



European
Commission



Unlocking systemic innovation excellence through UBC

Reflection Paper Series (Vol. 3)

Publications written/published by external organisations at the request and with the support of the European Commission.

Written by



Answering
tomorrow's
challenges
today



**DANISH
TECHNOLOGICAL
INSTITUTE**



Nadine Burquel (BCS), Tanja Bacher (3s), Stefan Humpl (3s)

This document has been prepared for the European Commission however it reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Luxembourg: Publications Office of the European Union, 2021

PDF ISBN 978-92-76- 40147-9 ISSN 2600-321X doi:10.2766/ 885722 NC-BC-21-003-EN-N

© European Union, 2021

Reuse is authorised provided the source is acknowledged and the original meaning or message of the document are not distorted. The European Commission shall not be liable for any consequence stemming from the reuse. The reuse policy of the European Commission documents is implemented by Commission Decision 2011/833/EU of 12 December 2011 on the reuse of Commission documents (OJ L 330, 14.12.2011, p. 39).

For any use or reproduction of elements that are not owned by the European Union, permission may need to be sought directly from the respective right holders. The European Union does not own the copyright in relation to the following elements:

Cover: Image, source: www.shutterstock.com

Contents

1.0. Introduction.....	5
1.0 Introduction.....	6
2.0. Innovation as a response to societal changes	8
2.1. Recent EU policy developments and priorities	9
2.2. Innovation, growth, employment, and competitiveness – A European approach	11
2.3. KICs and European Universities Initiative	14
3.0. From widening innovation to unlocking excellence through UBC16	
3.1. Unlocking excellence through open innovation ecosystems.....	17
3.2. Universities and businesses driving local innovation in global ecosystems	19
4.0. Unlocking different forms of excellence through social innovation	22
4.1. Unlocking new forms of excellence through social innovation.....	23
4.2. Enabling factors for social innovation	25
4.3. EU support for social innovation	26
5.0. Conclusions.....	28
5.1. Conclusions	29

1.0. Introduction

1.0 Introduction

Innovation has been at the core of EU policies for many years. In the year 2000, the Lisbon Strategy aimed to develop Europe into "*the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion*"¹. Nearly two decades later, European Commission President Ursula von der Leyen announced her 'Agenda for Europe', in which she underlined the **importance of research and innovation to tackle the key challenges facing Europe** (climate change, technological disruption, health, and demography), which are accentuated by the impact of the Covid-19 pandemic: "*we will invest record amounts in cutting-edge research and innovation, using the full flexibility of the next EU budget to focus on the areas with the greatest potential*"².

Despite the strong EU policy focus and support for innovation, **innovation and economic development remain at different levels across EU Member States**, leading to additional EU policy interventions and programmes to support cohesion³ among Member States, and to provide support to the lower innovative countries⁴ in the Union. The European Innovation Scoreboard was conceived as a country peer learning exercise, allowing a comparative analysis of innovation and performance in EU countries, assessing relative strengths and weaknesses of national innovation systems, and helping countries identify areas to be addressed in order to improve.

According to a recent report "*A Robust Innovation Ecosystem for the Future of Europe*"⁵, **key challenges for innovation are linked to the level of local, regional, and global connectedness of stakeholders, competence and talent, and capital**, all to be improved to better enable innovation in the complex and diverse European ecosystem. These challenges already point to the important role of University Business Cooperation (UBC) to unlock innovation. They especially play an important role in establishing innovation ecosystems, allowing different actors, ranging across Multinational Corporations (MNC), SMEs, start-ups, students, universities and/or policymakers, to cooperate and "*to be involved and create seamless interaction and mash-up for ideas in innovation ecosystems*"⁶.

¹ The Lisbon Strategy in short. Available at: <https://portal.cor.europa.eu/europe2020/Profiles/Pages/TheLisbonStrategyinshort.aspx> [Accessed May 6, 2021].

² A Union that strives for more. My Agenda for Europe. Candidate President for the European Commission. Ursula von der Leyen. Available at https://ec.europa.eu/info/sites/default/files/political-guidelines-next-commission_en_0.pdf [Accessed May 6, 2021].

³ New Cohesion Policy. Available at: https://ec.europa.eu/regional_policy/en/2021_2027/ [Accessed May 6, 2021].

⁴ European innovation scoreboards. Available at: https://ec.europa.eu/growth/industry/policy/innovation/scoreboards_en [Accessed May 7, 2021].

⁵ A robust innovation ecosystem for the future of Europe. Report on the results of the stakeholders' consultation. October 2019 – February 2020. Available at: <https://op.europa.eu/en/publication-detail/-/publication/c7552948-f6fc-11ea-991b-01aa75ed71a1> [Accessed May 7, 2021].

⁶ Shaping Europe's Digital future. Open Innovation 2.0. Available at: <https://ec.europa.eu/digital-single-market/en/open-innovation-20> [Accessed May 7, 2021].

This reflection paper reviews the developments and issues related to **unlocking multiple excellence and innovation through UBC**. The term ‘multiple excellence’ was already introduced in 2013 in a JRC technical report on “*Defining European ICT Poles of Excellence (EIPE)*”⁷, and the issues raised remain fully relevant today. The report reviewed the theoretical literature on agglomeration economies (i.e. the spatial concentration of economic activities) and the role of ICT in regional dynamics⁸. Based on this analysis the report concluded that European ICT poles of excellence should increase performance in business and knowledge functions through strong “*agglomeration, internationalisation and global networking*”. It proposes the following definition “*EIPE are geographical agglomerations of best performing Information and Communication Technologies production, R&D and innovation activities, located in the European Union, which play a central role in global international networks*”.

Further, the paper presents **examples of how UBC can be a practical approach to unlock innovation and showcase solutions**. It looks into EU policy on innovation, and the adoption of a wider and inclusive innovation agenda to celebrate multiple forms of excellence for societal developments. Past phases of UBC have seen the emergence and sustainable development of new products, services, concepts and organisational models, generated from the multiple interactions between different stakeholders in innovation ecosystems that are framed in networks of interactions between academia, industry, government and now civil society under the Triple and now Quadruple Helix⁹ models.

The paper is structured as follows:

- **Chapter 2** of this reflection paper reviews President von der Leyen’s new Agenda for Europe with a major Green Deal for Europe and the Resilience and Recovery Package.
- **Chapter 3** looks into the ways concepts and policies for innovation have shifted to address a broader and more inclusive focus.
- **Chapter 4** presents two important DG EAC initiatives: the EIT’s Knowledge and Innovation Communities (KICs) and the European Universities Initiative.
- **Chapter 5** presents EU initiatives to support social innovation.
- **Chapter 6** presents recommendations on how UBC can strengthen systemic resilience by unlocking multiple types of excellence through multi-actor collaboration.

