



Deliverable 3.3

Responsible Innovation Compass



RESPONSIBLE INNOVATION
COMPASS



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1. Introduction

This Deliverable D3.3 Responsible Innovation Compass, for the project COMPASS (Grant Agreement No: 710543), describes the final outcomes of Task 3.3 Designing the Responsible Innovation Compass.

Task 3.3 of COMPASS (710543) integrated, processed, and deployed COMPASS (710543) project outputs. This task developed content of the interactive online web portal to serve as a modular SME and multiplier platform that presents the results and tools delivered by all project activities. In the development of the Responsible Innovation Compass the results of WP1, WP2, WP4 and WP5 were integrated and deployed online.

The COMPASS (710543) project has been set up to develop tools and resources to support the update and development of responsible innovation in Small and Medium-Sized Enterprises (SMEs)¹. The main output of the project is an interactive online platform, the Responsible Innovation Compass, which provides guidance and orientation about responsible innovation, tailored towards the needs of innovative enterprises, in particular SMEs.

The Responsible Innovation Compass (www.innovation-compass.eu) is the main virtual access point to COMPASS (710543) and its tools and resources, including a self-check tool, a co-creation method kit, sectoral roadmaps, as well as additional targeted evidence and training focusing on benefits, incentives and business models for responsible innovation in the industrial context.

This deliverable describes the main content elements of the Responsible Innovation Compass platform:

- a) Responsible Innovation Self-Check
- b) Method-kit for co-creation
- c) Sectoral roadmaps
- d) Project directory
- e) Resources and training materials

All modules have been derived and deployed from various COMPASS (710543) work packages and are therefore described in more detail in related deliverables (see Table 1)²:

Responsible Innovation Compass element	Related Work Package	Detailed resources and deliverables
a) Responsible Innovation self-check	WP3	D3.1 Responsible Innovation Self-Check Tool
b) Method kit for co-creation	WP2	D2.5 Responsible Innovation Method Kit
c) Sectoral roadmaps	WP2	D2.2 Responsible Innovation Lab Report & Roadmap (Cybersecurity)

¹ The European Commission defines SMEs as companies with less than 250 employees and a turnover of less than EUR 50 Mio (European Commission 2003).

² All COMPASS (710543) deliverables are public and accessible online: <https://innovation-compass.eu/deliverables-2/>.

		D2.3 Responsible Innovation Lab Report & Roadmap (Nanotechnology) D2.4 Responsible Innovation Lab Report & Roadmap (Healthcare)
d) Project directory.	WP1	D1.4 Benchmark report & policy paper: Integration of the RRI approach into collaborative R&D&I and SME participation in European funded collaborative research in healthcare, nanotechnology and ICT
e) Resources and training materials	WP1, WP5, WP6	D1.3 Case study descriptions D5.4 Book “Benefits & incentives for mainstreaming Responsible Innovation in industry” Expert papers on responsible innovation with special foci on SMEs, healthcare, nanoelectronics, ICT, diversity issues and the United Nation’s Sustainable Development Goals (https://innovation-compass.eu/training/insights/)

Table 1: Overview of COMPASS (710543) deliverables and resources forming the basis of the Responsible Innovation Compass platform

Materials featured on the platform have been collated in an easy-to-access way, in alignment with Task 5.2 and the project’s visual identity described in Deliverable 5.3 Project branding & communication materials, and includes visualisations and audio-visual communications where appropriate.

The key elements of the Responsible Innovation Compass were all pilot tested in the course of the project. For an overview of testing outcomes please see Deliverable 4.2 Review & recommendations for the Responsible Innovation Method Kit, Deliverable 4.3 Review & recommendations for the Responsible Innovation Self-Check Tool and Deliverable 4.4 User feedback & implementation report on the Responsible Innovation Roadmaps.

For technical features and specifications of the platform please refer to Deliverable 3.2 Responsible Innovation Compass Technical Specifications.

2. The Responsible Innovation Compass

The Responsible Innovation Compass is an interactive online modular platform for SMEs and other actors in search for resources that can support SMEs on the path to responsible innovation. The Responsible Innovation Compass offers a one-stop-shop for learning, self-assessment, action planning and taking steps for improvement when it comes to responsible innovation in SMEs. The platform offers good practice case studies, expert insights, an interactive self-check tool, a co-creation methodology for responsible innovation roadmaps and training materials for business schools and business support organisations.

All modules can be accessed in any sequence. However, the COMPASS team suggests following a general process to developing a tailored company responsible innovation strategy (see training section [“Three steps to responsible innovation”](#)).

