

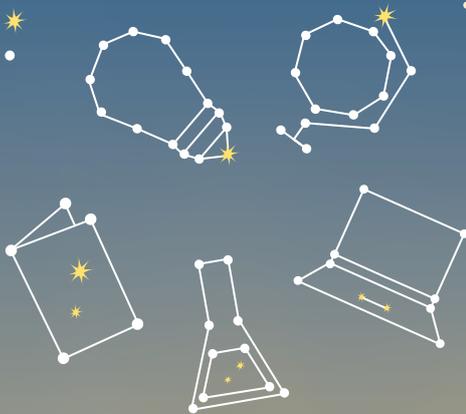


European  
Commission

# Human capital for territorial growth

JRC Annual Conference Proceedings 2016

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Joint  
Research  
Centre

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## Introduction



Human capital has long been recognised as one of the most essential contributors to the prosperity of regions and cities and as a provider of innovative solutions when tackling societal challenges.

The objective of the Joint Research Centre's (JRC) Annual Conference this year was to explore how Member States, regions and cities can harness the potential of their human capital within the current and future socio-economic and environmental challenges, and make their territories dynamic, creative and more resilient to external shocks.

The conference, which took place on 11 October at the BOZAR in Brussels, Belgium, was attended by about 200 stakeholders. Policy-makers, scientists and representatives of regions, cities and international organisations discussed how human capital is important for territorial growth and how science and policy together can better address the challenges ahead.

Globalisation, the digital economy, and demographic dynamics, such as migration, the ageing population, our multicultural society, and jobs-skills matching are just a few examples of the challenges that regions and cities face today.

To tackle these challenges effectively, a better understanding of how they evolve and impact on people's lives and the places where they live is a must. To achieve this, scientists and policy-makers have to work hand in hand. Only policy-making based on robust evidence provided by scientists and used in the right political, economic and social context, guarantees a better response to these societal challenges and can meet citizens' needs locally.

Several EU policy initiatives have already recognised the importance of human capital for territorial growth, as well as the need for a territorial dimension in EU, national and regional policy-making. However, more has to be done. Further development of territorial policies will depend more and more on scientific support that can help assess the measures taken and guide future policy actions.

In response to the current challenges, during the conference the JRC, together with the Directorate-General for Regional and Urban Policy, launched a new Knowledge Centre for Territorial Policies. This new virtual centre serves as a hub to exchange, analyse and download a wealth of existing data in a number of areas, including demography, economy, air quality, energy efficiency, and transport, to name but a few. It also provides a number of models and tools that enable interested stakeholders to analyse current and future trends for their cities, regions and macro-regions. The Knowledge Centre will also help identify gaps in scientific knowledge related to territorial policies, and conduct further research.

The parallel sessions held during the conference focused on the localised needs of human capital and the potential to provide solutions to societal challenges: on people and institutions to strengthen innovation in Europe's cities and regions; on tomorrow's cities, using innovative approaches to tackling social challenges; and on methods and approaches to measure and enhance human capital to support local and regional growth.

A number of recommendations were agreed upon, and these will guide the thinking of our future work.



## Foreword

To build prosperous cities and regions, Europe needs to focus on its most precious asset: people and their skills, talents and ideas. We need to do more to develop our human capital, and we need to ensure that we use the potential of science to the full in this.

Policy makers, academics, businesses and international organisations are increasingly recognising that human capital is an essential societal asset and that we have to spend more – and intelligently – on education and skills development.

It is about time. The current approach is flawed, shown by the mismatch of jobs and skills and the high level of unemployment in the EU. For example, employers in high-technology sectors complain about a skills shortage – at a time when about 40 million jobs could be created worldwide each year. These imbalances suggest that educational systems do not match the needs of our job markets and societies. We need highly skilled, flexible and creative people – not only to fill vacancies, but also to tackle global challenges such as unemployment, ageing populations, climate change, diverse societies, migration, the rise of poverty, and marginalisation.

Cities and regions are at the forefront of dealing with these issues. Education and science have a vital role in making sure they develop in a fair, competitive and resilient way. This means we need to look beyond Cohesion Policy and use all the resources available to support them. Policy makers increasingly require specific and up-to-date evidence and tools from scientists to analyse the impact of their policies and manage the growing volume of knowledge at their disposal. At the same time, they need

to tailor approaches and initiatives to the specific features of individual regions and cities. Providing locally relevant information and comparison tools can help municipalities and regions with limited resources, as well as big cities, to boost economic growth and job creation.

Scientific evidence, combined with local knowledge and proximity to citizens, will lead to a better understanding of the challenges facing Europe's regions and cities, as well as the impact they have on the people living and working there. This will allow us to make sound evidence-based policy decisions and to invest in the skills we need to keep Europe competitive. Using the European Commission Joint Research Centre's modelling capabilities to assess the impact of policies and investment over time can help drive regional and urban renewal processes. And using cities as laboratories to experiment, pilot, prototype and upscale will enable institutions, scientists, businesses and citizens to invest more smartly – especially in human capital and skills, essential elements of successful regional innovation ecosystems.

We have a wealth of knowledge on cities and regions at our fingertips – but we need to access and exploit it more efficiently. The Joint Research Centre, the Directorate-General for Regional and Urban Policy and the European Committee of the Regions are tackling this issue: we have created the Knowledge Centre for Territorial Policies in order to offer a single point of access to data, policy analysis, interactive tools and methods. This virtual centre should soon become a reference for policy makers, scientists and other stakeholders, particularly cities and regions, for the better management of knowledge and data. We invite you to make extensive use of it!

**Tibor Navracsics**  
European Commissioner



**Markku Markkula**  
President of the European  
Committee of the Regions

**Vladimír Šucha**  
Director-General,  
European Commission  
Joint Research Centre,  
Speaker



**Markku Markkula**  
President of the European  
Committee of the Regions,  
Speaker



**Marc Lemaître**  
Director-General,  
European Commission,  
Directorate General for  
Regional and Urban Policy,  
Speaker



**Michel Servoz**  
Director-General, European  
Commission Directorate  
General for Employment, Social  
Affairs and Inclusion,  
Speaker



**Charlina Vitcheva**  
Deputy Director-General,  
European Commission  
Joint Research Centre,  
Speaker and Moderator



**John Bensted-Smith**  
Director for Growth  
and Innovation,  
European Commission  
Joint Research Centre,  
Speaker



**Eric von Breska**  
Director for Policy,  
Directorate-General for  
Regional and Urban Policy,  
Speaker



**Sven Langedijk**  
Head of Competences,  
Modelling, Indicators and  
Impact Evaluation Unit,  
European Commission  
Joint Research Centre,  
Speaker





## Opening session and launch of the Knowledge Centre for Territorial Policies



*The Director-General of the Joint Research Centre opened the Annual Conference together with the President of the EU Committee of the Regions, the Directors-General responsible for Employment, Social Affairs and Inclusion and for Regional and Urban Policy, and the Deputy Director-General for Education, Youth, Sport and Culture. The discussion focused on the challenges facing Europe in addressing growth in EU regions and cities. Below are highlights of this opening session, followed by summaries of the presentations of this year's two keynote speakers. The official launch of the Knowledge Centre for Territorial Policies also took place. The Knowledge Centre is a virtual online platform for better management of knowledge and data for territorial policies.*



Member States should do more to target investments in human capital in regions and cities, said **Vladimír Šucha**, Director-General of the JRC. Over the past two years, the JRC has reached a level of understanding of the territorial dimensions of human capital which is sufficient to enable it to concentrate this year's annual meeting on human capital as a determinant of local growth. This evidence can provide a solid foundation for policy. The JRC is working to build knowledge that will bring better understanding and enable an informed assessment of the differences in regional development.

There is a need for a paradigm shift towards better recognition of the territorial aspects in EU policies and not only for Cohesion Policy, said the President of the European Committee of the Regions, **Markku Markkula**. He also recalled the need for regional renewal processes to address pressing societal challenges. Experimenting, piloting, prototyping and scaling up is what regions and cities have to do to make the decision and policy-making processes more participative for citizens. The Committee of the Regions' President welcomed the Knowledge Centre for Territorial Policies enabling regions and cities to invest more smartly, especially in human capital and skills – an essential element to becoming a pioneer in regional innovation ecosystems.



