# Report on the maps of UIS interface schemes (of their touch points of university-industry collaboration, using a design thinking approach)

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| **Document Type** | Deliverable |
| **Document Number** | D2.1 |
| **Primary Author(s)** | Karoline Schuster \| Spirit Design |
| **Document Version/Status** | 1.1 \| Final |
| **Distribution Level** | PU (public) |

| | |
|---|---|
| **Project Acronym** | **Science2Society** |
| **Project Title** | Improving university, industry and society interfaces to boost the throughput capacity of Europe's innovation stakeholders |
| **Project Website** | www.science2society.eu |
| **Project Coordinator** | Bert Pluymers \| KUL \| Bert.Pluymers@mech.kuleuven.be |
| **Grant Agreement Number** | 693651 |

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 693651

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## DOCUMENT HISTORY

| Revision | Date | Author/Organization | Description |
|---|---|---|---|
| 0.1 | 2017-06-28 | Karoline Schuster \| SD | Table of content, first draft |
| 0.2 | 2017-08-08 | Karoline Schuster \| SD | Integration of modelling |
| 0.3 | 2017-08-23 | Karoline Schuster \| SD | Summary, Objectives, … |
| 0.5 | 2017-08-30 | Karoline Schuster \| SD | Version for Review |
| 1.0 | 2017-09-11 | Karoline Schuster \| SD | Feedback and finalisation |
| 1.1 | 2017-10-29 | Edith Hammerschmid \| SD | Integration of feedback |

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# 1 EXECUTIVE SUMMARY

Analysing the process of an open innovation can give deep insights of inter alia how the process can be optimized. In D2.1 – the document held at hand – the first steps towards improving the processes of open innovation have been made. The Science2Society project wants to increase the efficiency of the European innovation system and the ways it creates new businesses, turns technology into products and services, attracts financing and generally creates value from academic research. [1] The project focuses on key schemes currently used to encourage the use of innovation. The fields of interest have been summarised into seven pilot projects:

1. Co-creation: Product development with future users in a virtual idea-laboratory
2. Co-location: Establishing industry innovation labs within universities
3. Collaborative R&D Projects: Between universities, RTOs, industries, SMEs and public-sector entities
4. Inter-sectorial Mobility: As an enabling tool for open innovation/science
5. Big Research Data Transfer: Collaboration through Big data and Science 2.0
6. University Knowledge Transfer: Direct university coaching and training to SMEs
7. Open innovation Marketplaces: Connecting universities, RTOs, industries, SME and start-ups

Design Thinking is a well approved approach among designers in the creative industries, with originally focusing on the look and functionality of products. But the methodology gained popularity as using design tools can tackle more complex problems as well. In other industries and branches the methodology of Design Thinking has often been used intuitively but not beyond the conventional problem-solving methods. In applying the Design Thinking methodology to the process design of the Scienc2Society pilots a new approach for identifying key processes has been implemented.

As the Science2Society project works towards a sustainable learning programme, where a community of practice will be set up for sharing knowledge, providing training material and giving best practice examples. The “Guidelines for Pilot Descriptions” was developed with Design Thinking methodologies and supports the concept of sustainable learning by providing a basis for replication of the best schemes. The basis is, that all seven pilots of the Science2Society project have to follow the same path, in order to derive findings at the end of the process. The “Guidelines for Pilot Descriptions” are not public, but are available for all project partners.

The general modelling approach is stated in section 3. As the modelling approach itself, is no public deliverable, the methodologies have not been described in detail. A brief overview and the major steps are being reported to guide the reader through and link the Design Thinking approach. This assures the understanding and describes the importance of linking these approaches. Section 4 starts with a short introduction of Design Thinking in general and its advantages. Then the report goes deeper into why the selected tools have been used in the “Guidelines for Pilot Descriptions” to shape the process design of the seven pilots of Science2Society.

The overall aim of this project is inter alia a common picture of all seven pilots, in order to make them comparable and derive the lessons learned into guidance for policy design at a later stage in the Science2Society project.

Keywords: Open Innovation Process, Design Thinking, Process Design

# 2 OBJECTIVES

The overall objective of Science2Society is to encourage the use of the open innovation approach for the design and implementation of research and innovation initiatives involving actors from research, development, technology transfer, industry, as well as solution users and stakeholders to generate wide-ranging innovation impacts and improve the efficiency of the European innovation eco-system.

As a public report, the D2.1 aims on describing how Design Thinking methodologies have been applied to describe open innovation processes and on how its further implementations can support the modelling approach for policy design in respective of open innovation and Science 2.0. In other terms, the report will show how the Design Thinking approach may support the design of Open-Innovation-oriented research and innovation activities, in particular taking account of fostering and hampering factors.

A guideline has been developed, namely “Guidelines for Pilot Description”, which is the basis of this report. With the application of Design Thinking methodologies in the process of open innovation a new perspective has added value too designing the pilot projects. In the forthcoming project implementation, the methodologies will support the modelling approach.

The objectives of this report are:

- to provide an insight into the modelling approach of the UIS (University-Industry-Society) interface of the Science2Society project, relating it to Design Thinking approaches.
- to report on how the UIS interface schemes have been mapped to the pilots' touch points.
- to give a general understanding of Design Thinking as a supporting process for modelling on the UIS.
- Create the basis for an extended use of Design Thinking and OI experiences to improve the implementation of research and innovation initiatives.
- Provide a reference for the application of the D.T. concepts to forthcoming open innovation initiatives design.