The overall content architecture of the Responsible Innovation Compass is depicted in Figure 1. The top level (yellow) mimics the top navigation of the COMPASS website. The blue elements show the different modules that a user can find in each web page with white font indicating entries to the interactive modules of the web portal.

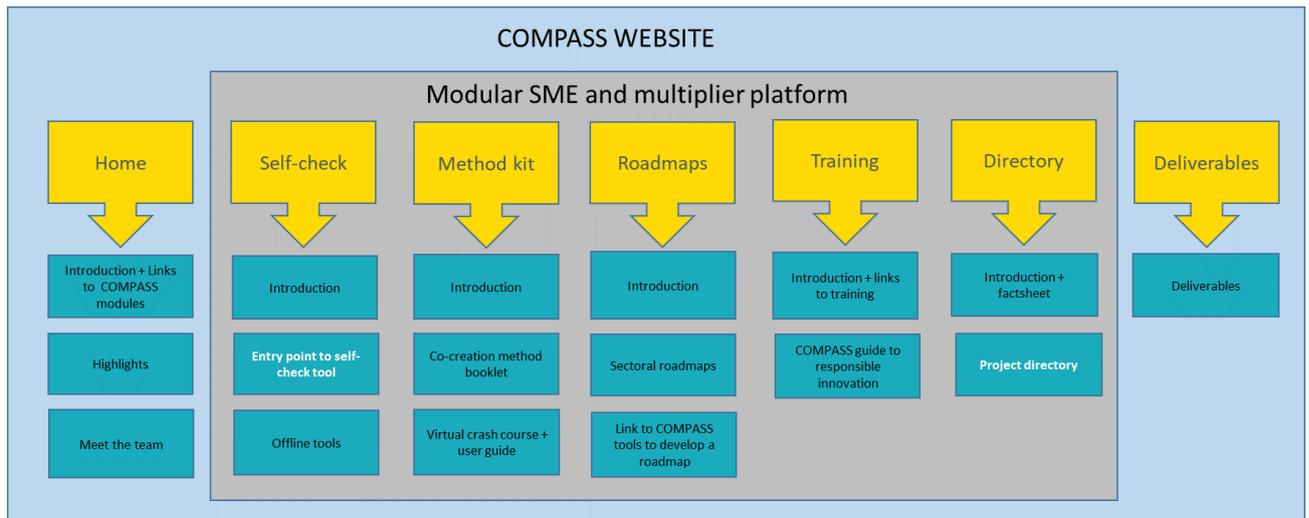


Figure 1: Architecture of Responsible Innovation Compass

The homepage of the web portal serves as the landing page of the website and introduces the visitor to what the portal is about. It also serves as an entry point to the modular parts of the platform and offers key information about the project and the web portal through a “Highlights” section. The last section of the homepage provides information about the COMPASS consortium (“Meet the COMPASS team”).

