

**DIRECTORATE FOR SCIENCE, TECHNOLOGY AND INNOVATION
COMMITTEE FOR SCIENTIFIC AND TECHNOLOGICAL POLICY**

Working Party on Innovation and Technology Policy

EXTENDED TERMS OF REFERENCE FOR THE CSTP/TIP PROJECT ON THE KNOWLEDGE TRIANGLE

**16-17 December 2014
OECD Conference Centre, 2 rue André Pascal, 75016 Paris**

Delegates will find attached an extended terms of reference of the CSTP/TIP activity on the knowledge triangle as part of the CSTP's PWB in 2015-16.

Delegates are invited to discuss and comment on the terms of reference of the various modules for the project including deliverables and proposed activities.

Delegates are also invited to indicate their interest in taking part in the joint CSTP/TIP expert groups for the project.

Contacts: Mario Cervantes (STI/CSO); e-mail: mario.cervantes@oecd.org; Isabel Vogler [isabel.vogler@oecd.org]; Caroline Paunov [caroline.paunov@oecd.org]; Richard Scott [richard.scott@oecd.org]; Giulia Ajmone Marsan [giulia.ajmone-marsan@oecd.org]

JT03367982

Complete document available on OLIS in its original format

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.



NOTE BY THE SECRETARIAT

This note presents the extended terms of reference for the CSTP/TIP activities on the Knowledge Triangle, which will be carried out jointly by the CSTP and the TIP in 2015-2016.

TIP Delegates are invited to:

- **discuss** and **approve** the terms of reference for the KT project, including the proposed timetable;
- **take note** of the proposed module on higher education and the knowledge triangle led by the CSTP; **and consider** merging it with the module on financing, co-operation and governance for practical purposes;
- **indicate interest** in joining (**by 15 January 2015**) the CSTP/TIP expert groups that will be attached to three modules as follows: higher education and governance; place-based policies for the KT; and evaluation and impact assessment;
- **indicate interest** in supporting the project by hosting workshops on the various modules or supporting case studies and empirical data analysis through voluntary contributions; and
- **identify potential partners** outside the OECD with whom collaboration should be sought.

EXTENDED TERMS OF REFERENCE FOR THE CSTP/TIP PROJECT ON THE KNOWLEDGE TRIANGLE

Background

1. The TIP will begin work on the knowledge triangle as part of its contribution to the CSTP's PWB 2015-2016. At its June 2014 meeting, the TIP held a brainstorming discussion on the knowledge triangle and the proposed terms of reference [DSTI/STP/TIP (2014)8]. The discussion revealed that the following issues were considered important by Delegates:

- the role of higher education in innovation, in particular the role of entrepreneurial education and researcher training policies;
- incentives for actors in the knowledge triangle, including for researchers;
- the autonomy of universities in global innovation systems;
- the role of government as both co-ordinator and actor;
- new channels for collaboration between university and society;
- the role of the business sector in local innovation eco-systems;
- incentives for institution to take on new roles and missions;
- policies to link the different functions of research, education and innovation.

2. The project will bring together the common themes from these suggestions. In terms of deliverables, Delegates suggested focusing on good practices. Although some Delegates suggested defining the knowledge triangle as a concept, there was general consensus not to belabour the definitional aspects and instead to take a more functional approach and focus on the policy challenges in the KT and good policy practices as solutions.

3. This document therefore presents the extended and revised terms of reference for the project. It also includes a proposed outline of the module on higher education and the knowledge triangle to be carried out by the CSTP in collaboration with TIP and other relevant bodies (e.g. NESTI, GSF).

Terms of reference for the overall project

4. The CSTP/TIP project on the knowledge triangle will examine factors that can enhance the capacity of education, research and innovation actors in the knowledge triangle to jointly tackle economic and social challenges such as health and ageing, industrial renewal and productivity growth, and sustainability. The project would draw on recent TIP work regarding the commercialisation of public research, open science, smart specialisation and public/private partnerships in STI and system innovation.

5. Some of the factors that can enhance the effectiveness of interactions in the knowledge triangle to address economic and social challenges include new approaches to the public and private funding of research, education and innovation; new modes of co-operation and knowledge sharing among the actors inside and outside the knowledge triangle; or new modes of co-production in innovation.

