DELIVERABLE D.T3.4.5

REPORT ON KNOWLEDGE MANAGEMENT & IMPACT MONITORING

Round-Up Report

June, 2020

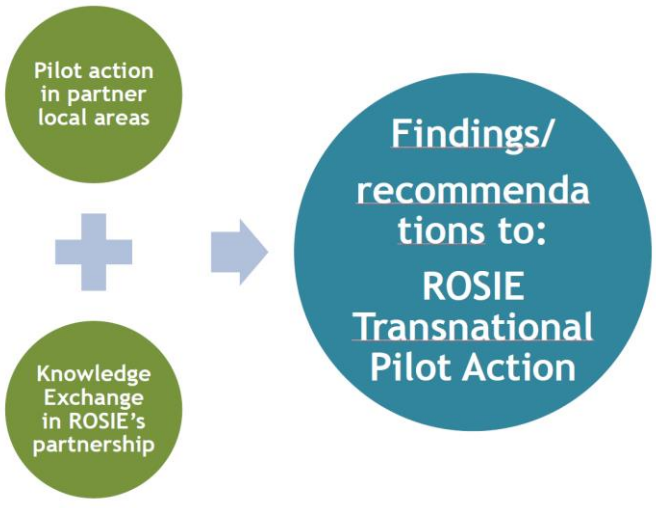
Author: Lubelskie Voivodeship

Identification			
WP	Activity	Deliverable	Document
T3: RI Pilot Actions	A.T3.4: Knowledge Management and Impact Monitoring	D.T3.4.5- KM/ IM Round-up Report and materials	Final version

1. About this document

Lubelskie Voivodeship (PP11) plays a role of the coordinator of WPT3 RI Pilot Actions. The action has been implemented in 9 partner local areas in 7 EU Member States.

According to Knowledge Management and Impact Monitoring Methodology adopted for implementation in March 2018, the monitoring system consists of information on the implementation of the pilot phase under WPT3 provided by PPs in the form of reports on the PA progress (Pilot Action in partner local areas) and recommendations/opinions PPs on possible improvements of these processes (Knowledge Exchange in ROSIE'S partnership)



The first stage of WPT3 was the Capacity Building Program where entrepreneurs have been informed about the innovative RI tools proposed in the ROSIE project. This was done through in-person trainings, informative on-line trainings as well as the training modules uploaded at PPs

websites. Some PPs decided to introduce the topic as the training modules on their websites and then develop it in the Action Pilot phase in form of Design Thinking workshops, after the selection of PA participants. The PA tools were adapted at the diagnosis and implementation stage in each enterprise depending on the specifics of their operation, the possibilities of the enterprise's involvement in the Pilot Action, the amount of time available for work under WPT3 and the available human resources. The task of PP11 as the WPT3 coordinator was to monitor the use of the previously recommended tools (standards/STIR/living lab), help to exchange experience between PPs on each of the preferred tools used when working with entrepreneurs and to describe the key findings.

Due to responsible approach of PPs to the task the Lubelskie Voivodeship managed to collect information successively on the course of Pilot Action in each of the local partner area. The Knowledge Management and Impact Monitoring Reports, which PPs were obliged to elaborate and present during Project Meetings, described PPs' experience in implementation process of the Pilot Action, allowed knowledge and experience exchange between PPs, indicated findings and recommendations noted when implementing the Pilot Actions among entrepreneurs. The Round Up Report summarizes the content and indicates the choices and solutions that most effectively enabled the implementation of the Pilot Action in ROSIE, allowed the ROSIE project sustainability and to expand the index of content with new tools next to UNI/PdR 27:2017, STIR and Living Labs that has provide input to D. T2.3.5.

2. General remarks concerning the Pilot Action

The exchange of experience among PPs was crucial for gaining knowledge about the practical and most useful tools at the Pilot Action stage. The exchange of information on this subject was carried out and successively prepared by PPs in Reports on Knowledge Management and Impact Monitoring (3 reports) and the efforts and findings discussed regularly during the Project Meetings in Lublin, Nova Gorica, Kosice and 2 Virtual Meetings in February 2019 and May 2020.