⁷ De Prato, Guidait ; Nepalí, Daniel (2013). Defining European ICT Poles of Excellence: Literature Review p. 67. Available at: <https://publications.jrc.ec.europa.eu/repository/handle/JRC77962> [Accessed May 6, 2021].

⁸ It also sought to draw on experiences from empirical exercises to map geographical locations of business, industrial and innovation concentration. It provides an inventory of “labelling initiatives” on excellence (centres of excellence, excellence in business and excellence in science) and on innovation (the French “*Pôles de compétitivité*”, the ICT Lab in the EIT or media reports by the Economic Intelligence Unit (Innovation-led clusters)).

⁹ Using the quadruple helix approach to accelerate the transfer of research and innovation results to regional growth. Available at: <https://op.europa.eu/en/publication-detail/-/publication/6e54c161-36a9-11e6-a825-01aa75ed71a1>. [Accessed May 7, 2021].

2.0. Innovation as a response to societal changes

2.1. Recent EU policy developments and priorities

In 2019, European Commission President Ursula von der Leyen launched the ‘Agenda for Europe’¹⁰, highlighting Europe’s challenges with climate, technological disruption, and demography, while emphasising the importance of collaboration to address these priorities with adequate and sustainable financing. The European experience of the Covid-19 pandemic has shown how cooperation, openness and sharing, and common purpose, were fundamental in overcoming infection and death levels, and in developing a coherent vaccination strategy. That requires deep and flexible cooperation between research, business, and policy in a way that goes beyond the levels of cooperation seen in the past.



The European experience of the Covid-19 pandemic has shown how cooperation, openness and sharing, and common purpose, were fundamental in overcoming infection and death levels, and in developing a coherent vaccination strategy.

The authors

In her Agenda, President Von der Leyen puts forward three key priorities:

- With regards to technology, she acknowledged the impact of Artificial Intelligence (AI) with ***“data and AI being the ingredients for innovation that can help us to find solutions to societal challenges, from health to farming, from security to manufacturing”***. The EC communication ***“Fostering a European approach to Artificial Intelligence”***¹¹ proposes to develop a regulatory framework for AI (to mitigate the high risks which existing legislation does not sufficiently address), and to define a new coordinated plan on artificial intelligence. The aim is clearly to encourage the development of AI, taking advantage of opportunities to make the EU a world-class hub for AI while at the same time clearly addressing the potential risks it could pose to safety and fundamental rights.

¹⁰ Von der Leyen, U. 2019. *A Union that Strives for More. My Agenda for Europe*. Political Guidelines for the Next European Commission 2019-2024. Brussels: European Commission. Available at: <https://op.europa.eu/en/publication-detail/-/publication/43a17056-ebf1-11e9-9c4e-01aa75ed71a1> [Accessed April 21, 2021].

¹¹ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, *Fostering a European approach to Artificial Intelligence*. Available at <https://digital-strategy.ec.europa.eu/en/library/communication-fostering-european-approach-artificial-intelligence> [Accessed May 6, 2021].

- The Agenda also states that **“we need equality for all and equality in all of its senses. [...] Innovation happens when people from different backgrounds and perspectives blend together”**. It referred to the European Pillar of Social Rights¹² and the UN’s Sustainable Development Agenda¹³ as key instruments to build **“an economy that works for people”**.
- On the environment, the Green Deal¹⁴ is the most ambitious of all the political priorities. To **ensure Europe becomes “the first climate-neutral continent by 2050”**, the Agenda includes proposals that range from a Biodiversity Strategy¹⁵ for 2030, a new Circular Economy Action Plan¹⁶ and a new Farm to Fork Strategy¹⁷ on sustainable food, to a strategy on green/sustainable financing¹⁸, a European Climate Pact¹⁹ and a Sustainable Europe Investment Plan²⁰, which **“will support over 1€ trillion of investment over the next decade”**.

The Covid-19 pandemic has made it necessary to **place these ambitious plans in the new context of dealing with the pandemic, then moving into recovery and actions to strengthen resilience in EU Member States** – and UBC clearly has a role to play here. The EU Recovery and Resilience Facility²¹ is making available €672.5 billion in loans and grants to mitigate the economic and social impacts of the Covid-19 crisis and make Member States more sustainable, resilient, and prepared for the green and digital transitions. The Facility is the key component of the *NextGenerationEU*²², the temporary recovery instrument under which the Commission is raising funds to support immediate economic and social recovery.

¹² European Pillar of Social Rights. 2021. Available at: https://ec.europa.eu/commission/priorities/deeper-and-fairer-economic-and-monetary-union/european-pillar-social-rights_en [Accessed April 17, 2021].

¹³ United Nations. The 2030 Sustainable Development Goals. Available at: <https://sdgs.un.org/goals> [Accessed April 17, 2021].

¹⁴ A European Green Deal. Available at: https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en [Accessed April 17, 2021].

¹⁵ Biodiversity strategy for 2030: Concrete actions. Available at: https://ec.europa.eu/environment/strategy/biodiversity-strategy-2030_en [Accessed May 7, 2021].

¹⁶ Circular economy action plan. Available at: https://ec.europa.eu/environment/strategy/circular-economy-action-plan_en [Accessed May 7, 2021].

¹⁷ Farm to fork strategy. Available at: https://ec.europa.eu/food/farm2fork_en [Accessed May 7, 2021].

¹⁸ Sustainable finance. Available at: https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance_en [Accessed May 7, 2021].

¹⁹ European Climate Pact. Available at: https://ec.europa.eu/clima/policies/eu-climate-action/pact_en [Accessed May 7, 2021].

²⁰ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Sustainable European Investment Plan. European Green Deal Investment Plan. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0021> [Accessed May 7, 2021].

²¹ Recovery and Resilience Facility. Available at: https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility_en [Accessed April 17, 2021].

²² NextGenerationEU. Commission gets ready to raise €800 billion to fund recovery. Available at: https://ec.europa.eu/commission/presscorner/detail/en/IP_21_1703 [Accessed May 7, 2021].

2.2. Innovation, growth, employment, and competitiveness – A European approach

The fourth industrial revolution is technology-driven²³, requiring organisations to harness technology, people, physical and digital spaces into new products and services, in order to thrive in knowledge-based economies and inclusive societies. A PwC report for the World Economic Forum 2021²⁴ advocates that **significant investment in massive upskilling could boost global GDP by USD 6.5 trillion (€5.549 trillion) by 2030 and create 5.3 million new jobs**. The key challenge is to augment human labour and avoid that routine tasks are taken over through robotisation. The report argues that there is a huge demand for jobs that require creativity, innovation and empathy, all to be used extensively along new IT skills.

