 'better with less'. In the next part of his presentation he discussed examples

of social entrepreneurs who successfully started grass roots level actions as well as initiatives of large domestic corporations to tap into these new markets. Examples of the former were the MittiCoolFridge, a mobile diabetes clinics, solar services provider to those who use kerosene and a frugal surgeon to reduce operation cost. All these examples had in common that they involved and trained people from local communities to enable the delivery of their services. Concerning large corporations, Tata introduced the Nano car with moderate success as well as a water filter, as well as the affordable Aakash Tablet aimed at school children. Furthermore, also large international corporations develop products for this market such as an ECG machine from GE, a foetal heartmonitor from Siemens and a Nokia smartphone. Professor Prabhu closed his presentation with examples of inclusive innovation in the west and its general challenges: the lack of resources to scale for small organisations that are inherently frugal and the wasteful and slow mechanisms within large organisations which have the resources to scale. Solutions to this could be partnerships between large and small, local and global organisatinos and the action of match-makers of institutions, like UNESCO and universities and governments to act as match-makers.

Session 3 - Innovation in Japanese companies based on intellectual assets

Session 3

Moderator

- **Mariko Mishiro,** CEO, Redial Co.

Speakers

- **Chihiro Takayama**, Executive Director, Eisai Co., Ltd. & **Hisao Kumakura**, Manager, 3M Japan Limited.
- **Yoshiko Shibasaka**, partner, KPMG Japan
- **Shinpei Goto**, Deputy Director, IPR Office, Ministry of Economy, Trade and Industry (METI)
- **Tatsuo Nakamura**, President, Valuenex

The session on innovation in Japanese companies based on intellectual assets was moderated by **Mariko Mishiro**, CEO of Redial Co.

The presentation of **Chihiro Takayama**, Executive Director at Eisai Co. Ltd., was about how Eisai realizes its human health care (HHC) mission through their business activities which are based on Knowledge Creation Theory. HHC was expressed in Eisai's Commitment to Innovation in 1989 and is essentially about knowing and sharing the feelings of patients and their families. The underlying logic is that the objective is to increase patients' satisfaction which in turn generates results in the form of increased sales, profits etc. Mr. Takayama then went on to explain the evolution from Corporate Social Responsibility, to the Creation of Shared Value and the focus on Human Health Care. Next, he discussed the SECI model which is an essential component of Organisational Knowledge Creation Theory. It consist of four aspects, namely Socialisation, Externalisation, Combination and Internationalisation, that result from the combination of tecit and explicit knowledge. For example, tacit and tacit knowledge refers to Socialisation which is the sharing of direct experience and the generation of tacit knowledge

in a communal setting. An example activity in this regard at Eisai is the socialization with children suffering from pediatric cancer, the aims of the program are to make the children in hospital smile and dream of the future, make the children express gratitude to their parents and the Eisai employees empathize with the children's emotions. Eisai Pharma's business model consists of three dimensions: financial, operational and social value which HHC stands for. In that matter, Eisei aims to improve access to medicine with regard to affordability, availability and adoption in areas such as non-communicable diseases or neglected tropical diseases. To achieve that, Mr.Takayama explained that Eisai has a tiered pricing policy so as to maximise the access to medicine by considering the different backgrounds of patients. He concluded his presentation with examples from European HHC activities, such as The Alzheimer Train in France which was the first exhibition dedicated to the disease from the carer's point of view.

Hisao Kumakura, Manager at 3M Ltd., presented the 3M Value Creation Process. After a company introduction, Mr. Kumakura went on to introduce the WICI Japan Value Creation Driver Discovery Subcommittee which aims to systematically show the critical management indicators of value creation by identifying the value creation drivers. In the next part of his presentation he analysed the 3M value creation process by using the SECI model, as introduced by Mr. Takayama. Socialisation is the contact with customers, externalization is about recognizing the customer's problem, internalization about proposing a solution that only 3M can provide and the combination of technologies. Mr. Takayama concluded with an hypothesis on three loops for the 3M value creation process, namely the encouragement of 3M engineers to go to customer sites, the combination of the 3M technology platform by handling technology like modules and the communication between 3M business units in differing markets.

The presentation of **Yoshiko Shibasaka**, Partner at KPMG Japan, was about integrated reporting and value creation in Japan. Madame Shibasaka started by identifying the issues at hand - such as question on the usefulness and informative value of integrated reports - and discussing Integrated Reports in Japan in 2016. She reported that the number of companies with integrated reports has been steadily growing from 26 in 2010 to 279 in 2016. So nowadays, all major listed companies are trying and issuing integrate reports. In the next part of her presentation, Madame Shibasaka addressed the question how to organize relevance to purpose in integrated reporting practice, followed by an analysis of the value creation stories that companies tell in integrated reports. She reported that financial targets are bring set in mid-term strategy but not in a concrete manner. Also, companies explain for capitals but not in a connected way together with their business model. Also, the discussion and consensus for their own capability and business model are not matured. An issue that is persisting is the notion that integrated reports are expected to function as an effective tool to engage with investors, however its contents are not including key elements that are of interest for investors. Madame Shibasaka concluded by voicing the concern for creating corporate value by means of integrated reporting and presented future issues, such

as the concern to increase the quality of integrated reports for which materiality is the most significant activity, as she pointed out.