Europe is still suffering from the consequences of the economic crises and employment has not yet recovered from the shock, said **Michel Servoz**, Director-General for Employment, Social Affairs and Inclusion. Of the millions of jobs lost since the 2008 global financial crisis, not all have been regained. The positions which have been created are not always the same as the jobs they replace, and they call for new skills for which we need to train people. Our focus should be on the knowledge-driven economy. Alongside the



'traditional' evolving economy is a new collaborative economy which is not organised or governed by social institutions. This sharing economy has its drawbacks, such as the lack of retraining opportunities for the self-employed. However, Servoz does not believe that government should step in to regulate the sharing economy because jobs need to be created, and we do not know enough about the sharing economy to be confident of regulating it wisely. We should adopt an enabling policy and we need instruments to anticipate challenges.



Investment in human capital is essential, but is not in itself sufficient to generate growth, said Director-General of Regional and Urban Policy, **Marc Lemaître**. In the past, EU policy was often based on guesswork rather than hard evidence. Hence the scepticism we see all around us in Europe today.

Lemaître stressed the importance of evidence-based policy development and welcomed the Knowledge Centre for Territorial Policies as being instrumental for the European Commission, public actors and the citizens who wish to access knowledge on cities and regions. We need the right knowledge to be informed about regional diversity and the different drivers of regional development. Coupling knowledge with adequate human capital development would enable us to better address regional disparities.

The Knowledge Centre for Territorial Policies will bring together data, methods and tools on regional and urban policy to ensure user-friendly access to support EU, national and international policy-makers. The Knowledge Centre will also help identify gaps in scientific knowledge related to territorial policies so that associated research can be carried out.<sup>1</sup>

The session also introduced the concept of a new Cultural and Creative City Monitor which illustrates at city level the importance of culture and creativity to improve socio-economic perspectives and resilience.

**Jens Nymand Christensen**  
Deputy Director-General,  
European Commission,  
Directorate General  
for Education, Youth,  
Sport and Culture,  
Speaker



1: The Knowledge Centre for Territorial Policies platform:  
<https://ec.europa.eu/jrc/en/territorial-policies>



## Why Europe must reconsider its irrational human capital policies

By **Enrico Giovannini**,  
Professor at the University of Rome  
'Tor Vergata', Visiting Fellow at the  
European Commission's Political  
Strategy Centre. Previously Italian  
Minister of Labour and Social Policies, and chief statistician at the Organisation for Economic Co-operation and Development (OECD), Keynote speaker.

Human capital fuels debate among policy-makers, economists, and business people worldwide as they struggle to understand its economic and social impact.

But in Europe, the concept appears to elude us completely. We recognise human capital as the most important source of a nation's wealth (as numerous studies show). And yet, when we plug it into the rows and columns that lead to the bottom line, human capital is not even treated as an investment.

Why are we behaving in such a contradictory way? We are saying human capital is the most important, the most rewarding, investment but we do not record it as an investment.

We can summarise the global order as a process that combines human, production, natural, and social capital to produce goods and services, or gross domestic product. GDP gets allocated either to investment, which contributes to future well-being, or consumption, which means the product or service is used up.

In the OECD framework, human capital is referred to as an investment. But in most national accounts, human capital is treated as intermediate consumption, a cost. This is, in my view, polluting the discussion of human capital and policies... We are not really coherent with what we are talking about. Nor do we yet have a satisfactory way to measure human capital in monetary terms, which makes it difficult to have evidence-based policy-making.

In 2014, the system of national accounts finally classified expenditure on research and development as investment. But this is not so for human capital. That means hiring a researcher is treated as an investment, while a teacher is a cost. In Italy, buying a computer is recorded as an investment in research and development. Investing in education gets counted as a cost. This does not make sense.

National accounts explain that, for the sake of consistency, expenditure on education is not reclassified as investment. However, it is noted that the system of national accounts encourages users to explore alternative conventions in the form of satellite accounts.

The 2016 Annual Growth Report recognises that Europe has difficulties with human capital. 20 % of its workforce

has only basic literacy and numeracy skills, while 39 % of companies have problems finding people with the right qualifications.

Education budgets in most countries were cut before the financial crisis, and have since been reduced even further. The United Nations Development Programme Human Development Report for 2014 predicts that the future will be full of shocks, and says we need to invest in society to make people less vulnerable and more resilient.

The importance of human capital was recognised when world leaders agreed last year to 17 sustainability goals. Among the goals was the commitment to ensuring inclusive and quality education for all, and promotion of life-long learning.

A report, compiled by an expert group which Mr. Giovanni chaired, identified three things as essential to achieve Europe's sustainability goals: technologies, skills and mindsets, and governance – which are, in a nutshell, the ingredients of innovation.

I believe we should immediately start building up a satellite account for human capital, taking care to have the right incentives as well as restrictions, so as not to open a Pandora's box. What are we waiting for? Another crisis?



## Global development challenges

*By Alvaro Santos Pereira,  
Director of the OECD Economics  
Department, previously Portugal's  
Minister of Economy, Labour,  
Transport, Public Works and  
Communications, Keynote speaker.*

The forces responsible for raising living standards and life expectancy by an unprecedented degree over the last 30 to 40 years, for lifting hundreds of millions of people out of poverty, and for narrowing the gap between the rich and poor, have been showing signs of unravelling since the 2007-2008 financial crisis.

Consequently, instead of a convergence in levels of wealth and well-being, there is a mounting sense that the global economy is becoming less inclusive, and that inequality is growing, a view supported by the data.

GDP per capita is now dispersed less evenly among regions and cities within the same country than among nations. Gains in productivity between the top 10 % of frontier regions and the bottom 75 % have also widened by 60 % in the last 20 years. Frontier firms, innovators such as Amazon, Apple and Google, have improved productivity at a rate much faster than legacy companies.

The three things that made convergence possible were technological advances, trade liberalisation and productivity gains. Despite continued breakthroughs in technology

and the rapid uptake by consumers – as symbolised by the smart phone – technology, the first factor, no longer seems to be making life easier.

Global trade, the second ingredient, has lost momentum, expanding 1.3 % annually against 3.4 % during 1986-2007. In the G20 nations alone, 1200 trade restrictions have been imposed since the crisis and calls for protectionism are growing.

Productivity growth – the third factor – has decelerated to its least robust pace since 1990 in virtually every country in the world.

We still face deleveraging of the economy, and a low-growth-rate environment, vestiges of the crisis, and the effect of China's slowing economic expansion.

The temptation is to blame globalisation for the increasing inequality, and to turn back the clock. But I believe we should not reverse globalisation, but rather, improve it.

To get ourselves back on a course of economic growth and to reduce inequality, we must commit to working on three things, all of which have been proven to contribute to growth.

We need to get structural reform up and running again because it helps create jobs and reduce inequality.

The question is whether reform fatigue has set in. It is true that as they demand austerity in southern European states, Germany, France and the rest of northern Europe have themselves refrained from restructuring. Mr Pereira said he did not buy the fatigue theory, but rather suspected several governments were reluctant to embark on what might be painful changes to tax or labour law just as they ask voters to re-elect them in the next 12 months or so.

Since the crisis, we have relied heavily on monetary policy to boost the economy. Low interest rates are creating distortions and monetary policy is reaching its limits. Fiscal policy can and must do more, especially in developing infrastructure and attracting investment.

Of the 18 factors the OECD has identified as contributing to territorial growth, human capital ranks fourth in importance. It is vital to have policies that improve skills and education to promote territorial growth. Policies should be aimed at reducing the massive gap in Europe between labour demand and skills supply.

As for trade liberalisation, we must not return to protectionism. Trade nurtures growth. We need to remove regulatory restrictions and differences in regulations, and cut tariff and non-tariff barriers. Product and labour market reforms are crucial to making domestic markets more competitive and to enabling a faster diffusion of technology.

To summarise, reform is our best option for more inclusive growth.