# 3 DESIGN THINKING APPROACH

In order to identify touch points among stakeholders of the seven pilots, Design Thinking as an approach, has been chosen to answer those and other questions. In all seven pilots of the Sience2Society project a set of Design Thinking tools has been implemented. The core teams of the pilots have been challenged to fill out and apply the Design Thinking tools. The results have been reported in D3.1 [3] and will be displayed at the website of Science2Society (www.science2society.eu). In the document at hand, the methodology of the approach of Design Thinking is described further. The link to the modelling approach has been described in chapter 3.1 and in the following chapters the tools applied in the specific stages of the modelling approach will be displayed with a graphic.

## 3.1 Introduction on Design Thinking

Design Thinking is a creative problem-solving method which distinguishes from other methods through its' user focus and its' iterative approach. Generally speaking, the method can be categorized as a human centred design method to develop innovative products, services and processes with a high desirability and acceptance by the target audience. The method is based on the principle, that interdisciplinary teams work on a certain target audiences' problem in a cyclic process to quickly develop solutions and immediately test them. Interdisciplinary is highly important as a multitude of professions, cultural backgrounds, ages and educations enable the team to view a certain problem from different angles and combine diverse problem-solving approaches. In Design Thinking there are no roles defined. Every member of a Design Thinking team is equivalent and has the same tasks within the respective phase. [6].

Design Thinking is a process based method which incorporates six distinct process steps. As the method was applied and modified over the years, operators developed different doctrines, where less or more process steps might be useful for their respective purpose:

**Understand Phase**

Initially the Design Thinking process begins with the so called **Understand Phase**, where all team members collectively face the *Design Challenge* and subsequently start researching. The Design Challenge depicts the target audience, the problem field and further boundary conditions for the upcoming development. It helps to create a common understanding among all team members of the projects' vision and goals for the development. The Design Challenge can either be developed by the Design Thinking team itself or it can be defined outside of the team. In both cases, the Design Challenge gives the team indications for the initial research about the target audience and the respective problem field. After information about the audience and the problem field is gathered and discussed, the methods for the target audience observation within the Observe Phase will be selected and prepared.

**Observe Phase**

The goal of the **Observe Phase** is to create as many insights from the target audience about the problem field which is targeted. Observation techniques and methods such as interviews, questionnaires and documented observations are applied for the purpose of understanding the problems and needs of the target audience on an emotional level. All the data and information gathered is then screened, processed and clustered by the Design Thinking team. Popular clusters are demographic factors, needs and requirements, problems and impediments. The processed and clustered information is the foundation for the upcoming phase.

**Define Phase**

All the clustered information about the target audiences problems and needs are now narrowed down within the **Define Phase.** A joint *Point of View (POV)* is defined which clearly depicts the problem statement which needs to be solved in a single sentence. It represents the collective understanding of the problem and is followed by the Ideation Phase, where the problem statement is aimed to be solved. Typically, this single sentence is developed by the Design Thinking team and starts with "How might we enable/empower/solve…". The Persona Method is a popular method for uniting problems and needs of a certain target audience in a fictive archetype.

**Ideation Phase**

The **Ideation Phase** is all about generating ideas for the solution of the problem statement as defined in the POV. The goal is to create as many creative and sometimes even unrealistic ideas which answer the problem statement. For the Design Thinking Team it is important to not deny or criticize any idea to early and to rather

try to build on ideas of others in order to fully benefit from the teams interdisciplinary, the resulting heterogeneous problem solving approaches and the diverse creativity. Some well-known techniques, such as classic brain storming or brain writing are applied in order to generate as many ideas as possible. After the idea generation, it is also part of the **Ideation Phase** to screen, discuss and cluster all the ideas, since some problem solving approaches can be pooled and functionalities or other factors can be grouped.

**Prototyping Phase**

Whilst the ideation is characterized by "thinking with the head", the **Prototyping Phase** is all about "thinking with your hands". In this phase the selected ideas are prototyped in order to create an experience. Prototypes range from simple drawings and sketches to depict certain functionalities or design components to functional prototypes made from paper, cardboard, Lego ® or any other material which supports the Design Thinker in visualizing the idea. It is often referred to as *rapid prototyping* since it aims to go rather quick (within a few hours) and no actual development process can take place. Thinking visually and creating an experience are the major task of this phase.

**Testing Phase**

The created prototypes which aim to solve the previously defined problem statement are now tested in the **Testing Phase** by the target audience under observation of the Design Thinking team. Therefore observation techniques, as used in the *Observe Phase* help capture all interactions and insights of the target audience with the prototype.

As new insights and information are generated within this phase, the iterative process then typically begins again in the *Define Phase* where all new insights help sharpen the POV for the subsequent second ideation. This process is then continued until a satisfying solution is accepted by the target audience which then can be further developed and manufactured (product) / further developed, defined and implemented (service, process) [5].

The biggest advantages of Design Thinking are:

1. Interdisciplinary teams: A combination of different viewpoints and a diverse set of problem-solving approaches enable project teams to create holistic solutions.
2. User centred approach: The empathic observation of the target audiences' problems and needs helps developing products / services / processes with high levels of desirability.
3. Iterative process: The iterative multi step process helps developing, testing and refining solutions quickly to finally mature on a desirable result.

Apart from understanding Design Thinking as the process based method it has also become a mind-set under practitioners. The essentials are

- Continuously (re-) developing with new actual insights
- Application of multidisciplinary teams
- Empathic understanding of problems and needs
- Application of a process for different mind-modes

Even though design thinking can be applied to problems of all fields, there is also some criticism about it [7] [8]. The most common points of critique are simultaneously illustrating the biggest challenges of Design Thinking. They are:

1. Flexibility: A common critique about Design Thinking is that its adaptability has led to a variety of definitions and interpretations. This can be confusing for people who want to try it out. To overcome that challenge it is important to think about the essentials of Design Thinking and choose the way that fits to your environment best.
2. Process orientation: Another criticism is that it is overly focused on the process. To avoid a focus on process, it is essential to develop a mindset and environment that are beneficial to design thinking (inspiring, open, allowing failure, support creativity).