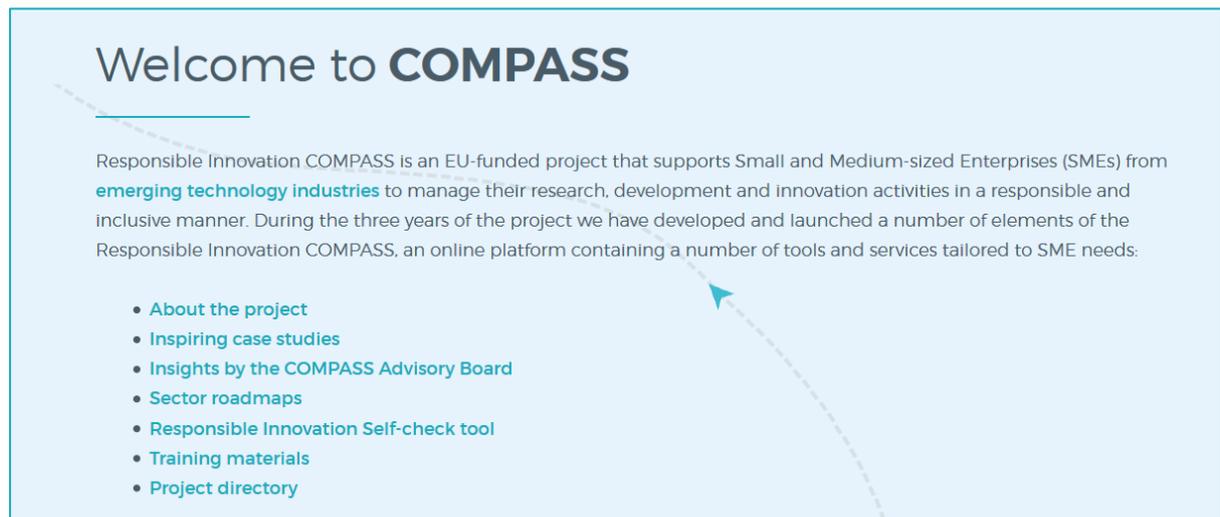


Figure 2: Introduction to Responsible Innovation Compass platform

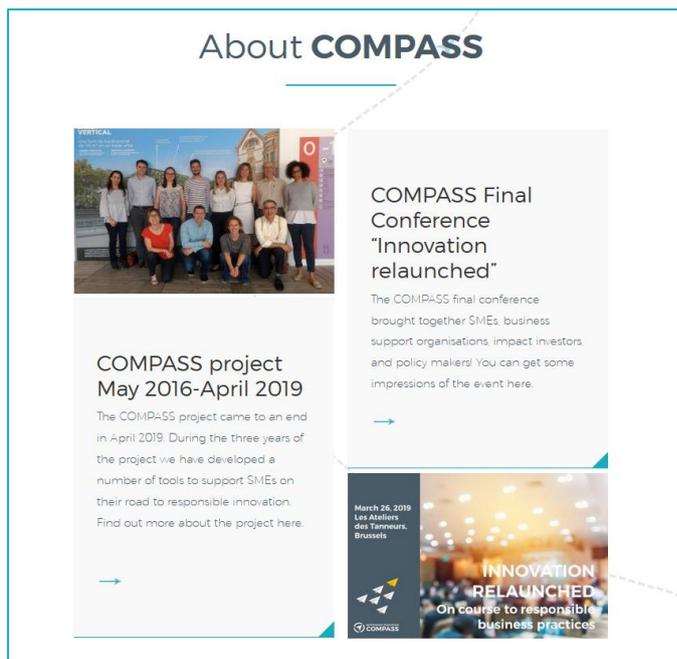


Figure 3: Highlights section on Responsible Innovation Compass homepage

The [“Deliverables” page](#) is the public open access page for visitors to view and access all of COMPASS (710543) project deliverables.

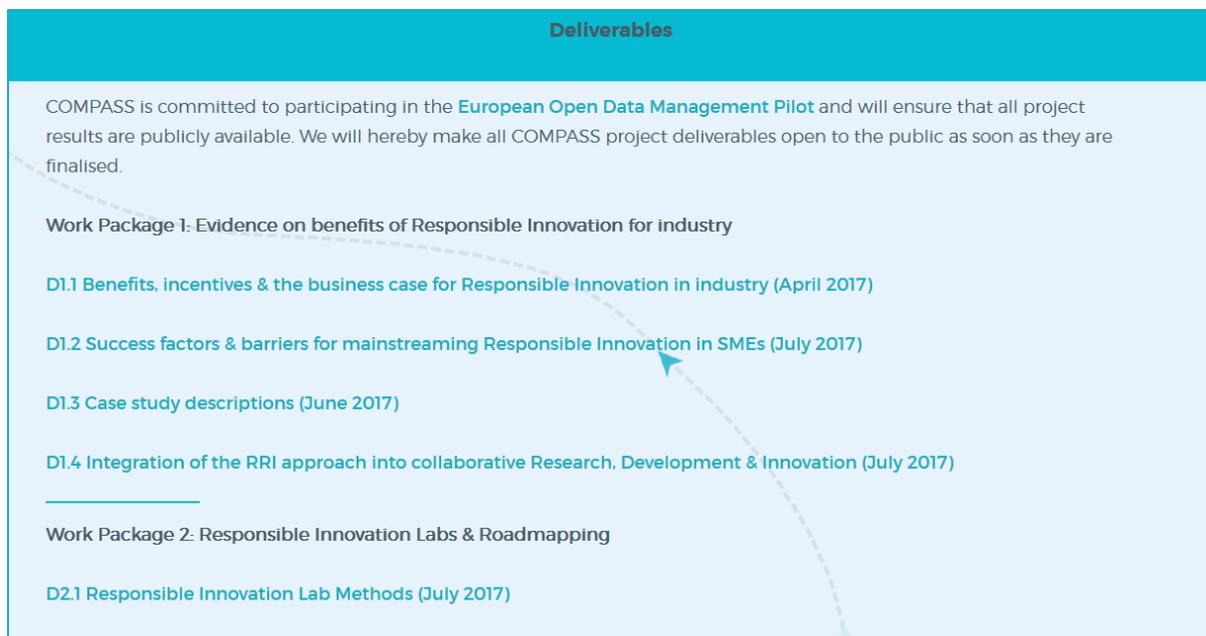


Figure 4: Deliverables page on Responsible Innovation Compass

The following sections 2.1 to 2.4 describe the key modules of the Responsible Innovation Compass modular SME platform, namely:

- a) Responsible Innovation Self-Check (section 2.1).
- b) Co-creation method kit (section 2.2)
- c) Sectoral roadmaps (section 2.3)
- d) Training materials and resources (section 2.4).
- e) Project directory (section 2.5).

2.1. Responsible Innovation Self-Check

The Responsible Innovation self-check tool module provides the user with an introduction to the tool, a link to log-in or register to use the tool, the offline versions of the tool, and a user guide.

The self-check tool, based on a comprehensive multiple choice questionnaire, allows SMEs to learn about responsible innovation, self-assess their strengths and weaknesses related to responsible innovation management, and derive tailored action plans based on automated results and benchmarking to peers. Based on the SME needs that were identified in WP1, the Compass self-check tool is developed to serve as a learning and organizational change support for responsible innovation. It is primarily meant to be used by SMEs themselves but can as well be utilised by multiplier organisations, innovation support organisations, and in the contexts of teaching. The self-check tool can be accessed online at <http://self-check-tool.innovation-compass.eu>.

The self-check tool questionnaire guides a user through the most important responsible innovation practices in company operations, explains why they are important and how they can be implemented practically by suggesting good practice examples in the form of answer options. It thus enables companies to self-assess their strengths and weaknesses and identify solutions and resources that can help the company improve as it grows and progresses. Within the Responsible Innovation Compass it can serve as a first entry point for SMEs wanting to learn about responsible innovation and take action.

The tool has 43 questions and 249 answer options pointing to good practice in responsible innovation. The questions are structured along key elements of responsible innovation as defined in academia and policy settings and are tailored to essential company functions. It checks your company governance, innovation idea generation & research, innovation development & testing and how your innovations can generate more positive impact on society. Once a user has gone through the questionnaire, they will have a clear idea of what responsible innovation practices are and where their company stands, which strengths they can focus on and areas of weakness to address. They also have an option to bookmark questions that can later be used as an input to developing their own tailored roadmap to responsible innovation using the COMPASS (710543) co-creation method kit.

The COMPASS self-check tool helps SMEs to:

- LEARN - Multiple choice questionnaire indicates good responsible innovation practices across business functions.
- DIAGNOSE – Automatic tool results identify company strengths and indicate areas of opportunity.
- BENCHMARK – Comparisons to other tool users allows companies to understand how they compare to peers.
- ACT – tool is in full alignment with the COMPASS co-creation method which allows SMEs to define follow-up actions towards responsible innovation.

For a detailed description of the Responsible Innovation self-check tool and its functionalities please see D3.1 Responsible Innovation self-check tool. For technical specifications of this section of the modular gateway please see D3.2 Responsible Innovation Compass Technical Specifications.

2.2. Method kit for co-creation

The co-creation method kit on the platform provides the user with an introduction to a methodology of how to co-create a roadmap towards responsible innovation.

This co-creation method kit supports companies in embedding responsible practices in their innovation strategies. It has been developed and tested by the COMPASS (710543) project. The co-creation method kit is presented in a form of a booklet (PDF) that explains in detail how to run co-creation workshops for designing tailored roadmaps for responsible innovation with SMEs. The method kit has been co-designed together with participating SMEs in WP2 and piloted in WP4. It is available for download at: <https://innovation-compass.eu/compass-crash-course/>. For a detailed description of the method kit and its application in the COMPASS (710543) project, please refer to Deliverables 2.1 to 2.5.

In order to help SMEs understand more about road-mapping for responsible innovation and available tools offered by the Responsible Innovation Compass, a virtual crash course is also featured. The virtual crash course is presented in a form of a video featuring COMPASS (710543) experts and allows interested audiences to get a quick and thorough understanding of responsible innovation, how to run their own roadmap co-creation workshop and equips them with a basis to derive their own tailored roadmaps. It also includes pieces of practical advice on how to facilitate the process in different contexts. The main part of the crash course video was recorded in form of a webinar on January 24, 2019.