Innovation has always been at the heart of EU policy for a knowledge society. The Lisbon Strategy of 2000 was followed by the Europe 2020 strategy launched in 2010 and proposed a framework for Europe's agenda for smart, sustainable and inclusive growth²⁵. The EU innovation agenda has always had a double internal and external goal, namely, to improve Europe's competitiveness and economic growth within Member States and the EU, as well as position the EU as a strong economic player in the world. In 2000, the Europe of knowledge was launched, as was the **European Research Area (ERA)**²⁶ to reach a critical mass of excellence, world class research for global competitiveness and address the knowledge gap. A process to revitalise the ERA was launched in 2018, which led in 2020 to the "*new European Research Area*". The new ERA focuses on four strategic priorities:

- To **prioritise investments and reforms** in research and innovation and support the digital and green transition and Europe's recovery.
- To **improve access** to excellent research and innovation for researchers across the EU.
- To **translate research results** into the economic growth (to ensure market uptake of research output).
- To progress on the **free circulation of knowledge, researchers, and technology** through stronger cooperation with EU countries.

²³ Shaping Europe's digital future. The fourth industrial revolution. Available at: <https://ec.europa.eu/digital-single-market/en/fourth-industrial-revolution> [Accessed May 7, 2021]

²⁴ World Economic Forum. Upskilling for Shared Prosperity. 2021. Available at: <https://www.weforum.org/reports/upskilling-for-shared-prosperity> [Accessed April 17, 2021]

²⁵ Europe 2020: A Strategy for Smart Sustainable and Inclusive Growth. 2010. Available at: <https://op.europa.eu/en/publication-detail/-/publication/6a915e39-0aab-491c-8881-147ec91fe88a/language-en> [Accessed April 19, 2021]

²⁶ European Research Area (ERA). Available at: https://ec.europa.eu/info/research-and-innovation/strategy/era_en [Accessed April 17, 2021]

Despite the strong EU policy focus and support to innovation, **levels of innovation and economic development have been at different levels across EU Member States**, leading to additional EU policy interventions and programmes to support cohesion among Member States and provide assistance to the less innovative countries in the Union. The European Court of Auditors has recently launched an inquiry about the efficiency of the widening innovation mechanisms in the Horizon 2020 programme²⁷. This could be interpreted that a broader view on innovation and excellence may be needed to capture the multiple forms of innovation that exist in EU Member States, beyond those currently reported since it seems that only marginal changes occur in the less innovative places despite the many attempts to widen innovation.

The European Innovation Scoreboard²⁸ and the Regional Innovation Scoreboard (RIS)²⁹ were conceived as country/regions peer learning exercises (see Figure 1). The main results reveal that **EU countries fall into four performance groups (innovation leaders, strong innovators, moderate innovators and modest innovators)**, that the EU innovation performance had increased by 8.9% compared to 2012, and '*that at the global level, the EU has surpassed the United States for the second time*'. Innovation areas that are emphasised are³⁰:

- **Framework conditions:** Human resources and the level of innovation-friendliness of the environment; attractive research systems; Innovation-friendly environment.
- **Investments:** Finance and support; Firm investments.
- **Innovation activities:** Innovators such as SMEs introducing product or process innovations; Linkages for example with innovative SMEs collaborating with others; Intellectual assets.
- **Impacts:** Employment impacts; Sales impacts.

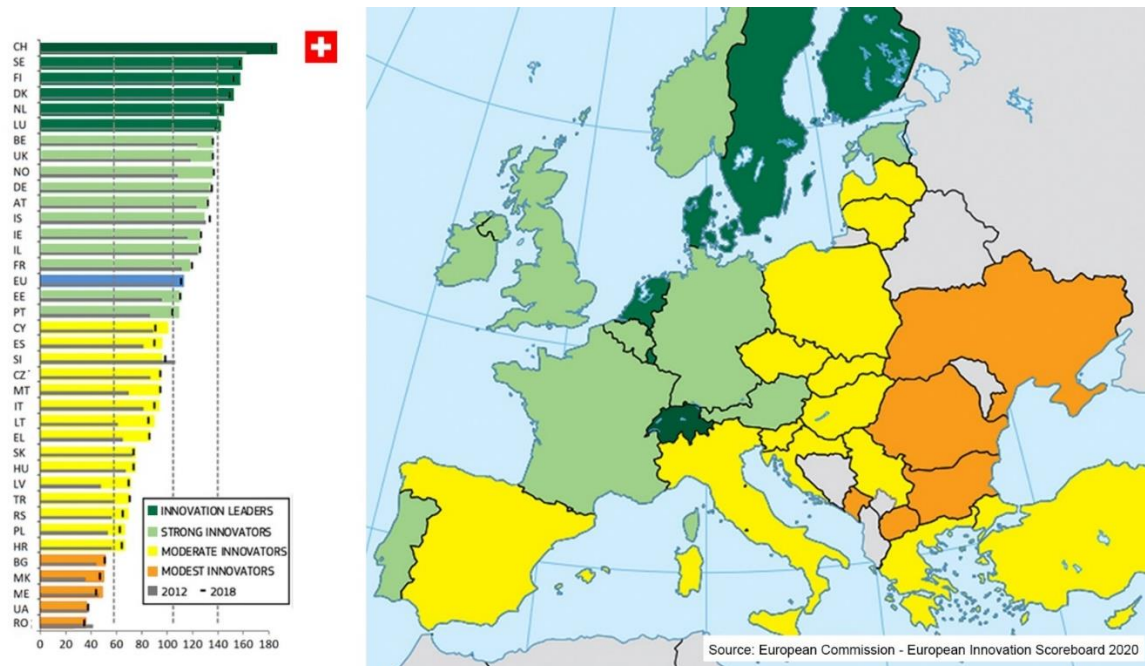
²⁷ European Court of Auditors. Auditors Scrutinise EU Action to Tackle Innovation divide. 2021. Available at: <https://www.eca.europa.eu/en/Pages/NewsItem.aspx?nid=15028> [Accessed April 17, 2021]

²⁸ European Innovation Scoreboard 2020. Available at: https://ec.europa.eu/commission/presscorner/detail/en/QANDA_20_1150 [Accessed April 17, 2021]

²⁹ Internal Market, Industry, Entrepreneurship and SMEs. 2019. Available at: https://ec.europa.eu/growth/industry/policy/innovation/regional_en [Accessed April 17, 2021]

³⁰ Regional innovation scoreboard 2019. Available at: <https://ec.europa.eu/growth/sites/default/files/ris2019.pdf> [Accessed April 21, 2021] See also https://ec.europa.eu/growth/industry/policy/innovation/regional_en [Accessed April 21, 2021]

Figure 1. European Innovation Scoreboard 2020



Source: European Commission Innovation Scoreboard. Available at: <https://ec.europa.eu/docsroom/documents/42981>

The 2020 edition of the Innovation Scoreboard highlights that the highest increases since the launch have been seen in Lithuania, Malta, Latvia, Portugal and Greece. Countries like Denmark, Finland, Luxembourg, the Netherlands, and Sweden are Innovation Leaders with innovation performance well above the EU average. Austria, Belgium, Estonia, France, Germany, Ireland, and Portugal are Strong Innovators with a performance above or close to the EU average. Croatia, Cyprus, Czechia, Greece, Hungary, Italy, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia, and Spain are Moderate Innovators performing below the EU average. Bulgaria and Romania are Modest Innovators performing well below the EU average.

