

1 EXECUTIVE SUMMARY

The overall aim of EU-InnovatE was to investigate the active roles of users in shaping sustainable lifestyles and the transition to a green economy in Europe (“Sustainable Lifestyles 2.0”). We investigated paths towards a sustainable society, which are (more) user-centred and user-driven. Hence, the project explored the creative, innovative and entrepreneurial roles of users in developing novel sustainable products, services and systems.

The project research focuses on the following specific objectives, which are in line with the Commission’s Call SSH.2013.2-1-1 on obstacles and prospects for sustainable lifestyles and green economy in Europe:

1. Understanding the complex relationships between natural resources, human needs, technology, and economics with a focus on consumers’ values and behaviour in Europe (past and present)
2. Assessment of the short- and long-term obstacles and opportunities associated with the transition to sustainable lifestyles and green economy in Europe (future)
3. Investigation of new business models enhancing sustainable lifestyles and green economy in Europe (user sustainable innovation and entrepreneurship)
4. Measurement of the prospects of sustainable lifestyles and the green economy in Europe
5. Assessment of the political dimension of the evolution in sustainable lifestyles in Europe

To achieve these objectives, EU-InnovatE employed a mixed-methods research design, including historic analysis, case studies, interviews, focus groups, surveys, experiments, scenarios, forecasting, modelling and simulation. Furthermore, EU-InnovatE adopted a participatory research approach as it went beyond doing research *on* stakeholders, but rather doing research *with* stakeholders. EU-InnovatE actively integrated end users, companies, policy-makers, and experts in a “co-creative” research process throughout all work packages. It embraced the principles of *co-innovation* and *co-production*, thereby challenging preconceived roles in open sustainability innovation processes. It promotes the idea of user-driven innovation and entrepreneurship as a process of “designing the future that users want to live in”.

The main contribution of EU-InnovatE is to shed light on the power of people in sustainable transformations. A key result relates to the role of users, which EU-InnovatE finds to be manifold and diverse. Accordingly, users can take on different roles in transition processes, including as producers, legitimators, intermediaries, citizens, and consumers. All of these user roles are present and play a pivotal role in the entire transition process, however, they have different prevalence in specific phases of the process, i.e. in creating, distributing and legitimizing innovations.

Reflecting the project’s aim to explore the innovative, creative, and entrepreneurial role of users, a particular focus was put on the user producer, which EU-InnovatE finds to be a steadily increasing group of sustainable entrepreneurs who are driven by their values, norms, and beliefs in bringing about change. In addition, we find first evidence of user consumers taking over active roles in the sustainable innovation processes of companies. The results therefore suggest that companies and policy makers will benefit from putting a stronger emphasis on enabling users to exploit their innovative and entrepreneurial potential to foster sustainable transitions.

2 PROJECT CONTEXT AND OBJECTIVES

In direct response to the Commission's Call SSH.2013.2-1-1, EU-InnovatE has explored new paths for achieving a sustainable future in Europe. This is reflected in the two main strategic goals of the project:

- To explore, describe and explain the active roles of end users in shaping sustainable lifestyles and green economy in Europe
- To develop and disseminate concepts and tools to enhance the active roles of end users to (co-) invent, (co-) design, (co-) produce, and (co-) market novel sustainable products, services and systems, which shape sustainable lifestyles and the transition to a green economy in Europe.

More pointedly, the project was designed to investigate the **creative, innovative and entrepreneurial roles of users** in developing novel sustainable products, services and systems ("**Sustainable Lifestyles 2.0**"). By focusing on the role and importance of **End User Integration, Innovation and Entrepreneurship ("EU-InnovatE")**, the project took a combined 'top down' and 'bottom up' approach to better understand future pathways towards sustainable lifestyles and green economy. To do so, the project adopted a multi-level perspective (MLP) on the phenomenon, which is a widely adopted framework for analysing stability, change and transitions in socio-technical systems (Kemp & Rip 1998; Geels 2002; Grin et al 2010).

The five main objectives (as included in Annex I to the Grant Agreement) are summarized in the following:

1. To understand the complex relationships between natural resources, human needs, technology, and economics with a focus on consumers' values and behaviours.

In order to achieve this aim, WP1 employed the multi-level perspective to summarise the main results of the historic research focusing on the changing roles of users during the twentieth century against the background of new technologies, competing ideologies, two world wars, the rise of the affluent society, and changing socio-demographic trends. While the historic analysis provides insights into the evolution of unsustainable lifestyles in Europe and the changing role of users to more or less passive consumers in the past, a quantitative study on sustainability values and behaviours (including end user innovation and entrepreneurship) provides an overview of the present situation in Europe.

2. To assess the short- and long-term obstacles and opportunities associated with the transition to sustainable lifestyles and green economy in Europe.

To reach this objective, WP2 applied scenario analysis to assess the short- and long-term obstacles and opportunities associated with the transition to European sustainable lifestyles and green economy through end user sustainability innovation and entrepreneurship. Building upon the SPREAD scenarios, the outputs of WP1 and the inputs of a contact group of people drawn from policy, business and public, WP2 quantified key indicators in the progress and pathways towards European sustainable lifestyles and green economy in ten years' time and in 2050.

3. To investigate new business models enhancing sustainable lifestyles and green economy in Europe.

In pursuing this objective, EU-InnovatE presents two emerging business models, which focus on the active roles of users in achieving sustainable lifestyles. WP3 explored company-driven open sustainability innovation integrating users, whereas WP4 investigated user sustainability innovation and entrepreneurship. Both work packages conducted numerous case studies in order to refine and develop theories on company-driven sustainability innovation integrating users and user sustainability innovation and entrepreneurship respectively. The case studies investigated how sustainability-driven business model innovations can be brought to scale to create broader value for society and more positive impacts on the natural environment. In addition, a quantitative study and a laboratory experiment have been employed to test the refined and developed models.

4. To measure the prospects of sustainable lifestyles and the green economy in Europe.

In order to achieve this aim, WP5 measured the impact of trends on sustainable lifestyles up to 2050. WP5 conducted measurements on detailed scenarios, derived from the work in WP2. The measurement markers connect agent/micro behaviour with macro measurable outcomes and feedback from the macro to micro, creating a dynamic picture of co-invention, co-design, co-production and co-marketing, which tackle social and ecological challenges.

