REPORT ON EXISTING OPEN INNOVATION AND SCIENCE 2.0 APPROACHES AND TOOLS

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1   EXECUTIVE SUMMARY

To master increasingly complex challenges of innovation, such as digitalisation and globalisation, companies have shifted from the so-called closed innovation processes, where internal R&D activities lead to internally developed products distributed by the company itself, towards a more open way of innovating.

Open Innovation has been defined as "the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively."[1], which means that there are various stakeholders involved in the innovation process and they must engage in new forms of cooperation.

Open innovation must go beyond the research and business sector; the civil society (citizens, user crowds, user communities, associations, non-profit organizations) must be integrated in the process to ensure the expansion of knowledge and that this process addresses the right questions and contributes with valuable ideas to find solutions. This is the added value of Open Innovation: Work together to co-create the future and drive structural changes far beyond the scope of what any organization or person could do alone.

For this transformation to take place, universities, RTOs, industry and other stakeholders involved in the innovation process need not only to be encouraged to open up and collaborate, but also to be given practical guidance of how to interface effectively in Open Innovation programmes for the benefit of the actors and the society as a whole.

At this point, the EU project Science2Society (S2S) has much to say. The project will investigate the mechanisms through which universities, RTOs, society and industry collaborate to create value based on the Open Innovation paradigm. This will involve assessing how ideas, knowledge and people can flow in and out these stakeholders' environments and outlining success factors, barriers and challenges from the perception of the different stakeholders.

In order to make this investigation open and available for all the stakeholders, the results will be compiled in an easily accessible knowledge database of University-Industry-Society (UIS) interface schemes, approaches, tools and experiences or real cases that can be used in an Open Innovation context, working sustainably and consistently in a variety of sectors and national settings. This enables stakeholders from universities, industries, RTOs and society not only to get access to an information source that can be browsed through, but also to answer specific questions and address real problems in the field of Open Innovation.

The report at hand and the deliverable *D1.1.Report accompanying the knowledge database* complement each other and explain how this knowledge has been gathered and how the relations among the different concepts have been established.

Keywords: Open Innovation, schemes, approaches, tools, experiences, knowledge database

2   OBJECTIVES

This document reports the collection of information on existing open innovation and science 2.0 approaches and tools and is the result of tasks T1.1 (Collection of available science-industry approaches) and T1.2 (Collection of available open innovation & science 2.0 tools) of Work Package 1 (Collection and analysis of models, programmes and tools).

This information, together with the case studies resulting from task T1.3 (Collection of university-industry interfacing experiences by internal and external experts), the relations among them (approaches, tools, experiences) and with the seven innovation schemes proposed, will serve to load the knowledge database resulting from task T1.4 (Preparation of an online knowledge database).

The knowledge database and its content will foster the success of the S2S project and the fulfilment of its objectives, since it will be used by the different stakeholders (universities, industry and research organisations, society) as a methodological toolbox and practical guidelines for cooperation, identification and analysis of innovation models and also by the S2S pilots, that will implement and evaluate in real life the seven UIS interface schemes.

2.1   Approaches and tools in the context of the S2S Knowledge Database

In order to create valuable knowledge for the stakeholders involved, an intelligent and customer-centred link between different information and data must be provided by the knowledge database. To ensure that all those links between schemes, approaches, tools and experiences are properly defined, several workshops were conducted, the results of them were reviewed by the project consortium.

Particularly challenging in these workshops was the question about how the needs of the different stakeholders and the different ways of using the platform should be considered: some users might have a specific question to be answered or a specific problem to be solved, whereas others might just browse through different approaches, tools and experiences. But, since all those cases have one thing in common, i.e. users need a stable and transparent entering point, the seven open innovation and science 2.0 schemes were chosen as clusters on the landing page of the online knowledge database. From this point on, users can access all approaches, tools and experiences, since they are interconnected with hyperlinks: a user interested in a specific approach will be probably also interested in the tools that support this approach and, on the other hand, a user interested in buying some tool might want to know which other approaches could be supported by it.

3 OPEN INNOVATION AND SCIENCE 2.0 APPROACHES

As in the grant agreement held, the approaches are in the context of S2S emerging approaches of cooperation between university, industry and research organisations in the field of open innovation and science 2.0. They were collected to work out the relations between existing knowledge, methods and (ICT-support) tools of state-of-the-art and to use them as a base of the knowledge database.

All pilot leaders were asked provide appropriate information using a template. The objective of the template was to simplify complicated approaches to a few categories to have a standardized frame for comparisons. The categories were classified through the seven schemes.

3.1 Template for approaches

The following aspects were queried in the template:

- Title

- Subtitle

- Keywords (1-3)

- Stakeholders (University, Large Company, SME, Research Technology Organization, Consumer, Investor)

- Objective of approach (1-3 bullet points)

- Description (3-5 full sentences)

- Unique selling point

- Resources

- Information about the conditions of that approach

    - Success factors

    - Barriers

- Contact information

Unique selling point:
Description of the contrast of the individual approach with others and its uniqueness.

Stakeholders:
Partners in this approach which should be considered

Resources:
Necessary conditions for the realisation of the approach in the form of persons and material.

Success factors & Barriers:
Criteria for the approach to be considered a success and obstacles to be overcome to achieve this.

3.2 Classification (or Types) of approaches

The approaches are classified through the possibly and real use at the seven schemes:

Scheme	Total of Approaches	Comments
Co-creation	12	3 unique approaches, 9 approaches fall into an additional category
Co-location	11	4 unique approaches, 7 approaches fall into an additional category
Collaborative R&D&I projects	10	All approaches fall into an additional category
Intersectoral staff mobility	8	2 unique approaches, 6 approaches fall into an additional category
Big Research Data Transfer	9	4 unique approaches, 5 approaches fall into an additional category
University Knowledge Transfer	9	All approaches fall into an additional category
Open Innovation Marketplace	7	1 unique approaches, 9 approaches fall ino an additional category

Table 1: Classification of Approaches

3.3 Index of approaches

Name (title)	Short description (sub-title)	Classification (or relation with scheme)
Academic chair	Long term bilateral relationship between a company and a university through a chair	Co-location, Collaborative R&D&I projects
Advanced Research Project (ARP)	Advanced Research Project (ARP)	Intersectoral staff mobility
Bachelor-/Master-Thesis	BA-/ MA-students solving an industrial case under university supervision	Collaborative R&D&I projects, Intersectoral staff mobility, University Knowledge Transfer
Case study about opening big research data repositories	Understanding the needs and wants of different stakeholders, identifying possible problems	Big Research Data Transfer
Collaborative definition of strategies in common research areas	Joint analysis and definition of strategies in common research areas between industry and universities	Co-location
Collaborative doctoral education	University-industry partnerships for enhancing knowledge exchange	Collaborative R&D&I projects, Intersectoral staff mobility, Big Research Data Transfer
Company workshops/seminars to University students	Participation of ICT companies in workshops/seminars held at the university	Co-location
Creation of a Center of Excellence	Universities, RTOs and companies with an interest in the same field associate	Co-location, Intersectoral staff mobility
Crowd intelligence	Using crowd intelligence tools for early evaluation of product ideas	Co-creation, Open Innovation Marketplace
Customer journey videos	Presenting product concepts using customer journey videos	Co-creation, Collaborative R&D&I projects, University Knowledge Transfer
Data-driven innovation	Collaboration to provide novel services based on Big data	Big Research Data Transfer
Identify talent through solving industrial challenges	University course where students will work in a particular challenge set by companies	Co-location
Industrial researchers as lecturers	Exciting students for a certain application domain	Intersectoral staff mobility
Industry-academia private workshop	Bilateral workshop addressing specific challenge(s) posed by the company	Co-location, Collaborative R&D&I projects
Innovation Coaches	Using Innovation Coaches to enable virtual development teams	Co-creation, Open Innovation Marketplace

Name (title)	Short description (sub-title)	Classification (or relation with scheme)
Innovation pitches in front of chairmen	Incubator and Accelerator program to grow innovative ideas into legitimate start-ups	Big Research Data Transfer, Open Innovation Marketplace
Innovation platform	Using an innovation platform as social innovation hub in product development	Co-creation, Open Innovation Marketplace
Interdisciplinary Project Week - Inno5	Interdisciplinary Project Week (Inno5)	Collaborative R&D&I projects, Big Research Data Transfer, University Knowledge Transfer
Intersectoral cooperation of staff	Exchange staff between academics and non-academics	Intersectoral staff mobility, University Knowledge Transfer
Literature review about Big data strategies	Using literature review to benchmark current sustainable Big data strategies in RTOs	Big Research Data Transfer
Live online training	Using live training to improve professional skills (on the job)	Co-creation
Mock-ups in virtual teams	Using mock-ups for early validation in virtual teams in product development	Co-creation, Big Research Data Transfer, University Knowledge Transfer
Project surveys	Using regular surveys for real time evaluation of virtual project teams	Co-creation, Collaborative R&D&I projects
Sectoral Cluster	Cluster involving all actors of sectoral value chain	Co-location, Collaborative R&D&I projects
Software initiative for academia	Transforming today's students into tomorrow's leaders	Co-location
Software partnerships	Establishing partnerships between software enterprises and students' product development	Co-creation, Collaborative R&D&I projects, Open Innovation Marketplace
Sources Code Library	Internal open source program	Big Research Data Transfer
Start-up & Innovation Day	Building up a strong and a local start-up-network	Open Innovation Marketplace
Student internships	Bridge the gap between academic curriculum and applied work	Co-location, Intersectoral staff mobility
Students as product developers	Involve students into real product development projects	Co-creation, Co-location, University Knowledge Transfer
Technology Think Tank	Technology Think Tank inside the company	Co-location, Big Research Data Transfer
Training networks	Innovative training network between universities, research centres and companies.	Intersectoral staff mobility, University Knowledge Transfer, Open Innovation Marketplace

Name (title)	Short description (sub-title)	Classification (or relation with scheme)
Trusted Global Open Innovation, Science and Technology Network	An effective collaboration in innovation, R&D and technology transfer	Collaborative R&D&I projects, University Knowledge Transfer
Virtual co-creation in product development	Establishing virtual co-creation between different organisations	Co-creation
Virtual creativity sessions	Implementing creativity methods into virtual collaboration	Co-creation, University Knowledge Transfer
Virtual feedback session	Using web conference session for quality checks and milestones	Co-creation

Table 2: Index of Approaches

3.4 Detail of approaches

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Academic chair	- Long term collaboration of science and industry - Company access to a long term relationship with a university chair manager, resulting in the definition of a collaborative R&D agenda - To improve the recruitment process of young talents	A chair is a strategic approach from a company to implement a partnership with a university. The chair relationship is based on an annual fee. In return, the company gets access to a series of results, such as increased visibility, dedicated R&D projects (with academic experts in the area), improved involvement in the university and execution of relevant events such as students' awards, hackathons or workshops.	- Motivation of the chair manager (university) to raise new projects - Strategic insight of the endowed professor - Patience from the Company to allow academic research to flourish	- Confidential aspects - IP issues on the exploitation of results. - Too restrictive agreements: expectation of results on fixed time-intervals	- Company: Key staff (R&D, marketing, communication...) - University: Chair manager - Renowned professor who identifies and manages the challenges of the company - University: Research teams involved in solving the challenges raised by the chair	Long term collaboration to ensure continuation of academic research on a certain application area

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Advanced Research Project (ARP)	- Students analyse and structure a complex and open-ended research question - Student group finds innovative solutions to practical problems	Students work on a current research topic from the university or from an external company. An open task definition enables the development of new solution processes. During their work the students have to find innovative solutions to practical problems as a part of innovative research.	- Clearly but openly defined task - Innovative atmosphere - Open minded students	- Unclear requirements - Being sceptical towards innovative ideas - Insufficiently self-organized student groups	- Clear but openly defined task - Supervisor (scientific staff) - Group of students (4-7 persons) - Research material (library, internet access, experts, ...) - Test objects and equipment	Open minded students solve practical problems in an innovative way. Both, university and industry, can provide openly defined tasks, which are solved by the students.

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Bachelor-/Master-Thesis	- Single student solves a practical accepted problem - Independently solve scientific questions in a structured manner using accepted engineering science methods - Company get a study and solution for a proposed case - Student learns to apply the knowledge gathered in his/her curriculum - Student learns soft skills: how to interact with company supervisors	A student works on a current research topic from the university or from an external company. An open task definition enables the development of new solution processes. During the work the student must find innovative solutions to practical problems as a part of innovative research.	- Solving of practical problems, using engineering science methods - Acquisition of relevant expertise and social skills	- Unclear requirements - Insufficiently self-organized students - Lingering IP agreements that delays the start of the project	- Student - Company supervisor - Academic supervisor - Legal framework (insurance, IP, ...)	An open-minded student solves a practical problem in an innovative way. Both university and industry can provide openly defined tasks, which are solved by the students.