The report “A Robust Innovation Ecosystem for the Future of Europe”³¹, identified challenges linked to the level of connectedness to stakeholders, competence and talent, and capital. Survey responses highlighted that **connectedness between stakeholders, locally and globally, is critical to improve current networks for innovation** and better flows across the European complex and highly diverse ecosystem.

³¹ European Innovation Council. A Robust Innovation Ecosystem for the Future of Europe. 2020. Available at: <https://op.europa.eu/en/publication-detail/-/publication/c7552948-f6fc-11ea-991b-01aa75ed71a1> [Accessed April 17, 2021]



Connectedness between stakeholders, locally and globally, is critical to improve current innovation networks.

Responses to European Innovation Council survey (2021)

The report also highlights to the **need to foster the entrepreneurial ethos a lot more and from an early age**. It argues that entrepreneurship and a good understanding of how innovation ecosystems can work effectively is often not sufficiently promoted at all levels, from students to faculty, researchers, entrepreneurs, investors, and the public sector. It also highlights that more capital is needed to support innovation, new forms of cross-border investment and a “de-risking” of investment in disruptive companies.

Finally, **a holistic view on the funding of ecosystems** is said to be lacking to support sufficient investment in scaleups (but also in early-stage companies), to enable trial and error and the scaling-up of innovative pilots. The report calls for the current regulatory burden to be reduced, simplifying legislation, and developing new approaches for innovative public procurement.

2.3. KICs and European Universities Initiative

DG Education and Culture (DGEAC) supports wider stakeholder engagement to co-create new ideas, services and products around two major structuring models for innovative forms of education and research for societal impact and sustainable growth. These are the Knowledge and Innovative Communities (KICs) in the European Institute of Innovation and Technology (EIT)³² and the European Universities Initiative³³.

The **KICs** are active in areas of long-term societal challenges and generate concrete impact in terms of new business creation and societal benefits. They form strong hubs of innovation and excellence, across sectors, discipline, geographical, institutional and sectoral borders.

The latest available evaluation of the EIT covers the period 2010-2015³⁴, reporting on the EIT’s uniqueness and added value through the integration between all three sides of the knowledge triangle across borders, sectors and organisations (and across the private and public sectors). It provides KIC partners and beneficiaries with access to a wider network of partners, investors and customers that might otherwise be difficult to connect to. The report highlights that the objectives originally stated for the EIT and supported by the academic literature are still fully

³² Knowledge and Innovation Communities. What is an Innovation Community? Available at: <https://eit.europa.eu/our-communities/eit-innovation-communities> [Accessed April 17, 2021]

³³ https://ec.europa.eu/education/education-in-the-eu/european-education-area/european-universities-initiative_en [Accessed April 17, 2021]

³⁴ Evaluation of the European institute of Innovation and Technology. 2019 Final Report. Available at: https://ec.europa.eu/education/sites/default/files/document-library-docs/finalreport_eitinterimevaluation.pdf [Accessed May 7, 2021]

relevant today, i.e. that networked approaches to innovation help grow new communities, nurture entrepreneurship, bring innovation to market and deal with societal challenges.

The **European University Initiative** calls on academia to innovate with new forms of integrated transnational degree education, beyond what had already been achieved through the Erasmus Mundus joint masters³⁵ or the EIT master programmes³⁶.

To date the European Commission has selected 41 European Universities transnational alliances that are all based on a long-term strategy focussed on sustainability, excellence, and European values. They are innovating in new forms of student-centred curricula jointly

delivered across campuses, in which students build their own programme and experience multiple new forms of mobility. They include a clear UBC focus to widen innovation and unlock excellence in so far as the Alliances are expected to adopt a “challenge-based approach”, in which students, academics and external partners cooperate in inter-disciplinary teams to tackle” the grand challenges” of society in Europe today.

³⁵ Erasmus Mundus Joint Masters scholarships. Available at: https://ec.europa.eu/programmes/erasmus-plus/opportunities/individuals/students/erasmus-mundus-joint-masters-scholarships_en [Accessed May 7, 2021]

³⁶ EIT Entrepreneurial Education. Available at: <https://eit.europa.eu/our-activities/education> [Accessed May 7, 2021]

3.0. From widening innovation to unlocking excellence through UBC

3.1. Unlocking excellence through open innovation ecosystems

The concept of innovation³⁷ was originally adopted by policymakers for **new approaches to support economic growth in what has now become wider innovation ecosystems**. Such innovation ecosystems “describe collectives of heterogeneous, yet complementary, organizational actors³⁸” (such as MNCs, SMEs, start-ups, students, universities and/or policymakers). The more sophisticated the local, regional or national ecosystem in terms of place-based strategies and the structural cooperation and attractiveness for investment, the higher performance on innovation, it is argued. This is also demonstrated through the EU innovation scoreboard (described in the previous section). Innovation ecosystems are a space for the participating parties to develop and launch solutions for solving real-world-problems. For instance, in Austria such an innovation ecosystem was recently set up in the form of an online platform to help SMEs with the digital transformation.

The **Digital Makers Hub**³⁹ in Austria offers a platform where companies (mainly SMEs), experts and developers have a space to connect, to develop jointly new business solutions, and to unlock the innovation potential through the use of digitalisation. The Digital Makers are the so-called “*creative minds*” to develop solutions for digitalisation - from students to university lecturers, from individuals to organisations, from regional initiatives to start-ups. The project is coordinated by the University of Applied Sciences St. Pölten.

The Digital Makers Hub aims to establish a digital culture across Austria, connecting “*makers spaces*” to close technological gaps, and to promote smart regions based on their regional strengths and identity. They also help with innovative approaches to work and further education, and they promote interdisciplinarity and creativity.

The initiative is funded by grants from the National Foundation for Research, Technology and Development, is supported by the Federal Ministry for Digital and Economic affairs and it is coordinated by the FFG (The Austrian Research Promotion Agency).

In its first project year the Digital Makers Hub conducted approximately 70 events and online formats and it could engage around 1,800 “Digital Makers”. The following activities were very well received: “Inspiring Chats” on topics like “Artificial intelligence in the world of work and in future” or “Digital ways to the consumer” as well as the “Virtual Future Tech Bootcamp” where ideas around themes like the “Internet of Things”, “Radar Technology”, “Renewable Energy” and “Artificial Intelligence” were developed.