The activities within WPT3 started with a slight delay in comparison to the project time schedule because of delay in the launch of the Open Call within WPT1. In the most local partners areas the PA started in 2019 and lasted till June 2020. Each PPs managed to select 5 companies; sometimes from the very beginning, in some cases the partners successively were inviting new SMEs to the Pilot Action or sometimes they needed to make a change the SMEs participating in the PA after the start of the process. There were several issues with selecting enterprises involved in the Pilot Action and maintaining the SMEs' list for the whole phase:

- misunderstanding of the concept of Responsible Innovation and barriers with translating this concept into benefits for the company,
- lack of sufficient human resources,
- time limits in the context of human resources involvement in the whole process.

In order to mitigate these obstacles RI consultants did their best to inform and educate SMEs on the RI concept and give examples of RI in business practice and how to implement the idea in the real life.

During the implementation of the activities within the WPT3, the PPs could individually decide on the application of the tool at the stage of diagnosis and implementation of Improvement Plans. These decisions were mainly influenced by:

• Analysis of the proposed tools in the ROSIE project (standards / STIR / Living Lab) and the possibilities of their use in the company

• Knowledge and experience of RI Consultants, tools used so far in working on innovative processes in SMEs

• Needs and expectations of the PA participants

• The level of knowledge and awareness of SMEs towards integrating technical, ethical, social, environmental, and economic issues into research and innovation practices

Based on KM / IM Reports, Design Thinking has a clear advantage as the most adequate for use in the development of innovative companies. In some cases, PPs used a combination of different tools depending on the factors mentioned above.

PPs willingly shared their experiences on the results of their work with the participants of the Pilot Action. Thanks to this exchange, it was possible to compile a list of the most used tools in the PA, along with their description and tips on their advantages and potential barriers to their use.

3. Complementary tools used by PPs within the Pilot Action

A. Design Thinking Methodology

Included in…			
UNI/PdR 27/2017	STIR for SMEs	Living Labs	Others

General information

Design Thinking is a design methodology that provides a solution-based approach to solving problems. Design Thinking is incorporated into the innovation process in order to develop specific solutions to address complex issues. It's extremely useful in tackling complex problems, by understanding the human needs involved, by re-framing the problem in human-centric ways, by creating many ideas in brainstorming sessions, and by adopting a hands-on approach in prototyping and testing.

Backgrounds

Developing creativity techniques in the 1950s and new design methods in the 1960s led to the idea of design thinking as a particular approach to creatively solving problems. Among the first authors to write about design thinking were John E. Arnold in "Creative Engineering" (1959) and L. Bruce Archer in "Systematic Method for Designers" (1965).

The start of the 21st century brings a significant increase in interest in design thinking as the term becomes popularized in the business press. Books about how to create a more design-focused workplace where innovation can thrive are written for the business sector by, amongst others, Richard Florida (2002), Daniel Pink (2006), Roger Martin (2007), Tim Brown (2009), Thomas Lockwood (2010), Vijay Kumar (2012).

Five stages of Design Thinking:

- ***Empathize*** - to gather information about a project problem. The following tools were used in this phase: stakeholder map, research summary.
- ***Define*** - to define the project problem to understand the beneficiary and design solutions he/she needs. Personas, empathy maps, problem definition and value proposition are some of the tools used in the define phase.

- ***Ideate*** – creating solution concepts. Among the tools used are the Lotus Blossom technique and the idea analysis.
- ***Prototype*** - creating prototypes creation of prototypes aimed to visualise ideas in a way that they could be easily tested.
- ***Test*** - testing the solutions to ensure their compatibility with the users' needs.

Understanding these stages will empower anyone to apply the Design Thinking methods in order to solve complex problems that occur around us.

