



# AEIP – Activity 2 Technology exchange – learning activity

Open innovation & co-creation





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## 1 Introduction

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This case study presents an investigation into the concepts of open innovation and co-creation and into the implementation of open innovation and co-creation programmes and platforms. Both concepts have been emphasized by the Community of Practice of the Africa Europe Innovation Partnership (AEIP) as potentially important methods of supporting technology transfer in Africa and Europe. The Service Facility for International Cooperation of the European Commission has undertaken this case study in partnership with WAITRO (World Association of Industrial and Technological Organizations).

### 1.1 Technology Transfer

Technology transfer is a complex and multifaceted process of disseminating and transferring technology from the its originating environment to a wider group of stakeholders. Technology transfer deals with issues of demand-side uptake capacities, the supply-side market and competition considerations, as well as a lack of intermediary pathways and brokers for such transfer. These issues and their framework conditions such as legal frameworks, business environment, and enforcement all play important roles in technology transfer. The process of disseminating technology occurs along various potential axes, from research and knowledge organisations (RTOs) to the private sector, from large companies to SMEs, and within or between countries. Technology transfer can involve various stages of technological sophistications, related to operating technology, maintenance or repairs, implementing innovations or eventually, designing and developing new products and (manufacturing) processes (Agola, 2016).

In the framework of the Sustainable Development Goals (SDGs), technology transfer has been recognized as a priority for supporting economic development in developing countries. When used effectively, technologies can be applied to overcome development challenges. The ambition to provide developing countries with the tools and capacity to enable or accelerate their trajectories towards inclusive and sustainable growth is mentioned in particular in SDG 9 (Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation) and SDG 17 (strengthen the means of implementation and revitalize the global partnership for sustainable development). SDG 17 devotes particular attention to the need for enhanced cooperation, both North-South, South-South and triangular regional and international cooperation, including access to science, technology and innovation through improved coordination and through a global technology facilitation mechanism. SDG 9 supports, amongst others, domestic technology development, research and innovation in developing countries, as well as the access to information and communications technology (AEIP, technology transfer strategy report, 2019).

### 1.2 Open innovation and co-creation

Open innovation and co-creation are regarded by the Community of Practice of the AEIP as means of increasing technology transfer. The term open innovation has been coined by Henry W. Chesbrough in 2003 to describe a new paradigm of innovating. It details the “shift from a closed paradigm to an open paradigm [...] as the main element that fosters organizational performance”. According to H.W. Chesbrough (Chesbrough H. , 2003) it means that “valuable ideas can come from inside or outside the company and can go to market from inside or outside the company as well.” It contrasts starkly with the traditional way of innovating, where all knowledge is kept inside



the company and moves in a linear way from the laboratory to the market. Similarly, co-creation relates to bringing stakeholders into an organisation or company to think about (shared) challenges.

Both concepts have been developed relatively recently and refer to new methods of innovation. The study therefore aims to first develop a theoretical framework (Chapter 2) in which the literature on open innovation and co-creation is explored to support the development of a set of criteria alongside which open innovation projects and programmes can be analysed.

In order to illustrate best the different ways in which open innovation and co-creation practices are applied, three different platforms facilitating open innovation and co-creation have been analysed (Chapter 3), which are:

- *Outside in innovation* Digital platform: SAIRA – the Open Innovation Hub for Sustainable Development (operated by WAITRO)
- *Coupled innovation* Collaborative research funding platform: Horizon2020
- *Inside out innovation* Physical platform: Ventures Platform & BongoHive

Based on the lessons learned from the cases, we provide conclusion on strengths and weaknesses of open innovation and co-creation platforms (Chapter 4) and offer a set of recommendations (Chapter 5) for actions to promote open innovation and co-creation.

## 2 Theoretical framework

In order to compare open innovation and co-creation projects and disseminate learnings for the Community of Practice, first the concept of open innovation and co-creation will be further explained in this chapter. This is followed with the research questions which have formed the basis of interviews held with actors involved in one of the three open innovation approaches.

### 2.1 Open innovation

Henry W. Chesbrough defined the term open innovation by comparing innovation principles. These principles described the different perspectives and approaches for organising Research & Development (R&D) activities within a company. The table below presents how Chesbrough structured six notions to illustrate the difference between closed and open innovation (Trott & Hartmann, 2009).

Table 1 Closed innovation versus open innovation principles

	Closed innovation principles	Open innovation principles
i	The smart people in our field work for us	Not all of the smart people work for us so we must find and tap into the knowledge and expertise of bright individuals outside our company.



ii	To profit from R&D, we must discover, develop, produce and ship it ourselves	External R&D can create significant value; internal R&D is needed to claim some portion of that value.
iii	If we discover it ourselves, we will get it to market first.	We don't have to originate the research in order to profit from it.
iv	If we are the first to commercialize an innovation, we will win.	Building a better business model is better than getting to market first.
v	If we create the most and best ideas in the industry, we will win.	If we make the best use of internal and external ideas, we will win.
vi	We should control our intellectual property (IP) so that our competitors do not profit from our ideas.	We should profit from others' use of our IP, and we should buy others' IP whenever

Source: (Chesbrough H. , 2003)

One considerable factor in this change in paradigm is that the knowledge landscape in which companies operate has changed significantly (Chesbrough H. , 2003). With an abundance of knowledge available, in the form of “public scientific databases and online journals and articles, combined with low-cost Internet access and high transmission rates”, knowledge is much more available than in the past.