Shinpei Goto, Deputy Director at the IPR Office at the Japanese Ministry of Economy, Trade and Industry (METI) presented tools for better dialogues between companies and investors. First, he introduced the term 'intellectual asset based management' which stands for the recognition of the intellectual assets in companies, their utilization and, by doing so, the improvement of management. Mister Goto discussed the Intellectual Assets based Management Report and the Management Report to Raise Business Value as two tools supporting intellectual asset based management. In the next part of his presentation, Mister Goto outlined Benchmarks for Local Companies which METI formulated in March 2016 aimed at leaders including company managers and entities including financial institutions and supporting organizations to utilize as a tool for conducting business diagnoses, in other words, a tool for understanding the financial conditions of companies. He concluded with guidance for Integrated Corporate Disclosure and Company-Investor Dialogues which METI compiled in a guide that was published in May 2017. Its aim is to assist corporate managers in holding dialogues with investors or in disclosing management strategies, non-financial information and other elements. It may also assist investors' evaluation of companies' performance and management therefor improving corporate value.

The presentation of **Tasuo Nakamura**, President Valuenex, was about the ways how to utilize IC information for investment. He began his presentation by engaging the audience with examples of opposites, such as reading vs. viewing, the maneuverability of a primitive vs accurate map and the closeness to truth of a distorted vs an accurate map. In the next part of his presentation Mister Nakamura presented company case studies, such as the ability of Nest to provide bridge technologies, the patent folio of Alibaba before and after its IPO in 2014 and a comparison of its patent portfolio with google. In the next part of his presentation, he talked about strategies how to reach new technology areas by discovering new services with a panoramic view. In that regard, he discussed the concept of 'white space' which is about the need to find completely new technical fields rather than focusing on patents which is past data. In order to make a model for predictive analytics, the technological linkage between , research, development, product service, market and finance is important. Mister Nakamura concluded his presentation by emphasizing the Panoramic View Analysis which allows companies to reduce costs and save time, find emerging technology fields, enables the detection of white space and future links, simulates the effectiveness of M&A and evaluates relative value of technologies.

Session4 – IC abundant country Japan

Session 4

Moderator

- **Kyoko Sakuma-Keck**, Principle, SA&C

Speakers

- **Tsutomu Miyagawa**, Gakushuin University
- **Etona Ueda**, Nomura Research Institute
- **Junichiro Mimaki**, Cool Japan Association and METI
- **Ieaki Takeda**, Director, Expo Office, Ministry of Economy, Trade and Industry (METI)
- **Noboru Konno**, Tama University

The session on Japan, IC abundant country, was moderated by **Kyoko Sakuma-Keck**, Principle, SA&C.

The presentation of Professor **Tsutomu Miyagawa** from Gakushuin University was about intangibles and the Japanese economy. In the first part, professor Miyagawa presented evidence on the recovery of the Japanese economy after the Global Financial Crisis, a period called 'Abenomics' which started in 2013 and is marked by growth in capital formation of 3.3% since then. Second, investment in IT has played a crucial role – in fact, is at the level of 25% of total Japanese capital formation. 75% of IT investment is in the service sector and amounted to 25 trillions JPY in 2012. Third, from an international perspective, the Japanese potential for economic growth is not high. Important is the consideration of tangible as well

as intangible capital accumulation. In fact, the ratio of intangible investment to GDP and tangible investments in Japan was at around 8% for the period 2001-2010 and thus lower than in other advanced countries except for Italy. In this regard, Professor Miyagawa presented two crucial issues of intangibles in Japan: the low investment in human resources and the lack of complementarities among intangibles. The final point of his presentation was about new strategies in the information and digital economy in Japan and the potential of using intangibles to revitalize the rise in potential economic growth. In fact, Professor Miyagawa discussed that the Japanese government has realised that easing monetary and fiscal policies do not result in increasing potential growth in Japan. The Prime Minister, Mr Abe, emphasized the process of productivity improvement through investment in human resources when presenting the new policy agenda published in June this year. In addition, the Japanese government should adopt more aggressive policies to raise potential growth through more effective use of IT, for example through e-government, Fintech, etc.

Etona Ueda from the Nomura Research Institute (NRI) discussed the potential for harmony between artificial intelligence (AI) and jobs. Mr Ueda began his presentation by presenting NRI – a top think tank and consulting firm with sales of 3.9billion USD and 6,000 employees which was founded in 1965. He argued that AI is not a threat to Japanese jobs but the key solution to keep society and industry in light of low birth-rates which result in severe shortages of the workforce in Japan. In fact, it is projected that the birth-rate will be 8million lower in 2030 than in 2014. Still, Mr Ueda reminded the audience that AI is not almighty and that it has three areas of weaknesses: creativity, social intelligence and flexibility. Therefore, he argued that AI is a future tool, not an enemy. To support this, he presented two viewpoints: the replace and the cowork model. In the former, AI is seen as an enemy which is to substitute workers and eventually leads to the supremacy of AI over workers, whereas the latter conceptualizes AI as a tool that works together with workers thereby taking over the share of automatable tasks while human workers remain in charge of non-automatable tasks. In his conclusion, Mr Ueda pointed out the challenges in the future such as the shift from generalists to expert so that humans focus on valuable works which AI will not cover. Also, the necessary rebuilding and simplification of business processes and organizational structures to create environments for suitable coworking with AI. Finally, the need to digitize information for AI and then the utilization of this digital information to share knowledge with neighbours.