6. This project will take a modular approach and examine several dimensions of the KT and innovation system performance:

Module 1. Higher education institutions (HEIs) in the knowledge triangle (CSTP)

Overall goal of the module

7. The HEI module will examine the linkages between HEIs, innovation and research. It will aim to produce policy recommendations and best practices for improving the contribution of HEIs to innovation alongside their other missions and objectives. Recommendations will be aimed at both policy makers and HEIs themselves. The module will be conducted in collaboration with the OECD Programme on Institutional Management in Higher Education (IMHE), which is overseen by the Directorate for Education and Skills.

8. HEIs are central actors in the innovation system and in the concept of the knowledge triangle. Higher and postgraduate teaching trains the future scientific workforce, as well as instilling skills that allow graduates to innovate or become entrepreneurs. HEIs are also a highly important source of research activity, helping to generate and disseminate new knowledge on which innovation and external research builds. But in addition to these ‘core’ missions, HEIs have often become responsible for wider missions and activities. A particular policy issue is the role that HEIs have or should have in promoting innovation, and how this links with their education and research missions.

9. Improving our understanding of what drives innovation-related “third mission¹” activities (such as informal engagement with industry, support for entrepreneurship skills among students and researchers, start-up support, or community interaction), what the barriers are, and how related policies and practices affect other higher education objectives is one aim of the CSTP module. From the perspective of the knowledge triangle, the potential interaction or trade-offs between such activities of HEIs and teaching and research is highly important. For example, certain research grant models may encourage certain types of research or incentivise certain activities among researchers. The role of HEIs in innovation is likely to vary according to country-specific and cultural factors and the large degree of diversity among HEIs. Since wider trends in higher education – large increases in student numbers, new initiatives for quality assurance and modernisation etc. – may be affecting the role of HEIs in innovation, the project provides an opportunity to update our collective understanding and learn from different country and institutional experiences.

10. In addition, however, how education affects the other components of the knowledge triangle – e.g. how research systems in OECD economies can be strengthened by education and innovation– also falls within scope of the module.

11. Possible research questions for this module could include:

- How can policies encourage greater links between higher education and innovation? Does encouraging HEIs to undertake wider activities harm their teaching and research? What can be learned from past experiences in this area?
- Are more autonomous institutions more successful in establishing formal and informal linkages with industry and other organisations? What barriers do less autonomous HEIs face?

¹ The third mission commons refers to the mission of universities and higher education institutions to engage in innovation activities as distinct from the two other missions, education and research.

- How does higher education teaching adapt to advances in business R&D and innovation? What mechanisms are used in institutions to involve industry in the design of teaching programmes? What lessons can be drawn from existing or previous efforts?
- Which practices best prepare students and researchers for innovation or entrepreneurship? How can teaching methods such as problem-based learning (see Hoidn and Kärkkäinen, 2014), or specific entrepreneurial skills training be encouraged? What are the barriers to their future development?
- What strategies do HEIs use to link education, research and innovation activities? What lessons can be drawn from the experiences of “entrepreneurial universities”? Can a more entrepreneurial culture be encouraged through internal institutional practices?

Methodology for the CSTP module on HEI in the KT

12. The project will have two principle perspectives: (i) a focus on the national policies that affect the role of HEIs in the knowledge triangle; and (ii) a strand on the specific practices implemented by HEIs themselves. The following methods will be explored:

- Stock-take of existing data sources.* As a first step, the project could bring together existing data and information to shed greater light on the diversity of institutions and their innovation-relevant activities. A number of sources could help establish a more quantitative background on HEIs and the knowledge triangle, even though such analysis of such data is unlikely to lead to detailed policy recommendations by itself. Official OECD data on higher education R&D (HERD) and higher education researchers, as well as related analyses, could be used alongside external data sources. Institution-level databases could be used to summarise the characteristics of HEIs in different countries. Some countries publish detailed budgetary information, such institutional R&D by source of funds or licensing income, and sometimes also research outputs. The project will explore the potential to link such institutional data with other information as a basis for more in-depth data analysis, though the possibilities may be limited. Other data sources that may help understand current context and practices include: graduate surveys (that could be used to understand the link between HEI practices and graduate occupation or innovation); higher education interaction surveys (e.g. the HE-BCI survey in the United Kingdom) that show how HEIs informally co-operate with other actors in the innovation system; and time-use surveys of researchers.
- Analysis of national policies.* The aim would be to better understand the national policy landscape and what initiatives exist in different countries to strengthen the linkages between education, research and innovation. The project could initially draw from existing sources to identify relevant country initiatives (whether financial, legal, or organisational), e.g. from the STI e-Outlook. The Education GPS (<http://gpseducation.oecd.org/>) may provide similar information from outside the typical CSTP/TIP audience. An initial step could outline the context of higher education in different countries (e.g. institutional autonomy), but it would be important to explore country experience with specific types of initiative in more detail. To go further, it may be possible to work with volunteer countries to better summarise experience with existing policies, or to gain several perspectives on the current strengths and weaknesses in the existing higher education and innovation policy landscape.
- Learning from institutional experience.* Case studies of HEIs could provide more detailed information about the effect of institutional practices on HEI involvement in innovation. In doing so, it is important to identify what not been covered in other exercises (e.g. in the context of