5. To assess the political dimension of the evolution in sustainable lifestyles in Europe.

To attain this aim, WP6 assessed current policies and instruments at communal, regional, national and EU levels with regard to their influence on user sustainability integration, innovation and entrepreneurship. Furthermore, novel elements of a comprehensive EU policy are suggested in order to support the integration of end users in company-driven sustainability innovation as well as end user sustainability innovation and entrepreneurship. The novel policy instruments have been tested *ex ante* by means of laboratory experiments.

3 MAIN SCIENTIFIC AND TECHNICAL RESULTS

The key ideas of user integration in company-driven sustainability innovation, user sustainability innovation and user sustainability entrepreneurship was running through all work packages respectively. EU-InnovatE was divided into eight work packages of which seven were scientific and one was related to the overall organisation of the project:

WP1 investigated (un-) sustainable lifestyles in Europe by analysing the past and present roles of users. Following the historical analysis of (un-) sustainable lifestyles, **WP2** applied future techniques, especially scenario analysis, to test how simultaneous changes in the four domains of food, living, mobility and energy may result in sustainable lifestyles in the short- and long-term. **WP3** focused on the integration of users in company-driven sustainability innovations, i.e. the types of organisational forms, culture, structures and management styles that promote (vs. hinder) the integration of users in corporate sustainability innovation processes. Taking user integration further, **WP4** dealt with user sustainability inventions, entrepreneurship and introductions, exploring novel business models that are expected to be suitable for easing the transition to future sustainable lifestyles. In **WP5** the impacts of future trends against the background of user sustainability innovation and entrepreneurship has been measured. **WP6** focused on the political dimension of user sustainability innovation and entrepreneurship, assessing current policies and instruments at communal, regional, national and EU levels, influencing user integration, invention and entrepreneurship in the context of sustainability. Research in **WP7** then drew on the outputs of WP1- 6 and aimed at developing a comprehensive framework with institutions and actors influencing user integration and user innovation, which have the potential to make a contribution to sustainable development. WP7 provides implications for the key stakeholders of the project, including policy-makers, companies and users. **WP8** aimed at ensuring that the project results are presented to the widest possible audience in Europe (primarily) and beyond. Activities in WP8 spread the insights and knowledge generated by EU-InnovatE and provided a targeted communication strategy to the key audience of EU-InnovatE. **WP9** concerned all management and co-ordination activities.

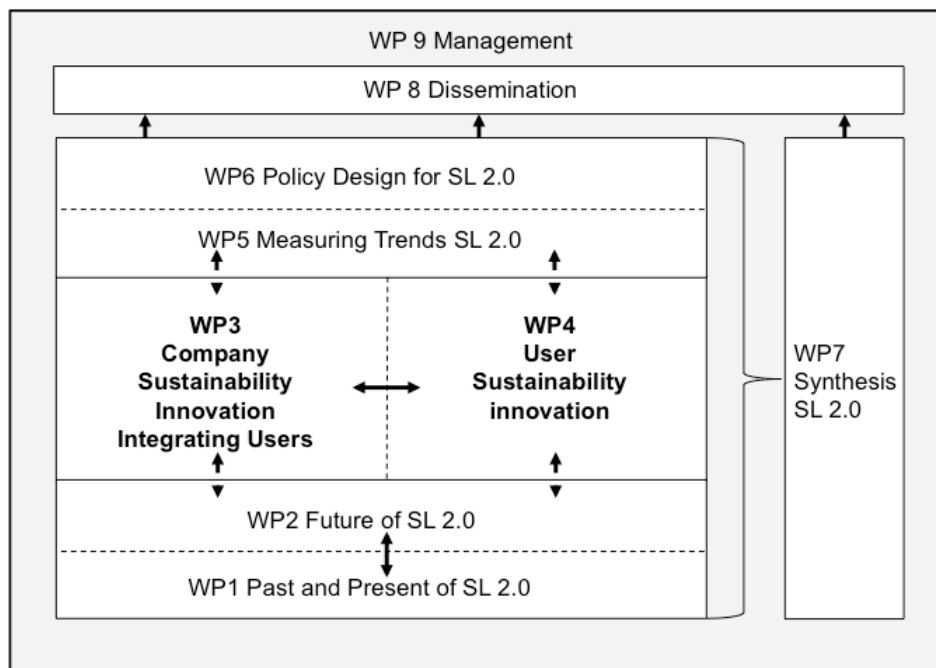


Figure 1 – Work Package Structure of EU-InnovatE (DoW)

3.1 WP1 – Understanding (Un) Sustainable Lifestyles in Europe

The objective of WP1 was to understand (un-) sustainable lifestyles, consumers' values and behaviour. A particular focus was laid on the potential role of user sustainability innovation, which were analysed in the context of heterogeneous socio-economic and cultural influences in Europe.

3.1.1 Work Undertaken

Conceptual foundation: Understanding sustainable lifestyles and user sustainability innovation

A conceptual paper was developed based on a systematic literature review concerning the roles of consumers/users in sustainability transitions. The review consisted of a 2x2x2 matrix to recode the data: consumers/users versus co-producers; individual versus collective agents in innovation studies; and impeding versus enabling factors. Furthermore, a conceptual paper concerning the role of cultural factors for innovation perceived through the lens of the multi-level-perspective (MLP): Hofstede's categories (including the corresponding empirical results) and their correlation with innovation and sustainability data was explained using the MLP approach. An interim report was also created, focusing on the relevance of the multi-level-perspective for EU-InnovatE and laying the conceptual foundation for all researchers involved in the project.

Status quo analysis (SQA) I: The genesis of (un-) sustainable lifestyles in Europe

Based on an extensive two step desk research involving a group of junior and senior researchers, a public database and manuscript of the European (un-) sustainability parameters was completed within WP1. The database identifies parameters for the domains energy, food, housing and mobility. Based on these parameters, a second database of relevant institutional frameworks for user sustainability innovation was completed and is currently handed in. These provide a basis for the on-going work in WP6.

Status quo analysis (SQA) II: A European survey concerning sustainable lifestyles and user sustainability innovation frameworks

An extensive European survey investigating sustainable lifestyles and user sustainability innovation in Europe has been realized with 10,000 participants from 10 European countries. The result is a database of 30 SPSS files. The data is accompanied by a report explaining the various measurement instruments included in the questionnaire and presenting descriptive results of the survey. The results also serve as foundation for the continuous interviews with experts from the different European countries as well as a series of international workshops, which will reflect, discuss and accomplish the findings for a final comprehensive report.