Junichiro Mimaki, Ministry of Economy, Trade and Industry (METI), presented Japan's national branding strategy Cool Japan. It is promoted by the public and private sector with its main fields focusing on food, movie, animation, manga, fashion and interior because of the interest of foreigners on these aspects of Japanese culture. The attraction of foreigners is important for three reasons, as Mr. Mimiki explained: diversity (Japan has geographically isolated regions which have preserved a unique culture), sophistication (active communication between manufacturers and producers) and uniqueness (Japan's culture is strengthened by the fusion with other cultures from other countries such as Asia, Europe and America). The Cool Japan Strategy is also important for the economic transition from the manufacturing of products to the creation of stories. In that way, Cool Japan adds branding

values to Japanese products and services which is in line with the age of 'spiritual wealth' meaning that consumers demand products that move them emotionally and that are able to resonate with them. Consequently, Mr Mimaki elaborated in the second part of his presentation how Cool Japan Strategy creates these new emotional values by conveying the cultural context of products and services to consumers. These are the factors that will allow foreign consumers to feel and experience 'Japan' through stories that are embracing different fields. In the final part of his presentation, Mr. Mimaki gave examples of initiatives that the Japanese government has put in place to support industries in Cool Japan in three ways: first, to foster an overseas expansion of Japanese content; second, increase the overseas base for launching business by supplying risk money; third, increase national consumption by attracting foreign tourists.

Ieaki Takeda, Japanese delegate to the BIE (Bureau International des Expositions), gave an "Overview of Candidacy for Expo 2025 – Osaka-Kansai, Japan". He started his intervention with two videos, the first was by the Japanese prime minister Shinzo Abe who presented the motivation for Osaka and Kansai to host the 2025 Expo with its spirit "well get to it then" – meaning to jump in with both feet and give things a try, to be able to think outside the box and embrace trial and error. It showed Osaka, Kansai as a world class innovation hub and unique laboratory for innovations. The second video links the Japanese efforts to achieve the 2013 SDGS and its community of co-creation by the vision: people's living lab. The world expo is to become a living lab to generate and try out new ideas for the future society for all humanity. The strategy is to be more than an event but a 7-year project of continued trial-and-error which starts on the day of the city selection. The aim is to change people's minds and thereby create a legacy which sustains over people's life times. The final part of the video projects case study examples of people from today to the year 2025 to exemplify the change the expo 2025 in Osaka Kansai can have to their life. In his presentation that followed after the videos, Mr. Takeda provided an historical overview of the Expo as well as provided examples of recent and future Expos. In the second part of his presentation he went into more details on the application of Osaka-Kansai to host the 2025 Expo by discussing organizational aspects as well as themes and sub-themes on the expo content.

The presentation of Professor **Noboru Konno** from Tama University was about the Future Center Alliance Japan (FCAJ). It is an alliance/platform for corporations, government ministries/municipalities, universities, NPOs, etc. to generate and accelerate open innovation/pre-competitive collaboration, utilising "ba"(place) for innovation: Future Centers, the Innovation Centers, the Living Labs. Professor Konno brought along and promoted the publication "Wiseplace®" (Innovation Accelerating Environments) which aims to mobilize "Static" Knowledge Assets to become "Dynamic". He presented evidence that Japan is in turmoil, meaning that GDP has rather stagnated between 1990 – 2014 than risen as it has been the case in the USA and China which is due to three major earthquakes in Kobe, Niigata and Tohoku. In the next part of his presentation, he linked the work of the Future Centre, Innovation Center and Living Lab with the SECI Knowledge Creation Model and presented

examples such as the people-public-private future center, the 'socio-economic system for 100 years life', 'the new ways of alliance for basic research' and a program for open dialog that brings together stakeholders from different areas in society such as ministries, intermediary research institutions, private firms and public banks. In the next part of his presentation, Professor Konno presented the Japan Innovation Network (JIN) which consists of the 'innovation 100 committee' and aims to create 100 innovative companies through global collaboration. JIN was created in 2015 and currently consists of 32 members from large Japanese companies. Professor Konno also presented SHIP (SDGs Holistic Innovation Platform) which connects corporate know-how and technologies with SDGs-related issues and needs. It had been adopted by the UN General Assembly in September 2015 and promotes innovation via various programs designed to build innovative business models which address the SGDs.

Cocktail reception

A cocktail reception at the end of conference day 1 was offered by the Permanent Delegation of Japan to UNESCO to all IC13 attendees.

The following speakers thanked the organisers for the invitation as well as everyone for the successful first conference day:

- Mr. **Satoshi NARA**, Chargé d'affaires a.i. du Japon auprès de l'UNESCO
- Mrs **Chafica haddad**, IFAP Chairperson
- Dr. **Boyan Radoykov**, UNESCO
- **Prof. Ahmed Bounfou**r, Université Paris-Sud






Session5 – Valuing data as digital assets

Session 5

Moderator

- **Prabhat Agarwal**, European Commission

Speakers

- **Magued Osman**,CEO,The Egyptian Center for Public Opinion Research 'Baseera', Former Minister of Information, Egypt
- **Juan Mateos-Garcia**, Nesta, United Kingdom
- **Jiri Pilar**, Legal & Policy Officer, European Commission
- **Ahmed Bounfour**, Université Paris-Sud & **Susanne Durst**, University of Skövde

The session on valuing data as digital assets was moderated by **Prabhat Agarwal** from the European Commission.

Magued Osman, CEO, The Egyptian Center for Public Opinion Research (Baseera), Former Minister of Information on Data for All as an agent for change: Experience from Egypt