university-industry collaboration or entrepreneurial universities). The strategies to manage the interactions/trade-offs between different HEI missions could be one focus, alongside more specific questions such as industry involvement in teaching. Given the diversity among HEIs, it would be beneficial to draw such analysis from different types of institution, and potentially not necessarily those identified as best performers. Another option would be to undertake a survey of a small set of institutions in volunteer countries. Though not representative, such an exercise could shed further light on if and how HEIs in different contexts organise themselves to support different missions and what incentives they face from national policies. The collaboration between CSTP/TIP and IMHE may be able to provide information and expertise on institutional practices in the area of the knowledge triangle. The Programme's work focuses on the governance and strategic management of higher education institutions and the development of their role in society.

Module 2. New financing, co-operation and governance arrangements in the knowledge triangle

13. The focus of this module will be on the modes of financing, co-operation and governance of the KT. With regard to financing, it will explore the role and interdependencies of financing flows in the knowledge triangle. As universities have been granted more autonomy, they have been able to diversify their sources of funding not just with regard to research and innovation, but also with regard to education. Meanwhile, higher education and research ministries increasingly channel funding in ways to stimulate certain objectives that can be complimentary such as co-operation and excellence. But these objectives may also be at odds or create tensions as in the case of commercialisation versus open science. Innovation and economic ministries stimulate business innovation through grants and R&D tax credits; some also provide funding or tax breaks for SMEs that hire and train PhDs. Better understanding the flows of financing to education, research and innovation can help government re-assess the policies for incentivising co-operation among actors in the knowledge triangle.

14. With regard to co-operation, data indicate that co-operation in research - as illustrated by data on scientific co-authoring - has increased over the past decade. Open science is also enabling greater co-operation between research and innovation and engagement with society (e.g. citizen science). Co-operation in education among institutions has also increased, as illustrated by data on the internationalisation of higher education institutions, and mobility of researchers and students. Meanwhile businesses fund research chairs or professorships at universities in certain countries, while in others co-operation may be organised around vocational education in a local context. In general, however, co-operation between the business sector and education is less well understood and measured.

15. Governance structures often reflect long-standing features of national innovation systems. In recent years, many countries have attempted to alter these structures to enable a strategic planning and implementation of research, education and innovation policies as well as a greater connectivity among the actors and stakeholders. The institutionalised forms of governance vary and include 'science and innovation policy' councils, strategy boards, innovation agencies and, not least, higher education and research ministries. A common characteristic of STI councils has been involvement of the firms, universities as well as civil society. The focus of these councils varies across countries. Some focus more on priority setting and strategic matters while others also include functions such as co-ordination and policy coherence. In some cases, however, institutional governance structures are unstable (e.g. accountability is weak) or the recommendations are too high level and there is little take up by the various actors. Councils have also had traditionally arms-length relations with provincial governments, regions, and local higher education institutions and business. Cluster initiatives may be more appropriate settings to engage companies and civil society in the knowledge triangle. How do different governance arrangements (horizontal or vertical) interact? Which level and which modes are more effective in steering and

incentivising actors in the knowledge triangle to work together in order to meet societal/economic objectives?