Status quo analysis (SQA) III: Understanding the diverse cultural systems in Europe

Qualitative research in a mixed methodology approach has been done to understand the logic of sustainability approaches in the various European countries. In five sections in each domain (Industry, Academics, Politics, Society/NGO, Inter-Sector) and with a total of 2718 data entries (food: 769, mobility: 655, energy: 807, housing: 487) the databased showed a variety of results. On this basis interviews have been conducted to add additional details and understanding.

Status quo analysis (SQA) IV: Workshops for stock-taking of sustainable lifestyles in different European regions.

Complementing the individual perspectives of the interviewees, five workshops have been held to deepen the understanding of various lifestyle approaches. A workshop for Southern Europe was held in Milan, for Northern Europe in Copenhagen, for Western Europe in London, for Eastern Europe in Warsaw and for Central Europe in Ingolstadt.

3.1.2 Scientific Results

Conceptual foundation: Understanding sustainable lifestyles and user sustainability innovation

Generally, five different user roles have been identified relating to innovation: resistance, barrier, passive adoption, co-production and production (see figure 2 below).

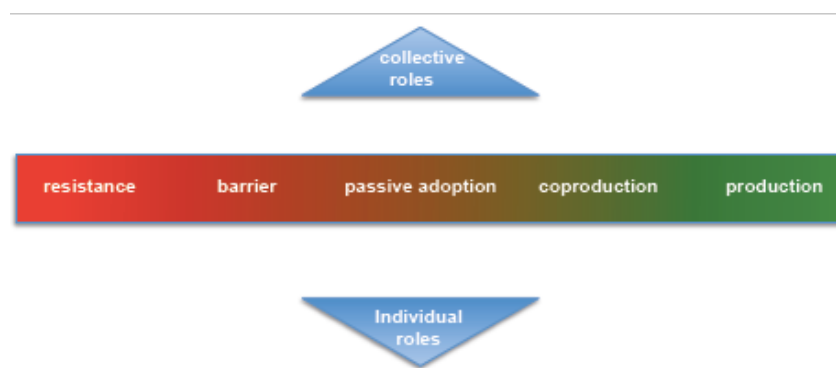


Figure 2 – Citizen roles in relation to innovation (source: D 1.1: Verhees, 2014).

On the individual level roles can range from ‘Not In My Back Yard’ (NIMBY) sentiments to the ‘classic’ role of users as consumers: those who simply buy sustainable products (or not). Individual characteristics, such as early adopters, early majority, late majority and laggards, can result in (non-) adoption decisions. Moving towards the right, we find individual users as lead-users, co-producers or ‘user entrepreneurs’ who convert sustainable solutions to a problem they experience into a business. On the collective level roles can range from large-scale social movements actively resisting innovations through organized protests to more passive collective barriers such as consumer practices and values. Towards the right of figure 2, we locate such practices as ‘collaborative consumption’ (e.g. co-housing, car sharing) and ‘collective buying power’-based business models. More active collective roles include ‘crowd funding’, ‘cooperatives’ and finally ‘community innovation’ (collective users that act as initiators, designers and maintainers of technological projects in their own locality) as well as ‘grassroots innovation’ (social movement organizations who produce sustainable innovations but expand beyond their locality and form the seeds of mainstream solutions).

SQA I: The genesis of (un-) sustainable lifestyles in Europe

The historical overview highlights the rise of (multi-) national companies, mass production and the democratisation of consumption in Europe from ≈1850 to the present. In this history, we have discerned the following periods:

- *Inventing Consumerism* (1850-1913): the development of new user practices and user movements in relation to the introduction of a host of new products. The state was relatively absent in this period.
- *Contested Consumerism* (1914-1950): In this period, debates and new consumer

practices emerged in competition. Users, companies and the state promoted and experimented with different consumer practices. They advanced collective and individual, large-scale and small-scale solutions. This happened against the background of ideological conflict between communism, fascism and democratic political systems.

- *Technocratic Consumerism* (1950-1989): In this period, users were transformed into individual consumers who had to ‘learn how to consume’ through marketing (with a big influence from the USA) or how to reduce their consumer needs complying with state control.
- *Participative Consumerism* (1989-present): In this period, new experiments with various forms of better integrating consumers into the innovation process became popular. Experiments happened before (≈1970s onward), but in this phase they were mainstreamed.

SQA II: Surveying the diverse cultural systems in Europe

Our survey added to a stream of recent research aiming to map the extent to which people in their private life engage in user innovation, something which may benefit not only the users themselves or the companies they work for, but society in general. In the present context, we have especially focused on the extent to which private consumers in (ten countries of) Europe are innovating in terms of more sustainable solutions. Besides its focus on sustainable consumer innovation, this research extends prior research in particular with regard to extending the number of countries covered and doing so based on samples of survey respondents from the 10 countries that are sufficiently representative and comparable to serve as the basis for comparative studies.

The survey revealed a substantial amount of user-innovator activities reported by private consumers, varying from 8.4% in the UK to 31.2% in Hungary, innovating in at least one of the eight covered domains. In the case of sustainable user innovations, the amount was significantly lower. Only 0.1-0.2% per country reported something that could be classified as *environmentally-friendly* user-innovator activities. Hence, it seems that the focus of consumers’ private user-innovation activities is overwhelmingly directed at solving private problems and obtaining private functionality, rather than on solving societal problems related to the environment. Obviously, this finding is only informative about the type of motivation guiding private user-innovation activities. Further research is needed to investigate possible societal consequences (benefits and costs).

The differences between countries in terms of consumer innovation activities suggests that individuals’ inclination to privately search for new innovations depends on the socio-economic context, perhaps a reflection of the old saying that “necessity is the mother of invention.” However, further research is needed on the importance of the context and background characteristics for user innovativeness (Stock, von Hippel, & Gillert, 2016), also including personal resources, value priorities, personality traits, as well as how the importance of these characteristics may differ across the different stages of the innovation process (ideation, prototyping and diffusion).

A second focus of the survey was on the relationship between domain-specific lifestyles and sustainable consumption in the food, transport and housing domains. Statistical analyses revealed that an optimal segmentation solution can be obtained from five to seven lifestyle segments and two to three country clusters in the three studied domains. In all three studied domains, lifestyle is a stronger predictor than country of residence on sustainable

consumption choices, but in two domains (food and transport) country cluster (or region) of residence account for additional variation in behaviour after controlling for lifestyle.

In these two domains, there are also significant interactions between lifestyle and country cluster (or region) of residence, meaning that the influence of lifestyle on sustainable consumption choices to some extent depends on geographic factors.