The speech of Magued Osman was built around three central questions: 1) how data and information can be shared and dissimulated to all? ; 2) what impact for data and information for all on development; 3) what specific place and role for institutions ? . Dr Osman started by reminding the global outlook on the increasing interest in data and information as a valuable resource especially with the emergence and growth of new sectors called markets of data (the big data market). He as well stressed the role of data and information in the decision process that every executive need to engage. On another hand, the speech emphasized the fact that the world is experiencing a shift regarding

the social capital. This latter, as of now, refers to participative actions, increasing demands for facts (need for transparency), new ways of collaboration (crowdsourcing), a shift from the concept of citizen to the concept of netizen referring to the increasing use of internet and finally the revolutions of communication (from people to people, from people to machine, from machine to machine). Third, Dr. Osman highlighted the growing presence and efficiency of ICTs. He pointed out the growing capacity of storage, the higher speed and performance, the increasing 'intelligence' of devices and the increasing dominance of social media. These three considerations invite both executives and academics to reflect on the impact of data and information for all on development. In fact, the sustainable development objectives range from reducing poverty, improving healthcare, ensuring a higher quality of education, acting for more responsible consumption, to build sustainable cities and communities. In doing so, a governance strategy based on data and information need to be implemented in order to empower citizens, support accountability and inform public debate. In that, institutions are called to strengthen their presence and role. By institutions are meant, governments, the private sector, academia and non-profit organizations that, together, should work on rebalancing their respective weight and role. Indeed, we witness a shift from an almost unique government-centered approach of sharing and disseminating data and information to a more balanced and society-centered approach. For example, non-governmental organizations can help government see better social, ecological and development issues. Dr. Osman then presented a comprehensive approach for the role of private sector in generating and disseminating data and information. He presented the case of 'Al Bassera', an institution, that he presides, aiming at providing information for all. It combines three applications to share information: 1) a daily mail service called 'number of the day' to give people insights about an issue of relevance or to help public debates to be evidence-based (religion, population, migration, justice, economy); 2) Mobile application "nesaalk" we ask on your behalf and 3) Twice per day "number of the day" via SMS. Dr Osman then concluded by reminding the new demands of today societies: end government monopoly of producing and disseminating information, empower citizens and lead the way to better governance

Juan Mateos-Garcia, Nesta, on The economic impact and organizational aspects of online data analytics

Mr. Mateos-Garcia presented a research paper studying the economic impact and organiztaional aspects of online data analytics. Before presenting the paper, he started by remining the foundations of the concept of big data and its current context. This latter is characterized by more data, more analytics and more applications. In fact, big data is one the technology-triggered trends, that is considered, on a time based scale as a trough of disillusenment which means that this trend did not reached yet the productivity level. It is thus legitimate to ask what impact would this technological trend have on the Innovation policy, the regulation (data protection, competition) and management. Also, the question of how the benefits would be distributed is of an increasing importance. The research paper asks three questions: What is the link between online data use and firm productivity? Are there complementarities between online data use and employee autonomy? Are there complementarities between online data use and process innovation? To answer them, the researchers adopted standard value-added production function equation to estimate the impact of data on TFP. They tested the equation on 500 UK companies commercially active online, with more than 50 employees (2012) with

a focus on online customer (not necessarily 'big') data, survey targeted to marketing activities/functions (and complementary survey of IT managers). Online data use including: Collection of data, Analysis & communication, Deployment in the business and an Index of all the previous. Besides, financial data from 2006 to 2012 are integrated. Findings suggest: 1) Strong link between data and productivity (It is not collecting data that matters but analyzing them systematically); 2) Need to adapt organisational structures and processes to make the most of data; and more important 3) Technology adoption is not enough: need to pay attention to organisational and human factors.

Jiri Pilar, Legal & Policy Officer, European Commission, on building a european data economy.

By the year 2020, the European Data Economy in the most favorable scenario could contribute up to 4% of EU GDP. Three scenarios are considered: 1) High Growth Scenario (maximizing data users benefits); 2) Baseline Scenario (Exploiting innovation) and 3) Challenge Scenario (few growth opportunities). The basic claim is that creating a European digital economy and society with growth potential should be done through ensuring that Europe's economy, industry and employment take full advantage of what digitalisation offers (Digitizing industry, cloud, inclusive digital economy and society, e-governement, standardization and interoperability, digital skills and data economy). Indeed, the European Commission is launching several activities to unleash the data economy that includes: 1) Communication that outlines possible policy and legal solutions for a European data economy in relation to free flow of data and emerging issues related to data access, portability, liability and experimentation; and 2) Launch of a public consultation and a debate with Member States and stakeholders to define next steps. Thus, building a European data economy requires: a need to access & exploit industry-held data better, a focus on non-personal, machine-generated data. Current barriers include limited access to data: companies tend to analyse data only in-house and keep data to themselves, creating data silos, Lack of comprehensive policy framework for the economic utilisation, re-use and tradability of machine-generated data. Also, when contract is king, there is risk of unfair standard contract terms imposed on weaker parties, Manufacturers de facto "owners" of machine-generated data and Data silos hamper innovation. Mr. Pilar has then identified possible actions to overcome these barriers concerning data access and transfer, data portability, interoperability and standards, liability in the context of autonomous systems and experimenting and testing. He concluded by exposing the preliminary trends and emerging issues before sharing the agenda of next workshops and conferences to address this topic.

Prof. Ahmed Bounfour, Professor, Paris-Sud University, on the micro and macro-economic modelling of intangible cyber-costs.