Figure 5: COMPASS co-creation methodology

2.3. Sectoral roadmaps

The roadmaps section provides the user with tailored roadmaps of three pilot sectors of the COMPASS (710543) project. Three sectoral roadmaps are featured on the Responsible Innovation Compass. These sectoral roadmaps can serve as an example for other SMEs both in these sectors as well as others that may be related to the pilot sectors. The roadmaps have been co-created with companies in a series of workshops for three specific pilot sectors: nanotechnology, cyber security and biomedicine. They each are presented individually, including a quick and informative user guide, helping users understand and make best use of

presented materials. Roadmaps and the user guide can be downloaded or viewed online <https://innovation-compass.eu/roadmaps/>.



Figure 6: Entry point to sectoral roadmaps

2.4. Training materials and resources

As a support to companies and innovation support organisations, COMPASS (710543) has compiled training materials and resources in the training section of the platform. It hosts a brief introduction to responsible innovation in form of frequently asked questions, a three step guide to responsible innovation, five good practice cases of SMEs that have already implemented responsible innovation practices (see section 2.3.1), six expert papers from members of the COMPASS (710543) Advisory Board on key topics related to responsible innovation in SMEs (see section 2.3.2), two teaching cases developed for the use in higher education contexts (see section 2.3.3), an analysis of European funded projects until March 2017, and COMPASS (710543) project deliverables.

2.4.1. Good practice cases

Since responsible innovation is a relatively new concept for industry and even more so for SMEs, case examples of peer companies are a tested way to help companies understand what responsible innovation means and how it relates to core business goals. Firstly, they show concrete examples of how responsibility can be implemented in innovation, secondly they allow for companies to learn from peers rather than theory.

The Responsible Innovation Compass features real industry cases on how implementing responsible innovation can kick-start innovation and contribute to competitiveness of SMEs in key innovation fields. Five cases are featured on the Responsible Innovation Compass platform. These cases are all winners of the case study competition ran as part of COMPASS (710543) WP1. All cases are highlighting key responsible innovation considerations and use illustrative pictures (see Figure 7 and Figure 8). Two cases feature videos introducing the respective company and discussing their responsible innovation practices.

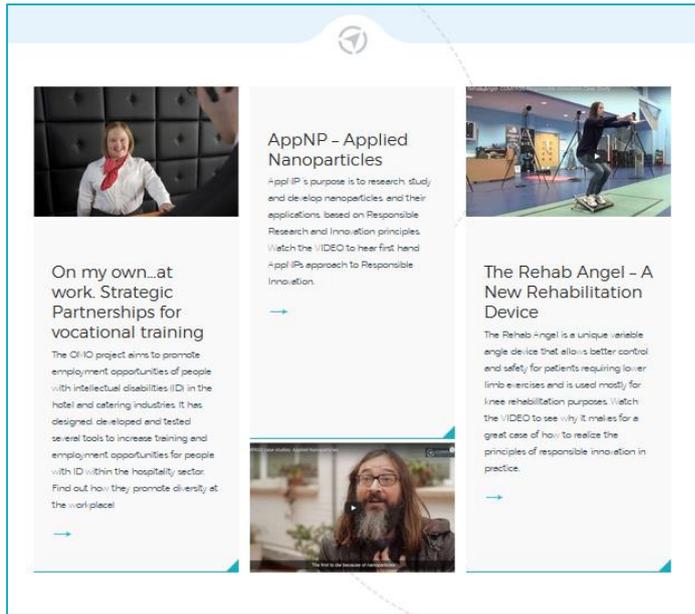


Figure 7: Good practice cases on the Responsible Innovation Compass (part 1)