Sources: Digital Makers Hub⁴⁰ and FH St. Pölten⁴¹.

³⁷ Innovation: The History of a Buzzword. Available at: <https://www.theatlantic.com/business/archive/2013/06/innovation-the-history-of-a-buzzword/277067/> [Accessed May 7, 2021].

³⁸ Thomas, L./ Autio, E. (2019). Innovation Ecosystems. In: SSRN electronic Journal, January 2019, p. 4.

³⁹ The Digital Makers Hub. Available at <https://www.digitalmakershub.at/en/> and the website of the FH St. Pölten (<https://www.fhstp.ac.at/de/newsroom/news/ein-jahr-digital-makers-hub>). [Accessed May 6, 2021].

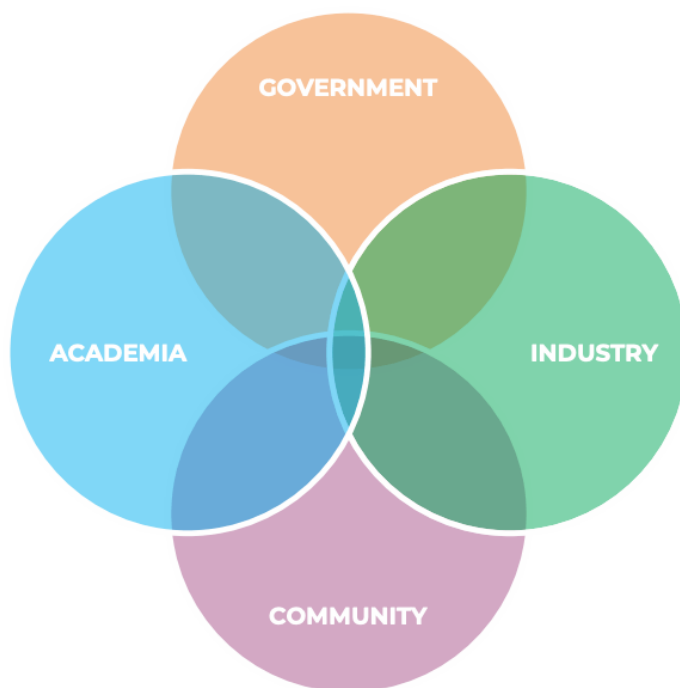
⁴⁰ Digital makers hub. Available at: <https://www.digitalmakershub.at/en/> [Accessed April 21, 2021]

⁴¹ <https://www.fhstp.ac.at/de/newsroom/news/ein-jahr-digital-makers-hub> [Accessed May 6, 2021].

In 1995, the American economist Clay Christensen defined **disruptive innovation**⁴² as the means to create new markets and value networks that eventually disrupt existing markets and displace established firms, products, and alliances. According to Christensen, disruptive innovation is about low costs and highly accessible products, low gross margins that at first serve the low-end of the market before they expand to larger markets. They are often hard to see coming and are at first not taken seriously before they quickly develop. Some truly disruptive examples are video streaming (Netflix), LED lights that disrupted the light bulbs, or smartphones. Less truly disruptive examples include Uber (it did not start at the low end of the market since its customers were already using taxis) or Tesla cars (that focus on the high end of the market).

In the European Open Innovation System⁴³ multiple stakeholders are encouraged to co-create through integrated interactions, generate new ideas and shared values in wide innovation ecosystems. It is based on the **Quadruple Helix Model** in which government, industry, academia, and civil society cooperate to co-create the future and drive structural changes through the cross-fertilisation of ideas that lead to experimentation in real life environments (see Figure 2).

Figure 2. Quadruple Helix Model of Collaboration



Source: GRRIP. Why is Quadruple Helix engagement so important Available at: <https://grip.eu/why-is-quadruple-helix-engagement-so-important/>

⁴² Christensen, C. M. & Raynor, M. E. & McDonald, R. 2015. *What is Disruptive Innovation?* Available at: <https://hbr.org/2015/12/what-is-disruptive-innovation> [Accessed April 17, 2021]

⁴³ Open innovation 2.0. Available at: <https://ec.europa.eu/digital-single-market/en/open-innovation-20> [Accessed May 7, 2021].

Regional innovation ecosystems as advocated under the **DG Regio Smart Specialisation Strategy**⁴⁴ are part of the European and global clusters of innovation ecosystems that must be sustainable internally and externally. The goal is to deliver social inclusion, well-being, and equity for citizens while at the same time being resilient to external forces. The focus is increasingly shifting to identify multiple forms of innovation or excellences, being in education, research and in the cooperation between businesses of all types (including those with a social aim) and universities.



Disruptive innovation is about low costs and highly accessible products, low gross margins that at first serve the low-end of the market before they expand to larger markets.

Christensen et al. (2018)

Social innovation and new social practices have been regaining attention in the last few years following the 2008 economic crisis. Multiple voices in society by civil society organisations, NGOs, advocacy groups or the public at large have also been advocating for more inclusive societal and economic growth, arguing that the benefits of an innovation-led economy can only be fully maximised when these are widely distributed.

3.2. Universities and businesses driving local innovation in global ecosystems

Although HEIs operate in the global HE ecosystem, both collaborating and competing, they **HEIs are also grounded in their own local and regional environments in which they can collaborate and compete**. The historic view of ‘town and gown’ and the way HEIs would ‘get along’ with their neighbours has shifted and is looking now much more at how HEIs are locally, regionally, nationally, and globally engaged. Such a shift requires much deeper relationships with businesses, civil society and policymakers to ensure education delivers for society in terms of a wider set of skills, competences, and knowledge that can be deepened through cooperation and collaboration. Social innovation is at the heart of such developments.

For some time, universities have been embracing the concept of **civic institutions**⁴⁵, broadening their mission to produce excellent research and education. Universities have been working on research outputs and education relevant for the needs of their local communities. In this way, they have embraced a wider definition of what constitutes excellence. They have

⁴⁴ Smart-Specialisation. Available at: <https://ec.europa.eu/jrc/en/research-topic/smart-specialisation> [Accessed April 17, 2021]

⁴⁵ Calvert, R. 2020. It's Now or Never for Universities to be Civic. Available at: <https://www.timeshighereducation.com/blog/its-now-or-never-universities-be-civic> [Accessed April 17, 2021]

engaged in collaborative research and open science practices with non-academic stakeholders in their environment. This in a context where the DORA San Francisco Declaration⁴⁶ advocates for research assessment beyond journal citations.



Universities have been working on research outputs and education relevant for the needs of their local communities [...] embrac[ing] a wider definition of what constitutes excellence.