Prof. Bounfour pointed out the importance and the timely interest in the problematic of cyber risks that organizations increasingly face. After exposing some examples of cyber-crisis (Wannacry attack) that organizations managed, he reminded that current organizational context regarding IT security lacks a consideration of intangible assets in the quantification of cyber attacks risks. Thus, a new academic approach, also including executives and policy makers need to be developed given the relevance of intangibles in managing cyber-risks. Figures on the importance of intangibles

are presented to emphasize the need of such an approach. Indeed, organizations are exposed to a large range of cyber risks. Prof. Bounfour exposed some of them such as the impact on the firm's sovereignty (stolen information and knowledge), the loss of reputation, the loss of stakeholders and relevant ecosystem trust, the loss of competitiveness and value in financial markets and the negative impact on employees, etc. Prof. Bounfour has then presented the HERMENEUT project about micro and macro-economic modelling of intangible cyber costs. The project, in which Prof. Bounfour represents Paris-Sud University is conducted in collaboration with several European partners. Three main objectives stand behind this project: 1) Generic microeconomic model of intangibles costs/impacts of cyber-attacks; 2) Macroeconomic estimates of intangibles costs of cyber-attacks; and 3) Microeconomic (sectoral) estimates of intangibles costs of cyber-attacks Business models of cyber-attacks. To do so, a survey is conducted in order to test the impact of intangible factors (knowledge and competences, databases on customers, reputation, trust ecosystem) and cyber-risk factors on the economic performance of firms in three key sectors: knowledge IP intensive, financial services and health sector. The general modelling task is undertook in two steps: 1) measure the impact of intangibles on a micro-economic level by estimating the economic value of intangibles; and 2) follow an event approach by analysing cumulative abnormal returns (Campbell et al., 2003; Acquisti et al., 2006) and their impact on the company's stock.

Susanne Durst, University of Skovde, on Knowledge risks- the (still) underdeveloped field of research.

Mrs. Durst began by defining knowledge risks which consist in the likelihood of any loss resulting from the identification, storage or protection of knowledge that may decrease the operational or strategic benefit of a company (Perrott 2007). She then presented a research background on knowledge risks. In fact, researchers have recently started to examine various types of knowledge risks, such as risk of knowledge loss (e.g. Treleaven & Sykes 2005; Durst & Wilhelm 2011; Martins & Martins 2011; Joe et al. 2013), knowledge leakage (Mohamed et al. 2007; Parker 2012; Ahmad et al. 2014), or knowledge hiding (Connelly et al. 2012; Connelly & Zweig 2014; Cerne et al. 2014). It is thus a promising development, but these studies have addressed very specific issues and thus produced a fragmented understanding of the topic. An overview of knowledge risks is presented. It includes knowledge attrition, leakage, knowledge risks due to unlearning or to forgetting, knowledge outsourcing risks and risks related to knowledge gaps, the risks of applying wrong. These risks happen to be significant both inside the organisation and outside of it. To conclude, she argued that, given the importance of knowledge to organizations, a discussion about knowledge risks is beneficial, not only for researchers but for practitioners as well.

Session6 – Transfer of knowledge & technology for regional development

Session 6

Moderator

- **Rajinder Jhol**, UNESCO

Speakers

- **Julien Baumont,** European Investment Fund
- **Marta Catarino,** President, ASTP-Proton
- **Nicolas Penet**, Chairman of INSAVALOR & Board Member of Réseau CURIE
- **Laura Kreiling,** Université Paris-Sud

The session on transfer of knowledge and technology for regional development was moderated by **Rajinder Jhol** from the UNESCO.

Julien Baumont, Europena Investment Fund on Technology Transfer investments at the EIF.

Mr. Baumont began by reminding the role of the European Investment Fund which is essentially to provide risk financing to stimulate entrepreneurship and innovation in Europe. He then explained the objective the 'how' and the 'where' of the EIF missions. In fact, the institution acts as a bridge between universitites and research organizations and the market in three ways: Spinning-out, Licensing and collaboration. Technology Transfer models range from co-investing alongside, joint venture, semi-captive/ embedded TTO, Independent managers to partnrships between managers and TTO. Mr Baumont, then presented two examples of techology transfer: Centre for Drug Design & Discovery III and IP Group. He concluded by presenting a new model of technology transfer based on: 1) Identifying the market opportunity and financing gap; 2) Structure the EIF role

and its input and 3) work on a strategic partnership between an existing independent manager and a research organisation.

Marta Catarino, President, ASTP-Proton, on ASTP-Proton

ASTP-Proton is the premier, pan-European association for professionals involved in knowledge transfer between universities and industry. It is a Pan-European non-profit association, it represents technology transfer professionals and gathers more than 800 members, from more than 350 TTOs in Europe and other parts of the world aiming at ensuring string links between science, society and industry. ASTP-Proton counts 6700 participants, 120 events, 800 members from 45 countries. By promoting and professionalizing knowledge transfer practice, the association aims to enhance the impact of public research on society and the economy. Mrs Catarino presented the results of the annual survey – Data FY 2014. An overview is presented about the number and distribution of respondents per country, on the number of institutions served by KTO, the number of FTEs employed and KTO staff, the KTO gross expenditures and the FTE in R&D. She also provided information about the the patenting activities (the number of granted patents), the licensing and other IP agreements, and the spin-off activities. Mrs Catarino concluded by promoting the activities and services of ASTP- Proton which include: annual conference, fall meeting, master classes, traning courses, on-site customized traning, site visits, peer review, special interest groups and discussion fora.

Nicolas Pinet, Chairman of INSAVALOR & Board Member of Réseau CURIE, on an overview of the Knowledge transfer in the French context.

The presentation of Mr. Pinet was structured around two points: 1) France's position regarding R&I as a source of competitiveness and the paradigm shift starting in the 90's; and 2) A local illustration of the French mechanisms & supporting tools for the collaboration between Universities / Research Institutes / enterprises in innovation & technology transfer: Competitiveness clusters, the SATT model and the articulation with local TTOs. As for the first point, he pointed out the historical characteristics of the French position: relying mostly on Research and Innovation, a poor transfer towards industry, weak interations between actors, low private R&D spending, a fragmented landscape of TTOs and long and complex mechanisms for technology transfer. Over the last 20 yers, a structured approach has been deployed. It includes a new legal framework for research and innovation (1999/2002), a shift towards a "project-based" funding mechanism for public research (2005), a revamped « R&D Tax credit » system to attract and develop private R&D investment (2005/2008), the creation of competitiveness clusters, the building of competitiveness out of public research (2005), the launching a national Research & Innovation Strategy (2009), and the lanuching the "Investing for the Future » Program. As for the second point, Mr Pinet presented an Illustration of the French Policy with the Auvergne-Rhône-Alpes case where two approaches to public private partnership in Research have been adopted : the Competitiveness Cluster Policy and the SATT Policy by accelerating Technology Transfer, based on a bold initiative based on M. Porter's Cluster theory claiming that research collaboration leads to innovation and growth.