SQA III: Putting innovations into context

As a result of the qualitative study, a database with insights into the diverse European regions was created. Our research revealed a broad variety of actors, issues and process of innovation policies in Europe. The database was used as the basis for open interviews that have been conducted with a number of different people representing all kinds of stakeholders and protagonists of the sustainability domain.

Innovation processes clearly are related to the defined economic, social and ecological contexts. Academia and an entrepreneurial society seem key for the development of innovative products and services. Only if there is a basic infrastructure for knowledge building and innovative business initiatives something like an innovation culture can grow. Especially in Southern and Eastern Europe important entrepreneurial support structures are still missing. The dominance of state / political governance structures enables a minimum of “top down” approaches, but is not able / suitable to foster “bottom up” initiatives. Therefore, more entrepreneurial actions, business engagement and broad support for new ideas seem to be needed.

Sustainability goes hand in hand with the development of an entrepreneurial society, which sees business as key to societal and ecological development. Nevertheless, some unique platforms and centres of expertise in applied practice can be found in Eastern and Southern Europe which slowly but steadily develop a new entrepreneurial culture for sustainability in their regions. An exchange between different cultural players might help to facilitate mutual learning and reinforce new perspectives within different cultural contexts. In the long run, a common European innovation culture is needed which embraces cultural and regional differences as an opportunity to develop new products and services.

SQA IV: Taking stock of sustainable lifestyles in different European regions

In the workshops lots of additional information was collected and insights into the individual perspectives of the interviewees have been made. They also served to verify the desk research and interview results in direct discussion with representatives of the respective countries (‘triangulation’).

The workshops highlighted the broad diversity of cultural approaches towards sustainability across Europe. The Central European event in Ingolstadt focused on business and SMES; its London equivalent showed the major importance of NGOs in UK. The workshop in Copenhagen revealed the scale of academic and political debates in Northern Europe about effective means to advance sustainable entrepreneurship, while the workshops in Italy and Poland both showed the importance of academic hubs for social developments. Taken together, the workshops clearly demonstrated that there is no “one-size-fits-all” solution in order to foster consumer driven solutions across all European countries. The context turned out to be too diverse but at the same time one of the most relevant factors in determining whether and how to foster innovative networks and processes – and by extension the prospects for defining a common European understanding of consumer driven innovation.

3.2 WP2 – Assessing Short- and Long-Term Opportunities and Obstacles: Future Scenarios

The primary objective of WP2 was to assess the short- and long-term obstacles and opportunities associated with the transition to European sustainable lifestyles and green economy through user sustainability innovation. It relied on scenario analysis and the insights gained from WP1 on lifestyles past and present.

3.2.1 Work Undertaken

Recruiting a contact group cohort

A contact group of 200 people (the ‘future-shapers’) has been recruited, consisting of user innovators and entrepreneurs and interested parties from business, government and civil society and representing all regions of Europe (<https://future-shapers-network.squarespace.com>). This group has been invaluable in augmenting the project scenarios with practitioner perspectives of sustainability innovation and entrepreneurship (SIE) as well as domain-specific information. There is a high interest for continued involvement, which may make a significant long-term contribution to the societal impact of the project.

Augmenting the SPREAD scenarios employing the MLP

Using the Multi-Level Perspective and through interactive workshops held with ‘future-shapers’ in Berlin and London, the SPREAD scenarios have been updated, augmented and analysed. The workshops were useful for exploring the contribution of SIE towards sustainable lifestyles in Europe. This is summarised and presented in a paper entitled “A multi-level perspective-based analysis of four scenarios for sustainable lifestyles in 2050”. The analysis explores the possibility of major shifts in the role of both innovation and innovators across society and the economy.

Quantifying key indicators in the short-and long-term scenarios

An inquiry into how to identify indicators for future sustainable lifestyles has been conducted and this is forming the basis of a paper provisionally titled “Exploring systemic measures of sustainable lifestyles: opportunities for sustainable user innovation and entrepreneurship”. The research suggests that social conditions are both the most important and hardest-to-measure aspect of transitions towards sustainability, and the area in which user innovation and entrepreneurship can have the greatest impact.

Identifying opportunities and obstructions for transition employing MLP

Synthesizing findings from WP3/WP4 and further enriching such insights with secondary data, short- and long-term obstacles and opportunities associated with the transition to European sustainable lifestyles were identified. The identified opportunities/ obstacles, which facilitate/ impede user integration, innovation and entrepreneurship were then evaluated with regard to their influence on pathways and interactions of the niche-regime-landscape.

Implications for policy and management

This issue was addressed through two interactive workshop sessions developed by Copenhagen Business School and supplemented by the outputs and data from the Sustainability Innovation Exchange hosted by Cranfield University.

3.2.2 Scientific Results

Shifting nature of users, from passive and individual action to collective action

The nature of ‘users’ may change in the future from an individual level and a passive role towards a collective level and a more active/innovative role, as shown in the community innovation quadrant in figure 3. This suggests a shift in the regime from product and service innovations to ‘system’ innovations, which enable sustainable lifestyles.

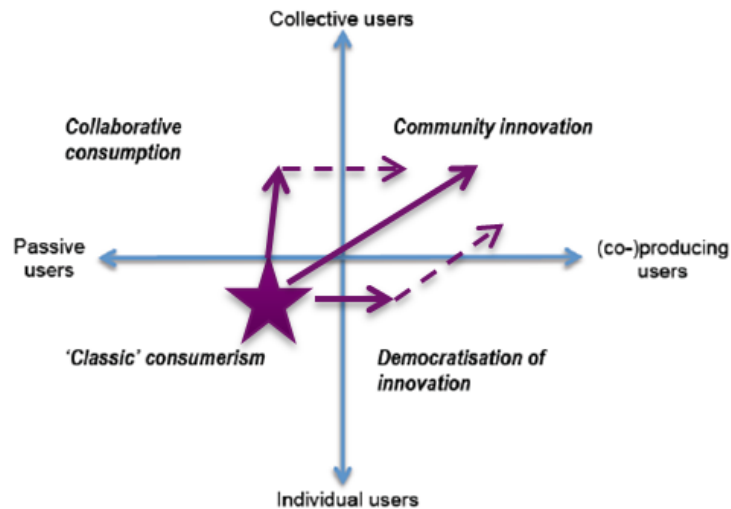


Figure 3 – Destination quadrant for future user/ citizen innovation (Source: co-production of WP1/ WP2)

Augmented scenarios 2050

The augmented SPREAD scenarios focused on the role of citizens in achieving sustainable lifestyles in 2050. Accordingly, four scenarios were identified: singular super champion, governing the commons, local loops, and empathetic communities (figure 4). A detailed description of the scenarios and their impact on economy, society and governance can be found [here](#).