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Case study about opening big research data repositories	- To increase current understanding of stakeholder needs and wants for data exploitation regarding big research data repositories - To reveal possible problems and issues for data exploitation and to find solutions how to overcome these problems - Develop sustainable business cases for big data research providers	Existing Big data owned by researchers would enable the development of new and existing businesses. The in-depth case study with 3-5 use cases is taken to understand better the needs and wants of different stakeholders regarding the opening up big research data. It is also to reveal possible problems and issues for data exploitation and find to solutions how to overcome these possible problems. At the end, the use cases are utilized to develop and demonstrate sustainable business cases for big research data providers that support open innovation. The primary data regarding use cases is collected mainly through interviews with the relevant stakeholders.	The quality and the relevance of identified use cases	Openness and motivation of stakeholders to work together to define and demonstrate proper use cases	- Team members - Case study stakeholders	In-depth practical understanding about how to transfer Big data from research to industry

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Collaborative definition of strategies in common research areas	Joint definition of strategies in common research areas between the University and the company	The university (a research team in a specific topic or administrative staff from the PMO) and the company (through its co-located team at the university) jointly develop the strategy to follow to conduct research in a specific topic or area. Both teams also collaborate to identify opportunities for collaboration in projects funded at a local, national and European level and write proposals together.	- IP issues need to be addressed through a research agreement	- Identifying common interests might not be trivial - Identifying the correct person leading a certain topic or research area might not be trivial, especially in large organizations	- University staff (professors and students in a specific area) - Company staff (co-located team at the University)	Developing a joint strategy between the university and the company in specific topics or research areas allows for increased efficiency in the relationship and the research results.
Collaborative doctoral education	- Doctoral graduates are better prepared for the employment outside academia - The company ensures state of the art research - The university ensures industrial relevance of research	In a collaborative doctoral education, a doctoral candidate is supervised not only by a university, but also from the industry. Collaborative doctoral education is of growing importance in Europe given the increased focus on innovation through R&D in order to advance towards a more "knowledge-based" economy and the reality that a majority of doctorate graduates are destined for careers outside academia in both research and non-research positions.	- Doctoral candidate with sufficient expertise and soft skills - Mutual understanding between the academic and industrial partner - Clear and transparent collaboration agreement	- Excessive focus on non-academic activities - Limited freedom for the development of innovative ideas - Conflict of public rights (IP)	- Doctoral candidate - Supervising professor at university - Supervising industrial company - Literature and internet access for research - Resources for experiments	Develop skills inside and outside academia that respond to public and private sector needs, while obtaining a doctoral degree.

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Company workshops/seminars to University students	Train students in business related topics that are not covered in technical degrees, such as company organization, production processes, project management, etc.	In short workshops/seminars of 9 hours each during two weeks, professionals from companies from the Information and Communication Technologies sector present different aspects of their companies, focused on business activities.	- Find relevant topics that are interesting for students - By experience, students prefer practical workshops rather than talks - Ability of presenters to motivate the students	- Limited seats at each workshop - Only addressed to one of the university schools	- University and company administrative staff to arrange logistics - Company staff to prepare and hold the seminars/workshops - Room at the University	Technical degrees do not cover training on business activities. This approach trains undergraduate students in useful aspects of companies that will be beneficial for their professional development.

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Creation of a Center of Excellence	Join efforts to promote the coordinated and joint development of a culture of quality, innovation and excellence.	A Center of Excellence is an association of organizations that promote excellence, quality and innovation. A leader is needed in order to analyse the model and motivation; and find partners that will be part of this association. This approach aims at having one representative from academia and one from industry joining efforts to have a comprehensive overview of the vision and the motivation of both sectors.	- Align the interests of all the organizations well - Plan the role of each organization well - Plan the funding model well - Motivate and get compromise from the organizations - Involve top management to be aligned with the idea - Take into account all aspects, including legal and financial	- Get funding for the Center of Excellence - Legal issues	- Dedication from university and company research staff - Dedication from university and company administrative staff - Involvement of top management in both organizations	When a university and a company join efforts, they can lead the creation of an association to promote excellence, quality and innovation more efficiently because they represent the interests of both academia and industry.

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Crowd intelligence	- Include internal and external expertise in early evaluation of product ideas - Save time for internal and external experts	Modern software solutions (e.g. innovation platforms) allow to involve selected internal and external experts at an early stage of product ideas. These experts are asked to evaluate product ideas and give some feedback. The evaluation can cover a simple star rating (comparable to amazon) up to an extensive reply to predefined central questions.		Including other experts too early can "destroy" ideas before their maturity is high enough to seriously being evaluated. Clear responsibilities and structures how to treat feedback are necessary.	Software salutation with rating functionality	Very efficient evaluation of product ideas in early stages of product development

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Customer journey videos	- Present product ideas and product concepts within 2 minutes	Video scribing software (e.g. know from tutorial videos) use a comic style design to explain a product idea or product concept from a customer's perspective. It combines a structured story-telling approach with video technology and simple language. The preparation of the videos can be performed by the product developer or the marketing department. The videos help internal and external stakeholders to fully understand the key elements of a product idea or product concept within 2 minutes.	- Competence in the field of video scribing software - Ability to identify the key elements of a product idea and to prepare a structured story out of it	- Describing technology within the videos instead of use cases - Fear of get used to video scribing software	- Software licenses	- A video customer journey is the easiest way to really understand a product idea from a customer's perspective

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Data-driven innovation	- Generation of added-value from existing third-party data - Cooperation of various organizations and roles (data owner - data consumer - analyst - customer - end-user)	A data owner (e.g. mobility company, production company,...) provides data to an analyst (e.g. innovative SME, university, RTO,...) who applies data analytics technologies to generate added-value for a customer (e.g. city planner, production process optimizer,...). The data can be produced by e.g. the society (e.g. passengers of a mobility company, car drivers...), sensors or workers in production environments... A customer pays for a service delivered by the analyst --> data driven innovation. Example: Case study by Michael Glitzner (Virtual Vehicle Research Center) see S2S projectplace https://service.projectplace.com/pp/pp.cgi/r1233078666	- A good cooperation between data owner and analyst to understand the basic data semantics - A good understanding of the needs of the customer or end-user	- Availability/ quality of data - Data protection laws	- Data analytics technologies - Data - Creative data analyst - Computation cluster	- Generation of a business model out of existing data

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Identify talent through solving industrial challenges	- To improve visibility of participating companies towards the university community (incl. students) - To build up trust in a bilateral relationship between the industry (companies) and the academia (university)	A university launches a course where one or more companies will share real (industrial) challenges with students. The students will have to work on specific projects to solve such challenges through the duration of the course. Students will interact with representatives from the companies (visits to companies are also foreseen, in some cases).	- Professor's ability to encourage students and get the maximum out of the course - Attractiveness of the challenges posed by the companies and level of motivation of innovation teams involved - Motivation of the students	- Confidential aspects related to the industrial challenges identified - Openness of the university to offer this kind of training - IP issues on the exploitation results related to the challenges	- Professor to guide the groups of the students - R&D staff involved in the definition of the company challenge and the supervision of the students' work during the course - Company's HHRR staff involved in the contracting process	- Opportunity to identify talent and test it under close-to-market conditions prior to contracting

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Industrial researchers as lecturers	- Give students an industry view on a certain application domain - Excite student to pursue a career in a certain domain	Experienced researchers from industry companies lecture to share first experiences. This give the students on the one hand a realistic view on the industry in certain application domains, on the other hand it allows the lecturer to create awareness around certain topics and increase the number of students that will continue a career in those fields. The examination of those courses can be done in consultation with the responsible professor of the course.	- Lecture material - Harmonize with curriculum	- Time constraints	- Curriculum that allows for guest lecturers - Experienced researchers with an interest in giving guest lecturers Time allocations to prepare lecture materials	Having experts in their domain to excite students for a career in their application domain. Provide unique industrial insides to students.

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Industry-academia private workshop	- Early identification of cooperation seeds, possibly leading to technology transfer projects - Proactive networking with highly interesting leads	Bilateral workshop to foster industry-academia collaboration based on a specific challenge identified by the company. The approach requires the previous identification of expertise within the university/RTO and the sound preparation of materials to be presented during the workshop.	- A previous perquisite is the existence of previous bilateral trust - Good preparation of the workshop from both sides; however, special emphasis should be devoted to the role of the university/RTO facilitator	- Lack of openness from both sides, but especially from the company - Lack of motivation - Confidentiality issues	- Company: key staff from the R&D department - University/RTO: workshop facilitator, including the proactive identification and selection of research teams - University/RTO research teams participating in the workshop - Appropriate meeting room - Appropriate material, incl. PC, beamer... - Food and drinks for coffee break	- Limitation of the workshop to one company + one university/RTO allows going deeper into possible confidential aspects (this can be regulated by an NDA) - The challenge posed by the company can be addressed from many different angles (incl. complementary technologies, expertise, groups...), allowing for highly transversal solutions

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Innovation Coaches	- Increase productivity of virtual development teams - Improve the process of collaboration in virtual teams - Identify weaknesses in virtual collaboration and compile solutions	Through involving innovation coaches into virtual teams in product development those teams are supported in conducting virtual meetings, using methods of product development and in coping with social problems. Innovation Coaches do not work on content but enable virtual teams to tap their full potential. To do this Innovation Coaches moderate virtual meetings, give specific feedback on project progress and review the process of collaboration regularly. The degree of involvement of an Innovation Coach can vary depending from project type, project progress and the needs of team members.	- Personality of the Innovation Coach - Knowledge of methods and tools for virtual collaboration in product development	- Acceptance of the role of the Innovation Coach by the team members - Innovation Coaches must understand what the project team is working on (at least to a certain degree)	- Team members - Inno Coaches - Appropriate media (PC, collaboration software / media)	Separation of project work and process work to continuously improve virtual collaboration

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Innovation pitches in front of chairmen	- Staying ahead of technology and market changes through innovation - Produce innovative products (deliver value to customers) - Allow employees to pursue their business ideas without the need to leave the company	Anyone with an idea can show up, but individuals and teams get 10 minutes, and only 10 minutes, to present an idea. Top executives listen to the ideas and then take 10 minutes to ask any follow-up questions. To enter a pitch event, all that's needed is a solid idea. Once teams are brought into the program, it runs in a fashion similar to some of the more well-known start up accelerators out there, such as DreamIt and TechStars. Each team is run like its own start-up. The people on those teams are called founders. Founders are given advisers after their skills have been assessed to determine where gaps are in their thinking and talents. Investment money for each team comes from a pool, and each start-up receives a budget—that way they know exactly how much money they have to take their start-up from the idea stage to the execution phase. Every month, founders have "Pivot/Pause/Persist" meetings with their advisers, during which they determine whether a new business should shift its approach, keep on going, or stop entirely.	- Ability to provide with support the employees to grow their business idea, not just the time to dedicate to the project and office space - Effective mentorship - Ability to evaluate the management capability of the intrapreneurs and assist them in learning those skills or finding other people to manage the future company - Fully formed strong business plan	- Competition (there are a large number of incubators/accelerators outside the company) - Finding a validated market opportunity	- Innovation Departments - All employees of the company (providing ideas) - Video Conference rooms for pitching - Investment depends on the project	Allow employees to grow their own business ideas inside the company (intrapreneurs) and leverage their talent

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Innovation platform	- Improve product development activities through better integration of internal and external stakeholders - Include elements of open innovation into early stages of product development processes - Enable the usage of crowd intelligence	The usage of innovation platform as the social innovation hub for product development projects enables companies to increase success of product development projects. Innovations platforms allow to include internal and external innovation impulses and to continuously improve their quality and maturity over time. A big role plays the so-called crowd (internal and external persons) which continuously evaluates existing ideas and give some feedback and remarks to improve project results.	- Usability of the innovation platform - Clearly distinguished phases of idea generation and valuation of ideas - Integration of methods of product development on the innovation platform - Using appropriate platform elements to allow for intrinsic and extrinsic motivation of the participants	- Motivation of providing ideas and giving feedback depends very much on the appreciation of this feedback - Complicated usability	- Professional innovation platform - Innovation Coaches	Combining the strengths of a structured product development process with the strengths of open innovation approaches using an innovation platform.
Interdisciplinary Project Week - Inno5	- Identification of customer needs and future scenarios - Development of open minded innovative solutions to practical problems	Interdisciplinary Project Week is an innovation workshop concept which enables companies to generate viable product ideas in a short time frame. It is guided by professional Innovation Coaches.	- Clearly defined task - Innovative atmosphere of the project - Open minded participants and tutors	- Unclear - Being sceptical towards innovative ideas	- Professional moderator - Creativity laboratory - 5 days of time	Viable product concepts in one week.