Laura Kreiling, PhD Student, Paris-Sud University, on Technology transfer as "set of practices": towards a maturity model

Ms. Kreiling began by introducing the 'technology transfer' and 'practices' concepts. She pointed out how the "the movement of know-how, technical knowledge and/or technology from one or more sources ('donors') to another entity ('recipient')" takes place (Roxas, Piroli, & Sorrentino, 2011, p. 7) and how the actors of technology transfer intercat through different channels. More interestingly, she showed how practices are contingent upon TTO strategy, a fact that the TTO practices field of research covers; and she then developed the different approaches to technology transfer from different disciplines (economics, management..). Her first paper answered the following question: To what extend does the territorial anchoring of SATT generate a tension between economic and territorial value and how is it regulated? To answer that, a research has been conducted on 14 SATT (Sociétés d'Accélération de Transfert de Technologies) created between 2012 and 2014 with 856 m Euros Budget. Findings suggets that 1) the SATT have two paradoxical roles endorsed concurrently: investor & territorial builder; 2) the paradox more acute on individual level regarding managers' motivation; and 3) a learning process is engaged to be able to manage the paradox. Another set of findings concern the maturity model concept and how it fits in the equation. Maturity model is a matrix of practices that define, for each organisational area the level of formality, sophistication and embeddedness of practices from ad hoc to optimising. In fact, maturity reflects appropriateness of its measurement and management practices in the context of its strategic objectives and in response to environmental change (Scott and Bruce 1987; Garengo and Bernardi 2007). The challenges of today are that current maturity models fail to totally explain the findings and that the TTO stategies are differrent across European countries. Ms Kreiling concluded by presenting paths for future research: 1) Develop approach for strategic management of TTO practices ; and 2) Foster measurement and benchmarking of TTO performance in order to develop a contingent TTO performance assessment framework.

Session7 – Institutional innovation and territorial development

Session 7

Moderator

- **Waltraut Ritter**, Knowledge Dialogue

Speakers

- **Helena Tenório Veiga de Almeida**, Brazilian Development Bank, BNDES,
- **Leif Edvinsson**, The New Club of Paris
- **Sarah Serval & Ahmed Bounfour**, Université Paris-Sud
- **José M. Viedma Marti**, Polytechnic University of Catalonia

The session on institutional innovation and territorial development was moderated by **Waltraut Ritter** from Knowledge Dialogue.

Helena Tenorio Veiga de Almeida, Brazilian Development Bank, BNDES, on Measuring the intangible role of a Development Bank – BNDES case

Mrs Tenorio began by exposing the Rationale for and definition of national development banks. At the national level, development banks can be instrumental not only in addressing market failures, such as the lack of provision of long-term finance due to the risks and uncertainties involved, but as a critical tool in supporting a proactive development strategy. The focus should be on financing projects where the social returns are greater than private returns ; or projects that promote economic transformation. But how to identify and measure those characteristics in a project? There exist different approaches to impact measurement including rating systems, assessment systems and management systems. Some international references are presented: the PWC -Total Impact Measurement and Management, the SIAT- Sustainability Assessment Toll by the European COmission and others. An internal reference is also presented: BNDES' Intangible Analysis Model (MAE). It consists in questions answered by bank staff, based on a collaborative process and IT support and used

for client's management improvement and for BNDES' credit risk. In addition to that, TIIP, a multi-criteria method to evaluate the non-financial features of funded projects, is as well used to assess Support decision, Social returns and benefits, internal and external transparency and communication. In doing so, JP Morgan' framework to BNDES' Procedures is adapted to specific contexts. The TIIP include 12 criteria to identify expected impacts that are divided into 5 dimensions: environement, regional development, social (job creation and well-being), national economy and customers. Mrs Tenorio then presented a more regional dimension and how related criteria for impact evaluation are applied to the attraction and retention of people and the development of new economic activities in the region (local spillovers) as well as to the reduction of regional inequalities (current development status as a proxy). She then presented examples of real projects in Northeast Region of Brazil where TIIP impact measurement was applied. Mrs Tenorio concluded by pointing out the challenges that are still to face. They include: 1) Exchange Knowledge: Finding external experiences and cases to improve the methodology and its applying process (banks, universities, governments, etc.), 2) How to exploit this methodology to increase public transparency; 3) Finding statistics and sectorial indicators to support the scorecard analysis (eg.: job creation, productivity, etc.); and 4) Turning the TIIP into a qualitative, but less subjective, project selection analysis tool.

Leif Edvinsson, Emeritus Professor, The New Club of Paris, on Institutional Innovation and Territorial Development

Prof. Edvinsson began by a citation of Hock, founder of Visa International saying that "we are living in an era of institutional failure" to show that a need for institutional innovation is more than urgent on several fields: transportation, health, science, food, finance, management etc. Notworthy is the role of intellectual capital, as a potential for future well-being, in reaching this objective. In fact, the capacity and capability of people (the human capital), the global business attractivity (the market capital), the knowledge creation, exploitation and innovation (the renewal capital) and the operational functionality of society are crucial to build the national intellectual capital (NIC). Figures prove that: in adavanced economies almost 75% of growth can be traced back to NIC (2001-2011) and NIC impact in Gross Domestic Product / GDP annual growth varies between 0.25 % and 2.15 %. It is thus imporatnt to focus on renewal and innovation in global positionning.