3. Design critique is missing: Some professional designers argue that design critique is missing in the Design Thinking method. To overcome that, it can be considered to add design critique to the Design Thinking process when it is appropriate.
4. Buzzword: Given that the phrase “Design Thinking” sounds very innovative and has become a very popular method, it is in some extend overused and thus has become a buzzword. Sometimes the solution of a challenge is obvious and therefore no interdisciplinary team, all the process steps or a cyclic process is needed. If no new insights or no innovative aspects are needed, no Design Thinking approach is needed.
5. Not for very radical or disruptive innovation: Just as it may not be the best method for very small improvements of products, services or processes, the Design Thinking method could be also the wrong method for very radical or disruptive innovation. If an innovative idea would change the whole system and rules of the market, it could be that the target audience is not able to change the current way of thinking and behaving as fast as it would be appropriate for an usual testing phase. To avoid that, there should always be the freedom in the process to take such an innovative idea out of the Design Thinking process and develop it within another innovation path.

## 3.2 Modelling Approach on the UIS Interface

The seven pilots have been designed as open innovation best practices, with the purpose to experiment innovative approaches to science, research and business open innovation initiatives.

For all seven pilots the following statements apply:

- They have specific innovation goals, which are the core of innovation co-operation (co-creation, co-location, joint education and training, etc.)
- Common sense of open innovation: it is about a process. It describes a way of innovating, while undertaking the consolidated innovation actions from basic research and exploration to development to market-oriented research and innovation to market applications.
- The scheme of the process has been started as the pilots started designing their process.

The report at hand was the first step towards modelling the guidelines for policy design (Task 2.3 – see GA [4]). As the here applied approach is derived from the open innovation process by Chesbourgh Henry William [[9]], the Sience2Society project partners agreed to map the process in the seven different pilots and to describe the common process elements, which are described with the following scheme:

- The five stages
    - Creating the Opportunity
    - Set-Up Stage
    - Knowledge Creation Stage
    - Knowledge Application Stage
    - Validation and Assessment Stage
- The three dimensions
    - Communicating
    - Behaving
    - Judging and Assessing
- Investigating fostering and hampering factors, and
- Asking for judgmental statements and assessments

Following, the design thinking tools used in designing the pilots are described in detail and the tools are linked to the five steps of the modelling approach.

**Design Thinking as a supporting process (for the modelling approach on the UIS Interface)**

Design Thinking as a method can support the process modelling approach since the project teams deliver highly interdisciplinary output and due to the advantages of an iterative process modelling sequence. The pilots and their members were not directly involved in the design of the Design Thinking activities but delivered the substantial information for the process modelling approach, where Design Thinking acts as a supporting agent.
The interdisciplinary output of each of the seven pilots, consisting of six different tools, was the input for the meta process. All tools were selected because of their usability and great evaluability. Half of the tools are visualizations, whereas the map of actors and the touchpoint analysis represent the tools with highly emotional information about the collaboration between the pilots' stakeholders. Iteratively, each pilot was analysed and will be monitored. The goal of the process modelling is to develop the process sequence to further develop recommendations and finally derive standards for future open innovation initiatives.
Within the five stages of the process six Design Thinking methods were applied. In the first stage "Creating the opportunity", no method was applied yet, as it will be captured within the modelling process which was still in process at the time the deliverable hold at hand was created. In chapter 3 the Design Thinking methods mentioned in are described in detail and depicted why the selected methods and tools have been chosen.