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Intersectoral cooperation of staff	- Staff gains experience in a different work environment - Exchanges of staff to develop careers combining scientific excellence with exposure to other sectors	The exchange of staff, including blue collar, researcher or professors, between academics and non-academics for a short or longer period, as a goal to return to the sending organization with gained knowledge and experience. The schemes can be defined bilateral or between multiple parties. Examples: - Research and Innovation Staff Exchange (RISE) - Innovation mandates (VLAIO - Flanders) - Fellowships for professors to join industry	- Clearly defined projects	- Time constraints and obligation at the sending organization (courses to teach, ongoing projects) - Personal constraints (family)	- Staff - Sending organization - Hosting agreement - IP agreement	Exchanges of staff to develop careers combining scientific excellence with exposure to other sectors.

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Literature review about Big data strategies	- Develop sustainable business cases for Big data research providers - Motivating researchers to open up their Big data - Identifying best practices and operational models for Big data repositories	Existing Big data owned by researchers would enable the development of new and existing businesses. Sustainable business cases and best practices need to be defined to motivate researchers to open up their datasets for the use of industry. Guidelines for transferring between researchers, industry and society in the context of Open Innovation and Science 2.0 need to looked up through literature study.	Quality and relevance of identified literature	Too theoretical literature, not enough practical applications found	- Team members - Articles - Publications	Best practices from literature about successful transferring big data from research to industry.
Live online training	- Provide high-quality training with minimal effort	Online trainings are well known from professional teaching companies. As virtual teams meet much more seldom compared to on-site teams the informal competence exchange does often not work properly, e.g. showing a colleague how to use a software tool. To level this out live trainings can be used. At live trainings a colleague presents a competence he or she has to other team members using conferencing tools. It usually consists of a short theoretical introduction, followed by live demonstration and best	- Openness and skills of team members	- Prevention of not-invented-here-syndrome	- Conferencing software	- Use the competence of virtual teams to a much higher degree for mutual teaching

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
		practices. The sessions closes with a final discussion.				
Mock-ups in virtual teams	- Early clarification of design, functionality and look and feel of a later product	The system of objectives is often not clearly defined in early stages of product development. On-site teams often meet and therefore have the change of harmonizing their understanding and their imagination of the later product, e.g. through using of sketches, gestures, etc.. As virtual teams do often not have this change so often it is helpful to prepare early mock-ups. Depending from the product this can be a virtual mock-ups (for physical products) or a highly interlinked PDF file allowing for quasi browsing through an application (for software), e.g. prepared by a special mock-up software.	- Awareness of the importance of visual explication for virtual teams - Availability of appropriate software tools	- Arranging with misunderstanding	- Mock-up tools	- Early clarification of design, functionality and look and feel of a later product

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Project surveys	- Early identification of possible problems within virtual teams - Regular monitoring of virtual teams	Regular project survey support identification of possible problems within virtual teams. As those teams often do not meet informally (e.g. at the coffee machine) problems concerning motivation, work content, e.g. are harder to identify. Additionally those teams are concerned with other issues like software tools, project planning, etc.. Project survey which are conducted once a week (preferably on Fridays) within less than 5 minutes can help to identify problems and help monitoring long-term issues like the acceptance of a certain software tools.	- Ability and willingness to participate	None	- Online survey tool - 5 minutes of time from each team member every Friday	- Avoid dissatisfaction and identify synergy potential within virtual teams

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Sectoral Cluster	- To build up trust in strategic partnerships - To identify common challenges (technology, market, regulation..), which can be solved in a collaborative way - Increased lobbying potential of the cluster towards administrations	A cluster brings together relevant players of the value chain in a specific sector, which are geographically concentrated and share common strategic challenges. Example: As a reference, there are 30 clusters in Catalonia, home to 1,700 firms accounting for a turnover of 65 billion euros. (http://www.catalonia.com/en/catalonia-barcelona/diverse-open-dynamic/cluster-hotspot.jsp)	- Cluster manager's ability to involve stakeholders. - Cluster manager's ability to encourage stakeholders to participate and get the maximum out of the cluster. - Motivation of participant stakeholders. - Local support to cluster policies.	- Confidential aspects related to the industrial challenges identified - Openness of the stakeholders to share their challenges - IP issues on the exploitation results - Lack of support from local administrations	- Cluster manager to identify and manage the challenges of the stakeholders - Stakeholders' relevant staff, incl. R&D, business development, internationalization, etc. - Relevant staff from the (local) administration - Appropriate meeting rooms - Appropriate material, incl. PC, beamer..	The geographical proximity of the stakeholders allows for a more precise definition of the common challenges; this helps in delivering optimized solutions to such challenges.

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Software initiative for academia	Providing tools and training to Universities and other organizations to create the next generation of innovation	An institution may install the software in its labs, and its faculty and students may install the software on their personal computers. Software is only to be used for research purposes. The Initiative should also include the opportunity for faculty and staff to attend free courses to help them get started using the products. Member institutions may send up to ten (10) faculty or staff per year to courses offered at various times and locations around the world. Convenient web-based training (WBT) is also available through websites.	- Providing enough information about the solutions - Providing successful training about the solutions - Effective technical support	- Some countries are not in the list of eligible countries (the organizations from those companies can still contact the organizers of the program to ask to be eligible)	- Software solutions are for free - Technical support is offered by the company to the University at no cost - Training is provided by the company to the University at no cost - Agreement can be renewed every year	Universities and other research organizations have very tight budgets; providing complimentary market leading software solutions to be used for research purposes allows them to innovate.

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Software partnerships	- Reduce development time of software - Increase software quality early - Provide high-end software solutions for students'product development projects	Innovative software solutions for applications (e.g. innovations platforms) in product development often need a long-time evaluation. Providing these software solutions to students' development projects to get early feedback by test users is one way to push up market entry. This helps the students to receive access to software they otherwise couldn't afford. On the other hand, the feedback by so-called digital natives which use the software under realistic conditions unhides all kinds of weaknesses and helps to improve the software solutions.		The software enterprise must have clear responsibilities and structures how to include students' feedback into the improvement of software solutions.	- Software solution - Continuous information flow between students and software developer	Use high potential students within product development projects as beta-users for high-end software solutions.

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Sources Code Library	- Foster cross-BU collaboration and help enable internal sharing, reuse, and leverage of common code and building blocks across products - Open innovation by exploiting the broad expertise and creativity of the whole developer pool in an organization, rather than just one department or team - Accelerated development resulting in faster Time to Market	Engineering teams have a documented strategy and process for the management, storage and use of source code and related materials. This process includes direction regarding trunk, branch and labelling. It should also include direction for merging fixes provided by other teams outside the team who owns the code.	- Quality assurance of the common - Selecting an appropriate seed product - Having a variety of stakeholders so that inner source can benefit from contributions throughout the organization - Modularity - Flexible development practices to allow new features or algorithms to be turned into code quickly - Transparency - Leadership - Motivation	- Organizational policies enforced by IT departments - Organizational culture change to internal sharing and re-use of code	- All developers are potential inner source contributors and users - There is no specific timeframe or budget	- Leveraging the company's common code - Broad expertise and creativity to accelerate product development - Increase quality and reach the market in a faster way

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Start-up & Innovation Day	- Development of an active start-up-scene	Start-up and Innovation Day brings together actors from economics, politics and science. It supports the local start-up-network through the building of valuables, ideas and interesting trends.	- Involvement at participants - Efficient organization	- Missing believe in innovative ideas	- Participation from economics, politics and science - Organizing team - Participants research teams with innovative ideas	- The start-up and innovation culture is highlighted and presented to relevant institutions - Boosting innovation potential of local start-up-network
Student internships	- Teaching - Students learn the applicability of their curriculum in an industrial setting - The student get an insight in how their future job might look like - The company can excite students for a career at their company	A dedicated (optional) course in the university curriculum to allow an internship (4-8 weeks) at a company. The student sees how he/she can apply the knowledge in a company and learn how a career at that company might look like. The company can motivate students to pursue a career at their company and as such guarantee an influx of newly graduated students.	- A mentor that will guide the student during the internship	Too big a gap between university courses and industrial application might hinder employability.	- Student - Company supervisor - Academic supervisor - Legal framework (insurance, IP, ...)	First-hand experience for students to get acquainted with industrial setting.

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Students as product developers	- Use creative potential of students to create innovative product concepts - Identify talents as later colleagues	Within these projects students of mechanical engineering (or other engineering courses) develop real products in cooperation with an industrial company. The company provide the task assignment. The university is responsible for project planning, development methods and processes as well as for teaching. The students are guided through a real product development project within about 4 month and present their results after every phase in milestones and at the project close-out.	- Huge pool of creativity - Highly relevant products	- Motivation of students might be fragile	- Between 40 and 80 students - Hardware and software - Project partner, university	- Unique combination of science, teaching and innovation

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Technology Think Tank	- Create unique opportunities for the diverse global technical community to form new relationships, drive change, collaborate and share expertise across organizational boundaries to fuel innovation and growth - Breaking down the real and imagined barriers between the various parts of organizations - Knowledge sharing and education	Each member of the Technology Think Tank selects the projects and degree of effort they contribute, the Think Tank's direction becomes a reflection of the priorities of the membership and the concerns of the technical community at large. It should comprise of employees who are selected based on their exceptional technical expertise, leadership and business acumen. Members collaborate on projects that position as an innovator and leader in the market through both inspired thinking and practical applications.	- Allowing the members of a Think Tank select the projects they want to participate and how much effort they want to put in them. This keeps them motivated - Exceptional technical expertise, leadership and business acumen of the Think Tank members - Success of the Think Tank mentoring program to build the next generation of their members and leaders - Ability to keep a technical community that is connected, collaborative and inspiring (as well as inspired)	- Day-to-day obligations may not allow Think Tank members to participate in as many projects as they would like to, or to put as much effort in them as they would like to - Time zones and tight agendas may make it difficult to meet	- Technical community - Time devoted to each project and number of projects they participate in depends on each Think Tank member	- Find innovative solutions by leveraging a cross-organizational network to problems or questions that require different skills and perspectives - Allow Technology Think Tank members to choose the projects to contribute and their efforts so that the company knows what are the priorities from the technical community

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
Training networks	- Train researcher - Increase transfer of knowledge	Joint research training, implemented by at least three partners from in and outside academia. The aim is for the researcher to experience different sectors and develop their transferable skills by working on joint research projects. The intensity of interaction can vary between dual desk collaboration, secondments or permutation between the partners. Example: - European Training Networks	- Mutual understanding between partners - Clear and open communication between all partners involved - Researchers with sufficient soft skills	- Too much effort to be spent on company tasks instead of research	- Hosting institutes (universities, companies, RTOs) - Researchers - Funding scheme - IP agreement	Innovative training networks bring together universities, research centers and companies from different countries worldwide to train a new generation of researchers.
Trusted Global Open Innovation, Science and Technology Network	- Make trustworthy contacts, initiate projects and share knowledge about technologies - Market your professional and expertise profile - Connect with the scientific community and the business world by posting your innovation needs	The trusted global open innovation, science and technology network provides a platform to ensure access to simple, secure and trustworthy contacts. It supports the initiation of projects and share knowledge about technologies with guaranteed protection of intellectual property and confidentiality. Example: The Innoget user community consists of thousands of specialists in their fields who benefit from free access to	- High effective matchmaking system - Well-structured database - Provide secure environment	- Complex usability - Community size - User's engagement - Content quality	- State of the Art peer-to-peer platform - World-class customer service team	Allow users to build their network of trusted innovation partners and share knowledge about technologies on a wide range of scientific and business

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
	and your portfolio of technologies	both innovation opportunities and innovative technologies published by leading organizations from the scientific community and the business world.				fields.
Virtual co-creation in product development	- Build up trust in strategic partnerships - Situation-specific involvement of external expertise - Early evaluation of project results by purchaser	To improve agile collaboration within partnerships between companies, universities and RTOs it is necessary to work with short iteration loops. One very efficient approach to support this is the usage of co-creation environments. Co-creation environments allow the purchaser to identify shortcomings in projects early. On the other hand the contractor can get fast feedback and identify ambiguity early. This increases project quality and reduces the risk of rework.	- Highly motivated teams - Allow for personal meetings at project start and in between	- Virtual co-creation must be accompanied by local meetings to establish a strong partnership - Critical situations can be identified but often not solved in virtual co-creation	- Appropriate media (PC, collaboration software / media) - Innovation Coaches	Allow synchronous collaboration between organisations at different locations.
Virtual creativity sessions	- Use the creativity potential of virtual teams	As virtual teams meet very seldom at a common location, they do often not have the chance to really work together, e.g. sitting together at one PC or conducting a workshop. Virtual creativity sessions provide a platform to not only discuss existing ideas (like in web conferences) but to really be creative together. Those sessions often use a common software platform and an adaption of well-	- Openness for creativity methods	- Software problems	- Software tool (e.g. innovation platform) - Team members - Moderator	- Using creativity potential also in virtual teams

Title	Objective	Description	Success Factors	Barriers	Resources	Unique Selling Point
		known creativity methods.				
Virtual feedback session	- Reduce travel expenses	Many milestones and important feedback meetings take place at one location even if virtual teams are concerned. With appropriate software tools and a high quality moderator who is aware of appropriate methods (like e.g. virtual sounding board) it is possible to conduct a high degree of such meetings in virtual rooms.	- High quality moderator - Appropriate tools	- Problems with trust and software tools	- Software tools	- Bringing a higher degree of milestone meetings and quality checks into a virtual environment

Table 3: Detail of Approaches

4   OPEN INNOVATION AND SCIENCE 2.0 TOOLS

New ICT tools and ways of communication and collaboration enable to speed up the innovation process and leverage remote distributed teams and knowhow. This enables science, and empowers the universities to become the centres of socially responsible scientific excellence, to keep up with the new challenges, trends and speed of innovation, critically contributing to the socio-economic progress of their regions.