Ahmed Bounfour & Sarah Serval, Professor and Post doctoral Research, Paris-Sud University, on Institutional Capital and Territorial Development.

The presentation clarified the qualification and definition of 'institutional capital' by answering the question of how can we characterise institutions and local development? Through the assessment of both the negative and positive impacts of effects of institutions on local development. But researchers still lack knowledge about the link between institutions and local development. To answer that, a typology of territorial institutional assets was developed. It includes institutional capital, practices and other componenets of territorial intangible capital. The second part of his presentation was about how to measure the 'institutional capital' and its impact. In fact, institutional capital, along with the human capital, is a component of intangible territorial capital which is crucial for growth. In doing so,

a research has been conducted based on the international scientific literature to list indicators measuring intangible territorial capital. For that, two data sources (publicly available) were combined : 1) Regional databases for indicators (Eurostat, European Commission) and 2) Survey data for scales of measurement (ESS, European Social Survey, 2012). Noteworthy is the fact that as social capital and institutional capital are multifaceted phenomena that cannot be captured by one single measure, two scales of measurement were created based on literature. The metholodology consisted in creating scales of measurement for social capital (7 items and 3 factors), institutional capital (5 items and 1 factor), human capital (3 indicators), technological capital (5 indicators), reputation capital (3 indicators), organizational capital (1 indicator). Prof. Bounfour concluded by presenting some recommendations including further refining the « concept of institutional capital » into practice ; for decision making in particular profiling of differentiated roles is a promising way to address the question of « How » and that case studies approach can be used as a modality for clarifying, typologing these differentiated roles.

José M. Viedma Martin, Emeritus Professor, Polytechnique of Catalonia, on Knowledge and Wealth, an overall

The presentation was structured around 5 parts. First, an overview of the 4th industrial revolution and the knowledge economy context is presented. Have been exposed the enablers of the 4.0 industry (artifical intelligence, nanotechnology, Internet of things, autonomous vehicles and 3-D printing), the pillars of the knwoledge economy (economic incentive, institutional regime, educated and skilled labor force, an effective innovation system and a modern and effective information infrastructure). Prof. Viedma Martin then identified the 'Wealth' concept as the a measure of the value of all the assets of worth owned by a person, a community, a company or a country. Wealth creation, has been aproached differently by focusing on the role of intangibles. Indeed, the market value of intangibles has continued to increase since the 70's. Many theories, both studying the micro (enterprises) and macro-level (cities, regions, countries), advanced theoretical foundations to explain wealth creation. On the macro level, the Austrian school of economics and the new institutional and evolutionary economics are of a special interest. An overview of both theories is presented. Concerning the wealth creation in the knowledge economy, new pillars have to be considered (people, knowledge, intangibles, competitive enterprises, innovative enterprises, suitable environement) but there is not an established body of theories on wealth creation in the knowledge economy. Prof. Viedma Martin concluded by calling to further develop theories and innovate in methodologies to produce frameworks of research like the competitiveness and IC communities frameworks.

Session8 – The future of reporting

Session 8

Moderator

- **Yasuhito Hanado**, Waseda University

Speakers

- **Thomas J. Housel**, Naval Postgraduate School, California, United States
- **Inge Wulf**, TU Claustal, Germany & **Pierluigi Catalfo**, Università degli Studi di Catania, Italy
- **Kimio Katsuyama**, PwC Consulting, Japan
- **Mariko Mishiro**, CEO, Rideal Co. Japan
- **Masahiko Kon**, Director, Japan Association of Corporate Executive

The session on the future of reporting was moderated by Professor **Yasuhito Hanado** from Waseda University.

Dr. Thomas Housel, Dr. Wolfgang Baer, and Richard Bergin (PhD Candidate), Naval Postgraduate School, California, United States, on an Econophysics Value Theory: Extension of the Original Model

The presentation was about developing an analogy between economics and physics to study market value of products in general and technologies more specifically. In fact, researchers have developed an initial model of the smart phone market value based on econophysics theoretical foundations (econophysics analogy 2016-2017) and propose an extension of it to explain the adoption rate curves of a product. To do so, they structure their work on three pillars: 1) calculate the protovalue, 2) give notional examples of smart phone adoption rates; and 3) shed light on innovators and imitators adopter models. First, the econophysics model was

presented and explained. It consists of answering the question on how to calculate market performance from fundamental parameters. Then, the different concepts composing the analogy were presented in both economics and physics terms. Third, the phases of adoption were presented in both economics and physics terms. Three phases are of interest: phase I: pre-product introduction; phase II regarding innovators and phase III regarding imitators. Findings are believed to be useful to study the introduction of fintech in Japan through three paths: determining pace of build out and architecture of micro finance platform and network requirements (e.g., number of servers, support techs, COTS based user interface and devices); creating advertising campaign based on need vectors; and selecting geographic areas for introduction.

Inge Wulf, TU Claustal, Germany & Pierluigi Catalfo, Università degli Studi di Catania, Italy, on "Reporting on Intangibles in the EU context",

The presentation began by reminding the current trends and developments that management reporting has known and the reasons behind them. These latter include: 1) the increasing in the value orientation by giving more significance to intangibles, 2) the loss of confidence between the different stakeholders and thus a need for more corporate social responsibility and monitoring and transparency, 3) the reducing of diversification in corporate reporting instruments leading to a need for integrated reports. Speakers then introduced examples of the EU directives with respect to non-financials in management reporting in Germany and Italy. For the German case, the Group management report (GAS 20) is combination (over time) of fundamental information about the group, a report on economic position (values resulting from the situation analysis), a report on expected developments (overview of risks and opportunities) and a report on economic position (a comparison between current and target positions). As for the Italian case, reports include a description of the undertaking's business model with a focus on information relating to the following matters: environment, society, employees, respect for human rights and anti-corruption and bribery.