The Design Thinking approach looks to minimize the uncertainty and risk of innovation by using collective intelligence through a series of lenses to grow their understanding of customer needs. By also engaging with customers or users actively throughout the process using a series of prototypes to learn, test and refine concepts, you end up far closer to customer understanding through this dialoguing, exchanging and growing intimacy to help uncover their needs.

For whom…

Design Thinking is not only for designers but also for creative employees, start-up owners, freelancers, executives and leaders who seek to infuse design thinking into every level of an organization, product or service in order to drive new alternatives for business and society.

Design Thinking is extremely useful in tackling problems that are ill-defined or unknown, by re-framing the problem in human-centric ways, creating many ideas in brainstorming sessions, and adopting a hands-on approach in prototyping and testing.

It may be used in…

During the whole innovation process the company manager and employees responsible for development of innovation take into consideration also opinions and ideas of regional stakeholders.

Pros of the tool according to PPs experience **(+)**	**Cons of the tool according to PPs experience** **(-)**
Design Thinking is really cost-effectiveness. It is a great way to test ideas without committing resources. Companies can establish how helpful a new product or	Design Thinking can't completely address the risk of innovation. This means no matter how rigorously you focus on your users' needs, you

service is likely to be, without having to go through the entire process of product development.	could still emerge from the process with a less than perfect solution.
Design Thinking is a great method to apply RI in SMEs, since it can utilize elements from the designer's toolkit like empathy and experimentation to arrive at innovative solutions. By using Design Thinking, you make decisions based on what future customers really want instead of relying only on historical data or making risky bets based on instinct instead of evidence.	
The methodology helps SME transfer user experience into their products and/or services. It helps them to be in direct contact with the users (B2B; B2C, even employees) and through this contact implement views of RI.	

For additional information…

https://hbr.org/

References: https://en.wikipedia.org/wiki/Design_thinking#cite_note-75

B. COMPASS - Responsible Innovation self-check tool

Included in…			
UNI/PdR 27/2017	STIR for SMEs	Living Labs	Others

General information

The COMPASS Responsible Innovation self-check tool is a learning and self-diagnostic tool for responsible innovation in business. The tool can help companies assess where their company stands, how they compare to peers, and what they can do to make their innovation practices more responsible.

The COMPASS Responsible Innovation self-check tool aims to help SMEs in highly innovative sectors to learn how to effectively integrate Responsible Innovation practices (RI) into their company and innovation management. The COMPASS self-check tool is a learning instrument that guides a company through the most important RI practices in company and innovation management. Each question points out the importance of certain RI practices and the provides answer options in form of good practices. The tool automatically scores and benchmarks a user's results against other users' results. The tool is structured into four modules: 1. Company Management 2. Idea Generation & Research 3. Development & Testing 4. Market & Impact, and is based on 43 multiple choice questions, which focus on factual information about company practices, rather than on the opinions of the user, and point to good responsible innovation practice. By doing so, the tool creates clear boundaries of responsibility and only asks about observable responsible innovation practices that are within company control.[1]

Backgrounds

The COMPASS self-check tool has been developed as part of a European Union H2020 funded project COMPASS (Grant agreement number: 710543). The authors of the tool (Tharani, A., Jarmai, K. & Nwafor, C.) at the Institute for Managing Sustainability at the Vienna University of Economics and Business developed the tool with the support of the COMPASS (710543) project consortium and the COMPASS advisory board.

The COMPASS self-check tool questionnaire and answer options have been developed by the COMPASS team at the Institute for Managing Sustainability at the Vienna University of Economics and Business in close collaboration with COMPASS Consortium partners through extensive review of academic literature, empirical evidence, project reports, responsible innovation-specific

[1] http://self-check-tool.innovation-compass.eu/faq

assessment tools, and corporate social responsibility (CSR) tools and standards, as well as through extensive consultations with experts, practitioners and company representatives[2].

For whom…

The COMPASS self-check tool was developed for SMEs, but can also be used by large companies. The tool has been piloted in three highly innovative sectors - nanotechnologies, cyber security, and biomedicine. Therefore, the tool is mostly suited to companies operating in highly innovative sectors in the service and manufacturing industries.

