



New Initiatives for Growth

Policy Brief by the Research, Innovation, and Science
Policy Experts (RISE)

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JUNCKER'S AGENDA FOR JOBS, GROWTH, FAIRNESS AND DEMOCRACY

In his Opening Statement on June 27, 2014 Jean-Paul Juncker presented his political guidelines for the next European Commission under the title «A New Start for Europe: My Agenda for Jobs, Growth, Fairness and Democratic Change». In his speech he underlined that «*My number one priority and the connecting thread running through each and every proposal will be getting Europe growing again and getting people back to work*». To this end Juncker presented his Investment Plan focussing on removing obstacles to investment, providing visibility and technical assistance to investment projects and making smarter use of new and existing financial resources. The plan is active in three areas: Mobilising investments of at least €315 billion in three years, supporting investment in the real economy and creating an investment friendly environment. However, foresight and innovation debates worldwide question if in the future jobs will be secured and created the same way as in the past. There are new patterns emerging of how knowledge and innovation are creating new opportunities for investments in value networks, and what implications this raises for jobs and work. This change process takes place in a global context where the scarcity of resources, concerns about climate change and environmental damage, but also new types of challenges to security pose new limits to traditional growth concepts. Even the concept of sustainable development, integrating economic, ecological as well as societal interests in a comprehensive approach, is losing momentum and has been challenged as a solid basis for decision making.

Against this background, this paper shall serve as starting point to identify challenges ahead as well as concepts able to support decision making by the EC with regards to rethinking innovation and growth – and as a consequence also of research and education.

HOW MAY THE FUTURE ENVIRONMENT OF THE KNOWLEDGE TRIANGLE LOOK LIKE?

A new innovation debate has been triggered by the financial crisis of 2008. Throughout Europe political strategies expected research and innovation to pave the way for economic growth. According to international foresight projects the following trends will be relevant already for the near future of Europe – and particularly for the Knowledge Triangle of research, innovation and education:

Acceleration of Technological Change

The future of research and innovation will be data driven. We are facing an explosive growth of data, authors and publication platforms. Every two years as much information is produced as in history until now. Moreover, already today 11% of the world scientific output is published as open source. At the same time, systems of collective intelligence are emerging from global collaboration of individuals and groups.

We are at the beginning of a profound change in the way the Knowledge Triangle works.

The new way of doing things will be based on the fusion of virtual and real production worlds. Desktop, digital factories with 3D-printers and 3D-scanners, lasers, robots and online-sharing over the World Wide Web will create global innovation communities. In fact, it will not be the ownership anymore, but the access to the means of production that will count and web-based platforms will serve as intermediaries. Global supply chains will be open for everyone and a de-centralized management of the best people available worldwide will become possible. As a consequence, there will be less economies of scale, and variety will become possible without additional costs. Transaction costs will be reduced by new technologies and by the web, thus replacing proximity as a formerly important management tool. As a consequence, new jobs will be created in the fields of green and smart technologies as well as in the world of IT-based services. At the same time advanced automation regarding production as well as services will destroy jobs. Moreover, the promises behind technological change can only be reaped if the competencies of individuals, the organizational models and the institutional framings keep pace with these developments. Technological change offers new opportunities to create jobs and to assure the wealth needed to maintain the level of social and economic development achieved. This, however, requires preparatory measures to be taken in education, public and private sector organization, and regulation/policy.

If we don't act swiftly, we run the risk of missing the opportunities ahead, and will face the risk of structural unemployment at a large scale – in Europe and beyond.

Globalisation

Based on new technologies, business may expand globally from day one. Moreover, globalisation will not only mean global mobility and connectivity of people, goods and services but at the same time also the vanishing of borders in many senses of the word. State borders, institutional borders, as well as borders between public and private systems will become less important already in the near future. As a consequence of these developments, intellectual property rights will lose their importance. Facing these perspectives we will have to develop economic «value ecosystems» replacing former value chains as well as rules and regulations i.e. for taxation based on transactions rather than on income, property and products.

Globalisation will lead to an atomisation of traditional space-based borders and corresponding structures and institutions.

Urbanisation

The rapid urbanisation of the world's population over the twentieth century has been described in the 2005 Revision of the UN World Urbanization Prospects report. The global proportion of urban population rose dramatically from 13% (220 million) in 1900, to 29% (732 million) in 1950, to 49% (3.2 billion) in 2005. The same report projected that the figure is likely to rise to 60% (4.9 billion) by 2030. Urbanisation processes will lead to megacities offering particular challenges as well as opportunities. Mega-cities will depend on sustainable infrastructures and goods. At the same time they offer a larger variety of services. Supporting the provision of these services requires workers, resulting in more numerous and varied job opportunities. Elderly individuals may be forced to move to cities where there are doctors and hospitals. Varied and high quality educational opportunities are another factor in urban migration.

Large cities will become competing innovation hubs requiring smart specialization based on particular traditions and strengths.