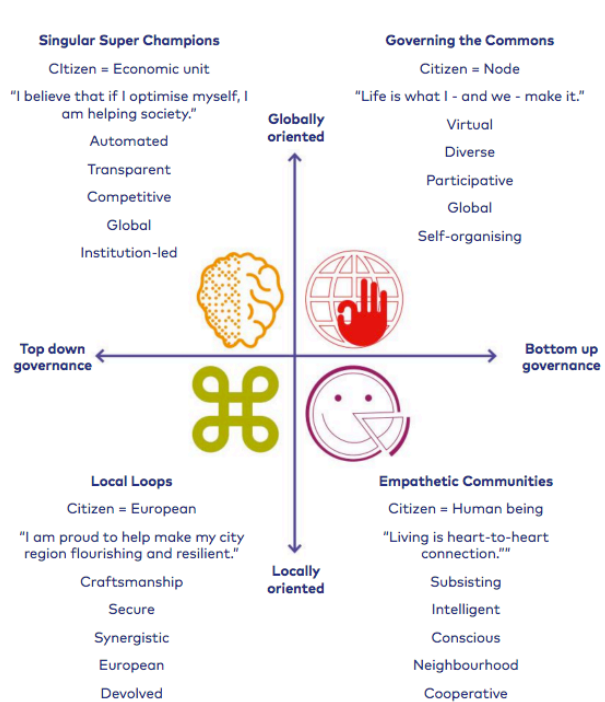


Figure 4 – 2050 Future Scenarios (Source: WP2)

Users and entrepreneurs innovate across many sites and fields of activity

When exploring indicators, one of the major findings was that many of the future SIE innovations required span across domains. Not only this, but the innovations themselves will vary in nature and influence:

Type of innovation	What is it and how does it contribute to systemic change?
<i>Product and service innovations</i>	<p>New products, services and experience systems - both virtual and real - help to de-materialise consumption, affecting brand communications, marketing, retail.</p> <p>They improve resource efficiency and improve the social and environmental impacts of the economy, while furthering consumption and growth.</p>
<i>Place and network-related innovation</i>	<p>A diverse range of activities shape how places develop and how people and organisations within them behave - including ways of working, organisational forms; value networks, visions and strategies; infrastructure improvements.</p> <p>These activities reconfigure the design of energy, food, mobility, housing and materials systems in a geography. A whole system approach unlocks extra material efficiencies by altering patterns of resource use, lifestyles and commerce and the cultural norms that go with them. They are a comprehensive, area- based response to challenges like climate change.</p>
<i>Governance, decision-making and participation in society</i>	<p>A broad and diverse range of activities that relate to the overall governance - or management - of society: its constitution, legislature, executive and judiciary functions.</p> <p>What they share in common is that they affect how collective decision-making happens and the trust, empathy, accountability, ways of thinking and the other social qualities that are wrapped up in how we relate to one another and the world around us.</p> <p>Includes education, civil society and finance as they intrinsically shape how individuals manage themselves and their participation, their identity, how they deal with conflict, exchange value and so on.</p>
<i>Paradigm innovation</i>	<p>Activities that have an intangible yet profound effect on culture and everything we do and how we do it.</p> <p>They do this by reforming our most fundamental beliefs, accepted wisdoms and assumptions and the language we use to understand the world - includes our perception of 'self', of humanity and our attitudes towards the future.</p>

Findings and implications for policy and management

- a. Current measures for sustainable lifestyles are inadequate for describing and managing the transitions required in the future. Specifically:
 - Economic measures do not describe the nature of the change that occurs in the 2050 scenarios.
 - Social conditions of society play a vital role in enabling sustainable lifestyles.
 - User innovation and entrepreneurship for sustainable lifestyles is shaped by these conditions, and can also influence them.
 - Change takes place at an uneven pace along scenario pathways to 2050.

- Prospective, quantitative measures are insufficient for learning and managing transition.
- b.** A number of cultural shifts are required in society to support the transition towards sustainable lifestyles, as outlined in the SPREAD 2050 scenarios. Specifically:
- Innovation that is required for transition takes the form of governance, structural & paradigm innovations.
 - To achieve this, we see an expanding role of users and entrepreneurs.
 - To achieve this, we see a declining role for business acting alone, but an increasing role acting as part of new forms of collaboration with users, communities and entrepreneurs.
- c.** Policy and management have a vital role to play in systemic transition, both as an enabler of innovation and as a site for innovation itself. Specifically:
- The purpose/function/role of policy and government undergoes radical transformation in all of the SPREAD 2050 scenarios as an outcome of transition towards sustainable lifestyles.
 - The analysis of socio-technical change and innovation along the scenario pathways identifies a vital role for policy and management in enabling the staged transition to sustainability.
 - The governance, structural and paradigm innovations required for sustainability are both the means for transition along the scenario pathways and the outcome of transition in 2050.
 - This is because sustainability and sustainable lifestyles are a continuous state of dynamic equilibrium, transition & evolution.
 - For policy and management to enable long-term transition through user innovation and entrepreneurship, it must embody and enact a new paradigm itself.
- d.** To achieve this, a number of long-term policy and management shifts are required. To move towards these over the short-term, the following recommendations are made. Specifically:
- Operate with a new mode, mind-set and with skills and capabilities that allow a systemic approach and that embrace a new cultural context that's consistent with sustainable lifestyles
 - Develop new interventions that lay the path for these elements to flourish in the longer term.
 - Constructively question and challenge the role of policy and management in society

Provocations about the roles different actors could play in enabling the transition to a sustainable future:

What is clear is that our future is uncertain and that processes of change will unfold in unexpected ways and in unexpected places. Our best chance of furthering a sustainable society is for diverse people and organisations to act within their own sphere of influence and to find new ways of collaborating with others to leverage this for impact. All these actors play a role in the transition to a sustainable society. Illustrative questions which different actors could address in defining their contributions include:

For civil society organizations: How could you help forge new ways of individuals to participate in society and relate with to another, beyond consumerist choices? Could you experiment with new forms of governance?

For citizen innovators: How could you be a maverick to bring about the cultural and social changes needed in society? As you follow your passions, how can you blaze a trail towards better lifestyles?

For policy-makers: How could you take a systemic approach to diagnosing, responding and understanding interventions? What untapped opportunities are there for you to collaborate with others to overcome the barriers?