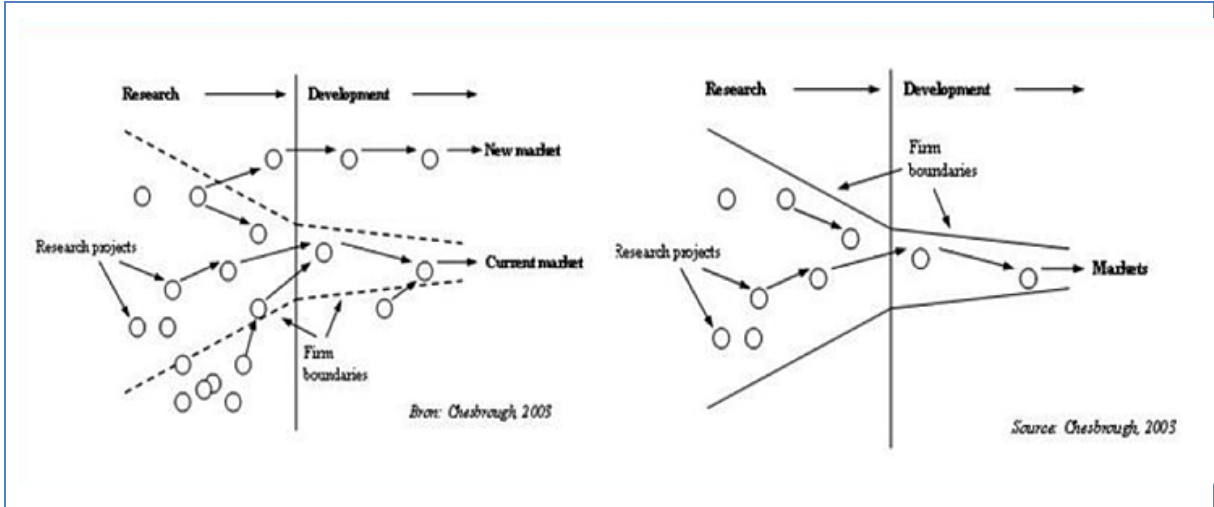
Chesbrough provides four indicators for this increased knowledge diffusion in society:

- Patents are spread over a larger number of companies (the share of individuals and small firms has also risen)
- The share of US patents held by non-US companies has risen
- The share of industrial R&D has increased greatly in companies that are smaller than a thousand employees and the share of large companies in total R&D expenditure has fallen
- A large rise in college graduates and post-graduates in the US.

This larger spread of knowledge has increased substantially the innovation development speed and logically also induced a change on how organisations organise their innovation development processes. In the ‘traditional’ setup companies organised innovation internally in order to develop and strengthen their competitive position. A strategy that proved to be too lengthy and expensive in a world where knowledge develops quickly, and as a consequence products and services based on that knowledge may prove to be outdated quickly. In order to increase speed companies started to tap into knowledge outside their ‘firm boundaries’ (fig. 1), either to improve the R&D for products and services in the current market or to develop products and services together with partners for new markets.



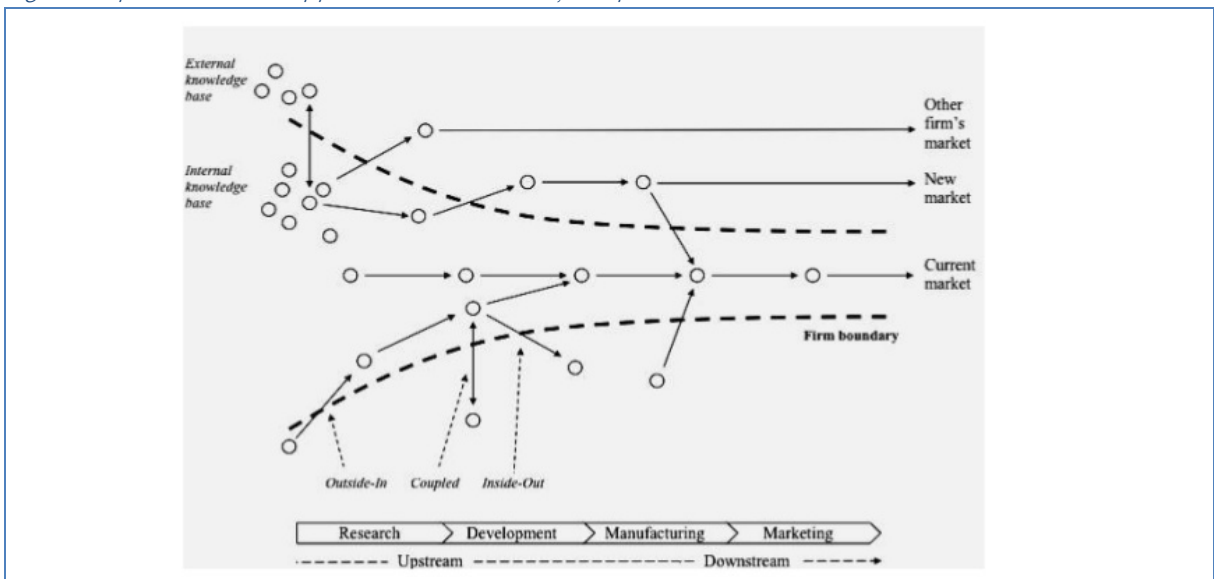
Figure 1 Open vs. Closed Innovation



Chesbrough (2003)

Chesbrough's innovation model describes sequential innovation processes and distinguishes activities related to Research and Development, which are characterised by a different scope. Research projects within the innovation model tend to have a broad scope which in the Development phase can be narrowed down to activities addressing the current market or a new market. The biggest difference between open and closed innovation, which Chesbrough described as two extremes on a spectrum, is the openness of the firm boundaries. In the open innovation model the firm boundary is open (dashed line) and sees different activities along this border. Chesbrough together with other researches has elaborated the innovation model through the years. Different process stages have been added where openness of innovation is relevant, and in 2014 (Chesbrough H. &., 2014) the interactions along firm boundaries have been typified as [1] Outside in, [2] Coupled and [3] Inside out (fig. 2).