It may be used in…

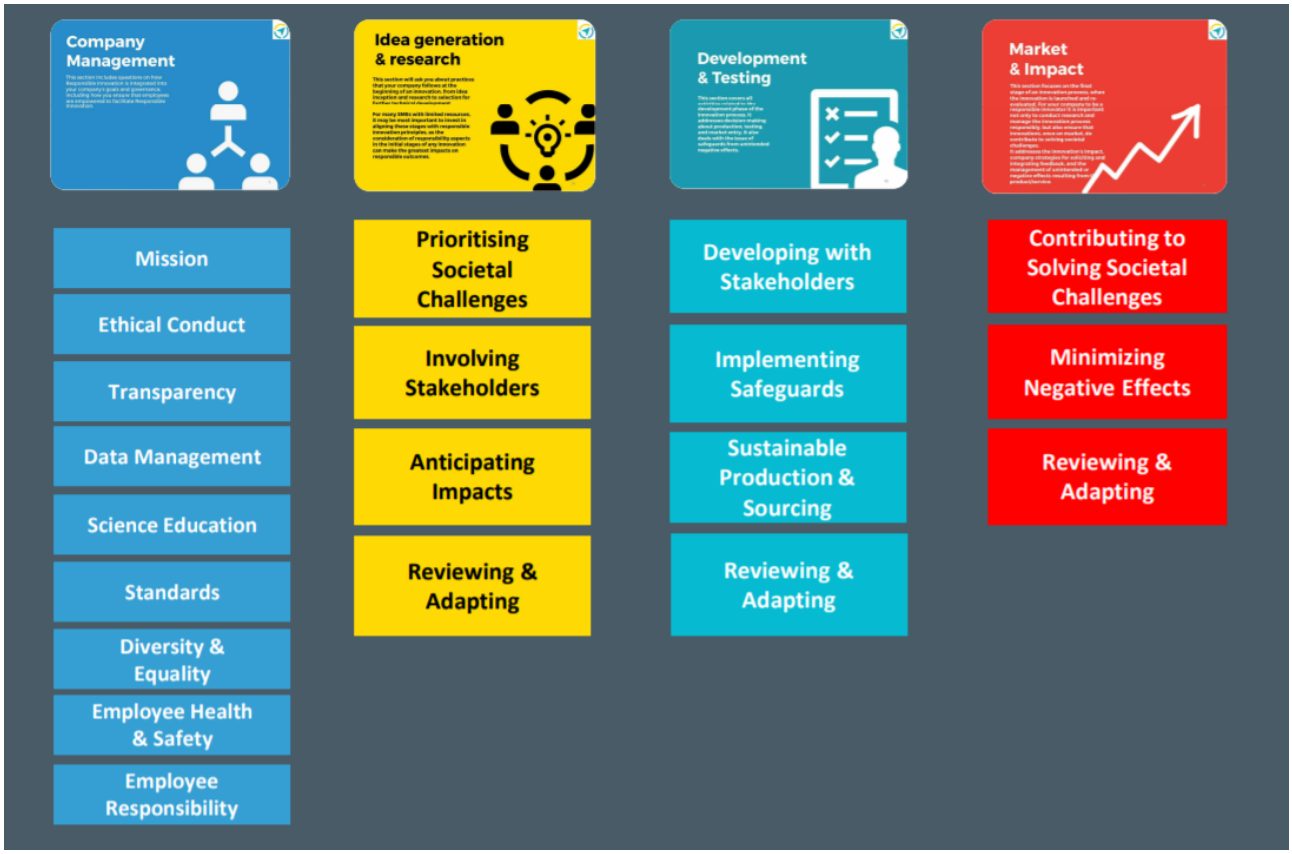
Taking the questionnaire a first time helps to self-assess the current state of the company and prioritize actions for improvement. The second time, the tool can be used after some improvements have been implemented in the company to see how that changes your scores and how your company compares to peers.