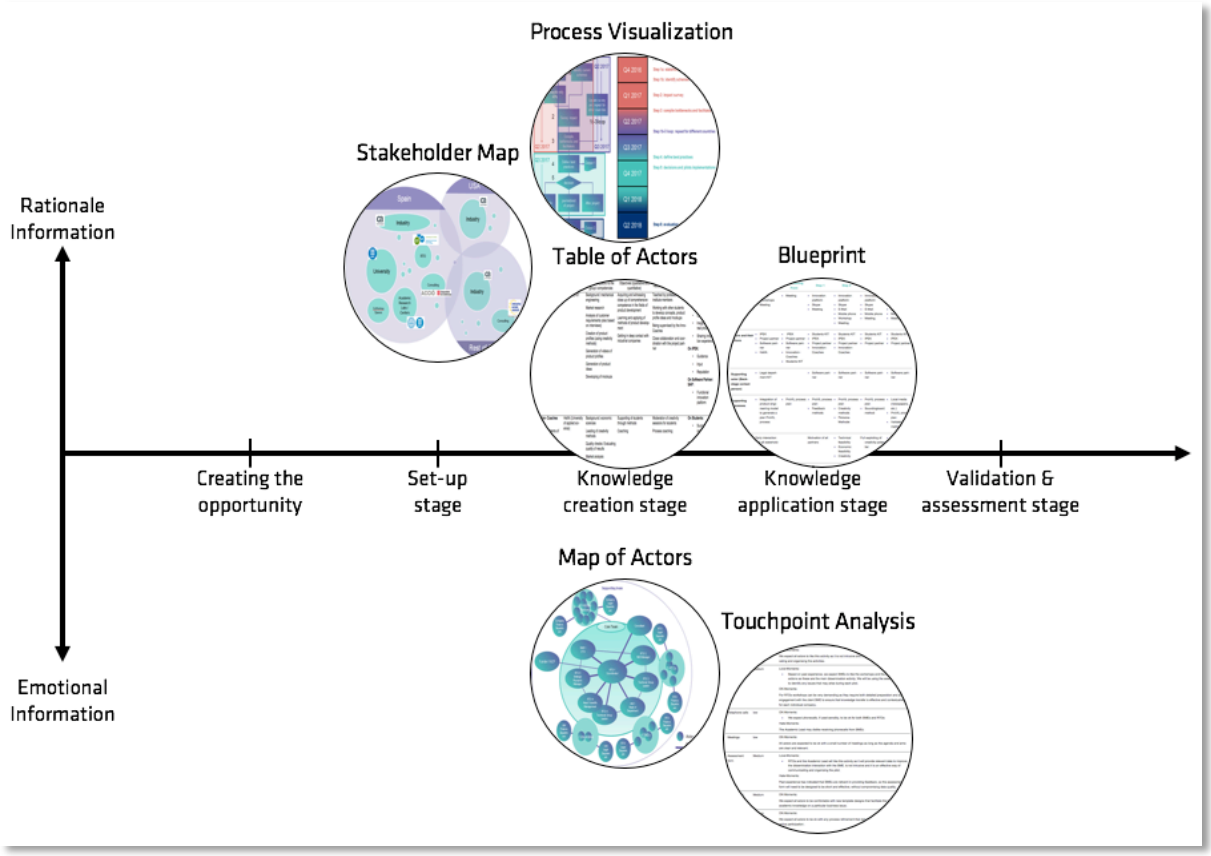


**Figure 1: Overview of the applied methods in context of the process stages**

## 3.3 Design Thinking approach for S2S

The process for developing solutions for the UIS interface, which is the main goal of the Science2Society project, is based on Design Thinking principles. Seven different pilot projects, each consisting of interdisciplinary multi-stakeholder teams, follow their projects and analyse all the interactions between the stakeholder groups in order to derive optimized solutions for future collaborations of universities, industry and society. It was chosen as it supports the development of newness, where experience-based knowledge is simply not enough, as it is

the case within the Science2Society project. Design Thinking is therefore the supporting process for the ultimate development of standards. The process for this endeavour is based on Design Thinking principles and contains six phases, each of them serving a different purpose in order to develop a desirable solution.

In the initial “Set-Up Stage” a common vision of each pilot has been created among all stakeholders. A unified understanding of the project goals was established to ensure everybody is “on the same page”, well informed and ready to start the project. This very useful step is comparable to the *Design Challenge* which initially kicks off a Design Thinking project. The following phases of the process are depicted in the sections below.

### 3.3.1 Creating the Opportunity Stage

How does an open innovation process begin? This is the central question as it is most likely that open innovation initiatives are initiated because companies or universities are looking for other ways to find innovative ideas. But how are these initiatives initiated? How essential are the personal / emotional factors? This information will be captured for all seven pilots probably through interviews and/or questionnaires in the near future.

So far: No specific tool is defined. But out of the status quo an expert interview would be the best tool.

### 3.3.2 Set-Up Stage

In the Set-Up stage, which is the equivalent to the Design Thinking’s’ Understand Phase, a common vision was created and shared amongst all project partners. All important information about the stakeholders was gathered and visualized. The Stakeholder Map was chosen to support this step to help all pilot members to deepen the understanding of each stakeholder and their affiliations to the project. This project stage is comparable to the Design Thinking’s’ *Design Challenge*, where all introductory information necessary to kick off the project is shared among all project partners in order to have a common picture of all relevant boundary conditions.

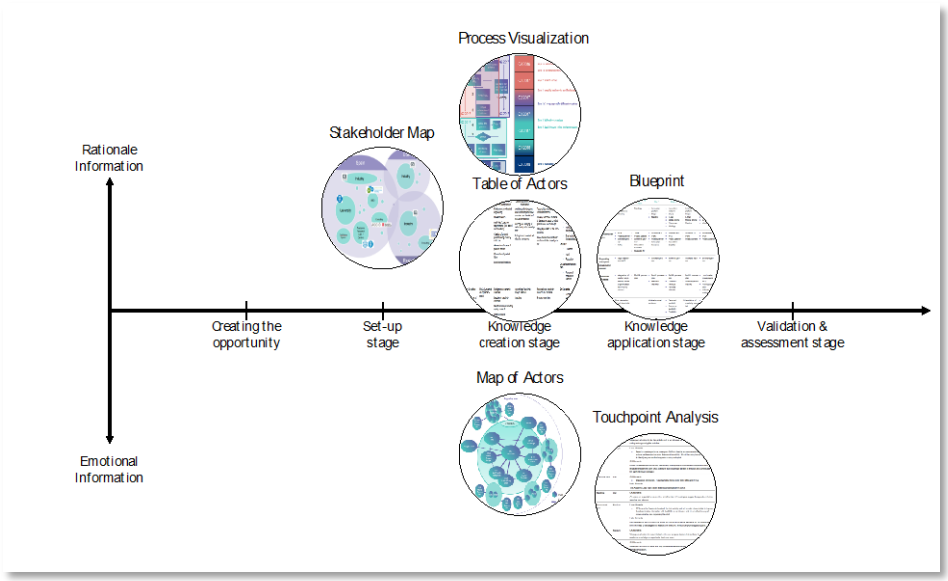


**Figure 2: Section of the Set up Stage in context of the process stages**

### 3.3.2.1 Stakeholder Map

The stakeholder map was chosen to be the first design thinking tool applied as it gives a great holistic and visually appealing overview about all relevant stakeholders of each pilot. This method aids in bringing all relevant stakeholders into one graphic without any interpretation of their relationships. These stakeholders are then clustered into groups like university, society, industry, the public sector, SMEs and RTOs etc. As seen in Figure **3**, stakeholders can also be clustered nationally [3]. The stakeholder map helps to become aware of that these groups have a legitimate interest on the pilot process or results.