## Panel 1 The local needs of human capital

### **Panel 1 in brief:** *Job-skills mismatches, educational model, data gap*

*That our approach to human capital investment has been flawed is clear from the level of job-skills mismatches. Employers in the high-technology sector and other companies complain of a skills shortage, even though unemployment remains high, with 40 million jobs needing to be created annually worldwide. Europe lacks decent jobs for its highly educated population.*

*The imbalances suggest the educational system does not match human capital needs, not only to fill vacancies for skilled workers, but also to tackle the big, global challenges related to health, ageing and climate change. Complicating the challenge is a lack of regional data to monitor progress. The panel sees possible solutions in: increasing business-university dialogue to shape curricula to market needs; adopting a lifelong learning paradigm so that skills supplies keep pace with a rapidly changing economic structure; and investing in the collection and analysis of regional data, with JRC involvement.*

### **Making human capital pay off everywhere**

Investment in human capital leaves nations better off overall. However, experience shows some regions tend to fall behind others. Putting more money into education and skills does not always help these territories to catch up. Why is this happening and what needs to be done to help lagging regions grow?

‘Human capital is a useful concept, but it is also limiting if you consider it in isolation to everything else,’ said **Olga Strietska-Ilina**, a specialist in skills policies and systems.’ It is true that countries at all development levels have found that adequate education and skills increase their ability to innovate and adopt new technologies, confidence and thus promotes job growth.



*‘Human capital is a useful concept, but it is also limiting if you consider it in isolation to everything else.’*

**Olga Strietska-Ilina**  
International Labour Organisation, Speaker

2: JRC research indicates that the estimated skills mismatches are not very large, calling into question whether researchers are looking at the most relevant data, or perhaps pointing to some differences in perception about what constitutes a mismatch, according to the JRC’s Federico Biagi, panel moderator.

Yet, this does not happen automatically: Only a coherent set that a and workforce with appropriate skills boosts investors' of macroeconomic, trade, investment, sectoral, labour market and financial policies can adequately respond to the myriad challenges of structural transformation and decent jobs faced by countries today. On the one hand, we face a paradoxical situation of high unemployment amid labour shortages. The job-skills mismatch<sup>2</sup> is evidenced by the fact that 40 million jobs need to be created annually just to maintain the status quo in global employment, while companies complain about a shortage of labour job-specific and more general skills, such as team working, innovation, management, and STEM (science, technology, engineering and mathematics) skills. On the other hand, often it is not just a question of skill shortages: in Europe, a highly educated population faces a shortage of decent jobs attractive enough to absorb the available talent.'

**Andrea Bonaccorsi**, Professor of Economics and Management at the School of Engineering, University of Pisa, put it another way. 'We have been asking why we do not see much impact in Europe from the Structural Funds used for research in innovation in lagging regions'. The answer is complementarity: 'We reap the benefits of human capital formation in territorial development if we have complementarity between human capital formation and opportunities, which means innovation and entrepreneurship. On the other hand, we reap the benefits of policy for research and innovation only if we have complementarity with human capital formation,' he said.

## The university-business divide

'The key issue around human capital is that there is something not quite working in Europe and education systems around the world,' said **Ebrahim Mohamed**, Director of Education of Climate-KIC, one of three knowledge and innovation communities set up in 2010 by the European Institute of Innovation and Technology (EIT). Employers say graduates leave university without the skills industry needs.

Mr Mohamed also said that the education system is inadequate for addressing the 'grand challenges' outlined in the Europe 2020 strategy. Issues such as climate change, health and the ageing population are so big and so complex that it vital to have an education system that equips students with the right skills.

Efforts to figure out how to make human capital investment benefit lagging territories are being hindered by the lack of regional data, which reflects the existence of policy 'silos', said Mr Bonaccorsi. Education, employment, industrial and other policies are often not integrated and tend to be decided at a national level – the Ministry of Education, the Ministry of Labour, etc. – which is why most statistical offices gather data on that basis.

Furthermore, data tend to be collected within silos, he continued. Indicators of educational development are usually reported up the chain to the Ministry of Education, for example, while data on research and other skills are reported to the Ministry of Labour.

Trying to build bridges across these silos is very difficult because each ministry wants to protect its own territory. Sharing information may seem threatening to government departments that fear losing their influence and budgets.

Education and training must be appropriate to the region's economic structure, including the level of economic development, entrepreneurship and innovation. At the same time, policies should work to change the existing economic structure if the latter is not conducive to jobs and growth.

'Companies should work in partnership with universities to try to help modernise teaching and learning,' said **Giorgio di Pietro** from the University of Westminster Business School. They should help identify the skills needed, including collaborative skills and those that allow workers to find jobs in a globalised economy, and help tailor education to develop those skills.

*'We reap the benefits of human capital formation in territorial development if we have complementarity between human capital formation and opportunities.'*

**Andrea Bonaccorsi**  
Professor of Economics  
and Management,  
School of Engineering  
University of Pisa,  
Speaker



*'The key issue around human capital is that there is something not quite working in Europe and education systems around the world.'*

**Ebrahim Mohamed**  
Director of Education  
Climate-KIC, European  
Institute of Innovation and  
Technology,  
Speaker

Universities are starting to offer more courses with an international focus, and there are more group assignments, often involving students from a variety of cultures, to develop team-working skills.

We need a new paradigm of education based on lifelong learning, according to Mr Mohamed. Rather than shedding senior staff, employers should retrain them and use their accumulated skills to achieve maximum impact. The EU should come up with a process of certification to recognise these skills.

Advances in technology should enable us to tap into the national statistics to extract regional data, Mr Bonaccorsi added. In some countries, data protection laws make data collection difficult. However, thanks to anonymisation techniques, administration archives on individuals can be collected. For example, we could gather data on students' employment history and measure human capital investment in relation to the *curriculum*, or the quality of the university and its effect on job placement.

We could build up 'master files', that is, permanent files periodically updated to serve as an authoritative source of regional data. Public research institutions, which account for a third of total research budgets, could be tapped to extract territorial data.

## Further research

Research shows that geographical proximity fosters innovation, Mr di Pietro said. It would be useful to discover the mechanisms by which geographical proximity drives local economics. Research could be extended to social, institutional and technological proximities. There is some evidence to suggest social proximity embeds trust. When companies of the same type congregate in an area, they may reap the benefits of technological proximity.

*'Companies should work in partnership with universities to try to help modernise teaching and learning.'*

**Giorgio di Pietro**  
University of Westminster  
Business School, Speaker



The JRC has significant research resources and capabilities and could strengthen its role as a knowledge producer and knowledge manager in human capital and increase networking and cooperation with other organisations. For instance, it is currently cooperating with the International Labour Organization (ILO) on a project concerning the future of work.

There is also the need to assess the effects of policy provisions, and collect evidence from academia on human capital and its impacts at national and regional levels. Both functions are consistent with the JRC's role as a knowledge bank. Having built up an expansive network, it has a role – arguably a duty – to help disseminate valuable research done both outside and inside the Centre to give such research a chance to make an impact. This is important because of the quality of its work, its reputation and its special relationship with the policy Directorates-General.

The JRC could also help Europe prepare for the big data revolution. First, work needs to be done at the conceptual level, looking at the relationship between human capital and other factors. Second, the JRC could take part in building an authority file – an official list of entities that could act as a basic framework upon which data could be collected and analysed.



**Federico Biagi**  
European Commission  
Joint Research Centre,  
Growth and Innovation,  
Human Capital and  
Employment,  
Moderator



**Ralph Hippe**  
European Commission  
Joint Research Centre,  
Growth and Innovation,  
Human Capital and  
Employment,  
Rapporteur



## Panel 2 **How to measure human capital**

### **Panel 2 in brief:** *Handling skills demand and supply, assessing skills and competences locally*

*There are different approaches to measuring human capital and its impact on regional growth. The standards of assessment should either be the extent to which education and training match a region's economic structure to improve its current performance, or resilience, i.e. whether human capital can enable citizens to adapt to a changing environment and meet present and future needs. Rather than have one quantifiable measure of human capital, it may be better to look at the unique needs and characteristics of each region and tailor human capital investments to those characteristics.*

*One of the most important skills for a person or a community of people is the ability to solve complex problems and, at the moment, the educational system in most countries is not geared in this direction but rather on the passive accumulation of knowledge, which is less and less valuable in a world with easy and free access to virtually any type of factual information.*

### **The demand-side approach to assessing human capital**

'We tend to look at human capital from the supply side as something that is created and then taken to the labour market', said **Vassilis Monastiriotis**, Associate Professor of Political Economy at the European Institute, London School of Economics and Political Science. 'We use two words to describe human capital: education and skills. And that's already problematic because we assume they are interrelated, but they are not always interrelated.'