The purpose of this activity is to collect a selection of already existing ICT-enabled tools that are used or are of potential help in Open Innovation & Science 2.0., in the era of internet and digital information.

According to the DoW, the scouting of these tools should begin by investigating:

− Inter-organisational communication tools, which are an enabler for specialised information sharing and for cooperative work and management

− ICT-enabled cooperation platforms that create online repositories/technology market places which are available as a service or as a process enabling tools

− Collaborative technology design and development platforms (CAE/CAM), creating remote cooperation systems

− Patent and publication databases

− Platforms providing information on solution providers.

A template was created (see 4.1) to provide a support for the description of the different groups of data, to describe the collection of innovation and science 2.0 tools and be the basis for this dataset in the S2S knowledge database. Each partner contributed to the information collection process in a uniform way, according to their own profile and experience.

After the initial collection of information and subsequent analysis of the tools, some ideas came to mind:

1) Some generic tools come from different suppliers but offer the same functionalities and can be easily replaced with each other. And then, some other tool types were set: Generic tools - Collaborative Mind Mapping, Generic tools - Online Brainstorming, Generic tools - Cloud file sharing, Generic tools - Audio & video live communication, Generic tools - Content management.

2) There was a need to extend the information collected and subsequently, a need to extend the template (see 4.1).

The results of the process were presented in Darmstadt in November 2016. A total of 54 tools were considered at that time, out of 101 tools, for the following categories[1]:

Tool type	Total of tools
Inter-organisational communication	32
Technology and technology solution provider scouting	6
Provision of information on solution providers	7
Relation management	2
Collaborative technology design and development (CAE/CAM)	2
Idea to product management tools	25

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[1] Some of the tools fall in more than one category

Patent and publication databases	7

Table 4: Initial classification of Tools

A total of 47 additional tools were discarded for several reasons:

- − Some were just an innovative way to make some tasks but not a tool to be used in innovation & science processes (11)

- − Tool provided by two or more partners (3)

- − Tools merged into some of the generic tools (11)

- − Not ICT tools, procedures, methodologies, programs (9)

- − Tool provider does not want to be referenced (2)

- − Not an innovation & science tool (4)

- − Financing. Initially not considered (7)

The initial classification of tools was reconsidered when the assignment of approaches and tools took place. Some of the tools served a very similar purpose, so it was easy to categorize in only one type. Others felt in different tool types and this fact was found rather confusing, causing many of the types to be reviewed (see 4.2).

In the following sections, the results of the collection of open innovation and science 2.0 tools are shown.

4.1 Template for tools

After analysing the first round of tools provided by the partners, the need to extend the initial template was expressed and a new template was drafted in the Graz Workshop, in May 2016.

New fields were then added to the template, referring to the requirements to implement a process in the organization, the technical details for the implementation and use (if the tool was a stand-alone application, a web-based tool, suite or if integration with other standard packages was needed), a graphic description of the tool, etc.

The final template design can be seen below:

Reference & general description:
- Name of the tool
- Partner providing information on the tool
- Short description of the tool, purpose
- Tool type. Classification of the tools, originally based on T1.2 description
- Successful implementations, initial enumeration of business cases
- Extended description of business cases
- Product and information web page (URL of product information page)
- Tool developer (initial implementation)
- Tool provider
- Date of first development
- Date of last version
- Type of license
- Cost scheme
  - Free
  - Per user

- Per volume (discount)
- Per site
- Per company/organization
- Others (specify)
- Bibliography

Methodology implemented:
Description of the methodology implemented in the tool (if any)

Process description:
Indicate which partial processes from the following are covered by the tool:
- Idea generation, collection and evaluation (including gathering information from previous research, patents, etc.).
- Development (business case & plan)
- Implementation (prototyping)
- Go to market
- Post evaluation
- Other processes (describe)

Domain in which is used:
- Universities
- RTOs
- Enterprises

Sector(s) of application:
- Industry, Telco, Media, Public, Health, Retail, Energy, IT, etc..

Block diagram or graphic description (if any available):
A picture that describes the process implemented by the tool or a screen shot.

Requirements to implement such processes in an organization:
A process may not work if it does not fit into an organization culture or structure.

Technology & Integration:
This should be further detailed in terms of the tool being a stand-alone application, a web-based tool, if the tool is part of a suite, if it can be integrated with other standard packages and any technical details and requirements regarding its implementation and use.

Links to WP1 models and programmes:
Link to corresponding approaches.

4.2 Classification (or Types) of tools

Tool type	Total of tools
Audio / video / web conferencing tools	2
Challenge announcement platform	1
Collaboration tools	8
Content Management	1
Innovation platforms	22
Mock-up tools	1

Newsletter	1
Online surveys	3
Project and task management tools	3
Tools for financing and crowd funding	7
Tools for live creativity	3
Tools in the area of intellectual properties and in the art research	7
Video tutorial software	1

Table 5: Classification of Tools

4.3 Index of tools

In this section, the tools, and the approaches to them they are related, are shown.

Name	Tool type	Approaches where it is used
AngelList	Tools for financing and crowd funding	Academic chair Technology Think Tank
Atizo	Innovation platforms	Crowd intelligence Identify talent through solving industrial challenges Innovation Coaches Innovation platform Start-up & Innovation Day Trusted Global Open Innovation, Science and Technology Network Virtual co-creation in product development
Balsamiq Mockups	Mockup tools	Innovation pitches in front of chairmen Mock-ups in virtual teams
bluewiwi ZEN	Collaboration tools	Academic chair Company workshops/seminars to University students Creation of a Center of Excellence Identify talent through solving industrial challenges Innovation Coaches Students as product developers Live online training Technology Think Tank

Name	Tool type	Approaches where it is used
CA Flowdock	Collaboration tools	Academic chair
		Company workshops/seminars to University students
		Creation of a Center of Excellence
		Identify talent through solving industrial challenges
		Innovation Coaches
		Students as product developers
		Live online training
		Technology Think Tank
challenge.gov	Challenge announcement platform	Project surveys
Chaordix	Innovation platforms	Crowd intelligence
		Identify talent through solving industrial challenges
		Innovation Coaches
		Innovation platform
		Start-up & Innovation Day
		Trusted Global Open Innovation, Science and Technology Network
		Virtual co-creation in product development
Espacenet (FREE)	Tools in the area of intellectual properties and in the art research	Case study about opening big research data repositories
		Collaborative definition of strategies in common research areas
		Collaborative doctoral education
		Data-driven innovation
		Industry-academia private workshop
		Literature review about Big data strategies
		Sectoral Cluster
Evernote	Project and task management tools	Advanced Research Project (ARP)
		Bachelor-/Master-Thesis
		Collaborative doctoral education
		Company workshops/seminars to University students
		Creation of a Center of Excellence
		Industrial researchers as lecturers
		Interdisciplinary Project Week - Inno5
		Intersectoral cooperation of staff
		Sources Code Library
		Training networks

Name	Tool type	Approaches where it is used
Generic tools - Online Brainstorming	Tools for live creativity	Collaborative definition of strategies in common research areas Industry-academia private workshop Interdisciplinary Project Week - Inno5 Virtual creativity sessions
Generic tools - Audio & video live communication	Audio / video / web conferencing tools	Collaborative doctoral education Data-driven innovation Students as product developers Live online training Sectoral Cluster Software initiative for academia Software partnerships Technology Think Tank Virtual feedback session (quality checks)
Generic tools - Cloud file sharing	Collaboration tools	Academic chair Company workshops/seminars to University students Creation of a Center of Excellence Identify talent through solving industrial challenges Innovation Coaches Students as product developers Live online training Technology Think Tank
Generic tools - Collaborative Mind Mapping	Tools for live creativity	Collaborative definition of strategies in common research areas Industry-academia private workshop Interdisciplinary Project Week - Inno5 Virtual creativity sessions
Generic tools - Content management	Content Management	Innovation Coaches Sources Code Library
HYPE GO!	Innovation platforms	Crowd intelligence Identify talent through solving industrial challenges Innovation Coaches Innovation platform Start-up & Innovation Day Trusted Global Open Innovation, Science and Technology Network Virtual co-creation in product development

Name	Tool type	Approaches where it is used
Hyve	Innovation platforms	Crowd intelligence
		Identify talent through solving industrial challenges
		Innovation Coaches
		Innovation platform
		Start-up & Innovation Day
		Trusted Global Open Innovation, Science and Technology Network
		Virtual co-creation in product development
Idea Connection	Innovation platforms	Crowd intelligence
		Identify talent through solving industrial challenges
		Innovation Coaches
		Innovation platform
		Start-up & Innovation Day
		Trusted Global Open Innovation, Science and Technology Network
		Virtual co-creation in product development
Ideas4All	Innovation platforms	Crowd intelligence
		Identify talent through solving industrial challenges
		Innovation Coaches
		Innovation platform
		Start-up & Innovation Day
		Trusted Global Open Innovation, Science and Technology Network
		Virtual co-creation in product development
IdeaScale	Innovation platforms	Crowd intelligence
		Identify talent through solving industrial challenges
		Innovation Coaches
		Innovation platform
		Start-up & Innovation Day
		Trusted Global Open Innovation, Science and Technology Network
		Virtual co-creation in product development
IDEENPORTAL	Innovation platforms	Crowd intelligence
		Identify talent through solving industrial challenges
		Innovation Coaches
		Innovation platform
		Start-up & Innovation Day
		Trusted Global Open Innovation, Science and Technology Network
		Virtual co-creation in product development
Indiegogo	Tools for financing and crowd funding	Academic chair
		Technology Think Tank

Name	Tool type	Approaches where it is used
Innocentive	Innovation platforms	Crowd intelligence
		Identify talent through solving industrial challenges
		Innovation Coaches
		Innovation platform
		Start-up & Innovation Day
		Trusted Global Open Innovation, Science and Technology Network
		Virtual co-creation in product development
Innoget.com	Innovation platforms	Crowd intelligence
		Identify talent through solving industrial challenges
		Innovation Coaches
		Innovation platform
		Start-up & Innovation Day
		Trusted Global Open Innovation, Science and Technology Network
		Virtual co-creation in product development
Innography Explorer	Tools in the area of intellectual properties and in the art research	Case study about opening big research data repositories
		Collaborative definition of strategies in common research areas
		Collaborative doctoral education
		Data-driven innovation
		Industry-academia private workshop
		Literature review about Big data strategies
		Sectoral Cluster
Innovation platform	Innovation platforms	Crowd intelligence
		Identify talent through solving industrial challenges
		Innovation Coaches
		Innovation platform
		Start-up & Innovation Day
		Trusted Global Open Innovation, Science and Technology Network
		Virtual co-creation in product development
InnovationQ Plus, Powered by IEEE and IP.com	Tools in the area of intellectual properties and in the art research	Case study about opening big research data repositories
		Collaborative definition of strategies in common research areas
		Collaborative doctoral education
		Data-driven innovation
		Industry-academia private workshop
		Literature review about Big data strategies
		Sectoral Cluster

Name	Tool type	Approaches where it is used
Innoversia	Innovation platforms	Crowd intelligence
		Identify talent through solving industrial challenges
		Innovation Coaches
		Innovation platform
		Start-up & Innovation Day
		Trusted Global Open Innovation, Science and Technology Network
		Virtual co-creation in product development
Instant Agenda	Audio / video / web conferencing tools	Collaborative doctoral education
		Data-driven innovation
		Students as product developers
		Live online training
		Sectoral Cluster
		Software initiative for academia
		Software partnerships
		Technology Think Tank
		Virtual feedback session (quality checks)
Jive X	Innovation platforms	Crowd intelligence
		Identify talent through solving industrial challenges
		Innovation Coaches
		Innovation platform
		Start-up & Innovation Day
		Trusted Global Open Innovation, Science and Technology Network
		Virtual co-creation in product development
Jovoto	Innovation platforms	Crowd intelligence
		Identify talent through solving industrial challenges
		Innovation Coaches
		Innovation platform
		Start-up & Innovation Day
		Trusted Global Open Innovation, Science and Technology Network
		Virtual co-creation in product development
Kickstarter	Tools for financing and crowd funding	Academic chair
		Technology Think Tank
Lime survey	Online surveys	Case study about opening big research data repositories
		Project surveys