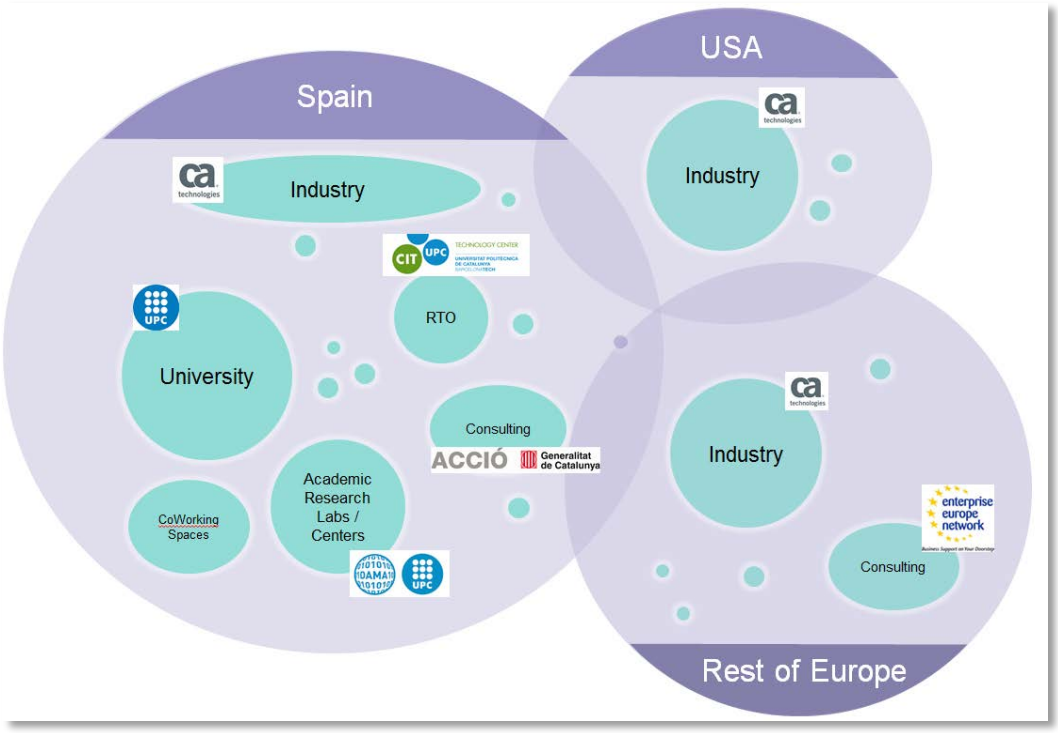


**Figure 3: Stakeholder Map of Pilot #2**

The Guidance for Pilot Descriptions [2] provided an in deep instruction, an example and a template in the format of Power Point. This enabled the pilot members to customize the Stakeholder Maps to their needs.

## 3.3.3 Knowledge Creation Stage

In the Knowledge Creation Stage, all information about actors and the applied process was gathered and visualized. This phase is a combination of the Observe and Define Phase of the Design Thinking process. Initially work relations, tasks and processes were monitored and observed. Subsequently, the pilots' respective work processes which offered improvements were defined. The applied methods Map of Actors, Table of Actors and Process Visualization help the participants to deepen the understanding of each actor and their associated roles and tasks within the process of the respective pilot.

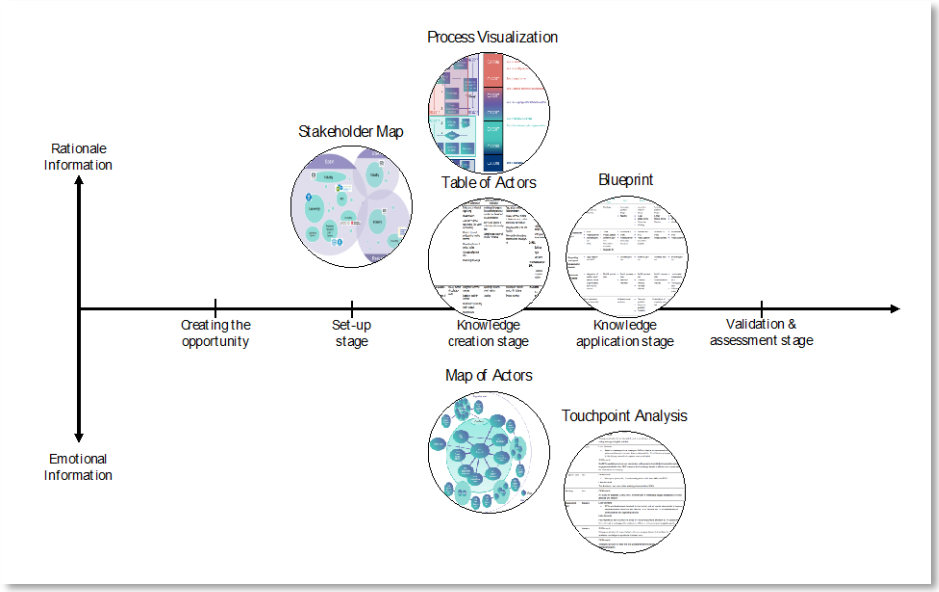


**Figure 4: Section of the Knowledge Creation Stage in context of the process stages**

### 3.3.3.1 Map of Actors

The Map of Actors tool is applied because it gives a great visual overview over all acting members of the project. All respective project actors are represented by a bubble and divided into two groups: the core team area and the supporting team area. Each bubble is labelled with the name of the actor, being a company, a university, a group of students, software providers or another partner etc., and the number of people within this group. The size of the bubble furthermore implies the importance of this actor within the pilot. The communicational paths between those actors are visualized with straight lines, where the relationship and collaboration intensity is depicted by means of the lines' thickness. Moreover, the relationship quality is visualized with either a heart symbol representing good and a flash symbol showing a rather bad relationship quality [3].

Some pilots used numerous maps of actors to either depict several use cases or subprojects. Apart from the template, it is interesting to notice, that every pilot edited the template slightly, using different colours and other symbols to depict their respective map of actors individually.