Figure 2 Open innovation approaches: Outside-in, Coupled and Inside-out



(Chesbrough H. &., 2014)





### *Outside in*

Researchers at universities have become more focussed on the needs of industry, in part to seek additional funding for their research. Ways to access external knowledge are for example hiring staff from universities or alternatively funding research at universities. An organisation could also look out for interesting activities at start-up companies (Chesbrough H. , 2003). According to Chesbrough, the concept of open innovation alters the research function in organisations, expanding “the role of internal researchers to include not just knowledge generation, but also knowledge brokering” and thereby changing the career paths of researchers (Chesbrough H. , 2003). In this case study we analyse this concept in more detail by studying the digital knowledge brokering platform SAIRA (See 3.1).

### *Coupled*

However, according to Hossain et al. (2016) not all scholars believe that open innovation is a new approach and there is criticism whether this is an appropriate approach. Trott and Hartmann for example mention that many scholars of R&D management and innovation argue that the open innovation paradigm “represents little more than the repackaging and representation of concepts and findings presented over the past forty years within the literature on innovation management” (Trott & Hartmann, 2009). This literature has often recognized the importance of incoming information, what Chesbrough has done according to them is to create a false dichotomy. Trott and Hartmann argue that reasons for strategic collaboration, involving for example customers, suppliers or competitors, have long existed and that the closed innovation model is misleading in representing companies undertaking all R&D by themselves. They see the following ways of entering strategic collaboration: licensing, supplier relations, outsourcing, joint venture, collaboration (non-joint ventures), R&D consortia, industry clusters, and innovation networks (Trott & Hartmann, 2009). Furthermore, Trott and Hartmann argue that the open innovation model disregards literature on technology transfer and absorptive capacity, which highlights the importance of R&D capacity in benefiting from outside technology. In this case study we analyse strategic collaborations in more detail by analysing a collaboration within a research consortium formed for a Horizon 2020 call.

### *Inside out*

In the first versions of Chesbrough’s closed innovation model spillovers were deemed a cost and judged to be essentially unmanageable. In the evolved conceptualisations the spillovers were transformed into inflows and outflows of knowledge that can be purposively managed. “Firms can also create channels to move unutilized internal knowledge from inside the firm to outside the firm or other organisations in the surrounding environment” (Chesbrough H. &., 2014). Chesbrough has argued that the important step is to develop and implement the open innovation approach which will deal with “opening up the business model” in order to enable companies to be “effective in creating and capturing value” (Hossain, Islam, Sayeed, & Kauranen, 2016). These processes tend to occur more often downstream in the innovation processes, building on knowledge already tested in order to (fully) capitalise on its value, in current and new markets. In this case study we analyse two ‘Inside out’ approaches.

Based on above mentioned additional research on open innovation, Chesbrough & Bogers (Chesbrough H. &., 2014) refined the definition of open innovation as a:



A distributed innovation process based on purposively managed knowledge flows across organizational boundaries, using pecuniary and non-pecuniary mechanisms in line with the organization's business model. These flows of knowledge may involve knowledge inflows to the focal organization (leveraging external knowledge sources through internal processes), knowledge outflows from a focal organization (leveraging internal knowledge through external commercialization processes) or both (coupling external knowledge sources and commercialization activities).

## 2.2 Co creation

As mentioned, in open innovation knowledge can be generated inside or outside the company and use internal or external paths towards the market. This could involve for example competitors or consumers. One way of opening up the business model is to provide customers with opportunities for co-creation or co-innovation (Weber, 2011).

Whereas open innovation advocates for a systemic approach to inflow and outflow of knowledge for the purpose of innovating, co-creation is specifically about bringing stakeholders into the company to work on challenges. These stakeholders could be consumers or suppliers and can be brought on-board through for instance in-depth meetings. Compared to open innovation, co-creation is logically centred around interaction. Vargo et al. (Vargo, Maglio, P.P., & Archpru Akaka, M., 2008), defined co-creation as follows:

A general concept that encompasses all the specific theoretical and empirical occurrences in which companies and customers generate value through interaction.