Name	Tool type	Approaches where it is used
MERLIN EEN PARTNERING TOOL	Collaboration tools	Academic chair
		Company workshops/seminars to University students
		Creation of a Center of Excellence
		Identify talent through solving industrial challenges
		Innovation Coaches
		Students as product developers
		Live online training
		Technology Think Tank
Nimble Bee	Innovation platforms	Crowd intelligence
		Identify talent through solving industrial challenges
		Innovation Coaches
		Innovation platform
		Start-up & Innovation Day
		Trusted Global Open Innovation, Science and Technology Network
		Virtual co-creation in product development
NineSights	Innovation platforms	Crowd intelligence
		Identify talent through solving industrial challenges
		Innovation Coaches
		Innovation platform
		Start-up & Innovation Day
		Trusted Global Open Innovation, Science and Technology Network
		Virtual co-creation in product development
Online Policy Briefs Environment	Collaboration tools	Academic chair
		Company workshops/seminars to University students
		Creation of a Center of Excellence
		Identify talent through solving industrial challenges
		Innovation Coaches
		Students as product developers
		Live online training
		Technology Think Tank

Name	Tool type	Approaches where it is used
Open Innovation Cloud Platform	Innovation platforms	Crowd intelligence Identify talent through solving industrial challenges Innovation Coaches Innovation pitches in front of chairmen Innovation platform Start-up & Innovation Day Trusted Global Open Innovation, Science and Technology Network Mock-ups in virtual teams Virtual co-creation in product development
openideo	Innovation platforms	Crowd intelligence Identify talent through solving industrial challenges Innovation Coaches Innovation platform Start-up & Innovation Day Trusted Global Open Innovation, Science and Technology Network Virtual co-creation in product development
Orbit- QUESTEL	Tools in the area of intellectual properties and in the art research	Case study about opening big research data repositories Collaborative definition of strategies in common research areas Collaborative doctoral education Data-driven innovation Industry-academia private workshop Literature review about Big data strategies Sectoral Cluster
Pioneers Festival	Tools for financing and crowd funding	Academic chair Technology Think Tank
Pioneers Ventures	Tools for financing and crowd funding	Academic chair Technology Think Tank
Projectplace	Innovation platforms	Crowd intelligence Identify talent through solving industrial challenges Innovation Coaches Innovation platform Start-up & Innovation Day Trusted Global Open Innovation, Science and Technology Network Virtual co-creation in product development

Name	Tool type	Approaches where it is used
Protosphere	Tools for live creativity	Collaborative definition of strategies in common research areas
		Industry-academia private workshop
		Interdisciplinary Project Week - Inno5
		Virtual creativity sessions
PUBLICA	Tools in the area of intellectual properties and in the art research	Case study about opening big research data repositories
		Collaborative definition of strategies in common research areas
		Collaborative doctoral education
		Data-driven innovation
		Industry-academia private workshop
		Literature review about Big data strategies
		Sectoral Cluster
Rapid Experimentation and Deal Design (REDD)	Innovation platforms	Crowd intelligence
		Identify talent through solving industrial challenges
		Innovation Coaches
		Innovation platform
		Start-up & Innovation Day
		Trusted Global Open Innovation, Science and Technology Network
		Virtual co-creation in product development
Rockethub	Tools for financing and crowd funding	Academic chair
		Technology Think Tank
SAP Success Factors / SAP Jam	Project and task management tools	Advanced Research Project (ARP)
		Bachelor-/Master-Thesis
		Collaborative doctoral education
		Company workshops/seminars to University students
		Creation of a Center of Excellence
		Industrial researchers as lecturers
		Interdisciplinary Project Week - Inno5
		Intersectoral cooperation of staff
		Sources Code Library
		Training networks
SeedInvest	Tools for financing and crowd funding	Academic chair
		Technology Think Tank

Name	Tool type	Approaches where it is used

Name	Tool type	Approaches where it is used
Slack	Collaboration tools	Academic chair
		Company workshops/seminars to University students
		Creation of a Center of Excellence
		Identify talent through solving industrial challenges
		Innovation Coaches
		Students as product developers
		Live online training
		Technology Think Tank
Studyka	Innovation platforms	Crowd intelligence
		Identify talent through solving industrial challenges
		Innovation Coaches
		Innovation platform
		Start-up & Innovation Day
		Trusted Global Open Innovation, Science and Technology Network
		Virtual co-creation in product development
SurveyMonkey	Online surveys	Case study about opening big research data repositories
		Project surveys
Survio	Online surveys	Case study about opening big research data repositories
		Project surveys
TEAM- AND PROJECT ROOMS	Innovation platforms	Crowd intelligence
		Identify talent through solving industrial challenges
		Innovation Coaches
		Innovation platform
		Start-up & Innovation Day
		Trusted Global Open Innovation, Science and Technology Network
		Virtual co-creation in product development
TECSCOUT	Tools in the area of intellectual properties and in the art research	Case study about opening big research data repositories
		Collaborative definition of strategies in common research areas
		Collaborative doctoral education
		Data-driven innovation
		Industry-academia private workshop
		Literature review about Big data strategies
		Sectoral Cluster

Name	Tool type	Approaches where it is used
THINK TANK – TT IMPULS NEWSLETTER	Newsletter	Sectoral Cluster Start-up & Innovation Day Training networks
Thomson Innovation	Tools in the area of intellectual properties and in the art research	Case study about opening big research data repositories Collaborative definition of strategies in common research areas Collaborative doctoral education Data-driven innovation Industry-academia private workshop Literature review about Big data strategies Sectoral Cluster
Trello	Project and task management tools	Advanced Research Project (ARP) Bachelor-/Master-Thesis Collaborative doctoral education Company workshops/seminars to University students Creation of a Center of Excellence Industrial researchers as lecturers Interdisciplinary Project Week - Inno5 Intersectoral cooperation of staff Sources Code Library Training networks
Video scribe	Video tutorial software	Innovation pitches in front of chairmen Interdisciplinary Project Week - Inno5 Customer journey videos
YAMMER	Collaboration tools	Academic chair Company workshops/seminars to University students Creation of a Center of Excellence Identify talent through solving industrial challenges Innovation Coaches Students as product developers Live online training Technology Think Tank

Name	Tool type	Approaches where it is used

Name	Tool type	Approaches where it is used
Yet2	Collaboration tools	Academic chair
		Company workshops/seminars to University students
		Creation of a Center of Excellence
		Identify talent through solving industrial challenges
		Innovation Coaches
		Students as product developers
		Live online training
		Technology Think Tank

Table 6: Index of Tools

4.4 Detail of tools

This is the most relevant information related to the tools analysed. More information is available for each tool in line with the fields of the template shown above in section 4.1 and can be consulted in the knowledge database.

Name	Description	Business Case	Web	Process Description
AngelList	Social network for investors and entrepreneurs	The site allows start-ups to raise money from angel investors free of charge.	https://angel.co	Social network for investors and entrepreneurs
Atizo	Crowd sourcing; idea Generation with the international atizo.com Community	Companies post challenges and rewards. Innovators submit ideas. Companies assess the ideas and divide the reward. Atizo also has closed user groups which work collaboratively on challenges.	https://www.atizo.com	Idea generation, collection and evaluation
Balsamiq Mockups	This software provides a tool to generate mockups for a unforgettable 2D impression. It offers the same speed and rough feel as sketching with pencil, with the advantage of the digital medium.	Balsamiq allows especially in the work context a visualized impression of ideas and products in the predevelopment phase of products.	https://balsamiq.com/products/mockups/	1. Add elements per drag & drop 2. Edit, position and orient elements 3. Test the mock-up 4. Export and share the mock-up
bluekiwi ZEN	Enterprise Social Software	The Innovation process enables to collaboratively contribute to ideas generation, selection, evaluation and implementation, and ultimately transform the company. Drive Innovation - Make internal and external crowdsourcing from idea generation to product/service launch.	https://bluekiwi.io/	The communities provide "Ideas Guidelines", a template to present the ideas. Once the idea is shared the employee can use his network to get other people engaged in the idea enrichment and

Name	Description	Business Case	Web	Process Description
		- Stay tuned and involved during the complete lifecycle of an idea. - Effectively build and manage an ideation portfolio over all phases of the innovation funnel. - Easily re-use earlier gained insights in new innovation processes.		collaboratively move it forward. Employees can also join the communities to read, vote and comment on their colleagues' ideas, collaborating to improve and support their ideas. The community leaders and community moderators play a key role in monitoring the ideas, giving suggestions and feedback to the idea owners, engaging with experts, business owners and the strategic transformation program owners, to move the ideas on to the next idea-stage and promote their implementation.
CA Flowdock	Chat & inbox for teams. One place to talk and stay up-to-date. CA Flowdock is a team collaboration app for desktop, mobile & web. Work on things that matter, be transparent and solve problems across tools, teams & time zones.	TED conferences, mongoDB and CA Flowdock team use CA Flowdock	https://www.flowdock.com/	Development, Post-evaluation, Idea generation, collection and evaluation
challenge.gov	Challenge.gov is a listing of challenge and prize competitions, all of which are run by more than 80 agencies across federal government. These include technical,	Breast Cancer Startup Agency: National Institutes of Health Winner: Sourav Sinha (Oncolinx Pharmaceuticals), Boston,	https://www.challenge.gov/list/	1. Government posts challenges 2. Citizens share with their friends

Name	Description	Business Case	Web	Process Description
	scientific, ideation, and creative competitions where the U.S. government seeks innovative solutions from the public, bringing the best ideas and talent together to solve mission-centric problems.	Massachusetts In Brief: The Oncolinx team developed a business strategy to develop and market novel toxins that can be used in therapies that target drug-resistant tumours for less money and with fewer side effects. More: Breast Cancer Equal Pay App Agency: Department of Labor Winner: Laquitta DeMerchant (Fuzion Apps), Sugar Land, Texas In Brief: She submitted a software solution in a White House-U.S. Department of Labor challenge to use publicly available labor data to create applications to build tools that promote equal pay. More: Equal Pay App NASA Lunar Lander Agency: NASA Winner: Sean Mahoney (Masten Space Systems), Mojave, California In Brief: His team aimed for the stars, demonstrating cost-effective vertical landing capability in a NASA competition to build and fly a rocket-powered vehicle that simulates the flight of a vehicle on the Moon. More: Lunar Lander		3. Talented people find solutions to the problems
Chaordix	This is an example of how companies can collaborate with society to innovate in their products. Chaordix provides with a social media platform that focuses on recurring innovation challenges to foster community spirit as well as idea generation. Chaordix goes beyond calls for a single project or task and instead brings together a group of	Customers: http://www.chaordix.com/our-work/	http://www.chaordix.com/	Idea generation, collection and evaluation; Go to market; Post evaluation

Name	Description	Business Case	Web	Process Description
	interested people to work on a continuum of innovations and projects simply because they are fans of the brand.			
Espacenet (FREE)	Espacenet offers free access to information about inventions and technical developments from the 19th century right up to today. Accessible to beginners and experts, Espacenet contains data on more than 90 million patent documents from around the world. Supporting information can help you understand whether a patent has been granted and if it is still in force.	Prior Art Search: verify patentability of a new invention comparing key technical features of this new solution with relevant prior art in terms of patents, published applications and non-patent literature; Freedom to Operate Search: verify the risk of infringement of a new product mapping the key technical features of this new product onto the claims of the relevant unexpired patents; Technology Landscaping Search: verify relevant patent information in a dedicated technology domain to identify main technology trends, areas with third party patents and areas of interest that are relatively free	http://www.epo.org/ http://www.epo.org/ searching-for-patents/technical/es pacenet.html#tab1	Idea generation, collection and evaluation (including getting information from previous research, patents, etc.) Development (business case & plan) Implementation (prototyping) Go to market
Evernote	Evernote is an app and note-taking tool that stores everything like simple typed note, business cards, article you want to read, to do list, or even a boarding pass.	As well as the keyboard entry of typed notes, Evernote supports image capture from cameras on supported devices, and the recording of voice notes. On supported operating systems, Evernote allows users to store and edit notes on their local machine. Users with Internet access and an Evernote account can also have their notes automatically synchronized with a master copy held on Evernote's servers. This approach allows a user access and edit their data	https://evernote.co m/intl/de/	Networking tool & text formatting tools which have the ability to embed tables, files and pictures; to record audio & video as part of your notes.