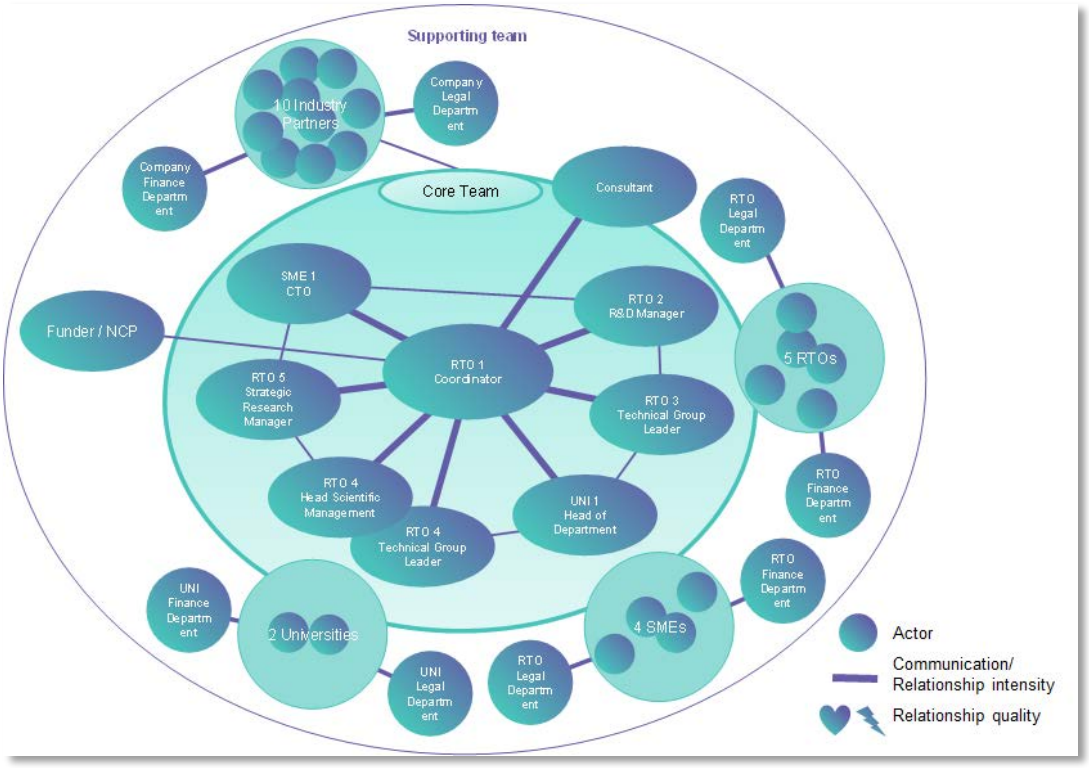


**Figure 5: Map of Actors of Pilot #3**

### 3.3.3.2 Table of Actors

As a counterpart to the very visual and reduced map of actors, the table of actors provides a multitude of information about every acting group. Within the clear and efficient structure of a six column table the following set of information is depicted [3]:

- Actors / Role – showing the name of the acting group just as found in the map of actors and a short sentence about what the role is
- Institution – Name and abbreviation of the institution
- Activities specific to the group / competences – a structured overview of the respective activities
- Objectives (qualitative and quantitative) – depicts the goals which need to be achieved in the course of the project
- Relationship inside the pilot – describes the line within the map of actors with words and the type of collaboration
- Expectations towards other actors – gives an overview of the expectations the acting group has regarding other groups

This table helps the pilot members to give thoughts to this set of information of each acting group in the set up stage and to keep in mind this important information of each acting group during the whole process. Thus potential conflicts between actors as well as the probability of misremembering objectives or expectations of any actor can be minimised.

| Actors/Role | Institutions | Activities specific to the group/ competencies | Objectives (qualitative and quantitative) | Relationships inside the pilot | Expectations on other actors |
|---|---|---|---|---|---|
| **Students (32)**<br>Specialized internship | University KIT | Background: mechanical engineering<br>Market research<br>Analysis of customer requirements (also based on interviews)<br>Creation of product profiles (using creativity methods)<br>Generation of videos of product profiles<br>Generation of product ideas<br>Developing of mockups | Acquiring and witnessing close up of comprehensive competence in the fields of product development<br>Learning and applying of methods of product development<br>Getting in deep contact with industrial companies | Teached by professor and institute members<br>Working with other students to develop concepts, product profile ideas and mockups<br>Being supervised by the Inno-Coaches<br>Close collaboration and coordination with the project partner | **On Head of R&D department: Porsche AG:**<br>• Guidance<br>• Connections<br>• Insight into the real processes<br>• Sharing innovation experience<br>**On IPEK:**<br>• Guidance<br>• Input<br>• Reputation<br>**On Software Partner: SAP:**<br>• Functional innovation platform |
| **Innovation- Coaches (10)**<br>Tutor of the students of the KIT | HsKA (University of applied science) | Background: economic sciences<br>Leading of creativity methods<br>Quality checks: Evaluating quality of results<br>Market analysis | Supporting of students through methods<br>Coaching | Moderation of creativity sessions for students<br>Process coaching | **On Students:**<br>• Successful participation of workshops<br>**On HsKA :**<br>• Recognition of their performance (ECTS) |

**Table 1: Excerpt of Table of Actors of Pilot #1**

### 3.3.3.3 Process Visualization

The process visualization is a great method to illustrate the amount and the sequence of process stages. It gives an efficient overview over the different possible paths, loops and gates depending on the respective pilot. This tool is very important for the brief and quick understanding of the work procedures. Below the visualization of each process, a description with more information about each step can be found. Timeframes for the process were mandatory for each pilot and as shown in Figure **6**, some pilots chose to add a very creative and inclusive combination of both, the process and the timeframe.