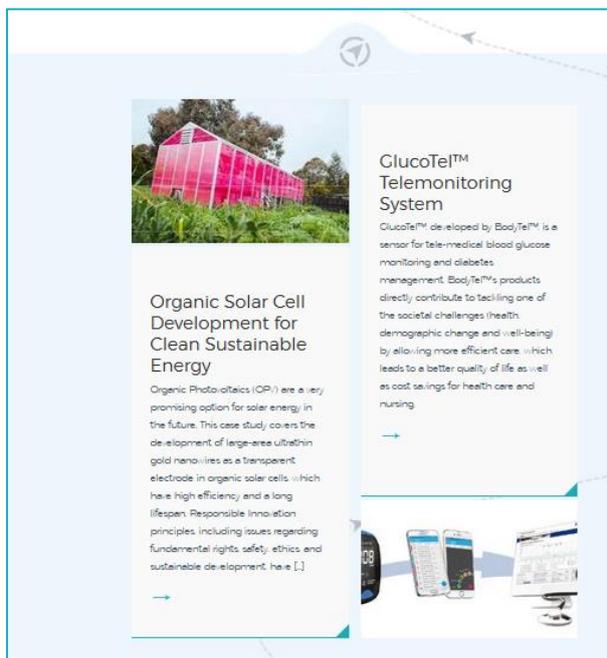
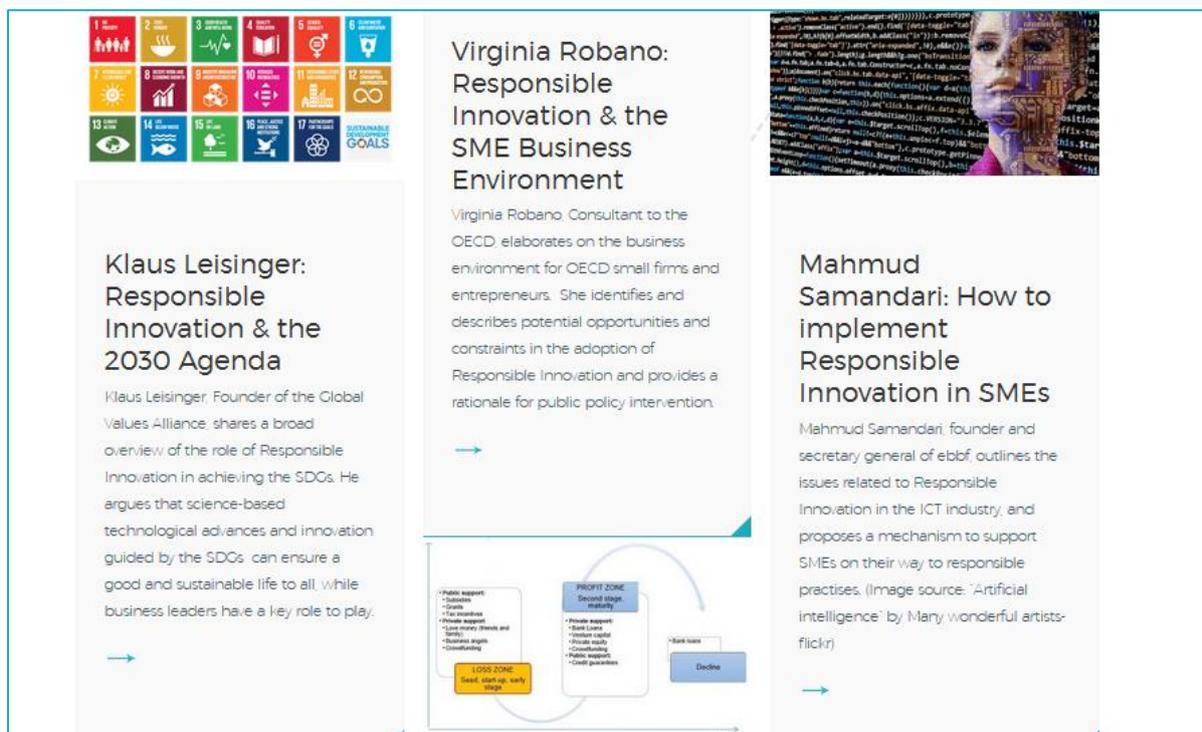


Figure 8: Good practice cases on the Responsible Innovation Compass (part 2)

2.4.2. Expert papers

Expert papers from six different members of the COMPASS (710543) Advisory Board serve as thought provoking material for considering key challenges SMEs are facing in the context of responsible innovation. COMPASS (710543) has brought together exceptional experts, who have been working on the forefront of responsible innovation issues in the areas of healthcare, ICT, and nanotechnology, as well as on ethics, gender, and competitiveness issues. The expert papers featured on the Responsible Innovation Compass are as follows:

1. de Keersmaecker, R. (2016) Responsible Research & Innovation in Nanoelectronics and ICT
2. Leisinger, K. (2016) Responsible Research and Innovation: science with and For Society (with special consideration of the “leave no one behind” aspect of Agenda 2030).
3. Robano, V. (2016) The SME Business Environment: Opportunities and Constraints to Implement Responsible Research and Innovation.
4. Samandari, M. (2016) How to implement Responsible Research and Innovation (RRI) in Small and Medium-Sized Businesses (SMEs).
5. Schiebinger, L. (2016) Gender-Responsible Research and Innovation for Small and Medium-Sized Enterprises: Nanotechnology, ICT, and Healthcare.
6. Wagenaar, C. (2016) Practical Evidence and Benefits of Responsible Research and Innovation in the African Healthcare Sector. Reverse innovation – learning from health SMES in Africa.