Name	Description	Business Case	Web	Process Description
	across multiple machines and operating system platforms, but still view, input and edit data when an Internet connection is not available. However, notes stored on Evernote servers are not encrypted. Where Evernote client software is not available, online account-holders can access their note archive via a web interface or through a media device.			
Generic tools - Online Brainstorming	The brainstorming tools are used for generating ideas and gathering input from groups. MeetingSphere, Stormboard, Mural are some of this type of tools.	Any project	https://www.meetingsphere.com/brainstorm https://www.stormboard.com/ https://mural.co/	Collecting lists of ideas categorising them
Generic tools - Audio & video live communication	Any tools that allow live audio, video, texting and screen sharing, like Adobe connect, Cisco WebEx, Skype (Business), Facebook Messenger & Enterprise Video Cloud	Use case description: 2 business partners have a common project. With the given tools they can share their results online. Only for important meetings they have face-to-face meetings. Their regular weekly meetings are hold in a virtual environment. All types of documents can be shared online.	http://www.adobe.com/products/adobeconnect.html https://www.webex.com https://www.skype.com/en/business/ https://messenger.com https://bluejeans.com/	Video and audio conference tool
Generic tools - Cloud file sharing	Any tools for cloud storage. They provide file storage and synchronization services. Additionally some can provide functionallity for collaborative edition of documents. Google Drive, OneDrive, Box, Dropbox, ownCloud and	Companies need only pay for the storage they actually use, typically an average of consumption during a month. This does not mean that cloud storage is less expensive, only that it incurs	https://www.google.com/intl/en/drive/ https://onedrive.live.com/about/es-es/ https://www.box.co	

Name	Description	Business Case	Web	Process Description
	Amazon Cloud Drive are some of the main solutions. Google Drive, OneDrive and ownCloud provide document collaborative edition. ownCloud is an open source solution that can be installed in an own server.	operating expenses rather than capital expenses. Businesses using cloud storage can cut their energy consumption by up to 70% making them a greener business. Also at the vendor level they are dealing with higher levels of energy so they will be more equipped with managing it in order to keep their own costs down as well. Organizations can choose between off-premises and on-premises cloud storage options, or a mixture of the two options, depending on relevant decision criteria that is complementary to initial direct cost savings potential; for instance, continuity of operations (COOP), disaster recovery (DR), security (PII, HIPAA, SARBOX, IA/CND), and records retention laws, regulations, and policies. Storage availability and data protection is intrinsic to object storage architecture, so depending on the application, the additional technology, effort and cost to add availability and protection can be eliminated.	m/ https://www.dropbox.com/ https://owncloud.org/ https://www.amazon.com/clouddrive	
Generic tools - Collaborative Mind Mapping	Any tools for collaborative Mind Mapping. They allow users to visualize their thoughts in the cloud. MindMeister[1], Bubbl.us and Mindomo are some of this type of tools. [1]MindMeister has been developed by MeisterLabs GmbH, a software company founded by Michael Hollauf and Till Vollmer	In any kind of project where (a lot) of information has to be collected	https://www.mindmeister.com https://bubbl.us/ https://www.mindomo.com/	Building up a mind map: with different extra tools

Name	Description	Business Case	Web	Process Description
	with offices in Munich and Vienna.[2]			
Generic tools - Content management	Any tools for digital content and document management that supports collaboration among different partners. Alfresco, Drupal, SharePoint are three examples. Usually these tools have to be set-up in an own server. Share point is also offered as a subscription service	Alfresco is a free/libre enterprise content management system for Microsoft Windows and Unix-like operating systems. Alfresco includes a content repository, an out-of-the-box, web-based user interface for managing and using standard portal content, a SMB interface that provides file system compatibility on Microsoft Windows and Unix-like operating systems, Lucene and Solr indexing, and Activiti workflow. The Alfresco system is developed using Java technology. Drupal, a free and open source content-management framework written in PHP and distributed under the GNU General Public License, provides a back-end framework for at least 2.2% of all Web sites worldwide – ranging from personal blogs to corporate, political, and government sites. Systems also use Drupal for knowledge management and for business collaboration. The standard release of Drupal, known as Drupal core, contains basic features common to content-management systems. These include user account registration and maintenance, menu management, RSS feeds, taxonomy, page layout customization, and system administration. The Drupal core installation can serve as a simple Web site, a single- or multi-user blog, an	https://www.alfresco.com/ https://www.drupal.org/ https://products.office.com/en/sharepoint/collaboration?omkt=en	Tool that helps people to collaborate on documents and to manage project tasks by implementing business processes on documents and items in a SharePoint site. It helps organizations to adhere to consistent business processes, and it also improves organizational efficiency and productivity by managing the tasks and steps involved in business processes. This enables the people who perform these tasks to concentrate on performing the work rather than managing the workflow.

Name	Description	Business Case	Web	Process Description
		Internet forum, or a community Web site providing for user-generated content. SharePoint allows for storage, retrieval, searching, archiving, tracking, management, and reporting on of electronic documents and records. Many of the functions in this product are designed around various legal, information management, and process requirements in organisations. It also provides search and 'graph' functionality. SharePoint's integration with Microsoft Windows and Microsoft Office allow for collaborative real-time editing, and encrypted/information rights managed synchronization. This capability is often used to replace an existing corporate file server, and is typically coupled with an enterprise content management policy.		
HYPE GO!	Collaborative idea Management	Idea Campaigns: To focus the innovation activities to business critical problems, several campaigns with different time lines and audiences may be set up. The audience might either be the whole community or limited to explicitly named users. A campaign manager describes the goal of the campaign; he selects the participants and the timeline. Ideas: The target audience can submit ideas in a campaign. These submitted ideas can then be discussed and voted upon by the audience. During the following	http://www.hypego.net	The process allows for the structured generation of ideas, for their elaboration and finally implementation in innovation projects.

Name	Description	Business Case	Web	Process Description
		evaluation phase, the ideas are reviewed by a campaign specific evaluation team, based upon a freely configurable form. Based these results, the campaign manager selects the winning ideas. Projects: Ideas are enriched and combined to project proposals, which will then migrate to fully blown projects during the process. The process can be configured to meet your needs, by providing building blocks of collaboration phases, framed by a predefined goal, terminated by a review step, in which the management decides whether the project will be continued or terminated. The project workflow can centrally be defined by the admin from one or several such blocks. During these phases the project team collaboratively works on the project to provide the predefined goals for this phase.		
Hyve	Crowd Sourcing / Idea & Innovation Management	HYVECrowd: Innovation Community Platform	https://www.hyvecrowd.net	Idea management solutions, online innovation contests, co-marketing and social media campaigns.
Idea Connection	IdeaConnection has a vast membership and large network of highly educated, creative experts ready to focus on solving your challenges. Our flexible approach tailors problem solving to fit your needs, and you control costs by determining your own	The World Wildlife Fund (WWF) is an organization with close to five million global members. It organizes the Conservation Innovation Awards, an annual crowdsourcing contest in New Zealand that aims to find and support	https://www.ideaconnection.com	IdeaConnection builds solution teams from a secure network of brilliant experts. Each team is managed by a world-class facilitator. By

Name	Description	Business Case	Web	Process Description
	challenge award amounts. - Problem Solving: confidential R&D problem solving, challenge writing, grand challenges - Idea Generation: IdeaRally® (online brainstorming with experts), prize-based ideation contests - Scouting: technology scouting, prior art citation search, executive search, consultant search	innovative ways to protect and restore the country's diversity. The 2015 awards followed on from the success of the inaugural 2014 contest, with participants invited to submit their ideas to any of the three categories – product, community project and research. Contributions were voted on by the contest's online community, but the final say on who won what went to the judging panel of independent experts. Prizes and Development Each category winner in this crowdsourcing conservation contest received a $25,000 development grant and a year-long mentoring package.		combining expertise and diverse perspectives, we provide you with solutions and insights not normally achievable by individuals working alone. We only accept client challenges we believe can be solved – we focus on productive success. IdeaConnection believes that you shouldn't have to pay for results that don't meet your criteria. Our R&D Challenge model takes the risk out of innovation and provides you with easy access to innovative solutions. Your challenge will receive several intensely researched and detailed solutions, and if, after reviewing them you are not satisfied, you pay out no award for the challenge.
Ideas4All	Social network to share ideas	The social network where ideas are shared and evaluated, and where they can become reality. Companies can implement a personalised platform.	https://www.ideas4all.com/	Idea generation, collection and evaluation
IdeaScale	Cloud-based innovation platform focusing on	4 million users, 25.000 customers	http://ideascale.co	Share and collaborate

Name	Description	Business Case	Web	Process Description
	crowd sourcing and ideation	IdeaScale incorporates social media into its application and uses it as a technique to improve upon crowdsourcing techniques. While IdeaScale's main purpose is to illustrate consumer sentiment, it can be used as an internal-facing application as well. Supporting Single-Sign-On (SSO), private and secure internal communities can be created for employees, partners and more. The software allows for tiered-user levels which restricts and grants access to certain parts of the application based on predefined permissions.	m	Evaluate and prioritize Develop and deliver
IDEENPORTAL	The "Fraunhofer Ideenportal" is a web based service that offers a secure environment to register, develop and discuss (innovation) ideas, prepare project proposals for internal funding and to take part on internal competition for ideas to all Fraunhofer employees. It also supports the exchange of ideas and the possibility to develop briefly ideas to projects and potential marketable products. For that "Fraunhofer Ideenportal" offers different areas and tools: -The "Personal room" is for collecting and further develop (innovation) ideas to projects. -The "Inspiration forum" allows the communication and cooperation with all	The "Fraunhofer Ideenportal" is service of the Fraunhofer Gesellschaft for all there related institutes and employees.	http://ideenportal.fraunhofer/#/ (restricted access)	Idea generation, collection and evaluation (including getting information from previous research, patents, etc.) Development (business case & plan)

Name	Description	Business Case	Web	Process Description
	registered employees within Fraunhofer, to discuss ideas, find partners for the own ideas.			
	-The "idea rooms" offer the possibility to discuss and further develop ideas with selected users.			
	-The "tech-to-business-path" offers tools and templates for development and description of a suitable business model in parallel to the development of the technical idea (e.g. in the idea rooms)			
	It also supports direct links to Fraunhofer internal funding programs and the proposal preparation.			
Indiegogo	Crowdfunding Website	The site runs on a rewards-based system, meaning donors, investors, or customers who are willing to help to fund a project or product can donate and receive a gift, rather than an equity stake in the company. Indiegogo has partnered with MicroVentures to offer equity-based campaigns beginning in 2016, allowing unaccredited investors to participate with equity stakes.	https://www.indiegogo.com	Financing/Crowdfunding
Innocentive	Platform to create and solve technological challenges	Platform in which technological challenges can be posted and solvers can propose a solution individually or as a group. The challenge proposer decides which solution suits best, which receives the Challenge Award.	https://www.innocentive.com	Idea generation, collection and evaluation, Development

Name	Description	Business Case	Web	Process Description
Innoget.com	Innoget is the global open innovation network for innovative companies, scientists, Startups and experts. Innoget offers a simple and secure opportunity to make trustworthy contacts, initiate projects and to share knowledge about technologies as well as in disciplines like biosciences, chemistry, engineering and IT - with guaranteed protection of Intellectual Property and confidentiality. The Innoget user community consists of thousands of specialists in their fields who benefits from free access to both technology calls and Technology Offers published by internationally active organizations from the scientific community and the business world.	http://www.innoget.com/news/43/Beiersdorf-expands-Open-Innovation	http://www.innoget.com	Idea generation, collection and evaluation (including getting information from previous research, patents, etc.) Go to market Build your Innovation trusted network (peer-to-peer engagement)
Innography Explorer	Innography Explorer offers powerful semantic search and automated reports for: Conducting prior art search, Developing new product ideas, Examining white space and novelty, Exploring freedom to operate, Identifying collaborators and Examining white space and novelty. It offers a secure solution without the risks of free patent search tools. It also includes interactive visualizations that enable the mapping of technology trends; classification similarities; market, geographic, company and classification landscapes; assignment relationships; and forward and backward citation mapping. As for Project Collaboration, Explorer enables creation of	R&D teams need to conduct IP search in order to be sure they are efficiently innovating and first to file. Traditionally, researchers use a lot of time and resources to find and analyse different patents. Innography explorer is an easy-to-use, secure patent search and analysis tool that can help doing that. It also offers collaboration tools to develop the patent.	https://www.innography.com/solutions/products/innography-explorer	Idea generation, collection and evaluation (including getting information from previous research, patents, etc.) Development (business case & plan)