PROs of the tool according to PPs experience **(+)**	**CONs of the tool according to PPs experience** **(-)**
The tool is structured into four modules: 1. Company Management 2. Idea Generation & Research 3. Development & Testing 4. Market & Impact. Users can start with any of these four modules. They can go through all sections or just respond to questions in one, two or three of them. This allows users to define their own pathway in conducting the self-check.	Too extensive and complex tool

[2] For a detailed description of the tool development process please see COMPASS project deliverable D3.1 at https://innovation-compass.eu/deliverables-2/

More information…

www.innovation-compass.eu



https://ec.europa.eu/research/social-sciences/pdf/policy_reviews/social_innovation_trigger_for_transformations.pdf

http://eureka.sbs.ox.ac.uk/761/1/Social_Innovation.pdf

https://www.tandfonline.com/doi/pdf/10.1080/23299460.2019.1572374

C. The Ethics Canvas

Included in…			
UNI/PdR 27/2017	STIR for SMEs	Living Labs	Others

General information

The Ethics Canvas is an intuitive tool, that helps to:

- Brainstorm about the ethical implications of a project and represent them in a canvas;
- Analyses the ethical concerns of a project and find suitable solutions;
- Join the Ethics Canvas community, learn from similar use cases and share your experiences.

The Ethics Canvas captures potential ethical impacts of technologies. It is an easy to use collaborative tool that assists in the identification of ethical impacts of research and innovation projects and incentivizes actions towards tackling these impacts. It is both suitable for offline use, as a paper canvas, and for online use, as an online collaborative tool.

In a nutshell, it is a pragmatic approach to **integrate ethics in research and innovation**; Related to approaches in applied ethics: a form of value sensitive design; mainly inspired by the Business Model Canvas, used for collaborative business model creation; transformed into a brainstorm tool for discussion ethical impacts;

Central terms:

- Ethical impact: interplay between a technology and human beings that raises normative, value-laden, concerns;
- Stakeholder: a certain type of individual (a demographic) or a collective (group or organisation) that has a "stake", - a normative concern -, in the ethical impacts of a technology;
- Remedial action: concrete practical interference in the research and innovation process in which a technology is designed, which has the purpose of mitigating ethical impacts.

The Ethics Canvas has been developed to encourage educators, entrepreneurs, engineers and designers to engage with ethics in their research and innovation projects. Research and innovation foster great benefits for society, but also raise important ethical concerns.[3]

Backgrounds

The Ethics Canvas has been developed by a team of researchers in the ADAPT Centre. It is the result of a truly multidisciplinary effort, pulling together expertise from the areas of ethics, computer science and business development.

The Ethics Canvas is adapted from Alex Osterwalder's Business Model Canvas. The Business Model Canvas is designed by: Business Model Foundry AG. This work is licensed under the Creative Commons Attribution-Share Alike 3.0 unported license.

For whom…

- Teachers: for teaching engineering and business students about ethics
- Entrepreneurs: for creating new products and services in an ethical and responsible way
- Researchers: for discussing ethical impact of their research and innovation projects
- Policy makers: for better understanding ethical impacts and finding policies to solve them

It may be used in…

The Ethics Canvas can be used at the design stage.
As a designer or user of technologies, there are three main reasons to engage with ethics:

- to show others that you act responsibly and that your work can be trusted;
- to make sure the quality of your activities will improve and that you will create better products and services;
- to make sure to do the right thing, paying attention to the common good and the good life.

The Ethics Canvas distinguishes 6 main types of impact to be taken into account at design stage:
I. Impacts on individual behaviour (changing habits, patterns)
II. Impacts on relations (friends, family, professional life)
III. Impacts on worldviews (political, religious, scientific)
IV. Impacts on social conflicts (inequality, lack of justice)
V. Impacts through resource use (climate change, toxics)

[3] The Ethics Canvas Manual, © ADAPT Centre & Trinity College Dublin & Dublin City University, 2017

VI. Impacts through product or service failure (fallout, safety)[4].

PROs of the tool according to PPs experience (+)	CONs of the tool according to PPs experience (-)
The resemblance to the wider know business model canvas tools makes approaching the Ethics Canvas at first easier	WARNING - the information and knowledge to be collected and entered in the canvas is all but easy to collect

For additional information…

www.ethicscanvas.org/

[4] Ibidem

D. Prisma RRI Exemplar Roadmap

Included in…			
UNI/PdR 27/2017	STIR for SMEs	Living Labs	Others

General information

Prisma RRI Exemplar Roadmap is the result of the H2020 PRISMA project (grant agreement No. 710059).