Klaus Leisinger: Responsible Innovation & the 2030 Agenda
 Klaus Leisinger, Founder of the Global Values Alliance, shares a broad overview of the role of Responsible Innovation in achieving the SDGs. He argues that science-based technological advances and innovation guided by the SDGs can ensure a good and sustainable life to all, while business leaders have a key role to play.

Virginia Robano: Responsible Innovation & the SME Business Environment
 Virginia Robano, Consultant to the OECD, elaborates on the business environment for OECD small firms and entrepreneurs. She identifies and describes potential opportunities and constraints in the adoption of Responsible Innovation and provides a rationale for public policy intervention.

Mahmud Samandari: How to implement Responsible Innovation in SMEs
 Mahmud Samandari, founder and secretary general of elbof, outlines the issues related to Responsible Innovation in the ICT industry, and proposes a mechanism to support SMEs on their way to responsible practises. (Image source: "Artificial intelligence" by Many wonderful artists- flickr)

Business Lifecycle Diagram:
 - **LOSS ZONE:** Start, start-up, early stage. Support: Public support, Subsidies, Grants, Tax incentives, Human resources, Loan entry, shares and equity, Business angels, Crowdfunding.
 - **PROFIT ZONE:** Second stage, maturity. Support: Private support, Bank loans, Venture Capital, Credit equity, Crowdfunding, Public support, Credit guarantees.
 - **Decline:** End stage.

Figure 9: Expert papers on the Responsible Innovation Compass (part 1)

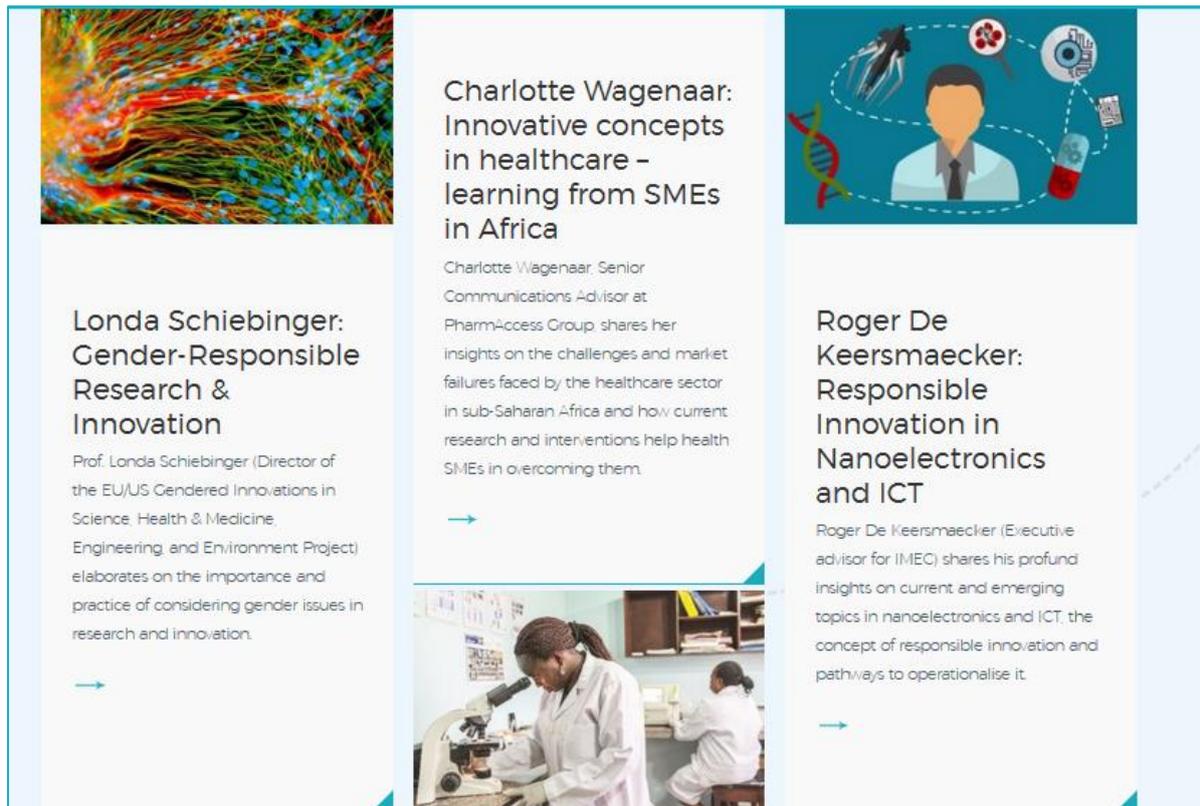


Figure 10: Expert papers on the Responsible Innovation Compass (part 2)