16. Research questions that could be explored in this module include:

- How do financing streams for education, research and innovation interact? How do these interactions (or the lack thereof) influence co-operation in the triangle? How can new funding (e.g. philanthropies, crowdfunding, business, and alumni) be mobilised to foster greater interaction inside and outside the knowledge triangle?
- How can the scope for co-operation in the KT be broadened, taking advantage of autonomy of HEIs, financial innovation and new technologies?
- How do existing governance arrangements for the knowledge triangle compare among countries? What typologies of countries can be found with regard to such arrangements?

17. Proposed methodology for the financing and governance module

- a. *Stock-taking and mapping of financial flows in the knowledge triangle.* An inventory of OECD data on financing of the different corners of the triangle could be carried out at the macro-level. Countries could volunteer to carry out national exercise to map flows that would include budgetary, tax or administrative data. Although OECD data provide an indication of business funding in higher education, data are not of sufficient detail to understand if the funding is directed towards education and training or to research.
- b. *Case studies of novel STI governance modes and structures that strengthen connections in the knowledge triangle.* Case studies of country efforts to foster triangular relations in the knowledge triangle could be carried out, focusing for example on the role of horizontal and vertical governance arrangements involving national science and technology councils/committees, innovation agencies, ministries and cluster initiatives as well as technology platforms.

Module 3. Place-based policies in support of the knowledge triangle²

Overall goal of the place based innovation module

17. Knowledge and innovation are key drivers of regional growth and development. However, in all countries and regardless of the level of development, innovation is highly clustered in a few core regions. Policy responses to this uneven geography of innovation have shifted from the provision of technological infrastructure and the development of local knowledge-intensive industries, towards the solution of a broad range of institutional, governance and network failures hindering agents' co-ordination within and between regional innovation systems. But enabling dynamic innovation ecosystems is not an easy task due to the heterogeneity of regional framework conditions, the diversity of elements involved and the complexity of interactions and endogenous processes leading to greater regional innovation. Moreover, the role of education actors, institutions and policies in strengthening regional innovation ecosystems has been largely overlooked in traditional regional innovation policy.

18. Looking at regional innovation from the perspective of the knowledge triangle may shed light on some of the barriers and solutions for enhancing capacities of regional actors in the public, private and

² This section draws on input from Felix Modrego, PhD candidate at Groningen University and intern at the OECD during the months of October and November 2014.

academic sectors for better diagnosing local and external conditions, releasing the local entrepreneurial drive and defining smart place-based policy mixes. Combining the KT and place-based approach to innovation policy analysis could also help identify potential for synergies among existing policies that aim to strengthen regional knowledge production and absorption capacities.

19. The research questions to be addressed in this module could include:

- How can regional policy enhance the linkages between education, research and innovation?
- How can cluster policies increase the flows of knowledge from the education sector to industry beyond R&D flows, e.g. professional education, lifelong-learning programs, tailor-made continuing engineering education, business coaching, etc.?
- How can regional smart specialisation strategies enhance such linkages?
- On the supply-side, how can policy makers design skills development strategies that are more pertinent to specific regional economic and technological conditions?
- Are there new forms of education and new learning methods to better match the supply and demand of skills in regional labour markets?
- What is the scope and potential for ICT tools and platforms (such as communities of practice, knowledge and innovation communities, massive open online courses - MOOCs, etc.) to enhance regional learning and educational environments?
- Are there mechanisms for education systems to incentivise civil society engagement in clusters and regional innovation eco-systems?
- How can regional-national governance relations strengthen regional knowledge production/absorption? What role does competitive funding of higher education institutions play?
- What is the role of intermediary and bridging institutions in enhancing knowledge flows at regional levels through networks and market mechanisms (e.g. licensing)?
- Which role do innovation agencies and research funding agencies play in local and regional STI governance systems?

Proposed methodology for the place-based module on KT as a tool for regional innovation

- a. *Characterisation of regional innovation ecosystems from a broader KT perspective.* Given the large heterogeneity of regional innovation ecosystems and the importance of local contexts for the innovation process, more research and evaluation seems necessary in order to arrive at context-specific best practices and policy recommendations on place-based policies in support for the KT. A first suggestion is therefore to extend existing characterisations of regional innovation systems (RIS) to include additional elements that encompass the broader set of actors, relationships and institutions entailed by the KT framework³. A first important consideration is the inclusion of more specific indicators of education and especially of universities and higher education institutions (HEI). Second, given the importance the KT places on actors and relationships within RIS, the use of Social Network Analysis (SNA) may be a powerful analytical