According to C.K. Prahalad and V. Ramaswamy “Informed, networked, empowered, and active consumers are increasingly co-creating value with the firm. The interaction between the firm and the consumer is becoming the locus of value creation and value extraction.” (Prahalad & Ramaswamy, 2004) Furthermore, the authors mention “co-creation is creating value based on experiences through engagement platforms that expand ecosystems.” (Pennsylvania, 2012)

From this perspective many activities can be described as co-creation. Galvagno & Dalli (2014) defined the theory of Value Co-Creation through a systemic literature review. In order to compare the activities and the focus of adding value through co-creation Galvagno & Dalli (2014) filtered the following levels of distinction:

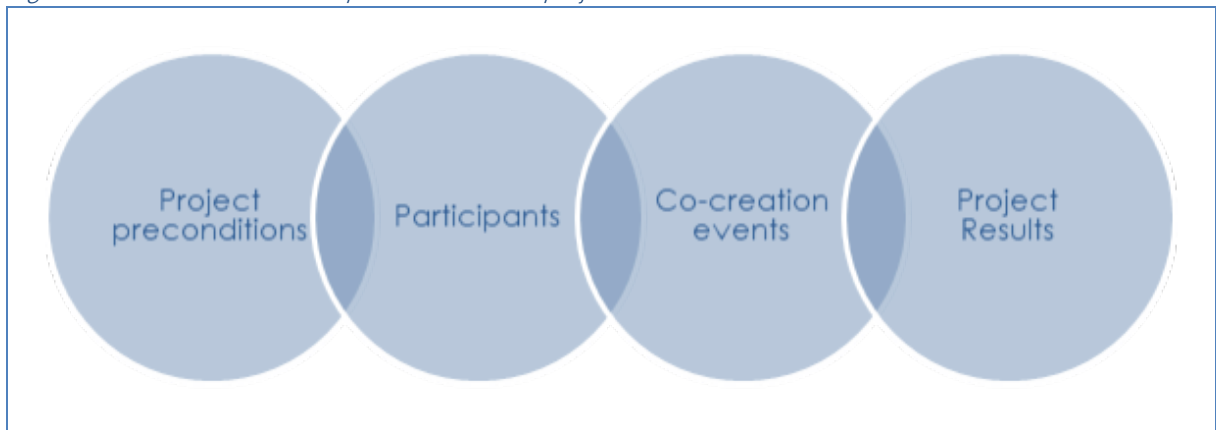
<b>Object of analysis</b>	Product	Service
<b>Level of analysis</b>	Company centred	Customer experience-centred
<b>Theoretical perspectives</b>	Service science, innovation and technology management, marketing & consumer research	
<b>Common themes</b>	Co-creating value through customer experience and competence, SDL, service innovation, the development of service science, online & digital customer involvement, individual consumers and communities collaborating with companies	

Source: Galvagno & Dalli (2014)



Although this does help to narrowing down the focus for an abstract analysis, it lacks the framework to be able to compare co-creation projects at a practical level. In many ways co-creation projects are based on project management principles, featuring an objective, a budget, a timeline and a team. Particularly interesting are the interactions between internal and external team members, which links also to the open innovation framework. Lee et al (Lee, Mattelmäki, Jaatinen, & Salmi, 2018) analysed 12 co-creation projects to compare approaches and results. Based on that the researches distinguished four variables of influence on co-creation projects:

*Figure 3 Four variables to compare co-creation projects*



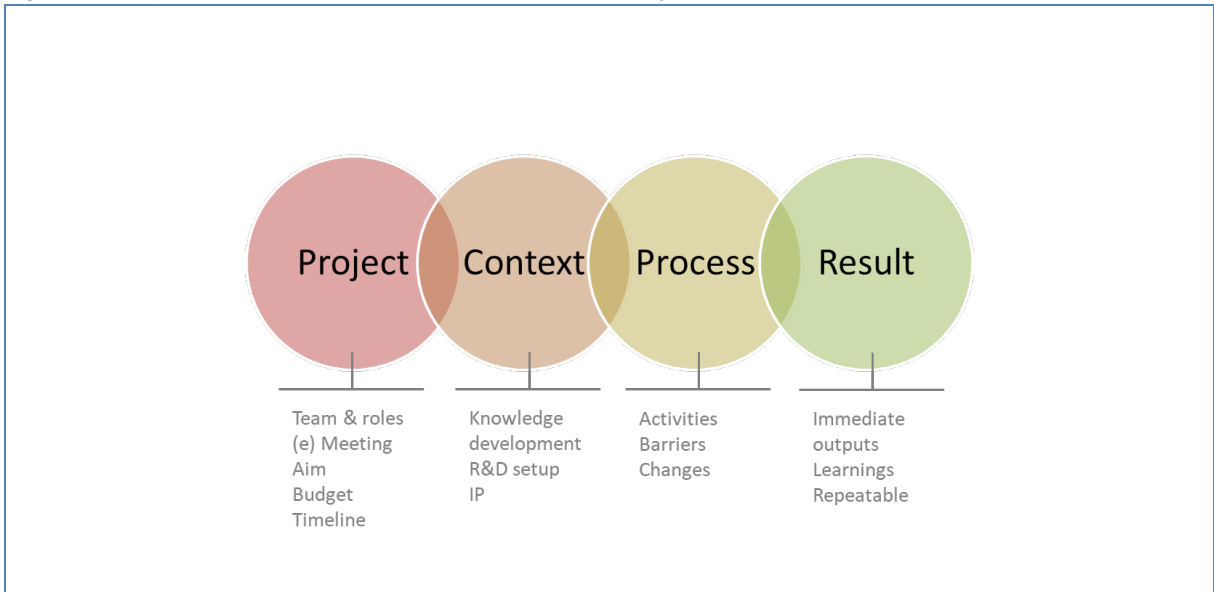
Source: Lee et al (2018)

### **2.3 Research questions for Outside in, Coupled and Inside out open innovation approaches**

The co-creation variables as described by Lee et al (2018) have formed the basis for the research questions in order to be able to compare how co-creation was organised in the three open innovation paradigms as defined by Chesbrough et al. To compare open innovation and co-creation projects the research questions were structured as shown in the figure below.