2.4.3. Teaching cases

The Responsible Innovation Compass offers two teaching cases to be used in the context of higher education, specifically business schools. These can be useful in educating future innovation and company managers about responsible innovation and equip them with capabilities to ask critical questions and find effective solutions. The COMPASS (710543) teaching cases have been based on real company examples of one of the case study competition winners (WP1) – AppNP (nanotechnologies) – and one of the companies involved in the UK Responsible Innovation Lab (WP2) – Yoti (cybersecurity).

COMPASS (710543) teaching cases are a rich narrative, based on which students solve a problem or discuss arguments for or against different possible ways of action. The two COMPASS (710543) teaching cases show how the concept of responsible innovation is practically applied in a nanotechnology company and a cyber security company, respectively.

The target audience for these teaching cases includes students of business administration and of the natural sciences at master's level. The case should be taught in courses that deal with corporate responsibility or societal impact of corporate activities (for business students) or in any course dealing with research ethics or entrepreneurship (for natural sciences students).

Both cases were developed according to the requirements of Sage Business Cases (<http://sk.sagepub.com/cases>) and submitted to Sage in January 2019 for publication. The cases will be published in the upcoming update to SAGE Business Cases, which is currently scheduled for January 2020.

Each case consists of an introduction to nanotechnology or cyber security, respectively, an introduction to responsible innovation, the specific company case, expected learning

outcomes and discussion questions. Both cases are further accompanied by a teaching note that describes teaching objectives, target audience, suggested teaching strategy and suggested answers to the discussion questions.

Teaching cases can be accessed at: <https://innovation-compass.eu/training/teaching-cases/>.

2.5. Project directory

The Responsible Innovation Compass offers its users a searchable directory of European responsible innovation projects based on insights of COMPASS (710543) project WP1.

The project directory is a searchable categorised database of 130 RRI projects and initiatives dealing with Responsible Research and Innovation (RRI) carried out in Europe between 2008 (when the first RRI projects were launched in the 7th European Framework Programme for Research and Innovation) and 2018 (when the final update of the database was conducted). The project directory aims to facilitate the search for RRI projects in Europe. The database contains basic information on the projects as well as links. This database is filterable on predetermined criteria and searchable by free text. The project directory is accessible on: <https://innovation-compass.eu/business-directory/>. An illustration of the directory is provided in Figure 11.

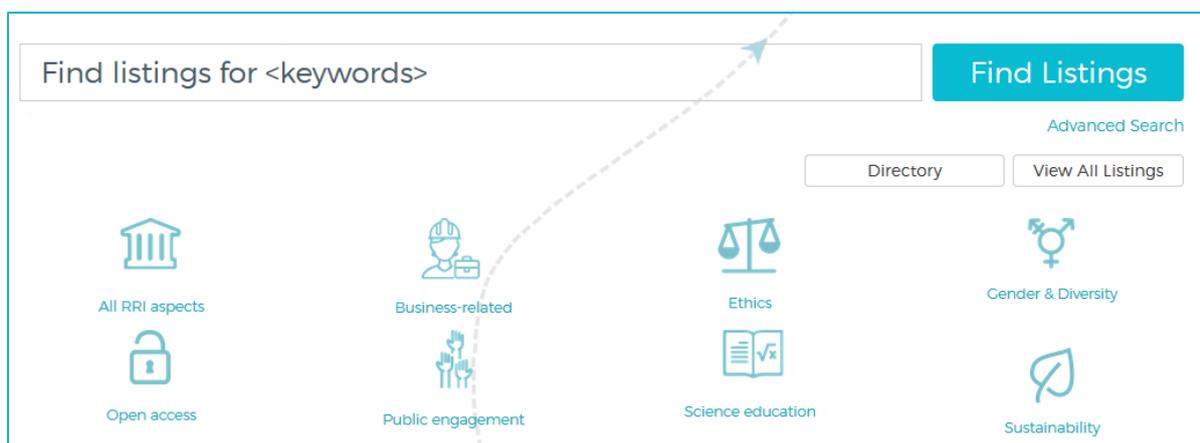


Figure 11: RRI project directory