For an effective RRI uptake it is essential to identify strategies and practices that fit with the realities and constraints in which the specific company operates. The PRISMA roadmap aims to do this. In recent years, the concept of IPRM (Innovation Policy Road-mapping Methodology) has been developed to connect the development of technologies and innovations to a wider societal sphere. A main aspect of IPRM is to identify those societal needs which create a potential demand for new solutions and possibly favour the emergence of new products and markets. IPRM integrate a foresight exercise on enabling technologies, applications, products, markets with analysis of socio-economical and sectorial drivers, and policy and regulatory tools and strategies. The RRI roadmap proposed adapts the architecture of the generic IPRM to the definition of long-term visions and action plans for uptake of RRI within innovation strategies of companies.

The roadmap design includes definition of the following elements: • The Research and Innovation product (s) on which to focus the RRI roadmap • The vision for RRI implementation in the product development • The time-scale for the implementation of the RRI roadmap • The drivers and challenges, risks and barriers to achieve the vision, based on the assessment of the present status • The RRI actions to pursue, as possible path(s) between present and future to reach the vision • The resources and process owners needed, their feasibility and consistency with the overall organization strategy and the innovation eco-system[5].

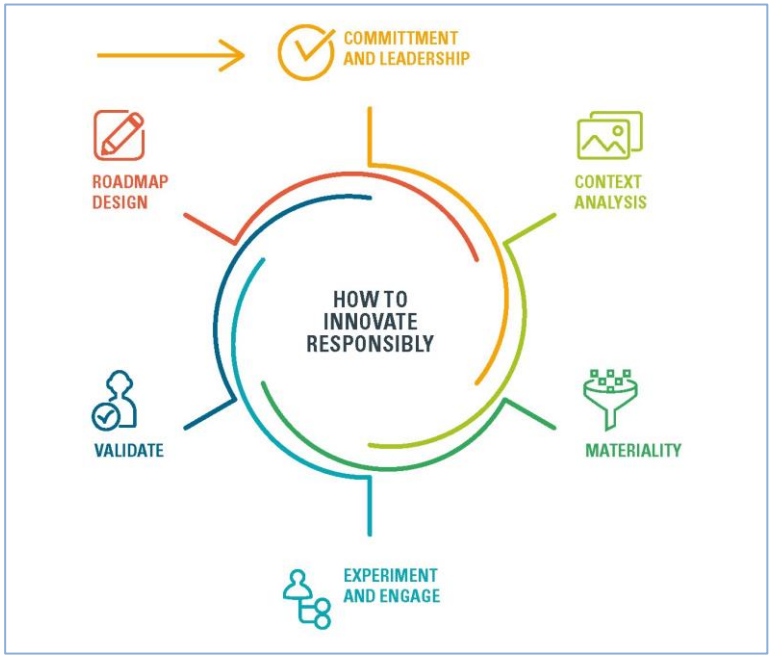
The Prisma RRI Exemplar Roadmap provides a framework to develop long-term strategies (roadmaps) to innovate responsibly, integrating technical, ethical, social, environmental, and economic issues into research and innovation practices, to improve the ethical and social impacts of final marketable outcomes.

[5] Deliverable 5.2: PRISMA RRI-CSR Roadmap -Part A – Exemplar Roadmap / CEN workshop version

Background

The Prisma RRI Exemplar Roadmap is the result of the H2020 PRISMA project (grant agreement No. 710059).