'We generally measure human capital by counting years of schooling or university degrees. But when we consider human capital *for territorial development*, two factors are key. The first is the region's sectoral or productive structure, and the demand for skills. An over-abundance of

*'We use two words to describe human capital: education and skills. And that's already problematic because we assume they are interrelated but they are not always interrelated.'*

**Vassilis Monastiriotis**  
Associate Professor  
of Political Economy,  
European Institute,  
London School of Economics  
and Political Science,  
Speaker



university graduates in a region will leave them underemployed or jobless, whereas a dynamic labour market can attract skilled workers whose cost of education has been borne by other territories. Hence, regions must find the right balance between human capital attraction and human capital accumulation, especially in economically integrated areas where skilled labour easily spills over from one territory to another, following their aspirations.'

'The second factor is resilience, the ability to mobilise resources to react to a changing environment both now and in the future by reallocating resources through retraining and job mobility. It includes the availability of retraining programmes and the willingness of employees to retrain. Examples of places able to mobilise human capital include Renaissance Venice and Florence, and San Francisco – cities which succeeded in attracting skills as well as creating and maintaining them.'

'There are at least three areas in which our approaches to human capital should be reconsidered in the interests of promoting regional growth. First is the nature of the skills we tend to focus on. Usually we treat skills as static, whereas the demand for skills is dynamic. Innovation often wipes out jobs. Capital flight and globalisation may shift production to other countries. The workplace itself is changing. For example, for professionals who make cafés and desks in co-working spaces their substitute office, skills such as self-discipline, and the ability to meet deadlines are vital.'

'Given that skills needs change over time, when deciding what kind of human skills are best suited to territorial development we should not only look at what attributes and assets a region has, but also at what the region can have. For example, on a remote island of Greece, training a lot of nuclear scientists might not be a particularly good idea.'

'We have good measures of hard skills, such as technical knowledge. However, we have less data to assess soft skills, such as the ability to retrain or adapt to new situations, which may be more important than hard skills.'

'Secondly, current approaches to policy may limit territorial growth. The tendency is to keep policy simple because

it is underfunded, moves slowly, and may attract more criticism if it is too complicated. Policies also tend to be packaged with a headline number for funding, and a clear-cut target, so that outcomes can be assessed and success claimed.'

'By opting for simplicity, policies tend to be developed within siloes and to ignore complexity while keeping us from considering synergies.'

'Third, we need to find good tools to measure skills. Skills shortages tend to be grossly overestimated by employers, whose ideal employee is someone who can do a million things at the same time,' said Vassilis Monastiriotis.

The EU, the OECD and national governments carry out surveys (generally interviewing 20 000 to 40 000 adult employees) to measure the supply of skills against standards, including current and forecast business needs, and against objectives such as Europe 2020.

However, when it comes to informing policy, these measurements involve a lot of guesswork, cannot capture the local mix of needs, and run the danger of mis-directing policy.

In a regression analysis in Greece, the speaker found cities oversupplied by university graduates doing jobs beneath their skills level, displacing less-well educated people who might be better suited to the task. But these graduates compromise on their job goals because they want access to cultural and other urban amenities.

Poor regions, too, may be marked by an over-abundance of well-educated people. Here the problem is one of demand rather than supply.

To summarise, human capital should be measured in relation to the local context. That may mean foregoing a single number that measures human capital and equips us to make comparisons across regions. However, 'what I need for territorial development is to understand what the human capital and skill needs are in different places, and how they differ systematically across places,' stressed Vassilis Monastiriotis.



**Ekaterina Travkina**  
Organisation for Economic  
Co-operation and  
Development (OECD) Local  
Economic and Employment  
Development Forum  
on Partnerships and  
Local Development,  
Rapporteur



**Francesco di Comite**  
European Commission  
Joint Research Centre,  
Growth and Innovation,  
Territorial Development,  
Moderator

## The primacy of complex problem-solving skills

'The key to successful regional development is the ability to solve complex problems', said **Peer Ederer**, Honorary professor for Human Capital, Growth and Innovation at Germany's Zeppelin University.

The EU-funded *LLLight'in'Europe* project, a group of eight universities researching lifelong learning, innovation, growth and human capital tracks, asked why there was a block of wealth in the centre of Europe, a mountainous, landlocked region with none of what traditional economics would say are the prerequisites for prosperity, such as ports, and an abundance of natural resources.

The project, which Mr Ederer directs, looked at earnings curves for people aged 20 to 60 years in Germany and found that their salaries increased towards the end of their careers. The assumption that they deserve the increases because of intelligence cannot be true, because intelligence is known to decline by 60 % from 20 to 60 years, while their salaries keep rising.

People in low-skilled jobs enjoy wage increases for the first ten years, after which earnings change little.

One might try to explain the gap as a function of skills or education. But if so, why does the gap increase instead of remaining the same, particularly given that most job skills are learned in the first few years? The most important thing that people in the high-skills jobs continue to learn throughout their careers is how to solve complex problems. For example, as lawyers continue to learn how to solve problems, their productivity rises, as does their income.

Complex tasks are defined as jobs requiring management of many variables and people. Trade-offs are necessary and there is no single solution. Ability to manage complexity is different from education. Airline pilots go through a lot of expensive schooling to qualify. But their jobs have become 'routinised', and piloting salaries have fallen from among the highest, 30 years ago, to moderate today.

Studies in Germany show that over the last 20 years the top 20 % of jobs involving complex tasks have seen income increases, in contrast with the bottom quintile.

Areas where more complex tasks are performed can be designated as complex regions. When we map complexity, the results mirror the wealth map, with a high concentration of complexity in the centre of Europe and in capital cities.

We know from reading economist Adam Smith that value is created through specialisation. Jobs have grown in complexity in line with the increasing complexity of value chains. More and more people are involved in the production of most goods and services. Value-chain complexity requires more transaction costs between people. Those able to perform the most complicated tasks collect the transaction costs in the form of higher remuneration.

The greater diversity of complex-problem-solving skills within a region, the more prosperous it tends to be. Studies have shown that Germany and the UK have greater diversity than other countries.

A study of 40 companies in Europe and 1200 staff showed the highest degree of complex-problem-solving scores occurs in information technology, and the lowest score in the hospitality industry. Software developers achieved the highest scores, followed by entrepreneurs, media specialists and engineers. Medical professionals had medium complex-problem-solving skills, while trainers and teachers come out relatively low, and service industry employees rank at the bottom.

There is increasing pressure to innovate to stay competitive as value chains become more intricate. Innovation is the ability to find solutions to new problems. Innovation skills become more and more valuable as value chains evolve.

In short, research suggests that complex-problem-solving skills are at the heart of the power of human capital and policies should be put in place to ensure that the education system contributes to fostering this component of human capital.



**Peer Ederer**  
Honorary professor for  
Human Capital, Growth  
and Innovation, Zeppelin  
University,  
Speaker

## How schools are failing in territorial development?

**Christian Bodewig**, Program Leader for Inclusive Growth in EU Member States, Europe and Central Asia at the World Bank, examined the skills that prepare people to solve complex problems. He noted that educational achievement has risen worldwide during the past ten years, without translating into all the skills employers seek. In many cases, research suggests that the education system is reinforcing socio-economic constraints rather than improving educational attainment and upward mobility.