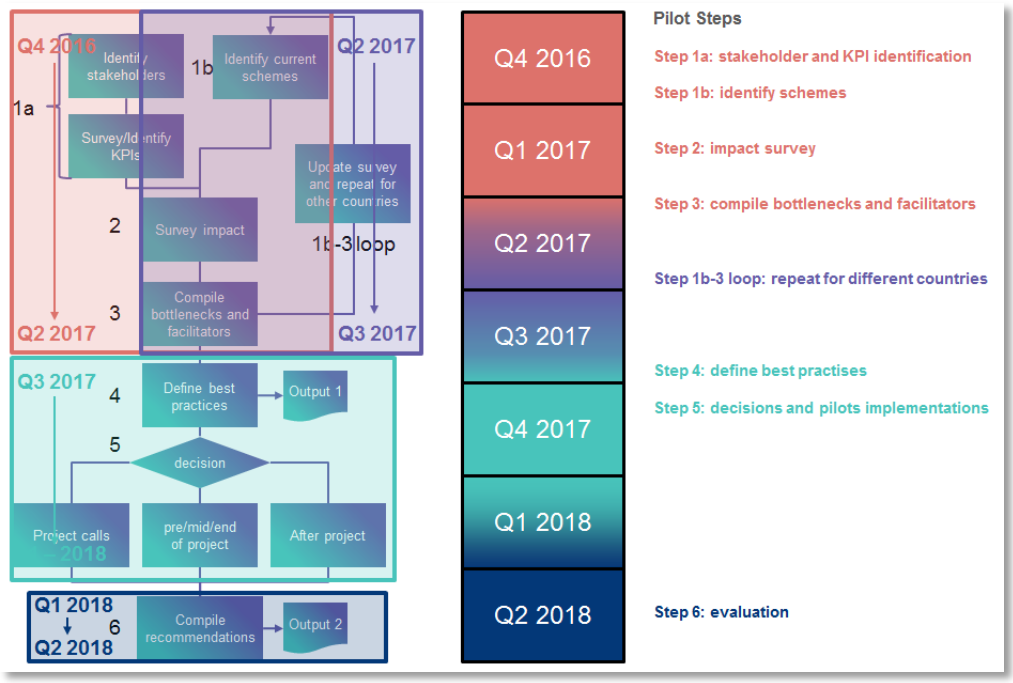


**Figure 6: Process visualization and Timing of Pilot #4**

### 3.3.4 Knowledge Application Stage

In between the Knowledge Creation and the Knowledge Application stage, the pilots worked on ideas which might impact the work relations of the stakeholders and processes positively. These ideas were then prototyped in the fourth stage of the process, the Knowledge Application Stage. Each pilot came up with prototypes for improving work relations and processes and had the task to capture the first insights about the project work. The tools applied are again visual methods to display workflows clearly and give insights about the collaboration quality among the different groups of actors.

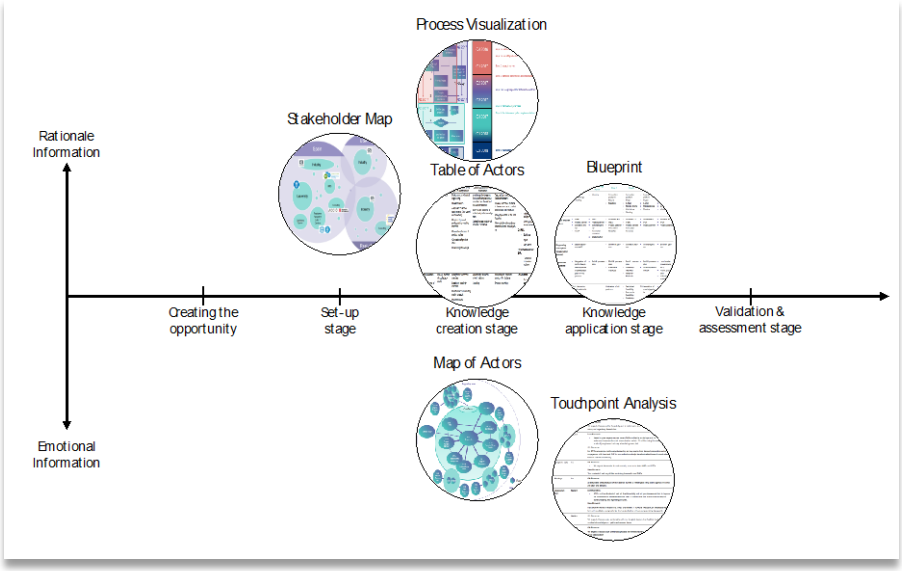


**Figure 7: Section of the Knowledge Application Stage in context of the process stages**

### 3.3.4.1 Service Blueprint

The service blueprint is a method which originated in the field of service design but then found greater usage in several other fields of the process creation and evaluation. It is a schematic analysis of every single process step concerning five different categories from visible foreground to hidden supporting background activities. The first category physical evidence resembles the real touchpoint, an interaction between two or more persons or stakeholder groups within the process. Examples in this application of the service blueprint were real meetings, phone calls or other real interactions. The second category is about the name of the performing actors and their actions regarding the respective touchpoint. The third category depicts the supporting actors, which oftentimes weren't even perceived by the actors whilst the touchpoint happened. The fourth category is clearly associated to the third category since it describes the supporting process, which made the real physical touchpoint from category one possible. The fifth category is about the quality criteria for the conduction of the respective process step which also takes learnings from the pilots work into account. This tool was chosen for the holistically investigation of all process steps of each pilot.