The authors

Different forms of research outputs beyond the scholarly publications in academic journals are also advocated in the Dutch initiative ‘Rewards and Recognitions’ by VSNU, the Dutch national association of universities to unlock multiple forms of academic talent and innovative research in HEIs⁴⁷. This initiative is also supported by EUA, the European University Association, clearly pointing to **UBC and multiple stakeholder involvement in the academic enterprise**. The focus on Responsible Research and Innovation as a cross-cutting dimension in Horizon 2020⁴⁸ goes in the same direction, and many national innovation funds now also broaden innovation beyond technological developments and support inclusive research and social engagement.

In the private sector, the concept of **corporate social responsibility (CSR)** already emerged in the seventies and is now gaining new attention in the context of the UN Sustainable Development Goals⁴⁹ and the way businesses are taking them on board, adopting new values and approaches on issues of climate change, social inclusion or social challenges. In 2012, the **Higher Education Sustainability Initiative (HESI)** was created in the run-up to the United Nations Conference on Sustainable Development (Rio+20) with more than 300 universities from around the world signing up and committing to:

- **Teach** sustainable development across all disciplines of study.
- Encourage **research** and dissemination of sustainable development knowledge.
- Green campuses and support **local sustainability**.
- **Engage and share** information with international networks⁵⁰.

⁴⁶ DORA. The Declaration on Research Assessment. Available at: <https://sf-dora.org/> [Accessed April 17, 2021]

⁴⁷ VSNU - Association of Universities in the Netherlands. Position Paper on Recognition & Rewards. Available at: <https://vsnu.nl/recognitionandrewards/recognition-and-rewards/index.html> [Accessed April 17, 2021]

⁴⁸ Responsible Research and Innovation. Available at: <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/responsible-research-innovation> [Accessed April 17, 2021]

⁴⁹ United Nations. The 2030 Sustainable Development Goals. Available at: <https://sdgs.un.org/goals> [Accessed April 17, 2021]

⁵⁰ Higher Education Sustainability Initiative: <https://sustainabledevelopment.un.org/sdinaction/hesi> [Accessed April 21, 2021]

There are many challenges to achieve cohesive innovation ecosystems in which different actors collaborate in competitive contexts to balance local, regional, and national interests and to drive local and global competitiveness and innovation. UBC can help to build such globally and locally competitive sustainable innovation ecosystems. An example of such an open innovation system is the Innovation Design and Entrepreneurial Action (IDEA) programme in Athens.

The **Innovation Design and Entrepreneurial Action (IDEA)**⁵¹ is an initiative of the Athens Centre for Entrepreneurship and Innovation (ACEin) at the Athens University of Economics and Business (AUEB). IDEA works with an open innovation project model to connect large organisations with talented students, entrepreneurial teams or start-ups to solve business problems. Students or young entrepreneurs may have an initial business idea (or no idea at all) when they are connected to enterprises.

To date IDEA has connected students and start-ups with large organisations in the fields of tourism, health and fintech. These connections have resulted in innovative products and service outcomes.

The IDEA open innovation process has four phases: First the *problem identification phase* and the *generation of ideas*, which involves the articulation of the problem and setting up the team. In the second phase the *business innovation model* is developed and validated; marketing strategies and elements of the business model are defined. The third phase *Agile Design and Development* “involves the mock-up development, rapid prototyping of the product/service and piloting through user testing”. The fourth phase *From Idea to Product* aims at finalising the process. It includes a presentation to the industry partners and a selection of services/products that could be of interest to the partner for further development and potential commercial partnership.

The AUEB provides the business-related education and supports “*the development of business models and plans*” in the programme. The industry representatives “*provide mentoring and networking, and the large organisations the problem contexts, the sponsorship of teams with successful proposals and they also collaborate on the development and execution of IDEA projects following the open innovation model*”. IDEA intends to act as a dynamic “*hub of open innovation and entrepreneurial interaction*”. It does not want to simply act as “*a provider of services to entrepreneurial teams*”.

Source: Woolley, R. (2018). Athens Centre for Entrepreneurship and Innovation (ACEin): Engaging students in open innovation with large companies, pp. -13⁵².=

⁵¹ IDEA. Available at: <https://acein.aueb.gr/> [Accessed May 21, 2021]

⁵² Woolley, R. (2018). Athens Centre for Entrepreneurship and Innovation (ACEin): Engaging students in open innovation with large companies, pp. 1-13

4.0. Unlocking different forms of excellence through social innovation

4.1. Unlocking new forms of excellence through social innovation

The EU Green Deal and the Recovery and Resilience Package clearly focuses on unlocking excellence in the wider sense through collaboration between all stakeholders from civil society, industry and academia across regions and local communities. They clearly point to **structural collaboration in the Quadruple Helix** to scale up the enormous innovative capacity of multiple players in society into sustainable and inclusive societal partnerships for social value. UBC plays a major role in their developments.



Innovations with a social purpose focus on new social practices, social processes and new forms of collaboration to meet societal needs and generate value (beyond the balance sheets).

The authors

Innovations with a social purpose focus on new social practices, social processes and new forms of collaboration to meet societal needs and generate value (beyond the balance sheets). The digital platforms that have emerged with the growth of new technologies have given social innovators, users and communities new collaborative tools to co-create knowledge and solutions for a wide range of societal needs and potentially scale these initiatives on the global scene. One of the largest of such platforms is InnoCentive⁵³ a global pioneer in crowdsourced innovation also committed to sustainability and social innovation.

InnoCentive is an “Open Innovation Marketplace” which connects “*Seekers*” (companies, organisations, Start-ups) with “*Solvers*” (experts “*from within and outside industry who offer diverse perspectives and fresh insights*”). InnoCentive has developed a “*Challenge Driven Innovation™ (CDI) model*” that helps to develop innovative solutions for “*complex problems*” and empowers “*seeker organisations to uncover and harness new business opportunities*”. The challenges available on the “Open Innovation Marketplace” are real world problems that can only be solved through critical thinking, research and creativity.

The “*Solvers*” platform has already hosted challenges “*from facilitating access to clean water at a household level to passive solar devices designed to attract and kill malaria-carrying mosquitos*”. “*Solvers*” are diverse groups of people ranging from academics, consultants, researchers, companies, students, technicians, etc.

Source: InnoCentive website⁵⁴.

⁵³ InnoCentive. The Open Innovation Marketplace. Available at: <https://www.innocentive.com/> [Accessed April 17, 2021]

⁵⁴ Innocentive. <https://www.innocentive.com/> [Accessed April 22, 2021]

Many social innovation initiatives are small and require further structuring, funding, and more sustainable collaborative organisational approaches to align all players in more resilient innovation ecosystems through better modelling, forecasting, risk and crisis management. The **European Innovation Council (EIC) Fund**⁵⁵ responds to these challenges by offering direct equity and quasi-equity investments in the capital of start-ups and SMEs in combination with grants, as part of the blended finance scheme under the EIC accelerator Pilot⁵⁶.