³ Ajmone Marsan and Maguire (2011) provide a good reference of regional systems characterization.

tool to get quantitative network indicators⁴. Third, multidimensional indicators of regional quality of governance (QoG) can be used to address governance aspects that are important for place-based policies in support for the KT (Rodríguez-Pose and Di Cataldo, 2014). One example is the QoG index recently developed for the European Union by Charrón et al. (2013). In summary, the characterisation of regional innovation ecosystems from a KT perspective should include region-level indicators of at least: i) innovation; ii) R&D; iii) education; iv) technology and ICTs; v) networks and social capital; vi) institutions and governance; vii) local framework conditions; and viii) universities and higher education institutions. There is a possibility that regional datasets could be used to produce multi-dimensional regional innovation profiles and to benchmark regional performance relative to leading OECD regions.⁵

- b. *Statistical analysis of the effects of the local effects of policies in support of the KT.* Given our still scarce understanding of the role of policies in support for the KT in strengthening regional innovation ecosystems, if data allows it, another option is to conduct statistical analysis (e.g. regression-based) to obtain quantitative measures of the impact of place-based policies. Some work on this can be undertaken within the scope of the project, but an extensive focus on this would require voluntary contributions, given the exploratory and resource intensive nature of this exercise.
- c. *In-depth case studies of concrete KT implementation experiences in specific regional innovation systems.* Qualitative case-based research in regional KT systems could help disentangle the more subtle mechanisms governing interactions within and between regional KT systems, the policy trade-offs stemming from current political, technological and institutional changes worldwide, and the potential and constraints of specific place-based policy instruments in support of the KT. There are several examples of KT-based initiatives led by regional universities including among others: the Aalto Camp for Societal Innovation (ACSI) in Finland (Pirttivaara, 2013). An additional potential source of case-studies for the KT are the research consortia created under the European Union's Seventh Framework Programme for Research and Technological Development (FP7), particularly, the Regions of Knowledge Initiative.⁶ Other potentially interesting experiences to explore from a regional KT perspective are a series of Smart City projects and Smart Cities collaborative platforms across the OECD countries.

Module 4. Evaluation and Impact Assessment

Objective of the Module

20. What is the contribution of public research to innovation? How can the contributions be improved? Answering this question is important for policy design in the context of the knowledge triangle. Success in building effective relations between public research and the private sector will be a core competitive strength. In an increasingly competitive global economy tapping into technical specialised knowledge with greater ease gives a distinct advantage for the innovation environment (OECD, 2013). Substantial amounts of public funding are devoted to funding research institutions. With the imperative for public policy to demonstrate returns, having a clear picture of impacts and of the possible mechanisms by which university science supports innovation is critical. It can help policy better leverage resources for

⁴ For an example of the use of SNA in inter-regional patenting networks in technological fields see Ajmone Marsan and Primi (2012).

⁵ For an example of innovation benchmarking exercises at the national level see OECD (2014).

⁶ FP7 initiatives can be consulted in the CORDIS website (http://cordis.europa.eu/projects/home_en.html)

higher returns. The benefits associated with public spending on research are also less direct than, for instance, funding of health, requiring additional evidence to justify these expenses.

21. The proposed module would involve data-driven analysis of public research's contributions to innovation and a complementary exercise aimed at identifying main approaches used in national policy evaluations. The quantitative work would ideally include cross-country and complementary national impact analyses. This part of the project would also explore developing policy indicators, building on the information from OECD and other sources. An informal working group would be set up to identify the main approaches used in ongoing evaluation exercises in countries with regards to the knowledge triangle, and aim at distilling best practices.

Questions to be addressed

22. The work will focus on how universities and public research institutions contribute to innovation. Stimulating commercialisation has been a major policy priority as it holds the promise of increasing the impacts of public research. The reason is that it may create more direct linkages between science and industry. Yet so far the reality of the commercialisation of public research has not met that promise (OECD 2013). Moreover, the possible impacts of research activities such as publications and conferences should not be neglected when assessing contributions to innovation. This is particularly important as trade-offs may exist as to where public research institutions set greatest emphasis. Therefore, the module would not only consider universities' engagement in commercialisation. It would also evaluate how research outputs that result in publications benefit innovation. As part of this assessment the differential contributions of public research across scientific fields and technological disciplines would be taken into account. Finally, a focus would be set at identifying what range of policy instruments can best allow larger impacts from public research. The focus could be on policies aimed at supporting joint research initiatives involving both research institutions and universities, but also on funding programmes for commercialisation as well as institutional and legal arrangements implemented to foster those collaborations.