New Actors and New Lifestyles

At the same time the Knowledge Triangle will be confronted with new actors. Private enterprises, foundations, but also individuals with new lifestyles and values will impact not only the way research and education is developing but also how innovation is implemented. Purpose driven research will be strengthened by increasing corporate investments as well as philanthropic funding for research and higher education. Established institutions, such as universities, will need to re-define their role in this changing context. Thus, new ways of public-private partnerships with appropriate governance structures will have to be developed in order to successfully cooperate at the interface of the private and the public sector. At the same time public funding will have to assure the prospects of frontier research and the access to knowledge infrastructures.

Contributions of new actors may allow for better solutions for grand challenges.

POLICY CHALLENGES AND RESOLUTIONS

Various concepts for future developments have been proposed over the past thirty years. Among these concepts «sustainability» has been the most important and influential approach. However, it seems too limited and vague in view of the emerging trends and challenges, and it is thus losing momentum. Against the background of the objectives of jobs and growth led out by the Juncker-Agenda and in view of the fast changing context described above, we are in need of new concepts and policies for socio-economic development in Europe.

Traditional strategies for growth and jobs in terms of the industrial age of «metals and concrete» will not be successful anymore.

The following table summarizes trends, effects and impacts and identifies the policy challenges as well as possible resolutions related to them.

Trends	Effects	Impacts	Policy Resolutions	Challenges/
Acceleration of technological change	<ul style="list-style-type: none"> – Advanced automation – Loss of jobs/new jobs 	<ul style="list-style-type: none"> – Structural unemployment – Gap between the «fits and haves» <-> «less fits and haves not» 	<ul style="list-style-type: none"> – Ecosystems of innovation assuring conscious innovation – Concepts for re-skilling and 	

Urbanization	<ul style="list-style-type: none"> – Megacities – Resource needs – Concentration of innovation 	<ul style="list-style-type: none"> – Innovation hubs: Cities becoming living labs – Smart specialisation of regions based on particular strengths 	<ul style="list-style-type: none"> – augmented learning – Economic concepts addressing employment and IPR – New models for societal contributions and rewards in order to assure peaceful societies – Reframing the interface of public/private incl. regulations and governance issues – Reflexion on planetary boundaries – Retrofitting cities – Investments in integrated big data infrastructure
Globalization and vanishing borders	<ul style="list-style-type: none"> – Atomisation of structures and institutions – Reduced importance of IPR 	<ul style="list-style-type: none"> – Diversity <-> fragmentation – Value ecosystems – Transactional borders – Transaction based taxation 	
New actors with new values and new life styles	<ul style="list-style-type: none"> – Crowd sourcing, crowd funding – Private equity as political actors 	<ul style="list-style-type: none"> – Purpose driven research – Citizen's science – Collaborative research – Better solutions for Grand Challenges 	

Table 1: Trends, effects, impacts and policy challenges

RECOMMENDATIONS: FIVE INITIATIVES

Based on the reflections above we propose five initiatives to be further developed in 2015.

Big Data Initiative: We recommend investing in integrated big data infrastructure. This will support research, innovation, jobs and growth in the field of ICT and will prepare Europe for new business models in the private as well as in the public sector. At the same time the EC should strengthen its regulatory role regarding big data infrastructures and use.

Smart Cities Initiative: We recommend investing in retrofitting European cities. This will support research, innovation, jobs and growth in the field of ecofriendly «green» technologies and at the same contribute to increase Europe's energy security while reducing our ecological footprint. In addition, this can foster the development of ecosystems of smart innovation hubs. To this end, Europe can build on its important public sector and particularly on public procurement policies focussing on innovative solutions.

Smart Business Models Initiative: We recommend an initiative to improve the understanding of and conditions for alternative business models. Globalisation and digitalisation of economic activities gives rise to new architectures of innovation ecologies and value networks, with potentially serious consequences for the economic and social well-being of Europeans. In order to benefit from these emerging developments, the pursuit of new business models is going to be essential, with control over IP being essential to securing social returns in these globalised networks.

Science Diplomacy Initiative: International cooperation of the best researchers in the world will be essential to cope with global challenges and pooling resources will be needed to further develop expensive research infrastructures. Moreover, scientific collaboration can also help pave the way for cooperation in other important policy areas. Thus, Europe's science diplomacy will have to be strengthened.

New economic and societal concepts: We recommend investing in research in view of new economic and societal concepts reflecting on planetary boundaries and addressing long term (un-) employment issues as well as options of sharing economies. There is a need to better measure the social capital and contributions of individuals as well as societal benefits overall in an alternative framework beyond economic growth measured in GDP. The DG ENV and DG RTD Communication regarding circular economy (June 2014) may serve as starting point for such an endeavor.

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Technological developments, globalisation and urbanisation will soon pose fundamental questions regarding future perspectives and patterns for growth, jobs, innovation and education. The answers to these questions will depend on the constellations, values and lifestyles of newly emerging actors, and on the mechanisms governing their interactions. Against this backdrop, traditional approaches for creating growth and jobs, still rooted in the industrial age, are unlikely to provide the necessary orientation for future policy strategies, and will need to be replaced by novel concepts. Five concrete initiatives, illustrating such a new approach, are suggested in this policy brief for further development in the coming year: Big Data Initiative, Smart Cities Initiative, Smart Business Models Initiative, Science Diplomacy Initiative and New economic and societal concepts.

Studies and reports