His analysis classified skills as:

- Socio-emotional: the so-called big five personality traits are openness to experience, conscientiousness, extraversion, agreeableness and neuroticism. This classification also includes behaviours and attitudes, such as mindset and the ability to set and achieve goals;
- Cognitive: including mathematics, reading, problem solving and intelligence;
- Technical: job-specific skills such as economic analysis and carpentry.

Socio-emotional training starts almost from birth. Most cognitive skills are acquired by the end of formal schooling, usually secondary school. Technical skills are acquired later in life, largely on the job.

The ability to acquire technical skills depends on the level of cognitive and socio-emotional skills which build resilience to changes in the labour market, helping to reorient careers and working life. As the half-life of technical skills gets shorter, their importance grows.

Therefore, socio-emotional and basic cognitive skills represent the general foundation on top of which individuals can build their own path to technical skills. The policy implications of this analysis are that basic education should be regarded as a national or even European priority in order to safeguard the equality of opportunities in society, whereas strategies for the development of technical skills are better designed at the local level, based on the different set of opportunities and characteristics that characterise different regions.

From the viewpoint of territorial development, what we want to see is that children leave the educational system with strong cognitive skills, and that they can acquire these skills wherever they live.

The World Bank assessed the literacy and numeracy levels of 15-year-olds using PISA (Programme for International

Student Assessment) analysis. In Bulgaria, 40 % fell into the bottom level of PISA, which signifies functional illiteracy and innumeracy. In France, the figure was 20 %. Comparing the performance of the top and bottom quintiles of students, researchers found an achievement gap in Slovakia equivalent to four years of schooling. A gap was also found between urban and rural areas in Spain.

This leads to the conclusion, according to Christian Bodewig, that 'education systems for much of Europe are not acting as an engine for social mobility ... meaning that if you come from a poor background, that translates into poor performance'.

This is largely due to the selection of students along what amounts to social background. Poor children perform poorly, get sent to vocational schools with limiting career prospects, and spend time with other poor children. Rich children go to *gymnasia*<sup>3</sup>, are surrounded by other rich children, and get the sort of education that improves their cognitive skills until the start of adulthood.

We have good tools to measure cognitive skills, such as the OECD's PISA test. Work is being done on capturing higher-level cognitive skills, such as complex problem solving. One constraint is that not every country allows access to large enough sample sizes to make it possible to compare results across regions.

With socio-emotional skills and behaviour, 'it's very challenging to measure these skills. There is increasing conceptual clarity across the dimensions of socio-economic skills and the instruments are getting better.' For its part, the World Bank has embedded a socio-emotional skills test within a literacy exam, and is adjusting the approach. Research is being done by the World Bank and others on how to embed the formation of these skills into the education system.

On the demand side, the World Bank is working on an enterprise survey into the regional demand for skills, which has proved useful in field research and has served as a starting point to engage stakeholders in an evidence-based discussion on skills needs.



*'There is increasing conceptual clarity across the dimensions of socio-economic skills and the instruments are getting better.'*

**Christian Bodewig**  
Program Leader for  
Inclusive Growth in EU  
Member States, Europe and  
Central Asia, World Bank,  
Speaker

<sup>3</sup>: In various European countries: a top-grade secondary school which prepares pupils for university.



## Panel 3 **People and institutions in territorial innovation systems**

### **Panel 3 in brief:** *Quadruple helix, new technologies, success stories, tackling societal challenges*

*Research supports the idea that innovation is linked to the strength of relationships among individuals embedded in a 'quadruple helix' structure that includes universities, businesses, civil society and the public sector. Trust aids innovation, especially when founded on long-standing relationships and structures.*

*Lapland's rebranding as the centre of Arctic technology, transportation and cold testing shows how local authorities can take a good idea, promote it and usher in a new era of prosperity. But local authorities do not always provide strong leadership on human capital. Whatever the state of national debate on migration, they should signal the region welcomes diversity. Institutions do play a strong part in territorial growth. However, grafting new on to old technology industries ignores the fact that the two are very different.*

### **Individuals and institutions as pillars of territorial growth**

Human capital and institutions are important to territorial development because geography matters in the innovation process, said **John Goddard**, Emeritus Professor of Regional Development Studies at Newcastle University. This is evident from the huge differences in innovative capacity found among European regions.

Research shows innovative capacity is linked to networks of relationships between producers and users in complex systems of co-production. These relationships are embedded within formal institutions – a 'quadruple helix' of universities, businesses, civil society and the public sector.

Regions where these networks, or 'ecosystems', are strong tend to have plenty of innovation. Institutionally thin regions, where the relationship networks are weak,



**John Goddard**  
Emeritus Professor of  
Regional Development  
Studies at Newcastle  
University,  
Speaker

are important to territorial growth in the sense that they might have much unlocked potential. If a way can be found to improve their networks, they might soon be able to innovate and grow.

The complex relationships involved in innovation suggest that rather than people and institutions each being important on their own to territorial growth, it is institutional capacity that is vital to innovation, Mr Goddard said.

Regional success in innovation may be explained by what **Hans-Werner Franz**, Managing Director at the European School of Social Innovation, calls the Dortmund consensus, a reference to the German city that has dug itself out of a period of industrial and economic decline to become the only Ruhr city that is growing. Dortmund has a long history of co-determination built on a relationship that grew in its economic heyday of coal, steel and beer production.

The relationships operating when the city enjoyed industrial prosperity filtered into society to create a culture based on trust. Everyone was invited to participate in discussions on an issue, after which all citizens would support the consensus decision and implement it.

## Why civil society should be included in policy

According to Mr Franz, civil society should be brought into the triple helix model because innovation must respond to the demands and needs of people. 'You need to find out people's needs and the only way to do that is to ask them,' he continued.

Science is seeing a movement away from the strictly linear scientific model to involving citizens in the process of innovation, explained Mr Goddard. Ordinary consumers are being invited to contribute their ideas, giving rise to the term 'citizen science'.

**Hans Werner Franz**  
Managing Director,  
European School  
of Social Innovation,  
Speaker



## Success stories: Lapland's development strategy and innovation labs in Spain

Regional authorities should be given credit for Lapland's economic revival, said **Kristiina Jokelainen**, a senior advisor at the Regional Council of Lapland.

They were the drivers of a tourism initiative declaring the city of Rovaniemi to be the official home of Santa Claus and advertising Santa Village as a must-see destination. Lapland's development strategy is based on branding itself as the centre of an Arctic economy, with facilities for cold testing tyres and studs, and as an Arctic research centre, a transportation and logistics hub.

Spain has had three 'Marshall Plans' for territorial growth during the past 20 years with little success in creating territorial innovation systems, said **Artur Serra**, Deputy Director of i2cat Foundation in Barcelona.

Barcelona has seen an explosion of labs (fab labs, living labs, etc.) that are accessible to almost everyone with a good idea. This has led to innovation on a scale not previously attained by the traditional laboratory analysis model at universities.



**Kristiina Jokelainen**  
Senior advisor, Regional  
Council of Lapland,  
Speaker

*'We also need to integrate natives into innovation systems. One of the key lessons of Brexit is that natives aren't integrated into our innovation system. The kinds of systems we have are the traditional aristocratic, 18<sup>th</sup> Century innovation systems. A very small minority of the population has confidence in innovation.'*



**Artur Serra**  
Deputy Director of i2cat  
Foundation, Barcelona,  
Speaker

## Tackling big societal challenges: immigration

‘Migration is too often framed as a problem to be tackled by national level institutions’, said **Cécile Riallant**, Head of the UN Joint Migration and Development Initiative at the United Nations Development Programme.

‘Yet cities and local authorities are the front-liners to respond to challenges and opportunities brought by migration. This includes giving a voice to migrants who often cannot vote in elections’.

‘Immigrants often contribute substantially to productivity and local growth, while young heirs to family businesses have no interest in running the firms’, Mr Franz said. ‘Foundations are a way to facilitate transfer of ownership of family businesses whereby the heirs would show no interest in getting involved.’

‘We also need to integrate natives into innovation systems,’ explained Mr Serra. ‘One of the key lessons of Brexit is that natives aren’t integrated into our innovation system. The kinds of systems we have are the traditional aristocratic, 18<sup>th</sup> century innovation systems. A very small minority of the population has confidence in innovation.’