The speakers, then, presented a comparison between real experiences in Germany and Italy: the case of EnBW, a utilities company where integrated reporting has been adopted since 2014 after a transition from a simple addition of annual reports and sustainability reports and then combined reports. A second example concerns HERA, a utilities company as well.

Overall, integrated reporting has a higher focus on the value creation process, connectivity of information and future perspective.

Before concluding the speakers shared some ideas: 1) Actually at a minimum of 80% of the information needed for Integrated Reporting is covered by the new EU-Directive, 2) The EU strategy could be successful: simply asking a compulsory set of topics that can be covered by specific contents ; and 3) In Europe there is a strong tradition in reporting according to CSR and sustainability reporting perspective. In any case, the quality of the report depends on the will of the company.

Kimio Katsuyama, PwC Consulting, Japan, on 'VCDD Tree' in integrated report

Mr. Katsuyama began by reminding the definition of VCDD: Value Creation Driver Discovery and the process by which KPIs that convey the 'value creation story' is developed. It is, in fact, a relationship between two stakeholders: the issuer and the reader through the report (containing financial or non-financial KPIs). But, a gap always exists between the wish of the issuer to make the story of value creation clear and the impression and the evaluation that the reader has and make. To rectify that, the VCDD process is engaged to 1) find drivers which form the 'Value creation story'; 2) to understand the relationships to clarify the issuer intentions and 3) to build VCDD trees. This latter is done through several steps: define prime KPIs, pick-up two sub-KPIs that contribute to the prime KPI, utilize qualitative and quantitative indicators and revisit only when strategy changes. Examples of VCDD trees and mapping are then presented. Mr. Katsuyama suggested some learnings that the VCDD research contributed to. He listed four: 1) Confirm there is no missing information that is common in the company, 2) Check if what you wanted to tell is far from the actual situation, 3) Obtain feedback from the reader; and 4) Understand that the gap is not completely filled. To conclude, future paths of research on VCDD using Artificial intelligence were presented. The basic claim is that reporting will rely more on machine and deliver VCDD 2.0. Reports would be automatically created and VCDD re-generated.

Mariko Mishiro, CEO, Rideal Co. On "WICI Intangibles Reporting Framework "

Mrs. Mishiro first began by introducing her work that crosses three interests: financial accounting, integrated thinking and intangibles. She also gave information about her company: Rideal Co. The presentation covered 5 points: What are WICI and WIRF? What are the merits of WIRF? What are the characteristics of WIRF? What are the Examples? And How to Participate? In fact, WICI is a global business reporting network that focuses on management and reporting of intangibles. Its activities consist in developing frameworks and KPIs to make aware and influence. Mrs Mishiro then exposed the merits of WIRF. It, in fact results in less complex and more concise reports. It also ensures connectivity, sustainability, comparability, and credibility. WIRF are also a booster of integrated thinking because it has specific characteristics that enhance that kind of thinking and encourage the interpretations of the principles described above. The structure of intangibles reporting is composed of: 1) outlining the business and management philosophy, 2) exposing the intangibles and value creation from part to present, and 3) recommending the intangibles and value creation from present to future. Before concluding by inviting the public to participate through the website of WICI, Mrs. Mishiro presented some examples of WIFR applications in organizations.

Masahiko Kon, Director, Japan Association of Corporate Executive, on "Integrating intangibles in a stakeholder approach"

Mr. Kon presented the Japan Association of Corporate Executives (JACE). It was established in 1946 with 83 far-signed leaders to contribute to reconstructing Japan's society. Currently 1,400 top executives of some 980 corporations. Each member shed his/her corporate identity and participates as individual. JACE is deeply concerned with the problems the world confronts today and committed to making. The association declared engaging actions of management promoting capital efficiency capital optimization. It aims at creating and communicating appealing visions to change society, at establishing highly effective corporate governance, at promoting business restructuring, at sharing financial and non-financial capital targets with employees and at communicating with investors for enhancing corporate value in the medium – long term. Mr. Kon concluded by presenting and explaining how value from in-house capital is created. It is in fact a combination between the governance and the strategical vision of the financial and intangible capital composed of customers, human, organization and intellectual capitals). The value creation process is an interplay between all the previous. Mr. Kon also shed light on the creation of social value and accumulating it. It goes through the interplay of the sustainability and the innovation of the economy.

Conference closing

The Conference was closed by Dr. **Boyan Radoykov** of UNESCO and professor **Ahmed Bounfour** from the University Paris-Sud. Dr. Radoyokov thanked all conference participants for their active engagement and interest in the subject area. He acknowledged the interesting conversations that were evoked from the large variety of themes that were discussed during these two days. Prof. Bounfour thanked Dr. Radoykov and his team, the Japanese delegation at UNESCO, The Japanese and international delegates to ic13, the chair sponsors and partners, and the team at University Paris-Sud who was involved in the organization of the conference. He wished everyone a safe travel home and was looking forward to meeting many colleagues again at IC14 conference next year.

«Information and Knowledge for All:
Towards an Inclusive Innovation»

Pictures : P.Guerrier/ L.Kreiling
Texts : N.Saidani & L.Kreiling
Université Paris-Sud

Scientific Coordination :
Pr Ahmed Bounfour, Université Paris-Sud
European Chair on Intangibles : ahmed.bounfour@u-psud.fr