Figure 4 Comparison of open innovation & co-creation projects



Source: Technopolis Group (2020)

### Research questions

#### Project

1. How big was the project team
2. How many team members from inside the company and how many outside the company (distribution of power)
3. Which roles were assigned to the team members (e.g. from different departments – diversity in knowledge and interest)
4. How often did team members (e)–meet?
  - How much was done virtually and how much physically
5. What was the project aim (necessary to link to results)
  - Product or Service
  - Company centred or customer experience centred
  - Service, innovation & technology or marketing & consumer research
6. Did the project start with a project brief? Was it changed over the course of the project?
7. Was there a (strict) timeline
8. Was there a strict budget

#### Context



1. How is knowledge developed by actors
2. How is knowledge shared within the company
3. How is R&D organised within the organisation? How much is done internally, how much externally
4. How common is it to share R&D knowledge with external partners? Does the organisation have legal checks in place before starting a project?
4. How does the organisation go about IP matters? Was that an issue within this project?

### Process

1. What worked out well during the project? Why
2. Which activities were used (type of co-creation events & setting for co-creation):  
Co-design workshops, prototypes, interviews, process simulations, visualizations, co-development of methods, journey mapping etc
3. What had to be changed? Why
4. Which barriers were encountered? (e.g. trust, miscommunication, accountability)
5. How were barriers solved

### Result

1. What were immediate outputs
2. Further implementations and impacts [outcomes] (learnings)
3. Would the actors organise the next project again via co-creation principles?

## 3 Examples of open innovation: three platforms

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Based on the theoretical framework three different approaches to open innovation have been compared: Outside in approach, Coupled approach and Inside out approach. Within the Community of Practice these three approaches have been organised through three different platforms.

### 3.1 Outside in: digital platform Waitro - Saira

#### 3.1.1 Summary of platform

Launched in 2019, SAIRA was born out of WAITRO to foster international collaboration in research and development and to tackle the United Nations' Sustainable Development Goals. By bringing



established researchers together with companies, start-ups, NGOs, government agencies, and impact investors, SAIRA strives to transfer technologies and implement innovative solutions on a global scale. SAIRA is operated by the WAITRO Secretariat based in Sankt Augustin, Germany, and secured by Fraunhofer technology.

The SAIRA platform offers easily accessible matchmaking tools that:

- Connects about 150 Research Transfer Organisations across the globe based on ideas or specific needs
- Unite companies and experts in research and technology development
- Link start-ups with innovative business ideas and scientists
- Bring together NGOs and government entities with research partners

By enabling promising partnerships, SAIRA bridges the gap between impact investors and investment opportunities.

Everybody can setup a profile in the SAIRA platform. To facilitate matchmaking, in terms of bringing the desired expertise from the outside into the organisation, the platform offers the possibility to define the collaboration needs by posting challenges in order to be connected to the right R&D experts.

### 3.1.2 Open innovation and co-creation outcomes

Since the launch the user bases has grown and based on their experiences some features of the SAIRA platform were extended. Based on the principle that good matchmaking is essential for running fruitful open innovation projects the extended features are oriented towards increasing the likelihood of a good match. This is done by adding more levels of specification and tailoring the platform to different target groups and related needs. In the updated version also Industry, start-ups and NGOs/government can use the platform and post their challenges. By catering to a larger group it is likely the user base will grow more rapidly which will increase the likelihood of valuable matches made through the platform.

The platform offers additional resources & services to facilitate project processes, in this early stage of the platform the focus of the users however is more on finding the right profiles online. Collaboration and further execution of the project in this stage is done more often outside the platform through more 'traditional' channels such as e-mail and Skype.

Core Community of Practice member Waitro championed knowledge development regarding open innovation within the group. Based on additional knowledge the SAIRA platform can be strengthened, in order to facilitate future open innovation projects.

## **3.2 Coupled: collaborative research funding platform: open innovation in Horizon2020 calls**

### 3.2.1 Summary of platform

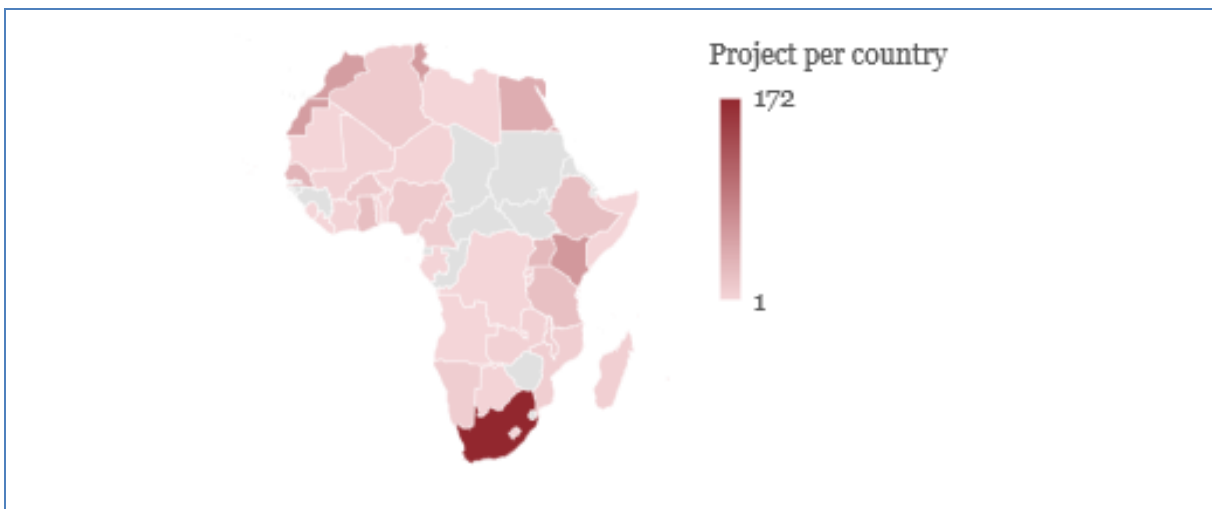
Horizon 2020, the 8th Framework Programme (FP8) for Research and Innovation, implemented by the European Commission, provides nearly €80 billion in funding (2014–2020), making it the biggest EU funding programme, and one of the largest single standing programmes in the world.