*‘It’s very important for cities and local authorities to reach out to migrants, to bring them in. This also means giving them a voice in a context where in most cases they cannot vote.’*

**Cécile Riallant**  
Head of the Programme  
Management Unit,  
Joint Migration and  
Development Initiative,  
United Nations  
Development Programme,  
Speaker



**John Edwards**  
European Commission  
Joint Research Centre,  
Growth and Innovation,  
Territorial Development,  
Moderator



## Institutions best suited to drive regional innovation

‘Academics need to be convinced that as citizens they have a duty to use their knowledge to find solutions to the local manifestations of grand challenges’, said Mr Goddard. According to Mr Serra, a new set of structures, independent of universities, laboratories or other institutions that were part of the old system, will be needed to represent the emerging hubs of innovation.

‘The problem we have in Europe is that we use the new to support the old,’ he said. ‘New technologies are not old industrial technologies plus. They are new technologies. They are new industries. They are new institutions. New social structures are emerging but they are not the classical ones. The city labs, fab labs –these are new structures.’

The city of Barcelona has created an innovation officer role just to support this new collective intelligence. ‘Policy-makers and academics must understand that grafting new technologies on to the old will mean that Europe is left behind for the next ten decades,’ Mr Serra continued.



**Gabriel Rissola**  
European Commission  
Joint Research Centre,  
Growth and Innovation,  
Territorial Development,  
Rapporteur



## Panel 4 **Tomorrow's cities and innovation in tackling social challenges**

### **Panel 4 in brief:** *City foresight, collaborative economy, engaging youth, inclusion of refugees*

*Europe's future cities are places of increasingly nomadic existence. Younger generations are likely to live in cities longer, to postpone having a family, share rental accommodation and work anywhere they can plug in their computers. In turn, they demand more and better public spaces. Foresight provides support for policy-makers to engage with citizens from various social strata in developing a future vision for the city they live in. A German NGO has proven cities to be enablers, by winning the backing of policy-makers, universities, corporations and public bodies to give refugees a chance to get an education while waiting for decisions on their asylum cases.*

*Beirut's struggle to cope in the absence of effective national governance has driven young people to actively engage in finding solutions, while Amsterdam's sharing economy offers a bottom-up approach to mobilising human capital, building communities, and contributing to sustainable living.*

### **Shaping the city of tomorrow**

Cities of the future will be home to an increasing percentage of the global population, play an even larger role as centres of work and innovation, and face more complex problems in managing human capital, said **Nick Dunn**, Executive Director of ImaginationLancaster and Professor of Urban Design at Lancaster University.

Mr Dunn and his colleagues studied visions of future cities dreamt up by architects, artists and designers over the past decades, in a project commissioned by the UK government. The study contributed to 'city foresight', an approach that uses scientific evidence and futures analysis to address the complex issues cities are likely to face and provide strategic options. It includes a toolkit for local policy-makers that describes foresight methods and offers practical advice on how to implement a foresight process with participants from the various



**Alice Szczepanikova**  
European Commission  
Joint Research Centre,  
Foresight, Behavioural  
Insight and Design policy,  
Moderator

strata of society. Visioning, analysing, designing, testing and delivering activities help to guide city planning. For example, a dozen UK cities have used city foresight to transform their visions for the future.

Research into past visions of tomorrow's cities was marked by two prominent paradigms: the technology driven and the innovative, which are not mutually exclusive, although one or the other dominates. Mr Dunn cited a proposal for Paris in the wake of the Paris climate change agreement. The plan includes eight multiple-use structures with positive energy output, the classic smart city focusing on reducing greenhouse gas. 'What we are far less sure about with these kinds of cities is what we might have in technological lock-in ... What kind of limits to our growth, and what kind of limits to our human capital, do they provoke?' he asked.

With three-quarters of its population already living in urban areas, Europe is unlikely to see the creation of many new cities. In a sense, the structure of future cities is already here and what matters now is how we respond to the needs of its inhabitants.

A salient societal trend that is likely to be more pronounced in tomorrow's cities is that 'socially and spatially, we are more dispersed, more individualised than ever before, which is largely a 'reaction to the lifestyles of the latter part of the 20<sup>th</sup> Century and the economic and environmental realities of the 21<sup>st</sup> Century', said Mr Dunn.

Today's younger generation and those of the future are likely to stay in cities for longer periods of their lives as they either choose not to have a family or delay having one, and forego access to first-tier suburbs or the countryside.

'This suggests their lives are, for want of a better word, more "downloadable". They are more nomadic, they are plugging into different workplaces, they are detached, more distinct, more individualised ... forced into situations of shared housing,' continued Mr Dunn.

Conversely, members of this generation expect cities to be 'more uploadable'. They demand more and better-equipped public spaces, e.g. public transport running later into the night.

Future cities will face complex human capital challenges. The key points include:

- Health services will be under more strain as the incidence of respiratory conditions, depression, cancer, obesity, diabetes, cardiovascular and other non-communicable diseases increases, partly because of urban lifestyles.
- A dramatic demographic change is on the horizon. In the UK, there will be 19 million people aged 60 or over by 2050, and 9 million over the age of 80 in 30 years compared with 3 million today. Eurostat predicts the UK's population will rise to 77 million by 2050 from 65 million now. People over 50 already control 80 % of the wealth and demand to be heard, as shown in the Brexit referendum where they turned out at polling stations in far greater numbers than millennials.
- New jobs are more flexible, but may lead to more precarious financial conditions. Inequality will continue to rise.
- Climate change leading to pollution, rising sea levels and extreme weather conditions that interfere with construction, energy supply, water availability and human health.
- Over the next 15 to 20 years, worldwide, we will, for example, see a 30 % rise in demand for water, 40 % for energy and 50 % for food.

The idea that civil society should have a greater say in policy is gaining currency but how do we solicit opinion from a population of several million people? Digital communication is likely to lead to over-representation of those in their 20s to 40s.

Surveys indicate that urban dwellers' priorities clash with those of a low-carbon agenda: two-thirds want to travel more, have bigger homes, and enjoy lifestyles that are more carbon-intensive, which further complicates the outlook.

*'What we are far less sure about with these kinds of cities is what we might have in technological lock-in ... What kind of limits to our growth, and what kind of limits to our human capital, do they provoke?'*



*'This suggests their lives are, for want of a better word, more "downloadable". They are more nomadic, they are plugging into different workplaces, they are detached, more distinct, more individualised ... forced into situations of shared housing.'*

**Nick Dunn**  
Executive Director of  
ImaginationLancaster,  
Speaker

## Human capital formation in a policy vacuum: the case of Beirut

By 2030, it is projected that 30 % of the urban population worldwide will be under 18 years old, making young people fundamental to city dynamics. 'When we talk about cities of the future we must think about the role of youth in this dialogue,' said **Abbas Sbeity**, co-founder of the Architects for Change.

Beirut is a case study of the importance of how human capital in a major urban centre copes when governance breaks down. The Lebanese Architecture Club, which aims to train architects and involve them in designing tomorrow's cities, is part of the response.

Human capital formation becomes a monumental challenge in a city like Beirut. As a hub of education, Beirut attracts young people. While places like London and Cambridge, Massachusetts benefit from the intellectual aura and buzz of students lured by some of the world's finest educational institutes, Beirut counts the costs as students lured to the city increase road congestion and pollution, in the absence of public transport.

While young people consider education to be a right, only 28 % of Lebanese students go to public schools, indicating a lack of trust in the public education system.

Having completed university, graduates face a job market with an unemployment rate of 25-30 %. There are only 6000 jobs available for 23 000 university graduates each year.

Poor career prospects drive young people abroad to study or work. 'For those who stay behind in Lebanon, luckily we have strong entrepreneurship and good incubators', said Abbas Sbeity. Meanwhile, many businesses have adapted their products and services to the needs of the refugee population, estimated at 1.5 million people compared with a total indigenous population of 4 million. Members of the Architects for Change took part in designing a library for Syrian refugees.