The approach has been tested in practice by implementing it with eight pilots referring to industrial research projects related to transformative technologies. In particular nanotechnologies, biotechnologies, the Internet of Things and autonomous vehicles.



For whom…

All organisations/agents involved in planning and performing research and innovation and technological development.

It may be used in…

The roadmap supports management of the whole innovation process, from design to industrialization, but it needs to be applied at its off-set.

PROs of the tool according to PPs experience (+)	CONs of the tool according to PPs experience (-)
very thorough, consistent with international CSR and innovation management standards	Complex tool

More information…

- https://www.rri-prisma.eu/
- https://www.rri-prisma.eu/road-map-rri-for-companies/
- https://www.cen.eu/News/Workshops/Pages/WS-2019-010.aspx

E. Hackathon

Included in…			
UNI/PdR 27/2017	STIR for SMEs	Living Labs	Others

General information

Sprint events during which participants strive to solve particular problem and develop products or services. Originally, hackathons were focused on software development, but later, due to ensuring effective stakeholder collaboration, hackathons become increasingly used to promote and practice Open innovation. For that reason, hackathon was combined with Design thinking and used to foster Responsible innovation.

Backgrounds

OpenBSD's apparent first use of the term referred to a cryptographic development event held in Calgary on June 4, 1999, where ten developers came together to avoid legal problems caused due to export regulations of cryptographic software from the United States. Since then, a further three-to-five events per year have occurred around the world to advance development, generally on university campuses.
For Sun Microsystems, the usage referred to an event at the JavaOne conference from June 15 to June 19, 1999; there John Gage challenged attendees to write a program in Java for the new Palm V using the infrared port to communicate with other Palm users and register it on the Internet.

Starting in the mid to late 2000s, hackathons became significantly more widespread and began to be increasingly viewed by companies and venture capitalists as a way to quickly develop new software technologies, and to locate new areas for innovation and funding. Some major companies were born from these hackathons, such as GroupMe, PhoneGap (as a project at the iPhoneDevCamp).[6]

[6] https://en.wikipedia.org/wiki/Hackathon#cite_note-3

For whom…

- all relevant stakeholders in design process,
- all organisations regardless of its size, scope of work or type of products and services they provide

It may be used in…

The tool can be applied without restrictions to any stage of innovation, however they both would fit best to TRL levels 7-9 where user experience becomes more important.

PROs of the tool according to PPs experience **(+)**	**CONs of the tool according to PPs experience** **(-)**
Wide application, in various areas - not only in IT; mobilizes to search for solutions in a relatively short time and can engage various stakeholders	Thorough analysis of potential design issues in the early phase, must - besides ecological and ethical issues - involve technical issues and new innovative features of developed product. For that reason complexity is sometimes too high for SME's to handle.

More information…

https://www.podravka.com/company/knowledge-in-focus-2016/hack-the-future-of-food/

F. Additional tools:

- Data Ethics Canvas, https://theodi.org/article/data-ethics-canvas/
- RWCT - Reading and Writing for Critical Thinking, https://www.rwctic.org/
- Cover Story, https://gamestorming.com/cover-story/
- Sustainability Journey, https://sustainabilityadvantage.com/
- Contribution to SGD-Analysis
- STEP-Analysis for the identification of mega trends,
- Risk Analysis/Risk Matrix
- U/R Diagramm
- SWOT, https://www.mindtools.com/pages/article/newTMC_05.htm
- MET-Matrix
- Hot Spot-Analysis
- Social Innovation. https://ec.europa.eu/growth/industry/policy/innovation/social_en
- ISO 26000:2010. Guidance on social reasonability, https://www.iso.org/standard/42546.html