Horizon 2020 aims to strengthen the EU science base, advance EU’s technological leadership and innovation capabilities, and tackle societal challenges through R&I. The structure of the programme is based on three pillars: ‘Excellent science’, ‘Industrial Leadership’ and ‘Societal challenges’.

Horizon2020 aims to combine direct project funding and leveraging of funding, and policy coordination to maximize effectiveness and efficiency across the continent. In addition, it emphasises the European value of internationalisation beyond the Union’s borders, as reflected in the priority “**Open to the World**”. Researchers from third countries can participate in Horizon2020 calls. However, participation by non–EU researchers has seen a substantial drop in Horizon 2020 compared to the 7th Framework Programme. As of October 2016, there had been 191 participants from the African Union in 79 projects (€31.2 million) compared to 368 participants during the same period in the 7th Framework Programme. However, DG RTD has emphasized that total international participation in 2018 had increased by 50% compared to the preceding year. An analysis of the CORDIS–database of Horizon 2020 projects shows that **participation is furthermore unequally distributed** (fig. 4). The international collaborations hold the potential for open collaboration or co–creation activities and should therefore be investigated.

*Figure 4 Number of H2020 projects involving African partners, by country (May 2019)*



Source: CORDIS, analysis by Technopolis

### 3.2.2 Open innovation and co–creation outcomes

#### Project

To better understand open and innovation and co–creation outcomes occurring within Horizon2020 research projects, one collaboration between consortium members to formulate a research proposal has been investigated. It concerns a consortium of partners in Central, Southern, and Eastern Europe as well as partners from Africa (Cameroon), America (Argentina) and Asia (Thailand), that has engaged in a partnership to deliver the Horizon2020 “**SOILGUARD**” proposal (project duration would be roughly 3 years). The aim of the research project is to study the dynamic of degradation of different types of soil and effect of fertilizers and pesticides. Thereby it should increase knowledge on biodiversity, geolocalize it, and understand the relations between different



species. Two interviews have been undertaken virtually, with the coordinator of the proposal from the Spanish [Leitat Technological Center](#) and an Associate Professor Phytobiochemist and Seed Pathologist from the University of Yaoundé I (Cameroon).

## Context

The innovation culture of Leitat has changed over the years, moving from a closed system to one that is more open to collaboration with partners. In the context of the Horizon2020 project, collaboration is furthermore a requirement. Leitat, the leading organisation, “aims at Managing Technologies to create and transfer Social, Environmental, Economic and Industrial sustainable value for companies and entities through research and technology processes”. It generally starts its preparation for proposals by analysing internal capacities, requirements posed by the call, and the necessities for carrying out the research, in terms of thematic expertise and geographies.

Leitat had come into contact with the Associate Professor from the University of Yaoundé I through the SAIRA platform, and subsequently verified this contact through the Horizon2020's partner search with the aim of including access to fields to extract data from this distinct environment/biographical region.

## Process

The partners had made several calls to consider cooperation in the project. Leitat had also hosted a proposal meeting, where the concept was discussed and questions from partners answered. Interaction between the Spanish proposal lead and the Cameroonian partner was limited. Due to limited connectivity communication was organised in separate 1:1 sessions, which also limited interaction with wider group. These sessions were mostly practical regarding procedures and forms that need to be followed, to organise the research to be executed by the Associate Professor from University of Yaoundé as formulated by Leitat. In terms of research formulation, the approach formulated does seem to have been rather pre-defined rather than evolved through joint iterative processes.

The proposal lead emphasized the difficulties of working with a partner on a different continent due to differences in communication, culture and research standards and priorities. These barriers may inhibit a deeper collaboration or partnership between the parties involved, such as a collaborative formulation of the research approach. This emphasises the importance of well-established and trusted partners in international collaboration as well as the allocation of resources (i.e. time & travel) to build trust.

## Result

The immediate output of the collaboration so far has been a research proposal for Horizon2020, as well as contacts gained through the formulation of the consortium. The African party was content with the possibility of gaining practical and useful data through its role in the research consortium. In Cameroon, no thematic funding opportunities exist, according to the Cameroonian interviewee, and funding through the university is only sporadic. The collaboration therefore potentially enables the African partner to engage in useful research. Issues around intellectual property however had not been discussed between the parties.