*'When we talk about cities of the future we must think about the role of youth in this dialogue.'*

**Abbas Sbeity**  
Architects for Change,  
Speaker



## The collaborative economy in Amsterdam

Amsterdam became the first 'sharing city' in Europe and second in the world after Seoul. The declaration, supported by the city government, was instigated by shareNL, an independent agency for the collaborative (and sharing) economy.

In the Netherlands, the collaborative economy has grown rapidly to include more than 150 start-ups, social enterprises and other entities, said **Pieter van de Glind**, co-founder of ShareNL.

'When I look at the collaborative economy horizon, I like to think that it's like a pair of glasses, he continued. 'When I turn those glasses on I see a different city; I suddenly see all the hidden capacity we are not using at the moment. Everybody knows that cars are standing still 90 % of the time. There are also a lot of people who are isolated. So there's a lot of untapped potential.'

Examples of sharing initiatives include:

- A platform called Peerby which allows you to borrow the things you need from people in your neighborhood.
- Snappcar, the biggest peer-to-peer car sharing community in Europe.
- A platform for renting household items – a drill or saw for a rare bit of home DIY, for example – from neighbours within a 15-minute journey from one's home. The platform builds a sense of community among neighbours who might otherwise never have a reason to meet.
- MyWheels facilitates car sharing. Possible benefits include sustainability (by reducing the need to buy a car and thus for parking spaces) and mobility for people who might need a vehicle for work but cannot afford to buy one.
- ParkFlyRent enables people to drive to the airport and rather than incur parking charges while they are away, they can leave their cars with representatives of the rental initiative. Benefits include a portion of rental fees, no parking costs while away or cab fare to and from the airport, and less pressure on airport parking space.
- ShareYourMeal allows people to cook for neighbours who pay the cost of the ingredients.



*'When I look at the collaborative economy horizon, I like to think that it's like a pair of glasses. When I turn those glasses on I see a different city; I suddenly see all the hidden capacity we are not using at the moment.'*

**Pieter van de Glind**  
Co-founder of ShareNL,  
Speaker

More than 20 cities are considering Amsterdam's model of supporting the sharing economy, with a view to possibly following its lead, facilitated by the global 'Sharing City Alliance'.

Conference attendees who joined Mr van de Glind in the group session suggested that the JRC could contribute to monitoring the developments and impacts of the collaborative economy in the EU. It could also consider supporting the development and sharing of best practices on the collaborative economy to facilitate reaping the benefits, while removing hazards and preventing fraud.

## How Berlin enabled refugees to develop their human capital

Over the past few years, an influx of refugees has given many European cities a human capital quandary. Only 1 % of the world's refugees, half of them under 18, have access to schooling as they wait for up to several years for a decision on their asylum claims.

Guided by the principle of 'no more time, potential, or lives wasted', Kiron, a German NGO, tried to find ways to remove the four main obstacles blocking refugees' access to higher education. Although it is too early to judge the initiative's impact, 4300 refugees have accessed Kiron's platforms and 1500 have enrolled.

The NGO attributes its success in part to the role of cities as enablers, according to **Sanja Sontor**, Head of International Academics at Kiron. 'In Kiron's case, the enabler was Berlin, which has an excellent funding 'ecosystem' due to the presence of many start-up companies, especially in technology, policy-makers who can champion projects and sway opinion, big corporations with funds to donate to charities, and volunteers', Ms Sontor explained.

The major obstacles and Kiron's solutions were:

- Obstacle: lack of money as refugees arrive with none of the assets they may have once possessed

Solution: Kiron University is free of charge for refugees who may get additional support from donations.

- Obstacle: lack of access to documents proving previous schooling, transcripts, etc.

Solution: No documents, transcripts or recommendations are required by Kiron.

- Obstacle: limited number of places for students on campuses

Solution: Virtual learning has no limits, with Kiron has managed to persuade corporations and public bodies to donate computers and offer space and internet access.

- Obstacle: language requirement as a precondition for university enrolment

- Solution: Kiron helps refugees learn languages, particularly those of their destination country and does not have a language requirement itself.

Kiron can offer free tuition as it relies on Massive Open Online Courses (MOOCs), which are free, although fees are levied for those who want certificates. Kiron has persuaded some MOOC providers to donate certificates.

MOOCs are not normally designed to yield credits towards a diploma or degree. Kiron has stitched various MOOC classes together to form two-year *curricula* leading to qualifications in business and economics, engineering, computer science and social science.

Once they get the qualification, the students can apply to Kiron's 23 partner universities which have recognised Kiron University's programmes as fulfilling admission requirements.

'We like to call this "from camp to campus". We are transforming refugees to become our students,' said Ms Sontor.

This panel worked in four discussion groups with the objective to facilitate a higher interaction of the participants and more in-depth discussion on the issues at stake.

*'When we talk about cities of the future we must think about the role of youth in this dialogue.'*

**Sanja Sontor**  
Head of International Academics, Kiron Open Higher Education, Speaker



**Anne-Katrin Bock**  
European Commission Joint Research Centre, Foresight, Behavioural Insight and Design policy, Rapporteur





## The way forward

During the final session of the conference, focusing on how science can contribute to reinforcing the role of human capital in territorial growth, the speakers presented the issue from different perspectives. **Luc Soete** focused on the role of science and innovation for territorial growth and highlighted the importance of cities as laboratories for experimenting policies and regulations in a participative way before extending them to other cities, regions and Member States. **Klaus F. Zimmermann**, Co-Director of POP (Center for Population, Development and Labour Economics) at United Nations University - Maastricht Economic and Social Research Institute on Innovation and Technology (UNU-MERIT), and **Anna Terrón Cusí**, President of InStrategies, discussed the role of regions and cities when tackling such challenges as migration and marginalisation. **André Sobczak**, Vice-President of Nantes Métropole and representative at the Eurocities Presidency explained the importance at city level of the role of science to bring evidence for policy-making in cities, while **Joseph Cacciottolo**, Pro-Rector for Academic Affairs, University of Malta, highlighted the need for more collaboration between universities and other stakeholders in cities and regions.

There was consensus among the speakers on the current and future role of the Joint Research Centre in providing reliable and independent evidence in the design of policies addressing pressing societal challenges. Institutions, together with scientists, business sectors and citizens should engage in a more participatory development of the regions or cities where they are based.

In this respect, there was consensus on the potential role of cities as a laboratory to experiment, pilot, prototype and scale-up evidence-based and participatory policy design and impact assessments towards more resilient, fair and competitive societies.

In this process, said **Vladimír Šucha**, human capital needs to be recognised as a societal asset requiring investments to be maintained and developed, rather than as an intermediate cost, if we wish to ensure that local and global policy makers treat it as a development opportunity and not as fiscal burden. We need to acknowledge the multi-dimensional nature of human capital and to improve the way in which we measure its development and how it contributes to regional and urban growth. We should better focus on how to efficiently overcome the mismatch between demand and supply of competences and skills locally. The economic crisis has destroyed a large number of jobs that we are struggling to recreate in a changed world. Science and decision-makers in the private and public sectors and at all level of governance should think together about the future of jobs and how to have, for example, universities collaborating more closely with the cities and regions in which they are located.

The conference recognised the importance of the newly launched Knowledge Centre for Territorial Policy as a virtual entity that, in a short period of time, should become the reference for policy-makers, scientists and other stakeholders on data, policy analyses, methods and tools for EU cities, macro-regions and regions.