4. List of tools that PPs indicated as the most useful in Round Up Reports

PPs	Key tool	Additional tools
CISE	The Ethics Canvas, Prisma RRI Exemplar Roadmap, COMPASS,	
ASRD	Design Thinking	
CCSS	Living Lab	Reading and Writing for Critical Thinking, various open platforms, Design Thinking, Cover Story
TGZ	Mix-> Sustainability Journey and Contribution to SGD-Analysis, STEP-Analysis for the identification of mega trends, Risk Analysis/Risk Matrix, U/R Diagramm, SWOT, MET-Matrix, Hot Spot-Analysis	
MONG&CCSI	No data	No data
City of Šibenik	Design Thinking	
Innovacjia	Design Thinking	Hackathon
Innovhub SSI	COMPASS	Social Innovation, ISO 26000:2010. Guidance on social reasonability
Lubelskie Voivodeship	Design Thinking	COMPASS, The Ethics Canvas, The Data Ethics Canvas

The list was elaborated on the basis of PPs experience when the PA implementing and then described in KM/IM Reports.

5. Conclusions from the PA

Based on the PPs' experiences in implementation the PA in SMEs a few conclusions arose:

- Tools used at the stage of diagnosis (Self-Assessment Tool, In-Depth Assessment Tool, COMPASS Self-assessment Tool) and the order of their application were positively evaluated by the companies. It was also critical that entrepreneurs gradually familiarized themselves with the RI concept by moving from general to more specific issues, which was particularly important when diagnosing companies with a view to implementing the RI concept.
- PPs had the chance to estimate what worked better to explain RRI to SMEs: the H2020 RRI keys, the ONU Agenda 2030 SDG (17 SDGs) or the so-called RRI operational dimensions (anticipation, inclusiveness, reflexivity, and responsiveness). Responses differed and they were individual, dependent on the local area. For example in Poland there is a campaign at the national level focused on the ONU Agenda 2030, therefore 17 SDGs are better recognizable. At the same time for example in Czech Republic RRI operational dimensions are better known due to their links to Design Thinking approach that is often used in business activities. For Croatian partners the H2020 RRI keys (ethics, gender equality, open access, stakeholder engagement, science education, governance of innovation) are the most practical set of dimensions that can help SMEs assess compliance to RI regarding their own organization as well as that organizations' position within the context (local government, eco system etc.).
- The entrepreneurs found it important to identify actions that are currently implemented in the company in each key of RRI/17 SDGs or operational dimensions (dependent on the MS), which encouraged them to reflect on their activities and indicate practices worth implementing in the future. It is important to continue educational actions in this areas.
- The entrepreneurs were satisfied especially with the opportunity of applying the Design Thinking method in their businesses to create innovative products and services. Its application allowed them to approach design based on the needs and expectations of recipients of innovative solutions. It was also relevant for the participants of the workshops to take a new look at the recipients of services and to develop employees' skills in the field of empowerment and prototyping. Companies are mainly looking at the internal processes and employees. But more and more emphasis is being placed to opening the innovation processes and management of them, as well as stakeholder engagement. The entrepreneurs also appreciated the opportunity to work in groups and share their findings.
- The entrepreneurs were open for other tools (see p. 6-20) recommended by RI consultants in order to implement actions foreseen in the Improvement plans. Individual selection of

these methods seemed to be the most effective for companies from each partner local area and the whole process. The PPs recommended such tools that were the most effective and useful for their group of SMEs and allowed to use knowledge and capacity of PPs' staff involved, including RI consultants.

- Study Visits allowed to note various approaches of SMEs to RI -i.e. focus on the consumers' needs, focus on health and safety, focus on human resources. There were 3 study visits organised during the project life-time:
    - in Lublin (PL) in April 2019 when PPs had the opportunity to know SMEs located in Lublin and their aims, motivation, resources and expectations to participate in the PA[7];
    - in Nova Gorica in October 2019 when Slovenian partners and the PA participants presented the first assumptions of the Improvements Plans among SMEs applying responsible innovation to tourism sector;
    - in Kosice in March 2020 when Slovakian partners presented their contribution to the RI road mapping process focused on creative and culture sector.

All of them contributed to the better understanding RI approach in relation to the local context and specificity of the business sector in the ROSIE PPs' areas.

[7] The PA in Lubelskie started in September/October 2018