Name	Description	Business Case	Web	Process Description
	project workspaces to save search results, upload documents, and categorize documents as desired. Colleagues can collaborate on projects, review and share analysis, refine search results, and set alert notifications.			
Innovation platform	Platform to support the development of ideas in an innovative, creative and collaborative way. Furthermore, to carry out, develop and evaluate these ideas iteratively and in a structured manner. This platform brings the idea generator and organizer together. Thereby, the open innovative paradigm is taken into account.	Different teams can work across different locations together. It enables people (of different locations) to work simultaneous and non-simultaneous on their projects and share all results in a structured manner. Therefore fewer physical meetings are necessary.	https://hana.sap.com/abouthana.html	Working together over distance: discussion and sharing information
InnovationQ Plus, Powered by IEEE and IP.com	InnovationQ Plus is a powerful innovation discovery and analytics platform that combines deep engineering knowledge from IEEE content with IP.com's global patent and non-patent literature. Powered by IP.com's proprietary cognitive retrieval engine, InnovationQ Plus rapidly sifts through massive amounts of big data to quickly and efficiently pinpoint relevant patents, applications, and non-patent literature, delivering industry leading search results. InnovationQ Plus enables IP discovery, analysis, and mapping of patent and non-patent material in one easy-to-use, highly accurate search tool.	Prior Art Search: verify patentability of a new invention comparing key technical features of this new solution with relevant prior art in terms of patents, published applications and non-patent literature; Freedom to Operate Search: verify the risk of infringement of a new product mapping the key technical features of this new product onto the claims of the relevant unexpired patents; Technology Landscaping Search: verify relevant patent information in a dedicated technology domain to identify main technology trends, areas with third party patents and areas of interest that are relatively free	http://innovate.ieee.org/innovate/	Idea generation, collection and evaluation (including getting information from previous research, patents, etc.) Development (business case & plan)

Name	Description	Business Case	Web	Process Description
Innoversia	Virtual Innovation Marketplace	Universia is a network that consists of 1,1000 universities in 15 countries: Andorra, Argentina, Brazil, Chile, Colombia,Spain, Mexico, Panama, Paraguay, Peru, Portugal, Puerto Rico, Dominican Republic, Uruguay and Venezuela. It has 12 internet sites, one for each country, and a global site which offers information and contents from across the network.	http://www.innoversia.net/inicio-0.html	Idea generation, collection and evaluation
Instant Agenda	Meeting facilitator in a Box, run an effective meeting without preparation	Our Research Team has a weekly meeting for coordination, as well as to present new ideas to the rest of the team, share knowledge, ask questions, etc. This tool allows us to add topics on the go, vote for the most (and the least) interesting ones for the team, set a specific timeline to quickly discuss them (some minutes that can be extended) and keep the list of discussed topics in the same page for further follow-up. The effectiveness of the meeting is improved simply by the fact that the agenda is created collaboratively, topics are discussed by order of preference or importance, and time is monitored for discussion	www.instantagenda.com	Idea Generation, collection and evaluation
Jive X	It's the ultimate platform for partner communities, driving and improving every stage of the partner lifecycle from onboarding to enablement and collaboration. Whether you're selling, distributing or innovating, your Jive-x partner community is a one-stop-shop	CA has its own version of the tool: CA Communities. Anyone can become a member of CA Communities and collaborate with business experts, access exclusive content and training, network, submit ideas, vote for the most	https://www.jivesoftware.com/products/jive-x/ (digital tool) - https://communities.ca.com/	Idea generation, collection and evaluation; Go to market; Post evaluation

Name	Description	Business Case	Web	Process Description
	for partner training materials, product documentation, reseller tools, developer resources, interactive groups and private collaboration spaces.	interesting ideas, among other activities. CA Communities has an internal tool called Idea Wall, currently only open to CA employees, where they can submit any idea and the ideas are voted by other employees.	(business case)	
Jovoto	Jovoto enables large brands and NGOs to brainstorm at scale and solve design and innovation challenges with more than 80 000 creative professionals globally. The scale of projects range from working with a few hundred curated talents under NDA to foster innovation by large scale creative conversations involving broad public audiences while turning the creative challenge itself into a media event. To date jovoto has worked with more than 100 000 creative talents and successfully organized more than 380 challenges. Jovoto was founded in Berlin at the University of Arts in 2007.	By crowdstorming the future of the service station, Total screened a vast amount of innovation outside their own organization and collaborated with 462 creative professionals from more than 20 countries. Coca-Cola invited experts and designers from around the world to co-create the reusable bottle crate. Over 4 000 participants from 75 countries submitted 443 entries and voted their favourites over 60 000 times, organically reaching more than 237 Million people. Crowdstorms have helped Greenpeace to discover thousands of big impact ideas for their campaigns and connect with millions more through additional media and social media buzz.	https://www.jovoto.com/	1. Build Brief 2. Pick project type (pricing options) 3. Launch contest 4. Review submissions by Jovoto 5. choose winners
Kickstarter	Funding Platform that does Seed Investments	Individuals who back these projects are offered tangible rewards and one-of-a-kind experiences in exchange for their pledges.	https://www.kickstarter.com	Financing/Crowdfunding
Lime survey	Online survey tool to get quickl responses on surveys; partners give support from basic support to the development and implementation of complete LimeSurvey Projects	Employee satisfaction surveys, market research surveys, event management, education surveys, personal management	https://www.limesurvey.org	1. Generate a survey 2. Define type of questions; add questions 3. Settle conditions 4. Define evaluation rules

Name	Description	Business Case	Web	Process Description
				5. Evaluation
				6. Export results
MERLIN EEN PARTNERING TOOL	Merlin is the software tool that assists Enterprise Europe network (EEN) members in performing their daily activities related to the partnering and networking process. It offers the possibility to create, publish and promote collaboration profiles, partnering events, expressions of interests and partnering agreements with SME and researchers from more than 50 countries. It facilitates sector groups activities and forum and communicate with other EEN network colleagues in a single user-friendly framework.	http://een.ec.europa.eu/success-stories	http://een.ec.europa.eu/about/about	Go to market
Nimble Bee	Each competition is a series of iterations through a managed network of universities and consumer communities, resulting in valuable new ideas for the companies, and experience in real-life business for universities and students.	For Businesses looking for a fast way to come up with new and disrupting packaging ideas. For businesses looking to improve current packaging. For businesses looking for new and disruptive promotion materials. For businesses looking to implement recent trends in their packaging strategy (i.e. 3D printing)	http://www.nimblebee.eu/	1. Build Brief 2. Launch contest 3. Review submissions 4. Choose finalists 5. Customer validation 6. Select winners
NineSights	NineSights is a secure, collaborative community connecting innovators with problems of all sizes.	See all contests on https://ninesights.ninesigma.com/contests	https://ninesights.ninesigma.com/contests	Participants in NextChallenge: Smart Cities vie for a grant and/or funding to execute a demonstration that will showcase a smart city solution addressing an urban challenge. One

Name	Description	Business Case	Web	Process Description
				winner will be awarded up to $80,000 to demonstrate and validate their solution in 2017 at NextEnergy Center in Detroit, or applicable site that meets the needs of the selected solution. Terms of the award will be executed via a Statement of Work between NextEnergy and Winner. Up to four additional grants with a combined total of $20,000 will be awarded to finalist(s). From this selected pool of winner and finalist(s), the challenge intends to award at least 1 small business, but may elect not to if responsive proposals are not received by any qualifying small businesses.
Online Policy Briefs Environment	The Online Policy Briefs Environment is an interactive process that can be used to test and discuss preliminary research results and policy ideas. This tool gathers feedback on ideas from various stakeholders and combines	The Continuous Online Policy Briefs Environment is an interactive policy brief process that offers the stakeholders (government officials, politicians, public/activist groups, academic researchers, media, etc.) an	http://www.softwarebusinesslab.fi/	Policy proposals will be circulated for comments. The completed policy brief will be published among a large

Name	Description	Business Case	Web	Process Description
	it with analytics for further collaboration.	environment to test and discuss preliminary research results. This tool manages and circulates (circulation time about 3 to 4 months) ideas between different stakeholders. Web analytics, measurement scoreboards, and other online mechanisms will be included for collaboration and policy co-design, and assessment.		stakeholder group. The process is automated.
Open Innovation Cloud Platform	This tool represent an open innovation platform for knowledge sharing with the objectives: - Enhance technology transfer and knowledge sharing among your members. - Generate opportunities for collaboration in R&D and innovation by inviting your members to post technology needs and offers - Accelerate and make more efficient the process to detect internal opportunities in R&D and innovation among business units, research groups and employees.- Build and manage your own trusted open innovation network	Generate both internal and external collaborative opportunities in R&D and Innovation, and connect your Cloud to the world via innoget.com Success factors: High effective matchmaking system Good quality content Provide secure environment	www.innogetlcoud.com	1. Build an open innovation network 2. Share the network 3. Interact and collaborate → share property and innovation
openideo	At OpenIDEO, people from all corners of the world collaboratively tackle some of the toughest global issues. No matter who you are, your experiences will bring a unique perspective to our conversation and idea development. Sign up to start collaborating and read on to learn more about how to participate.	In February, OpenIDEO launched the Water and Sanitation Challenge—sponsored by Water.org—in order to uncover solutions that expand water and sanitation solutions among low-income households in India. By May, more than 8,000 people worldwide and 143 water and sanitation organizations in India participated. After a refinement and evaluation process, two organizations were selected to receive up to $250,000 USD	https://openideo.com/?_ga=1.175941666.1002591408.1465292073	RESEARCH: It all starts with an invitation for you and others around the world to share inspirations, stories, tools and successful examples on the challenge topic. IDEAS: Based on learnings from the Research phase, the OpenIDEO community

Name	Description	Business Case	Web	Process Description
		each to support their efforts and we're excited to congratulate and announce the winners: Samagra and Svadha.		shares new, wild or existing ideas and collaboratively refines them. REFINEMENT: We then focus on testing ideas with end users. FEEDBACK: This is when the OpenIDEO community shares comments and suggestions for next steps. TOP IDEAS: Working closely with the challenge sponsor, the OpenIDEO team chooses a set of top ideas based on their potential for impact, level of engagement and relevance to the challenge topic and evaluation criteria. *IMPACT: This is where you can share learnings, find collaborators and share updates on how ideas are evolving.
Orbit-QUESTEL	Questel's suite of online tools enables technology-based competitive intelligence that can be visualized, analysed, and shared	Prior Art Search: verify patentability of a new invention comparing key technical features of this new solution with relevant prior art in terms of patents,	https://www.questel.com	Idea generation, collection and evaluation (including getting

Name	Description	Business Case	Web	Process Description
	online. Questel offers services to support every stage of innovation. From IP and innovation consulting, to prior art research, to web-based corporate training on IP fundamentals.	published applications and non-patent literature; Freedom to Operate Search: verify the risk of infringement of a new product mapping the key technical features of this new product onto the claims of the relevant unexpired patents; Technology Landscaping Search: verify relevant patent information in a dedicated technology domain to identify main technology trends, areas with third party patents and areas of interest that are relatively free		information from previous research, patents, etc.) Development (business case & plan) Implementation (prototyping) Go to market
Pioneers Festival	Pioneers Festival unites the most promising tech start-ups with the world's top investors and executives.	Pioneers is a global platform for all technology sectors – from robotics to biotech.	https://pioneers.io	Yearly event in Vienna, Networking and Matchmaking.
Pioneers Ventures	Pioneers Ventures is a pre-seed investor empowering outstanding start-ups with a global network of corporates, industry experts and entrepreneurs.	Business Development: Privileged access to Pioneers events around the globe to grow your relevant network. We match you with peers, corporate partners and potential clients. Silicon Valley Insights: Our Silicion Valley Insights tour gives you two weeks of meetings with serial founders and VCs as well as pitches in front of product/market experts. Learning and Mentoring: One-on-one mentoring sessions with industry experts (physically or online). Pioneers Ventures portfolio day enables high quality peer-	https://pioneers.io/ventures/	Business Development/Silicon Valley Insights/Learning and Mentoring/Financial Support

Name	Description	Business Case	Web	Process Description
		to-peer learning. Financial Support: We fund you with our pre-seed investment of up to €125K and help you raise follow on funding through our global investors network.		
Projectplace	Collaboration tool that brings project members together to improve collaboration and get things done.	Projectplace helps organizations realize their resource potential with solutions that span strategic planning, portfolio and resource management, and project collaboration. The customers improve resource utilization, accelerate time to market, increase productivity of project teams, and ultimately achieve their goals. No software installation is needed, clients pay to access Projectplace from a remote Web site. Modules include Team conversations, Document Archive, Issue Management, Planning & Tracking, Meeting Management, Project Portal, and Contacts.	https://www.project place.com/	Collection of WP- input, project development, support via tools needed to set direction, execute tasks, communicate and track progress
Protosphere	ProtoSphere is business collaboration software that allows your organization to quickly create a 3D immersive environment optimized for business applications such as e-learning, virtual meetings and virtual conference events, scientific research and development, and sales and manufacturing collaborations involving rich data visualization. ProtoSphere allows global organizations to effectively bring together their best people and relevant information to make optimal business decisions, from anywhere, at anytime.	ProtoSphere use means less unproductive time wasted in airports, sitting in traffic, and waiting for connections. ProtoSphere also has the benefit of easily persisting data in electronic form after the meeting/event is over so that it can be reviewed, updated, and massaged. This persistence isn't possible with physical meetings or events. Finally, customer case studies of ProtoSphere indicate some tendency to more fluid engagement among meeting	http://www.protonm edia.com/	