Project objectives

23. Box 1 provides a short description of the implementation of the module. Further detail is provided in the Annex (DSTI/STP/TIP (2014)13). This includes an overview of proposed data sources.

Box 1.

Description of the proposed project methodology for the module on evaluation and impact assessment

The work would consist in a cross-country analysis of public research institutions (universities and research institutes) to innovation. The analysis would involve the following steps:

- First, the quantity, quality and characteristics of national scientific outputs of relevance for industry would be captured using available data sources on public research institutions' patents and their publications. The exercise will build on existing OECD work on bibliometrics.
- Second, the information on public research would be linked to firm- and industry-level data on innovation performance and other firm or industry characteristics. Specific attention will be paid to the matrix used for connecting firms or industries to fields of scientific research.
- Third, in a further step efforts could focus on developing policy indicators so as to understand impacts of policies on research output and their contributions to innovation. The project will provide complementary insights to the ongoing [NESTI project which analyses the impacts of public support for business R&D](#).

National quantitative policy studies aimed at analysing impacts at specific country levels are very welcome. This may include proposed studies on the impacts of specific policies, in-depth assessments of researcher-sector specifications as well as analysis of alternative data to assess collaboration and impacts on firm performance.

Countries are invited to join an informal working group which would discuss impact assessment exercised conducted on policies aimed at supporting the commercialisation of public research. Based on information from the 2014 STI Outlook policy questionnaire, policies among the following reflect current policy efforts in a large number of countries: fostering collaborative research, institutional arrangements to organise more collaboration policies, innovation voucher schemes as well as policies aimed at supporting business capacities to absorb complex knowledge generated by public research.

Antecedents

24. The proposed activity will capitalise on the 2013-14 RIHR project on “impact assessment” and the 2011-12 TIP project on the commercialisation of public research. Moreover, it will build on findings from the CSTP meeting on 20 October 2014 on the theme of “Assessing the Impact of Science, Technology and Innovation Policy Instruments with Common Objectives”. This workshop was co-hosted by France Stratégie and followed on workshops held by the CSTP in Paris in March 2013, by TIP/RIHR in Tallinn in May 2014, and by NESTA in conjunction with the OECD in London in December 2013. The project will also draw on recent TIP work regarding open science, smart specialisation and public/private partnerships in STI.

Country Involvement

25. Country involvement in the impact assessment module will be critical and can involve: i) contributing to the data-driven analysis by realising national studies to shed light on specific questions posed by the analysis; and/or ii) participating in a working group where volunteer countries would present policy assessments they conduct on one or several similar national policy instruments that relate to the thematic focus. Dedicated workshops will be organised, starting with a workshop in early 2015, to develop the joint analysis of policy impact evaluations. Moreover, a Community of Practice (CoP) on impact assessment, which will be created on the Innovation Policy Platform (IPP) in the context of the CSTP Ministerial Meeting, will provide an online support platform for the activity including for thematic discussions on the themes ([DSTI/STP\(2014\)32](#)).

Overall deliverables of the CSTP/TIP project on the knowledge triangle

25. The following outputs will result from the project: 1) Synthesis report on best practices to promote research, innovation and education policies in the context of the knowledge triangle; 2) Analytical reports on the various modules for the project, i.e. higher education; governance, place-based policies in support of the KT and evaluation and impact assessment for the KT.

Organisation of the overall CSTP/TIP project

26. The CSTP/TIP project would be managed by TIP under the guidance of the CSTP. The CSTP and TIP will be invited to nominate Delegates and expert to join a “Joint CSTP/Expert Groups on the KT” corresponding to each module. For practical purposes, the CSTP and TIP may consider merging the modules on higher education and the module on governance so that only 3 expert groups (i.e. higher education and governance; place-based innovation; and evaluation and impact assessment) would be created. TIP and CSTP bureaus may wish to consider allocating a member of their respective bureaus to the joint expert groups to ensure overall co-ordination.