The EU adopted its revised **Council Recommendation on key competences for lifelong learning** in May 2018. It referred to citizenship competence as one of the eight key competences, defined as “*the ability to act as responsible citizens and to fully participate in civic and social life, based on understanding of social, economic, legal and political concepts and structures, as well as global developments and sustainability*”⁵⁷. There is an explicit reference to the UN Sustainable Development Agenda 2030⁵⁸, inviting EU Member States to mainstream the UN Sustainable Development Goals (SDGs) into education, training and learning, encouraging knowledge acquisition on climate change and the sustainable use of natural resources. The invitation is clear that HEIs should help change the mindsets of individual students but also for institutions themselves to focus more actively on the SDGs and operate in different ways. UBC has a key role to play in these developments as HEIs and businesses can play a transformational role through institutional changes, offering their staff (and students) opportunities to “*practise change*”.



HEIs should help change the mindsets of individual students but also for institutions themselves to focus more actively on the SDGs and operate in different ways.

The Authors

⁵⁵ EIC Fund; Available at https://eic.ec.europa.eu/investment-opportunities_en [Accessed April 16 June, 2021]

⁵⁶ EIC Accelerator Pilot. Available at: <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/eic-accelerator-pilot> [Accessed April 17, 2021]

⁵⁷ Council Recommendation of 22 May 2018 on key competences for lifelong learning. 2018. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?toc=OJ%3AC%3A2018%3A189%3ATOC&uri=uriserv%3AOJ.C_.2018.189.01.0001.01.ENG [Accessed April 17, 2021]

⁵⁸ United Nations. Transforming our World: the 2030 Agenda for Sustainable Development. Available at: <https://sdgs.un.org/2030agenda>

4.2. Enabling factors for social innovation

The report '*A European ecosystem for social innovation*⁵⁹ identifies critical enabling factors for social innovation. HEIs should do a lot more to **promote social innovation as a discipline and a criterion for career advancement** along other types of academic production. Curricula should offer knowledge to enhance students' awareness of societal issues and develop their skills to become engaged citizens in society, possibly delivered in cooperation with business and NGOs, which currently remains challenging.

According to the report HEIs are embedded in their region and they should **cooperate with companies that have a strong focus on social innovation**. They should engage more widely in civil society dialogues between citizens, students and university staff to form opinions and take action on issues of societal importance. Government R&D funding with a stronger focus on social innovation could also be a strong enabling factor to encourage the development of new business models; it is currently insufficient to support social innovation.

The SocialLab at the University of Lucerne provides a good example of an interdisciplinary project related to social innovation and cooperation between Universities, economic partners and NGOs. The interdisciplinary module "Social Lab⁶⁰" uses the Design Thinking innovation method to find application-oriented solutions for social-social problems.

The **SocialLab^{61 62} of the Lucerne University of Applied Sciences and Arts** is an interdisciplinary module in which students from the departments of Social Work, Design and Art, Technic and Architecture and Business collaborate on questions related to social innovation. Students work with practice partners from different economic areas in collaborative processes to develop innovative solutions with the use of design thinking. The module is offered yearly and consists of 3 sub-modules:

1. **"Innovation Camp"**: This is a block week in Berlin during which students are introduced to the methods of design thinking and Fast-Forward-Challenges. They team up with 5 to 6 fellow students and are introduced to the specific challenge of their respective practice partner.
2. **"Innovation Development"**: This takes place during four weekends. In this sub-module students get to know different co-working spaces, are working on their challenges under supervision, exchange with the respective practice partner and present to them their intermediate results. In-between the weekends the study teams work independently on their challenges and possible solutions.
3. **"Innovation Transfer"**: This is another block week during which students develop solutions for their team challenges. At the end of the week, they present their innovative solutions to

⁵⁹ GEORGHIU, L. 2018. *A European ecosystem for social innovation*. European Commission. Published April. <https://publications.europa.eu/en/publication-detail/-/publication/df7a8163-69fd-11e8-9483-01aa75ed71a1/language-en/format-PDF/source-71538714> [Accessed April 17, 2021].

⁶⁰ <https://www.isa-campus.ch/de-ch/angebote/sociallab/> [Accessed May 6, 2021]

⁶¹ Minder, B./Larbig, C./Jakob, M.C. (2015): Out of the box: Soziale Innovation. Available at: <https://www.zukunftsinstitut.de/artikel/out-of-the-box-soziale-innovation/> [Accessed April 22, 2021].

⁶² SocialLab. Available at: <https://blog.hslu.ch/sociallab/studierende/modulaufbau/> [Accessed May 6, 2021].

their respective practice partner. The sub-module counts for 3 ECTS and includes a reflection phase and feedback from the practice partner. The final output is an implementation concept which is handed over to the practice partner who then decides how the concepts can be used and implemented.

Sources: Minder, B./Larbig, C./Jakob, M.C. (2015)⁶³ and SocialLab website⁶⁴.

4.3. EU support for social innovation

The Commission has been pioneering social innovation for many years for example the EU-funded **URBACT programme**⁶⁵ to help cities to exchange around good policies for urban developments by multiple local stakeholders. The EU-funded SELUSI study (2008-2013)⁶⁶ reviewed 550+ social ventures and examined how they could expand innovation on a much larger scale, looking at different social venture business models. The FP7 Transition project (2013-2016)⁶⁷ had similar aims to facilitate upscaling and business planning for social innovation initiatives.

In the **Erasmus+ Alliances for Innovation** are funded with the aim to strengthen Europe's innovation capacity by boosting innovation through cooperation and flows of knowledge between higher education, vocational education and training institutions (both for initial and continuous education), and the broader socio-economic environment, including research.⁶⁸ An example of such an alliance for social innovation is the "*Social Innovation through Knowledge Exchange*" (SIKE) project which demonstrates the potential of universities to use their knowledge in order to affect social change in a direct and meaningful way.

SIKE⁶⁹, a co-funded Erasmus+ project (2018-2021) aims to unleash the knowledge potential of universities to have a direct impact on social change.

The project developed a blueprint document to provide guidance for establishing local SIKE units. These units intend to build alliances between stakeholders in the social innovation ecosystem, from businesses, local government, to civil society organisations and community groups, to develop knowledge exchange tools and processes to meet the needs of social innovators.

⁶³ Minder, B./Larbig, C./Jakob, M.C. (2015) Out of the box: Soziale Innovation. Available at: <https://www.zukunftsinstitut.de/artikel/out-of-the-box-soziale-innovation/> [Accessed April 22, 2021].

⁶⁴ SocialLab. Available at: <https://blog.hslu.ch/sociallab/studierende/modulaufbau/> [Accessed May 6, 2021].