For established businesses: How could you help to bring about a whole system approach to managing the efficiency and impacts of the materials economy? How can you use your scale and reach to bring about changes not just in the technologies that form our infrastructures, but to the design of these systems?

For SMEs and entrepreneurs: As you find new ways of creating and sharing value, how could you dematerialise markets? What opportunities are there for you to collaborate with others to grow markets that will help upgrade our infrastructures and improve the efficiency with which we use them?

3.3 WP3 – Company-Driven Sustainability Innovation Integrating Users

The aim of WP3 was to contribute to the understanding of user integration in company-driven open sustainability innovation (COSI) by identifying what types of organizational forms, culture, structures, and management styles promote (vs. hinder) the process of user integration.

3.3.1 Work Undertaken

Case examples of user integration in COSI

A long list of 127 potential sustainability innovations has been identified. Case companies reside within the domains of food, housing, energy and mobility. They represent a diverse group of various sizes and different organizational structures: from smaller, highly flexible firms to multinational giants with complex hierarchy and established organizational cultures. The sustainability innovations include incremental, radical and system-level innovations.

Case studies of user integration in COSI

From this list, 18 cases were chosen for in-depth analysis that fit best with the project criteria. The cases come from 12 European countries (Nordics, Central, Eastern and Southern Europe). Case data was collected from multiple perspectives to allow for comprehensive theory development and policy advice on user and stakeholder integration into sustainable innovation models. The data combines interviews with company representatives (e.g. project managers, R&D managers); interviews with integrated end users or with end user “customers” who have experience with that innovation; and other third parties involved in the innovation process (e.g. NGOs, research institutions, municipalities). Additional data was collected from company reports, newspapers, blog writings and online sources. Each case relied on 3-7 semi-structured interviews, with final case reports ranging from 30-50 pages.

Sustainable Lifestyle Online Survey of COSI Customers

On the basis of an online survey with customers (n=579) of COSI products and services, it was assessed whether customer participation in COSI processes and the adoption of COSI products/services induces behavioural changes for the adoption of more sustainable lifestyles.

Systematic comparison of multiple case studies on COSI

A separate analytical report addressing innovation types, user and stakeholder integration methods and organizational enablers of such innovation has been compiled. Nine scientific articles are currently in progress, of which three have been accepted for publication. One of the key observations is that a larger set of stakeholders (above and beyond mere user integration) is needed for most sustainability innovations to have a realistic chance of meeting objectives.

Quantitative study on user integration in COSI

A large-scale study of European firms has been conducted (n=128). Based on a multi-method approach, this study contributes to a better understanding of how firms can co-create sustainable value with customers to achieve superior innovation and sustainability performance. The results indicate that the commitment of the top management team and a firm's absorptive capacity are the driving forces behind successful approaches to co-creation with customers.

Laboratory experiments on leadership types in relation to different innovation phases

Laboratory experiments were undertaken in two countries to explore the influence of manager's leadership style on the participation of end users in online ideas contests. The study is based on 4 experiments involving a total of 429 participants, including students and working adults of different nationalities.

3.3.2 Scientific Results

End User Integration

Surprisingly, our results indicate that companies in the studied domains rarely have in-house expertise on end user integration in innovation development. Rather, they rely on the services of professional innovation/consumer agencies, or alternatively on mediation provided by secondary stakeholders, such as academic institutions, public bodies, or NGOs. These secondary stakeholders tend to have wider experience of working with insights from end users. In addition, companies are often still unconvinced of end user integration benefits. This might be related to the lack of experience and expertise of how to handle the insights from end users. Our findings show that companies might require an external push or motivation to start working with end users, such as public funding calls with explicit focus on end user cooperation. Traditional end user integration methods are still strong, such as focus group interviewing, pilot testing, various types of field trials. Figure 5 below portrays distribution of end user integration methods across innovation stages (ideation, product development, commercialization, and post-launch) in the WP3 case pool.

	(online) focus group discussions; surveys; prototype testing;		
online idea contest; home visits and observation; survey of expectations; personal interviews; weak signals; feedback in stores; lead user workshops;	co-creation workshops; discussions/"echoroom" personal interviews; mock-up testing; consumer diaries; home visits; long-term product testing	prototype testing; focus groups; consumer communication in stores; online ideation for potential service use; end user committee	cooperation with bloggers; engaging mobile applications; workshops/seminars; collecting feedback from customers (online, surveys, in person)
Ideation	Product development	Commercialization	Post-launch

Figure 5 – Distribution of End User Integration Methods

At the same time, new methods enabled by Web 2.0 technology make end user integration more convenient and allow companies to gather insights from larger and more diverse user groups (e.g. online idea competitions). They also enable more balanced discussions (e.g. online focus groups) and facilitate real-time access to consumer data over the long term (e.g. online consumer diaries). End user integration methods may vary in terms of length, but our cases suggest that what really makes a difference is the extent of organizational involvement in the process. It matters whether the company simply outsources user integration activity to a professional agency to get a ready-made summary of results and interpretations, or whether some of the company's management and employees are personally involved and present during the user integration process. Our cases show that extensive organizational involvement with integrated users (and other stakeholders) is essential for more radical innovation, such as system innovations.

In WP3 we found evidence that end users who participated in company-driven sustainability innovation processes show a more environmentally friendly behaviour when compared to non-participants. Our findings suggest that end user integration to sustainability innovation can activate environmental goals among participants, thereby strengthening their environmental self-identity, which, in turn, leads to further environmentally friendly actions and lifestyle choices. The degree of interaction and its timeframe have a notable effect on the activation of environmental identity. The integration of users into companies' open sustainability innovation processes is crucial not only for company success but also for establishing a sustainable lifestyle. Leadership and participative decision-making are identified as enablers of the subsequent absorption of ideas created in idea contests, which contribute to sustainability-oriented innovation in companies.

Stakeholder Collaboration

Although this work started out with a focus on end user integration only, the vital role of other stakeholders in open sustainability innovations was strongly evident in all identified cases. The groups that are typically labelled as "secondary" stakeholders – such as special interest groups, NGOs, grass-root organizations, research institutions, and municipalities – turned out to have important roles in the development of sustainability innovations.

Sustainability innovation calls for novel ideas or capabilities beyond the usual partners

The holistic nature of sustainability issues assumes a wider network of interconnected issues and stakeholder interests, and therefore requires wider collaboration for successful results. Compared to businesses, secondary stakeholders – such as municipalities or NGOs – have citizen well-being and environmental sustainability as their primary concerns. Thanks to this divergent thinking, they are able to expand firms' boundaries in the innovation process. Our findings indicate that groups on the periphery of a company's stakeholder network are often more relevant for sustainability-oriented innovation.