| | Pre-Pilot Phase | Pilot Starting Point | Step 1 | Step 2 | Step 3 | Step 4 |
|---|---|---|---|---|---|---|
| **Physical evidence (Touchpoints)** | • E-mail<br>• Workshops<br>• Meeting | • Meeting | • Innovation platform<br>• Skype<br>• Meeting | • Innovation platform<br>• Skype<br>• E-Mail<br>• Mobile phone<br>• Workshop<br>• Meeting | • Innovation platform<br>• Skype<br>• E-Mail<br>• Mobile phone<br>• Meeting | • Innovation platform<br>• Skype<br>• E-Mail<br>• Mobile phone<br>• Meeting |
| **Actors and their actions** | • IPEK<br>• Project partner<br>• Software partner<br>• HsKA | • IPEK<br>• Project partner<br>• Software partner<br>• Innovation-Coaches<br>• Students KIT | • Students KIT<br>• IPEK<br>• Project partner<br>• Innovation-Coaches | • Students KIT<br>• IPEK<br>• Project partner<br>• Innovation-Coaches | • Students KIT<br>• IPEK<br>• Project partner | • Students KIT<br>• IPEK<br>• Project partner |
| **Supporting actor (Backstage contact person)** | • Legal department KIT | | • Software partner | • Software partner | • Software partner | • Software partner |
| **Supporting processes** | • Integration of product engineering model to generate a plan ProVIL process | • ProVIL process plan | • ProVIL process plan<br>• Feedback methods | • ProVIL process plan<br>• Creativity methods<br>• Persona-Methode | • ProVIL process plan<br>• Soundingboard method | • Local media (newspapers, etc.)<br>• ProVIL process plan<br>• Validation of methods |
| **Quality criteria** | Early interaction with all stakeholders | | Motivation of all partners | • Technical feasibility<br>• Economic feasibility<br>• Creativity | Full exploiting of creativity potential | • Creativity<br>• Feasibility<br>• Criterias of project partner |

**Table 2: Excerpt of Service Blueprint of Pilot #1**

### 3.3.4.2 Touchpoint Analysis

The touchpoint analysis is a classic Design Thinking method because it analysis the collaboration of the different stakeholders on an emotional level. A touchpoint is the physical or digital exchange of information between any participant of the pilot. The analysis captures the different communicational touch points sorted by means like meetings, workshops, skype calls, emails etc. and the frequency how often it is used. Then, to each of the communicational means Love-, Ok- and Hate moments are described, giving a very empathic view on the collaboration. Based on this tool, communication between different actors can be analysed and optimized. Also, the choice of the communicational mean can be shifted towards a more satisfying solution.

| Touchpoints | Frequency within pilot | Love-, OK-, and Hate-Moments |
|---|---|---|
| E-Mail | high | Love-Moments:<br>We expect all actors to like this activity as it is not intrusive and is an effective way of communicating and organising the activities. |
| Workshop | medium | Love-Moments:<br>• Based on past experience, we expect SMEs to like the workshops and the one-to-one interactions as these are the main dissemination activity. We will be using the assessment forms to identify any issues that may arise during each pilot.<br>OK-Moments:<br>For RTOs workshops can be very demanding as they require both detailed preparation and active engagement with the client SME to ensure that knowledge transfer is effective and contextualised for each individual company. |
| Telephone calls | low | OK-Moments:<br>• We expect phonecalls, if used sensibly, to be ok for both SMEs and RTOs<br>Hate-Moments:<br>The Academic Lead may dislike receiving phonecalls from SMEs. |
| Meetings | low | OK-Moments:<br>All actors are expected to be ok with a small number of meetings as long as the agenda and aims are clear and relevant. |
| Assessment form | Medium | Love-Moments:<br>• RTOs and the Academic Lead will like this activity as it will provide relevant data to improve the dissemination interaction with the SME. is not intrusive and it is an effective way of communicating and organising the pilot.<br>Hate-Moments:<br>Past experience has indicated that SMEs are reticent in providing feedback, so the assessment form will need to be designed to be short and effective, without compromising data quality. |
| Refined tool (new tool templates) | Medium | OK-Moments:<br>We expect all actors to be comfortable with new template designs that facilitate the transfer of key academic knowledge on a particular business issue. |
| Refined process (new facilitation steps and slides) | Medium | OK-Moments:<br>We expect all actors to be ok with any process refinement that reduces repetition and encourages active participation. |

**Table 3: Excerpt for Touchpoint Analysis of Pilot #6**

The touchpoint analysis applied in the pilots is very detailed, the number of actors and dimensions that are mapped will be condensed into basically three dimensions in the questionnaire that takes place later in the project:

- Communicating
- Behaving
- Judging and assessing

### 3.3.5 Validation and Assessment Stage

The information and data which were created whilst the application of the work relation and process prototypes will be consolidated and collectively tested in the Validation and Assessment Stage. Therefore, this stage is very similar to the Testing Phase of the Design Thinking process (see section 4.1). As the pilots are not yet evolved to this stage, no tools have been chosen for conduction yet. It is planned to have at least one iterative loop on validation and assessment in order to guarantee a process modelling approach for derivation of policy guidance.

All sorts of observation techniques and methods are suitable for the purpose of understanding the problems and needs of the project. Yet no tools have been defined.

# 4 CONCLUSIONS

Ultimately the report shows that the work performed in the pilots is highly supported by a Design Thinking approach. The linkage of the two processes, modelling and pilot design have gained value by using Design Thinking methodologies. The strong emphasis of how the UIS interfaces can be approached and how each stakeholder in the relationship can or has to be addressed in order to get the best result in open innovation and Science 2.0 schemes. The focus is set on assessing the touchpoints. The findings out of the general modelling approach of Science2Society will be derived into policy guidelines.

To assure the workflow the dimensions of rational and emotional are distinguished. This shows the strong connection of how to work with a human centred approach in an open innovation eco-system. The tools applied in the modelling process where chosen in order to guarantee the understanding of the touch points and their importance to the open innovation process.

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