⁶⁵ European Commission. URBACT Interreg. Available at : https://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/europe/2014tc16fir003#:~:text=URBACT%20III%20is%20a%20European,programme%20promoting%20sustainable%20urban%20development. [Accessed April 17, 2021]

⁶⁶ European Commission. Final Report Summary – SELUSI (Social Entrepreneurs as Lead Users for Service Innovation). 2013. Available at: <https://cordis.europa.eu/project/id/217622/reporting> [Accessed April 17, 2021]

⁶⁷ European Commission. Final Report Summary – TRANSITION (Transnational Network for Social Innovation Incubation). 2016. Available at: <https://cordis.europa.eu/project/id/604849/reporting> [Accessed April 17, 2021]

⁶⁸ Alliances for Innovation. Available at: https://ec.europa.eu/programmes/erasmus-plus/programme-guide/part-b/key-action-2/partnerships-cooperation/alliances-innovation_en [Accessed April 27, 2021]

⁶⁹ The SIKE project. Available at <https://sike-eu.org/> Accessed April 27, 2021]

SIKE stimulates social entrepreneurial skills in universities and their regional communities. It offers facilities to support social innovation incubation and hot-desking. It links services to connect social entrepreneurs and community groups with university knowledge bases. It offers resources, processes and expertise to demonstrate the value of social innovation to policymakers.

Source: SIKE project⁷⁰.

The Structural Funds have also supported multiple social innovation initiatives in areas such as migration, urban regeneration, health and ageing and workplace innovation. The guide for social innovation prepared in 2013 by DG REGIO and DG EMPL, with inputs from other DGs⁷¹, provided multiple examples. It highlights the need to upscale social innovation into public policies, looking at ways under which social innovation could be evaluated and approaches to shift from social policy experimentation to sustainable approaches.

Finally, the Social Innovation Tournament of the European Investment Bank⁷² recognises the best European social entrepreneurs and reward innovative initiatives that create social, ethical or environmental impacts. Projects cover areas of education, healthcare and ageing, the environment, the circular economy or job creation.

⁷⁰ Sike. <https://sike-eu.org/> [Accessed April 27, 2021]

⁷¹ DG REGIO & DG EMPL. Guide to Social Innovation. 2013. Available at: <https://www.channelmanche.com/assets/document-downloads/EU-Guide-to-Social-Innovation.pdf> [Accessed April 17, 2021]

⁷² European Investment Bank. Social Innovation Tournament. 2020. Available at: <https://institute.eib.org/social-innovation-tournament-2/> [Accessed April 17, 2021]

5.0. Conclusions

5.1. Conclusions

The initiatives described in this reflection paper have shown results since universities and businesses join forces to instil innovative mindsets in individuals (from staff to students), while at the same time stimulate dynamic institutional approaches to unlock multiple excellences in open innovation ecosystems. As this approach has already been central to traditional technological innovation so far, it seems that for social innovation it is even more the case.

Combining research excellence and economic development is crucial to add value to any type of innovation. The importance of peoples' mindsets (university staff, students, employers, employees, and wider society) is widely mentioned in the innovation literature⁷³. However, this mindset is connected to the social, economic, and environmental conditions to build the basis for a modern innovation culture.

The example of digitalisation illustrates this very clearly. Digitalisation is both an instrument for innovation, but also a way of innovation itself. The former reflects the need of use-cases for digitalisation, while the latter provides new perspectives on social and economic development through digital applications, which had not been thought of before. Further, digitalisation is also an example for regional and international development: Ideas for digital solutions are often established with communication platforms including international brainstorming. The Digital Makers Hub in Austria, as well as the global InnoCentive marketplace for open innovation, are just some examples of such platforms. In this respect digitalisation provides both the means and the ends to open up innovation.

For innovation ecosystems to foster university business cooperation the following key aspects are of major importance:

- **Framing**, which means to establish an innovation friendly environment, including innovative mindsets, excellence in competence development, and entrepreneurship.
- **Instruments**, which are accessible to all players in innovation (universities, MNCs, SMEs, public institutions and society), including possibilities to establish cooperation and communication between the different actors. For example, interdisciplinarity and creativity are increasingly approached through unconventional formats and activities like new emerging digital platforms connecting different stakeholders from all over the world. Universities could also open up their facilities by creating open labs aiming to share knowledge, experience, commitment and intellectual stimulation with local societies and follow a challenge-driven approach where students engage with companies to solve real life problems.

⁷³ E.g. John Sweeney, Elena Imaretska (2016): Innovative Mindset: 5 Behaviours for Accelerating Breakthroughs. Porchlightbooks, Milwaukee.

- **Support** is important: many innovative ecosystems provide financial and non-financial support and incentives to innovation (European research programmes, national funding programmes, regional initiatives).
- The **possibility to participate** in innovation nowadays has never been as high as it is today in Europe. A large proportion of well-educated people in the society is connected to recent challenges and asking for new services and products, which can be widely accessible. Examples of these challenges are digitalisation and artificial intelligence, but also the Green Deal as stated in the “Agenda for Europe” launched in 2019⁷⁴. The recent Covid-19 crisis has created major challenges on the labour market for some worker categories, but it has also led to major innovation and job creation in new areas.

Eventually, the terms and conditions may differ in the national contexts for the Recovery and Resilience Facility and its €672.5 billion in loans and grants available for reforms and investments in EU Member States to mitigate the economic and social impact of the Covid-19-pandemic⁷⁵. But the need to include wider parts of the society to unlocking multiple excellences is undisputable, and it reflects opportunities for universities and businesses to play a vital role in the crisis recovery and to modernise Europe’s economic, social, and environmental conditions.

This reflection paper highlights the many different approaches that can be taken to unlock systemic innovation and excellence through UBC. Frameworks, methods and practical tools exist, that have been developed by researchers and in EU-funded projects. These can often form the backbone to make the shift from project-based initiatives to sustainable systemic approaches for long term impact.

Peer learning and exchange of good practices on “what works” for multi-stakeholder collaboration in ecosystems that promote excellence and social innovation have always been at the heart of the UBC. UBC could disseminate good practices through online seminars with 4 to 5 presentations of initiatives, and a facilitator capturing the lessons learnt, good practices and the EU added value.

To join the University-Business Cooperation (UBC) network, join the Microsoft Teams Group, stay updated and get involved in future activities of the UBC network, please contact the European Commission:

Mr Paul Tzimas (DG EAC, Unit C1, Innovation and EIT), Paul.Tzimas@ec.europa.eu

⁷⁴ My Agenda for Europe. President European Commission Ursula von der Leyen. Available at: <https://op.europa.eu/en/publication-detail/-/publication/43a17056-ebf1-11e9-9c4e-01aa75ed71a1> [Accessed April 21, 2021]

⁷⁵ The Recovery and Resilience Facility. Available at: https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility_en [Accessed April 17, 2021]