### 3.3 Inside out: Physical platform - startup hub

#### 3.3.1 Summary of platform

Across the globe the past decade there has been an extensive growth in the amount of startup hubs featuring accelerator programmes. Also in Europe and in Africa. The rationale for the existence of these hubs is the same; to strengthen the economy it is important to tap into knowledge, which evolves at increased speed if it is shared. By increasing the proximity of startups it is expected that knowledge spreads more easily, benefitting the development of valuable innovations. Proximity however is an enabling factor for collaborations, not a guarantee. Therefore, through the years more accelerator programmes have taken shape. Just as the Outside in approach with the digital SAIRA platform also the Inside out approach with physical platforms starts with a challenge. These are often initiated by organisations that wish to better tap into knowledge by organising collaborations. To further explore how these challenges are shaped and the matchmaking is organised two physical platforms were analysed:

#### Ventures platform

[Ventures platform](#) is a hub based in Nigeria which started as an investor platform, providing financial capital for startups. Next to that Ventures Platform offers capacity building for startups to thrive in. Based on the Theory of Change the core vision is to build a sustainable and inclusive economy in Africa. This means on one hand working on access to income. As Ventures Platform puts it: a lot of people have income but need a decent income. With that comes access to factors that will lead to a better life. And on the other hand it means working on access to services, finance, internet, affordable housing and basic services which improve lives. Entrepreneurs can provide this, through the jobs, product and services they develop.

#### Bongohive

[Bongohive](#) started as a collaboration platform based in Zambia. The co-founders, all enthusiastic programmers, sought to address the gaps they experienced working within the local technology industry leading to a lack of coordination, difficulty in tapping into available skills and hampered productivity. BongoHive has evolved to assist scalable start-ups of any background by enhancing skills, accelerating growth, strengthening networks, increasing collaboration, providing a forum for ideas exchange and reducing the barriers to entrepreneurship.

Both physical platforms provide programmes of different levels to stimulate the growth and success of the entrepreneurs enrolled. How to formulate the goal of the programme (needs assessment), the selection criteria for entrepreneurs, sourcing entrepreneurs, selecting and training entrepreneurs is knowledge that is mastered internally within the compact hub teams and capitalised upon in existing and new markets. Hence, the Inside out approach.

#### 3.3.2 Open innovation and co-creation outcomes



## Project

In both cases the programmes are organised based on the budget and objective provided by the client which contacted the hubs from their location in the same city. The size of the project team is closely related to the budget, which is why many work with a compact central team (3–4 persons) enriched with freelancers where needed. The central team defined the strategy of the programme, in close contact with the client and kept track of the operation. This way knowledge gained on for instance process improvements was easily transferred to following projects.

Contact within the team was predominantly face to face at the start of the project but afterwards more virtual. In Corona lockdown times also the start was done virtual, resulting in much shorter project cycles. Another valuable insight for the future.

In both cases the aim of the project was to provide matchmaking (service) between organisations to foster collaboration and enhance innovative capacity. Ventures platform facilitated matchmaking between Nigerian and Irish organisations in the agricultural sector. Bongohive developed a programme for a Zimbabwean corporate that wished to tap into ‘fresh’ business solutions from outside for their freshly build trendy & inviting office space. But actually they needed –although they were not fully aware– a programme to accelerate internal innovation processes, on which Bongohive advised them. Interestingly enough an extensive budget was available for refurbishing a floor, significantly less buy in was at hand for a process that required investment and commitment of time. Both services asked came from new markets for the platforms, which made it interesting to invest additional resources in, even when the budget was tight. Timelines seemed to be slightly stretchable in both cases.

Several co-creation tools, mostly workshops and journey mapping, were used to finalise the objective of the programme (needs assessment) and strengthen capacity building along the way.

## Context

The core knowledge assets of these physical platforms is process and network (stakeholders & community) related, which is further developed whilst running projects. As the programmes are run by the same core team this knowledge (R&D) is developed and build internally. External partners see the outcomes but not exact processes to reach those outcomes, which may explain why IP is hardly an issue in these projects.

## Process

What typifies both projects is that they were capitalising on an Inside out approach oriented to new markets, steered by new clients. In both cases the processes were the same, only the sourcing activities were more labour intensive as it involved reaching out and organising activities in new networks. For Ventures Platforms it meant reaching out to new networks and organisations in Ireland, for Bongohive it meant organising major hackathon events simultaneously at Zambian universities to source ‘fresh’ ideas from students. Both mentioned that testing new sourcing activities helped to further improve their business model with the possibility to scale the activities in future projects.



## Result

Due to Covid-19 the physical meetings, originally planned in Ireland, of Nigerian companies with Irish companies had to be postponed. But what came through as an immediate 'win' was that due to Covid-19 the timeline was drastically shortened, by half. A test that Ventures Platform never planned, but knowing that it is possible to shorten the programme cycles so drastically is of course a valuable insight, to be capitalised upon in the future.

For Bongohive the impact of learning the ins and outs of a new sector means that they are able to offer their services to other corporates in the banking sector.

Both stressed the importance of a thorough needs assessment. Interestingly enough, this is the same insight gained from the Outside in digital platform.