Name	Description	Business Case	Web	Process Description
		participants in brainstorming and conflict resolution because of the anonymity afforded by the avatar versus live interactions.		
PUBLICA	Frauhofer Publica is a database for publications and patents resulting from research activities of all Fraunhofer institutes. It contains hints and full texts of papers, conference contribution and articles in conference proceedings, research reports, studies, university texts as well as patents and registered designs	Service is provided by Fraunhofer and open to all users	http://publica.fraunhofer.de/starweb/pub09/index.htm	Idea generation, collection and evaluation (including getting information from previous research, patents, etc.)
Rapid Experimentation and Deal Design (REDD)	REDD is a new innovation method for experimenting and designing, done through high-level collaboration innovation process to create rapid scalable value creating services and concepts between organisations and key stakeholders.	The Rapid Experimentation and Deal Design (REDD) Environment is the way to develop, test, and start implementing new successful operational modes in the regions. It is a collaboration tool for rapid experimentation of different digital enabled services. Typically the rapid experimentation happens between the city and the infra providers (power, water, traffic, networks, education etc.). Essential feature is to get feedback for the proposed new service within minutes using the social media tools. The results from the Policy Brief Tool can be tested and validated with this Rapid Experimentation and Deal Design environment.	http://www.softwarebusinesslab.fi/ https://peacelab.wordpress.com/	Small incremental improvement proposals are tested at high speed and a deal of implementation is agreed in the end of the workshop.
Rockethub	RocketHub is an online crowdfunding platform	RocketHub offers a Reward (or Goods)	https://www.rocketh	Financing/Crowdfunding,

Name	Description	Business Case	Web	Process Description
	where users post campaigns to raise funds and awareness for projects and endeavours.	crowdfunding model. This feature makes them stand out from the competition in the crowdfunding market because some funding is better than no funding for new first-time fundraisers. So if you raise $10,000, you get to keep the $10,000 (after fees).	ub.com	Social network for investors and entrepreneurs
SAP Success Factors / SAP Jam	SAP Jam is a cloud-based enterprise social networking suite and collaboration app that helps users connect with employees, partners, and customers.	SAP Jam combines elements of SAP's prior social collaboration platform, SAP StreamWork with SuccessFactors Jam, a collaboration platform that SAP acquired when it purchased SuccessFactors, a maker of on-demand human resources software.	http://www.successfactors.com/en_us.html	Enterprise social networking with numerous functionalities. Social collaboration
SeedInvest	SeedInvest is an equity crowdfunding platform that connects start-ups with investors online. The Funding Platform offers Seed, Early Stage Venture, Later Stage Venture, and Equity Crowdfunding Investments.	The SeedInvest network contains over 15,000 accredited investors, including hundreds of family offices and institutions. SeedInvest typically invests between $500,000 - $5 million as part of a syndicate.	https://www.seedinvest.com	Venture capital(Angel investing/Equity crowdfunding
Slack	Team communication for the 21st century. Slack is a free tool that eliminates the need for internal emails. It includes features such as group and private messaging, inline images and videos, rich link summaries, and notifications.	Customer stories: https://slack.com/customers	https://slack.com/is	Development, Post-evaluation, Idea generation, collection and evaluation
Studyka	Companies challenge students by offering innovative contests	"Turn YouTube into a daily ritual destination the way TV was for past generations!" was the challenge launched to the students by the most famous search engine with the Google YouTube Challenge (GYC). They position themselves as if they were a	http://en.studyka.com/	A challenge lasts about 3-4 months. During the course of the challenge, companies are free to choose the way they get involved. They have the

Name	Description	Business Case	Web	Process Description
		channel owner in order to find new ways to engage users with YouTube content. Mission accomplished for the 3 teams on the podium: "Beluga", "YouTube 3.0" and team "TSML".		possibility to coach teams, video chat with candidates, give the students advice on how to best tackle their problem, or just participate in the selection phase and the voting of projects.
SurveyMonkey	Online survey tool to create and send easily surveys (mobile, web, social media) to get a high quality basis of decision-making; real-time results; text analysis; SPSS-Integration; user-defined reports; filters; integration with partners (e.g. MailChimp, Eventbrite)	Event management, surveys to customer satisfaction, employee satisfaction surveys, market research surveys, healthcare surveys	https://www.surveymonkey.com/	1. Generate a survey 2. Define type of questions; add questions 3. Settle conditions 4. Define evaluation rules 5. Evaluation 6. Export results
Survio	Online survey tool to create automatically analysis in real time; using with all mobile devices possible; easily sending of survey invitation per email; sharing of surveys with social media	Market research surveys, feedback surveys, product / service evaluation surveys, student surveys, polls , event registrations, employee satisfaction surveys, training surveys, 360° assessment surveys	http://www.survio.com/en/online-surveys	1. Generate a survey 2. Define type of questions; add questions 3. Settle conditions 4. Define e Video scribe valuation rules 5. Evaluation 6. Export results
TEAM- AND PROJECT ROOMS	Team and project rooms at Fraunhofer support the cross-departmental and institutional collaboration. They support members in activities like e.g. coordination of projects and schedules, discussion of ideas and validation of documents or suggestions, network and	Implemented within the Fraunhofer Gesellschaft	Access is possible only for Fraunhofer staff.	Idea generation, collection and evaluation (including getting information from previous research, patents, etc.)

Name	Description	Business Case	Web	Process Description
	community-management. Team rooms include a document management function as well as a collaborative calendar, task management, a discussion board and sections for news and announcements. All this content could be shared and synchronized with Outlook. Also Blogs and Wikis could be included. Team rooms are initiated and led by a moderator who could add additional members. Based on Microsoft Sharepoint (Fraunhofer specific implementation)			
TECSCOUT	TecScout is a semantic search and analysis tool in selected topics (actually Electro mobility and Industry 4.0). The semantic analysis of texts takes into account not only the search words (as in common internet search engines or professional databases) but also the meaning of the search words. TecScout is a tool for identification, evaluation and monitoring of technologies based on scientific publications, patent and press databases focused on the use in enterprises but also is applicable for research institutes. It supports these organisations in technology recognition, scouting and monitoring as well as identification of potential markets and applications of new technologies and in competition analysis.	Implemented within the Fraunhofer Gesellschaft. The tool is not available for use yet but there is the possibility for enterprises to get a Test-Account.	None	Idea generation, collection and evaluation (including getting information from previous research, patents, etc.) Go to market
THINK TANK – TT IMPULS NEWSLETTER	The Fraunhofer Corporate Think Tank is an interdisciplinary unit with the aim to support the interconnection within the Fraunhofer Gesellschaft and the cross-institutional		The tool is available on the Fraunhofer intranet only.	Idea generation, collection and evaluation (including getting information from previous

Name	Description	Business Case	Web	Process Description
	innovation culture on one hand and on the other hand to support technology transfer and provision of information to public entities like enterprises and politics. The Think Tank offers several "products" including market studies and potential analysis, identification of new fields of business and growth, technology fact sheets as well as services like coordination and moderation of strategic projects or project concept and idea generation. One main instrument especially for technology transfer and knowledge transfer is the TT Impuls Newsletter, which features, on a quarterly basis, well selected research topics and their potential development and also provides links to potential research opportunities at Fraunhofer			research, patents, etc.)
Thomson Innovation	Thomson Innovation enables you to make more confident IP decisions with the most trusted global patent data, scientific literature and business information, integrated with powerful analytics and easy-to-use workflow tools.	Thomson Innovation is the leader in global patent intelligence and collaboration. Work smarter with our new, intuitive user interface for more decision power. In today's fast-paced and global IP environment, you want the ability to act fast and with confidence. That ability is yours with Thomson Innovation – the trusted single destination for leading IP professionals offering: • Broad global coverage, including hot new markets • Unmatched patent content, with the new enhanced global patent authority	http://info.thomsoninnovation.com/	Idea generation, collection and evaluation (including getting information from previous research, patents, etc.), Post evaluation, Patent Application & prosecution, patent monitoring, patent licensing, patent litigation

Name	Description	Business Case	Web	Process Description
		• Smart Search allows all users regardless of experience to search with confidence • Powerful capabilities to search, analyse and collaborate efficiently • The ability to integrate your own data with ours GET THE BEST VIEW OF GLOBAL IP ACTIVITY Don't worry about checking multiple sources, coping with foreign languages, or dealing with incomplete records. With a single query, you get a complete and global picture of your IP landscape, thanks to: • First-level patent data from around the globe – including the Asia Pacific and Latin America regions – in English • Enriched with enhanced patent data and invention based records – a Thomson Reuters exclusive • A wide range of non-patent data from Thomson Reuters, including scientific literature, business information and news collections		
Trello	Web-based project management application	Trello is a system of boards, lists and cards. This creates a system that allows for individuals or teams to track a project and collaborate or contribute where they can be most useful or where it is most needed.	https://trello.com	Project management
Video scribe	Video Scribe is a simple software for creating	It provides the opportunity to generate	http://www.videoscr	1. Arrangement and

Name	Description	Business Case	Web	Process Description
	whiteboard animations automatically. It supports the learning ability through visualization. Video filed can be exported to Quicktime video, Flash video or image sequences.	demonstrative videos for customers and stakeholders to present new ideas or products.	ibe.co/	zoom of elements at the drawing layer 2. Changing of chronological order 3. Add audios 4. Integration of clip charts 5. Finish and share videos
YAMMER	Social collaboration	A collaboration solution that includes enterprise social, email, real-time collaboration, and file sync and share.	https://www.yammer.com	Social Collaboration: Groups, external collaboration, search, inbox and notifications, discovery feed, MS Office integration
Yet2	Platform to connect companies to strategic technologies and market partners around the globe	Technology marketplace where technological solutions can be listed as well as technological needs. Technologies are listed by categories.	http://www.yet2.com/	Go to market

Table 7: Detail of Tools

5 DISSEMINATION, EXPLOITATION AND STANDARDISATION

All the knowledge gathered about approaches and tools, and their links with the 7 different schemes, will be compiled, organised and made public online for free and in a easily accessible way in the knowledge database. This fact will constitute a strong dissemination tool that will promote the results of the project throughout Europe, aiming to successfully replicate the university-industry-society collaboration programmes to a large number of universities and industries in order to improve the innovation processes, their impact and effectiveness in society.

The exploitation strategy will be carefully designed in *D4.4.Exploitation Strategy*, taking into account the findings obtained from the implementation of the knowledge database. This knowledge database provides a unique, interlinked collection of open approaches, tools and experiences and bundles, in a practical way, relevant and scientifically reviewed knowledge to be used as a drop-in center in the field of Open Innovation and Science 2.0.

6   CONCLUSIONS

The knowledge database of Science2Society is an online and easy to use tool that stores and retrieves, from a single place, practical guidelines to analyse UIS innovation models, simultaneously helping to identify and contact experts and the different stakeholder groups.

For the design of this database, several datasets have been taken into account (see *D1.1 Report accompanying the knowledge database*), namely:

- Innovation Schemes: the seven interfaces piloted in the project

- Experiences: first-hand real case studies from experts in the schemes field from within and outside the consortium

- Approaches: available science-industry concepts and models

- Tools: up-to-date catalogue of existing ICT tools related to open innovation and science 2.0

This report has described the process followed in order to upload the database, and its final content, with respect to the approaches and tools. A total of 36 approaches and 60 tools of 13 different types have been identified and analysed by the partners, the relations between which, and with the seven schemes, have also been set up revealing the following: approaches can be used by several schemes and each scheme can follow different approaches. Additionally, each approach can be related to several tools and each tool can be useful for different approaches.

Once the knowledge database is online, the content will not remain static. On the contrary, the different stakeholders will be able to upload contrasted and reviewed content to it, contributing to the success of open innovation and science 2.0 schemes in cooperation between university, industry and research organisations.

Furthermore, the results of this deliverable will serve WP3 for a more effective piloting of the seven interfacing schemes and will be integrated in the current JIIP project on an observatory on Knowledge Transfer and Open innovation[2], which will give a set of recommendations to develop a comprehensive policy approach to knowledge transfer and open innovation throughout Europe.

7   REFERENCES

[1]   Chesbrough, H. (2003), "*Open Innovation: The New Imperative for Creating and Profiting from Technology*", Harvard Business School Press

[2]   http://www.jiip.eu/dweb/projects/study-knowledge-transfer-and-open-innovation

A. ABBREVIATIONS AND DEFINITIONS

Term	Definition
DoW	Description of Work
ICT	Information and Communications Technology
RTO	Research and Technology Organisation
S2S	Science2Society
UIS	University-Industry-Society