Resources

27. The project will be funded by Part I and voluntary contributions, both cash and in-kind (e.g. organisation of steering group meetings/workshops).

Co-ordination inside DSTI and with other Directorates

28. Co-ordination across CSTP working parties will be ensured including with NESTI and GSF. Co-ordination with the CIIE where relevant (e.g. project on the evaluation of industrial policies) will also be ensured.

29. In addition, the project will involve collaboration with the OECD Directorate for Education and Skills. For example, the IMHE programme provides an important source of expertise on the governance of higher education. The project will also build on the findings of work by the Centre for Educational Research and Innovation (CERI) on skills for innovation and innovation in the education sector.

Proposed timeline of the CSTP/TIP work on the KT project		
Phase	Calendar	Activity
TIP meeting	December 2014	Revised draft terms of reference on the KT Identifying additional research questions; Agreeing on methodology
Secretariat	15 January 2015	Deadline for nominations for the experts groups
Secretariat	End of January 2015	Announcement of the composition of the expert groups
Secretariat	January/February 2015	Setup of a Community of Practice (CoP) on the Innovation Policy Platform (IPP)
Secretariat/Volunteer Country	First Quarter 2015	Workshop on Evaluation and Impact Assessment in the KT
CSTP	March 2015	Progress report
GSF/IMHE	April/May 2015	Possible event on Higher Education and the KT
TIP meeting	June 2015	Progress report Breakout Sessions on several or all KT modules
CSTP meeting/CSTP Ministerial	October 2015	Progress report
TIP meeting	December 2015	Progress report
CSTP	March 2016	Joint CSTP/TIP Interim Synthesis Report
TIP meeting	June 2016	Revision of the synthesis report
CSTP Meeting	October 2016	Joint CSTP/TIP Draft Final Synthesis Report
TIP meeting	December 2016	Final Report

REFERENCES

- Ajmone Marsan, G. and A. Primi (2012), “Tell me who you patent with and I’ll tell you who you are: Evidence from inter-regional patenting networks in three emerging technological fields”, *OECD Regional Development Working Papers*, 2012/03.
- Ajmone Marsan, G. and K. Maguire (2011), “Categorisation of OECD regions using innovation-related variables”, *OECD Regional Development Working Papers*, 2011/03.
- Charron, N., L. Dijkstra and V. Lapuente (2014), “Regional Governance Matters: Quality of Government within European Union Member States”, *Regional Studies*, 48:1, pp. 68-90.
- EIT (2013) *Catalysing Innovation in the Knowledge Triangle*. Publication for the European Institute of Innovation and by Technopolis Group.
- Goosens, M. and Sjoer, E. (2012), “Expanding the concept of Knowledge Triangle to foster the working of the Triple Helix Model”, IACEE World Conference on CEE, UPV, Valencia, 16th – 19th May 2012
- Hirviloski, T. (2011) *The Knowledge Triangle Promoting Innovation and Multidimensional Learning*. Laurea University of Applied Sciences, Finland.
- Hoidn, S. and K. Kärkkäinen (2014), “Promoting skills for innovation in higher education: A literature review on the effectiveness of problem-based learning and of teaching behaviours”, *OECD Education Working Papers*, No. 100.
- Lundvall, B. Å., (2003), *The Economics of Knowledge and Learning*, Aalborg University, Department of Business Studies Aalborg University, November 2003.
- Maasen P. & Stensaker B., (2011), “The knowledge triangle, European higher education policy logics and policy implications”, *Higher Education* 61(6), pp. 757-769
- Markkula, M. (2011), “Knowledge Triangle answering the EU 2020 Needs and Challenges”, 6th Feb 2011
- OECD (2003), *Turning Science into Business: Patenting and Licensing at Public Research Organisations*, OECD, Paris.
- OECD (2013), *Commercialising Public Research: New Trends and Strategies*, OECD, Paris.
- Pirttivara, M. (2013), “Case 1: ACSI – Knowledge Triangle in Action”, In Lappalainen P. and M. Markkula (Eds), “The Knowledge Triangle: Reinventing the Future”. SEFI- Aalto University - Universitat Politècnica de València., p. 189.
- Rodriguez-Pose, A., Di Cataldo, M. (2014), “Quality of government and innovative performance in the regions of Europe”, *Journal of Economic Geography* (forthcoming).