Stakeholders take on a variety of different roles in sustainability-oriented innovation

Based on the analysis of 18 cases, we identified eight stakeholder roles in sustainability-oriented innovation: stimulator, initiator, broker/mediator, concept refiner, legitimator, context enabler and impact extender. These roles demonstrate a deep, highly collaborative form of stakeholder engagement in the innovation process, as opposed to stakeholder engagement focused on (potential) conflict resolution only. Some of these roles, e.g. as legitimators, educators, initiators, and broker/mediators, have been previously identified in the innovation literature.

Our data confirm that these roles are relevant for sustainability-oriented innovation. Public bodies, for instance, often serve as legitimators for sustainability innovations. Academic institutions have the authority and means to educate about sustainability issues. NGOs have the experience and networks to mediate end user integration for companies. The new roles that emerged in our research (stimulator, concept refiner, context enabler and impact extender) are highly relevant for the development and establishment of sustainability-oriented innovations. The stimulator role is essential for public bodies that can inspire more collaborative sustainability innovation with specific funding calls. The concept refiner role often assigned to end users helps to ensure that emerging innovations are user-shaped before entering the market.

Stakeholders can have a highly proactive role in the innovation process

The roles of stimulators, initiators and impact extenders show that sustainability innovations are not purely company-driven. It is possible, for instance, that NGOs approach companies as initiators, with ideas for potential solutions to societal challenges. NGOs also often take on the role of impact extenders to help promote increased use of sustainable products/services, and potentially extend the impacts to other areas of sustainable lifestyles. These proactive roles demonstrate that in the future innovating for sustainability will be a collaborative effort between different partners, shifting the focus away from companies as central innovation actors.

Stakeholder integration strategies behind groundbreaking sustainability innovations

Our findings suggest that there are at least three explicit strategies for stakeholder integration that lead to more sustainable innovation processes and outcomes. The first strategy makes use of very early stakeholder inputs, with strong ties to stakeholders. The second strategy is about collaboration at the late stages of innovation, but with a very limited number of stakeholders (1-3). The last strategy is about beginning collaboration with a broad array of actors, but with the actual product/service being developed by the focal innovator-firm. However, one condition is true for all three strategies: building close ties to integrated stakeholders is essential for developing successful sustainability innovations. The ties are considered strong when multiple members or top management of the focal firm have participated in the collaboration with different types of stakeholders.

3.4 WP4 – User Sustainability Innovation and Entrepreneurship

The objective of WP4 is to analyse user sustainability innovation and entrepreneurship (SIE), shaping the transition towards a green economy and sustainable lifestyles in Europe.

3.4.1 Work Undertaken

Case examples of user SIE in Europe

A long list of 210 sustainable enterprises in Europe has been identified. The sustainable enterprises come from the domains of food, living, energy and mobility, which were identified in SPREAD 2050 and the 2013 FP7 Call as having the highest impact and potential to catalyse sustainable lifestyles and green economy in Europe – and thus were the focus of EU-InnovatE.

Case studies of user SIE in Europe

From the long list, 20 case studies from eight different European countries, including Northern, Eastern, Southern, Western and Central Europe, have been finalized in WP4. The data for the case studies was collected from multiple sources including interviews with the user entrepreneur(s) behind the case companies. Additional data was collected from company reports, newspaper articles, blog writings and other relevant online sources. Each case relied on 2-5 semi-structured interviews, with the final case reports ranging from 20-30 pages. The results of the cases have been summarized in a case-reporting template and provided a basis for the work in WP2, WP5 and WP6.

Sustainable lifestyle online survey of user SIE customers

Through an online survey with the members of three sustainable cooperatives, it was possible to explore and assess whether sustainable enterprises actually influence the sustainability-oriented behaviour and choices of their customers. Data was collected from a total of 930 members of the three cooperatives.

Systematic comparison of multiple case studies on user SIE

A continuous systematic comparison of the multiple case studies has been initiated and the theory of user SIE has been developed and refined in four cross-country research teams. Overall seven scientific articles have been developed and presented at leading international conferences. These articles focus on different aspects of the phenomenon of sustainable entrepreneurship, including: the sustainable entrepreneurship process; founder cognition; founder identity; community entrepreneurship; crowdfunding; as well as the impact of sustainable entrepreneurship.

Quantitative study on user SIE

A large-scale study has been conducted with sustainable entrepreneurs in Europe (n=104). Based on a multi-method approach, the results contribute to a better understanding of how firms can co-create sustainable value with customers to achieve superior innovation and sustainability performance.

Laboratory experiment regarding the influence of financial support schemes on user SIE

A laboratory experiment was conducted to analyse whether salience affects the contribution willingness of funders in crowdfunding projects. The experiment consisted of four different treatments using between subject designs (different participants for treatment and control groups) as well as within subject designs (same group of participants is used in more than one treatment). In total, 244 participants took part in the laboratory experiment.

3.4.2 Scientific Results

Sustainable entrepreneurship as a process

Based on the first subset of case studies, a six-phase model has been developed which describes the process of sustainable entrepreneurship (see figure 6 below). A key finding is that the triple bottom line of ecological, social and economic goals is integrated sequentially, not contiguously. A key activity in the development of a double bottom line solution is the alignment of social or ecological goals with values sought by particular customer groups. The development of a triple bottom line solution takes place successively, not simultaneously, to reduce the complexity of the challenging task. A significant finding is that in the course of the case study collection further triggers were identified as driving recognition of entrepreneurial opportunities in a sustainability context: user problems (Lifefood, Otodojazz, Pohjolan Ekotalo), as well as system changes (Kartoffelkombinat, Micibo, RetEnergie, Somenergia).