**Vladimír Šucha**  
Director-General,  
European Commission  
Joint Research Centre,  
Moderator



**Anna Terrón Cusí**  
President of Instrategies,  
Speaker



**Luc Soete**  
Rector Magnificus,  
University of Maastricht,  
Speaker



**André Sobczak**  
Vice-President of Nantes  
Métropole,  
Speaker



**Klaus Zimmerman**  
Co-Director of POP  
(Center for Population,  
Development and Labour  
Economics)  
at UNU-MERIT,  
Speaker



**Joseph Cacciottolo**  
Pro-Rector for Academic  
Affairs, University of Malta,  
Speaker



## List of speakers

### Opening session and launch of the Knowledge Centre for Territorial Policies

**Vladimír Šucha:** Director-General, European Commission Joint Research Centre, Speaker

**Markku Markkula:** President of the European Committee of the Regions, Speaker

**Marc Lemaître:** Director-General, European Commission, Directorate General for Regional and Urban Policy, Speaker

**Michel Servoz:** Director-General, European Commission Directorate General for Employment, Social Affairs and Inclusion, Speaker

**Jens Nymand Christensen:** Deputy Director-General, European Commission, Directorate General for Education, Youth, Sport and Culture, Speaker

### Keynote speeches

**Enrico Giovannini:** Professor at the University of Rome 'Tor Vergata', Keynote speaker

**Álvaro Santos Pereira:** Director of the Country Studies Branch of the Organisation for Economic Co-operation and Development (OECD), Economics Department, Keynote speaker

### Launch of Knowledge Centre for Territorial Policies and outline of the C3 Monitor

**Charlina Vitcheva:** Deputy Director-General, European Commission Joint Research Centre, Speaker and Moderator

**Eric von Breska:** Director for Policy, Directorate-General for Regional and Urban Policy, Speaker

**John Bensted-Smith:** Director for Growth and Innovation, European Commission Joint Research Centre, Speaker

**Sven Langedijk:** Head of Competences, Modelling, Indicators and Impact Evaluation Unit, European Commission, Joint Research Centre, Speaker

### Panel 1: The local needs of human capital

**Federico Biagi:** European Commission Joint Research Centre, Growth and Innovation, Human Capital and Employment, Moderator

**Olga Strietska-Ilina:** International Labour Organisation, Speaker

**Andrea Bonaccorsi:** Professor of Economics and Management, School of Engineering University of Pisa, Speaker

**Ebrahim Mohamed:** Director of Education Climate-KIC, European Institute of Innovation and Technology, Speaker

**Giorgio di Pietro:** University of Westminster Business School, Speaker

**Ralph Hippe:** European Commission Joint Research Centre, Growth and Innovation, Human Capital and Employment, Rapporteur

### Panel 2: How to measure human capital

**Francesco di Comite:** European Commission Joint Research Centre, Growth and Innovation, Territorial Development, Moderator

**Vassilis Monastiriotis:** Associate Professor of Political Economy, European Institute, London School of Economics and Political Science, Speaker

**Peer Ederer:** Honorarprofessor for Human Capital, Growth and Innovation, Zeppelin University, Speaker

**Christian Bodewig:** Program Leader for Inclusive Growth in EU Member States, Europe and Central Asia, World Bank, Speaker

**Ekaterina Travkina:** Organisation for Economic Co-operation and Development (OECD) Local Economic and Employment Development Forum on Partnerships and Local Development, Rapporteur

### Panel 3 – People and institutions in territorial innovation systems

**John Edwards:** European Commission Joint Research Centre, Growth and Innovation, Territorial Development, Moderator

**John Goddard:** Emeritus Professor of Regional Development Studies at Newcastle University, Speaker

**Hans Werner Franz:** Managing Director, European School of Social Innovation, Speaker

**Artur Serra:** Deputy Director of i2cat Foundation, Barcelona, Speaker

**Cécile Riallant:** Head of the Programme Management Unit, Joint Migration and Development Initiative, United Nations Development Programme, Speaker

**Kristiina Jokelainen:** senior advisor, Regional Council of Lapland, Speaker

**Gabriel Rissola:** European Commission Joint Research Centre, Growth and Innovation, Territorial Development, Rapporteur

### Panel 4 – Tomorrow's cities and innovation in tackling social challenges

**Alice Szczepanikova:** European Commission Joint Research Centre, Foresight, Behavioural Insight and Design policy, Moderator

**Nick Dunn:** Executive Director of ImaginationLancaster, Speaker

**Pieter van de Glind:** Co-founder of ShareNL, Speaker

**Abbas Sbeity:** Lebanese Architecture Club, Speaker

**Sanja Sontor:** Head of International Academics, Kiron Open Higher Education, Speaker

**Anne-Katrin Bock:** European Commission Joint Research Centre, Foresight, Behavioural Insight and Design policy, Rapporteur

### The way forward

**Vladimír Šucha:** Director-General, European Commission Joint Research Centre, Moderator

**Luc Soete:** Rector Magnificus, University of Maastricht, Speaker

**Klaus Zimmerman:** Co-Director of POP (Center for Population, Development and Labour Economics) at UNU-MERIT, Speaker

**Anna Terrón Cusí:** President of InStrategies, Speaker

**André Sobczak:** Vice-President of Nantes Métropole, Speaker

**Joseph Cacciottolo:** Pro-Rector for Academic Affairs, University of Malta, Speaker

## Useful tools

JRC Science Hub – <https://ec.europa.eu/jrc/en>  
JRC Annual Conference 2016  
<https://ec.europa.eu/jrc/en/revent/conference/annual-conference-2016>  
JRC News headline: New platform for better management of knowledge and data for territorial policies  
<https://ec.europa.eu/jrc/en/news/new-platform-better-management-knowledge-and-data-territorial-policies>

### Panel 1

Digital Skills and Jobs Coalition  
<https://ec.europa.eu/digital-single-market/en/digital-skills-jobs-coalition>  
International Labour Organization (ILO)  
<http://ilo.org/global/about-the-ilo/lang--en/index.htm>

### Panel 2

Knowledge Centre for Territorial Policies  
<https://ec.europa.eu/jrc/en/territorial-policies>  
RHOMOLO web simulation tool  
<http://rhomolo.jrc.ec.europa.eu/>  
Life-Long Learning, Innovation, Growth and Human capital Tracks <http://www.llightineurope.com/>

### Panel 3

Higher Education for Smart Specialization (HESS)  
<http://s3platform.jrc.ec.europa.eu/hess>  
Catalonia Higher Education for Smart Specialisation  
<http://s3platform.jrc.ec.europa.eu/documents/20182/154989/Universities+and+RIS3+--+the+case+of+Catalonia+and+the+RIS3CAT+Communities/50e790a3-25a4-4b4c-9f00-f2219fb14927>  
Lapland Higher Education for Smart Specialisation  
[http://s3platform.jrc.ec.europa.eu/documents/20182/90403/Lapland\\_background\\_document\\_final.pdf/b951fbbc-c17f-4b41-8df0-380463213e50](http://s3platform.jrc.ec.europa.eu/documents/20182/90403/Lapland_background_document_final.pdf/b951fbbc-c17f-4b41-8df0-380463213e50)  
Centre for Urban and Regional Development Studies (CURDS)  
<http://www.ncl.ac.uk/curds/>  
European School of Social Innovation (ESSI)  
[www.essi-net.eu](http://www.essi-net.eu)  
European Network of Living Labs (ENoLL)  
<http://openlivinglabs.eu>  
UN Joint Migration and Development Initiative (M4D)  
[www.migration4development.org](http://www.migration4development.org)

### Panel 4

EU Policy Lab, *Tomorrow's cities: innovative approaches to tackling social challenges*, Blog post with short video interviews with the panellists  
[blogs.ec.europa.eu/eupolicylab/tomorrows-cities](https://blogs.ec.europa.eu/eupolicylab/tomorrows-cities)  
Kiron Open Higher Education – World-Class Education for Refugees – <https://kiron.ngo/>  
shareNL – an independent agency for the collaborative (and sharing) economy – [www.shareNL.nl](http://www.shareNL.nl) – Initiators of Amsterdam Sharing City, and the Sharing City Alliance – [www.sharingcityalliance.com](http://www.sharingcityalliance.com)  
Architects for Change – [www.architectsforchange.org](http://www.architectsforchange.org)

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## Human capital for territorial growth - JRC Annual Conference Proceedings 2016

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### Abstract

*The JRC Annual Conference Proceedings report sums up the JRC Annual Conference 2016 which focused on the importance of human capital for the prosperity of regions and cities. The conference took place on 11 October 2016, at the Bozar in Brussels, within the framework of the European Week of Regions and Cities. Around 400 participants representing different academic fields, regions, cities, business and international organisations participated. During the conference, the European Commission's Knowledge Centre for Territorial Policies was launched.*

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