## 4 Conclusion on strengths and weaknesses of open innovation and co-creation platforms

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### *The laws of demand and supply*

For innovation processes to lift off through external collaboration demand and supply need to match. This came across in all three approaches (Outside in, Coupled and Inside out) analysed. What can be observed through the three approaches analysed is that in all cases actors involved invested additional time for needs assessment (demand) and on obtaining additional information to be able assess quality of the supply. The profiles listed on the digital platform SAIRA were cross checked on the Horizon2020 profile (quality indicator), whereas multiple activities were organised in the physical platforms to assess the quality of the entrepreneurs sourced. In all three cases Intellectual Property (IP) did not seem to be an issue. Considering the proposal stage of the Soilguard project IP related matters are not likely to surface yet, although Leitat had standard IP procedures in place. The focus of the research in Yaoundé was focused on field research rather than the development of new tools which does limit the demand for IP procedures. The key assets of both Ventures Platform as Bongohive are related to smart sourcing activities within the network, which has great value but is not an asset that can be secured through IP procedures. There is not a particularly unique way to go about sourcing, selecting and matching persons or teams nor is it done through unique and/or innovative technology which has been developed in-house. In case of Bongohive the client requested the possibility to tap into fresh knowledge of university students for which Bongohive setup several sourcing processes. None of the ideas presented by the students during the hackathons proved to be ground breaking for the client and it is far from obvious how students could have, in theory, protected their ideas after having presented them in public during hackathons and pitches. Both Ventures Platform and Bongohives do offer advisory services via IP experts during their accelerator programmes, which run between 6 weeks and 3 months.

Regarding coupled open innovation activities which were analysed through the research collaboration Soilguard a weakness came across, although it was not perceived as such by the partners involved. The African partner was on-boarded in the project due to geographical location and mostly field research expertise. In this setup it can prove to be complex to fully build on each



other's knowledge, which is an essential element of capitalising on a coupled innovation approach. If partners cannot equally build on each other's knowledge it will also take more time to develop that knowledge, which brings us back to the value of open innovation compared to closed innovation.

### *Tapping into tacit knowledge*

Regardless the open innovation approach chosen it is fairly easy to stumble into cultural barriers. This can be in cross continental projects but also closer to home, in the same country. Organisational cultures come in many forms and are difficult to anticipate sometimes. Both in the Bongohive case as the Soilgard case the **demand side was so specific** that little room was left to tap into the knowledge of the supply side, let alone the tacit knowledge. Moreover, as came across in all three approaches analysed; much communication goes through digital channels which limits the richness of communication substantially. Even more when trying to understand tacit communication. For open innovation projects to succeed it is vital that actors involved understand each other. Some of the cases analysed managed to organise physical meetings at the beginning of the project, some adapted their communication approach by organising bilateral meetings. Although this might help to obtain detailed input, it can hamper collective understanding and collective knowledge development. As in other economic activities, the COVID-19 pandemic poses a challenge to the continuation of open innovation projects and building trust between partners, as close collaboration will logically suffer in a distance economy. Trusted communication systems and investing time in building relations will claim even more priority, and should ideally be thoroughly addressed at the start of a project.

## 5 Recommendations

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Based on the insights gained throughout the case study recommendations have been formulated for the Core Community of practice (5.1) and Policy makers (5.2).

### **5.1 Recommendations to Core Community of Practice**

Much of what is done within innovation processes is trial and error. In some sectors this principle is even championed by celebrating failures. Without going this far the Core Community of Practice could further evolve their knowledge regarding open innovation approaches, by recurrently evaluating one. As the theoretical framework used in this analysis shows there are four elements (project, context, process, result) that every open innovation project shares to some extent. This makes it also easy to share experiences and learn from them.

For innovation processes to succeed it is also important to understand the cultural context actors operate in. Considering the coverage of many African and European countries by the Core Community of Practice they could provide 'cultural guidance' support, by giving some insight on how to navigate the implicit and tacit cultural barriers, for AEIP partners that wish to explore open innovation collaborations in respective countries. The Core Community of Practice can serve as a trusted partner for guidance on this, if needed cultural dimensions (for instance based on



Hofstede's cultural dimensions<sup>1)</sup> could be further analysed through future case studies. Also in terms of the much valued quality check on expertise and network, AEIP partners might be able to share knowledge within the AEIP community where needed.

## 5.2 Recommendations to policy makers

### *Outside in*

Open innovation processes start with the right match between demand and offer. Ideally profiles would be easily available with the desired level of information describing each actor. Building that from scratch is likely to be too expensive. However much data is already available, although not always easily accessible. For policy makers working on stimulating policies, to foster innovation collaborations between actors and across sectors, an important step is to evolve open data platforms, as has been done with Horizon2020 participants.

### *Coupled*

Coupled open innovation processes tend to bring greater benefits at large if the partners involved can 'level' fairly easily. If the difference is too big, it will hamper ease of communication and hence the ease of sharing knowledge. In their programmes, policy makers could encourage for the collaboration to occur within the formulation of the research aim and approach, in order to ensure that all relevant knowledge and expertise is combined. Furthermore, deliverables could be formulated to invite actors to evaluate not only their results but also the collaboration process, which will lead to stronger partnerships (SDG 17).

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<sup>1</sup> Hofstede, G. (2011) Dimensionalizing Cultures: The Hofstede Model in Context. Online Readings in Psychology & Culture 2 (1). Scholarworks.



*Inside out*

Corporates prove to have a catalyst function when it comes down to scaling knowledge. In order to incentivise this tax benefits could be designed to lower the costs for initiating open innovation projects.



## Appendix A Bibliography

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## Appendix B List of interviewees

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Open innovation platform	Name of interviewee	Organisation
Outside in: Digital	Anna Wohrab	Frauenhofer Institute   WAITRO Saira
Coupled: Collaborative Research Funding	Laia Piñol	Leitat – managing Technologies Business development manager
Coupled: Collaborative Research Funding	Julienne Nguetack	University of Yaounde Department of Biochemistry
Inside out: Physical	Adaeze Socan	Ventures Platform Director Design, Strategy & QA
Inside out: Physical	Lukonga Lindunda	BongoHive Co-founder & Executive Director