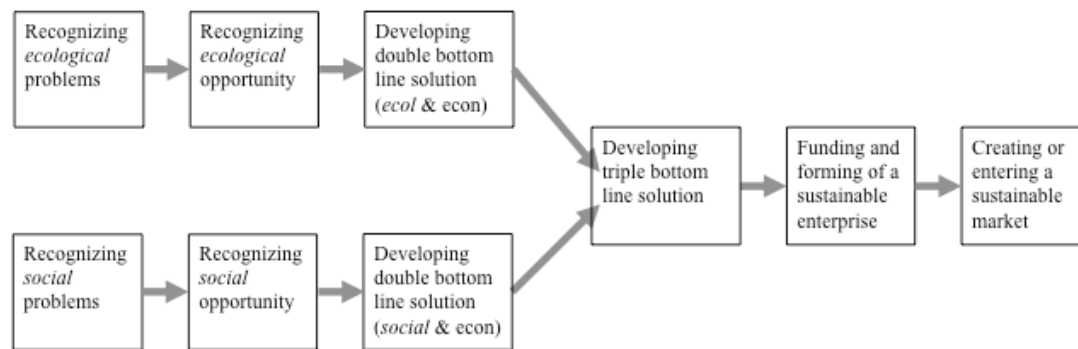


Figure 6 – Sustainable Entrepreneurship Process Model. (Source: Belz FM., Binder J.K.2017. Sustainable Entrepreneurship: A Convergent Process Model, *Business Strategy and the Environment*, 26 (1): 1-17.)

Social and environmental problems as opportunities

An interesting finding relates to the perception of social and ecological problems as opportunities. Accordingly, it was found that potential starting points of the sustainable entrepreneurship process (SEP) are particular social and/ or ecological problems on a local or global scale that prospective sustainable entrepreneurs encounter first-hand in their private or professional lives. Rather than seeing social and environmental problems as a negative threat, the sustainable entrepreneurs in our sample perceived these as a motivation to do things better. The finding has been further investigated in a verbal protocol experiment, showing that reframing problems into opportunities is a relevant cognitive feat of sustainable entrepreneurs.

The central role of founder's identity

Furthermore, the importance of a founder's identity in developing triple bottom line solutions became apparent. A key finding is that founders not only categorize themselves in terms of who they are, but also in terms of who they are *not*, which has an important influence on their entrepreneurial activity. In addition, we find that founders' social identities largely affected their interpretation of social structure and in turn their sustainable entrepreneurship process. Exploring the founders' social identities therefore provided us with an explanation of why differences in sustainable value creation processes exist and how this affected opportunity recognition, development, and exploitation.

Collective users as community entrepreneurs

An unexpected and interesting finding was that collective action of users sometimes resulted in a form of community entrepreneurship. Community entrepreneurship reflects a form of entrepreneurship, which focuses on local problems and aims to contribute to improving the living conditions of a specific group of people. Community members collectively establish, own, and manage businesses in pursuit of a common good. An interesting example is SomEnergia, a cooperative started by a group of professors and students at the University of Girona in Spain who were looking for a sustainable alternative for energy consumption that challenged the current energy industry. They see themselves as a social movement and believe they do not have to wait for the governments to make changes as they can initiate the changes for themselves. A key activity is to sustain the emotional loyalty of community members throughout the entrepreneurial process.

New legal forms and funding possibilities

Sustainable enterprises pursuing a triple bottom line approach can draw on a variety of potential sources of seed-capital, including family, friends, bank loans, crowdfunding and public funding. Sustainable enterprises create new sustainable niches or enter established sustainable niches and segments in the higher end of the market. As the results of the laboratory experiment have shown, using a third-party label for sustainable crowdfunding projects increases funder's willingness to invest in a project. In addition to novel funding sources, new legal forms have been found to be a relevant to provide a institutional framework for sustainable entrepreneurs. Particularly noteworthy is the legal form of a benefit-corporation, which is currently being implemented in different countries around the world, reflecting the sustainable ventures' hybridity and legitimizing their entrepreneurial endeavour.

Transformative power of sustainable opportunities

A change in current unsustainable structures is a necessity for achieving the transition towards sustainable lifestyles. Yet, we know very little about the processes entrepreneurs employ to create opportunities that actually change current unsustainable structures. Our results provide evidence for sustainable entrepreneurs who 1) *apply common scripts*, thereby acting within pre-existing templates and structure; 2) *recombine common scripts*, which may result in script changes and the emergence of new ways of doing business; and 3) *create uncommon scripts*, the most complex and transformative value creation process intending to bring about (radical) changes in existing systems. Thus, a relevant finding is that not all sustainable new ventures have the potential to bring about radical structural changes and that the reason why some engage in more complex and riskier value creation processes can be found in their social identity (see also point 3 - the central role of founder's identity).

3.5 WP5 – Measuring Trends to 2050

The primary aim of WP5 was to measure the impact of trends in sustainable lifestyles in Europe to the year 2050, with a focus on how behaviour (and by extension behaviour change) at the user-innovator level affects and inspires change in the overall system.

3.5.1 Work Undertaken

Measurement markers review

The report on relevant forecast models and future measurements in relation to sustainable lifestyles has been completed, and a full journal publication forthcoming. Two additional papers were submitted and accepted by international journals, and published in August and September 2015 respectively.

Mid-term project synthesis

A mid-term report focuses on synthesizing the results found so far in the EU-InnovatE research project on sustainable lifestyles in Europe and their potential for change due to user innovators in 2030/2050, was developed. This report was based on the input from WP1 –WP4 leaders. The report employed the multi-level perspective (MLP) framework for the synthesis, thereby enhancing our collective understanding of how different WP research outputs were advancing the knowledge around transitions towards 2050 scenarios.

Future scenarios

Within the framework of Sustainable Futures Scenarios, we have sought to evaluate the WP2 simulation models by means of bringing together experts who were asked to assess the central aspects of the simulation. In a second step this feedback was leveraged to improve the WP5 model, its potential outcomes and its use by discussing its potential applicability across different disciplines and contexts.

Simulation models and resultant impacts at different points

A computational model has been created (Eu-InnovatE simulation model). The model experiments, and simulates results in terms of impact for a short term (5 years up to 2020), and the long (35 years up to 2050). The model attempts to answer the following research problem: can user innovation into domestic consumption behaviours achieve sustainable lifestyles by 2050?

User as system changer

A report was developed around the behaviour of the user entrepreneur as a key potential 'system changer' in future scenarios.

Expert Evaluation

The results of the model were then evaluated with an expert panel. The purpose of the expert meeting was to evaluate simulation models carried out within the EU-Innovate project by means of bringing together key aspects of the content of the objects of the simulation.

3.5.2 Scientific Results

Measurement markers review

A proposed strategy for forecasting the future of user sustainable innovation and entrepreneurship in the domains of energy, mobility, food and living has been developed. It is based on a combination of several elements, which overall emphasizes strategies for measurement and identification of appropriate markers. The first component entails a combination of forecasting models. While the flexibility of agent-based models for explaining interactions within systems is convenient, it was proposed to combine this with simple time-series based models for series of data from which forecasts are available and which have a low level of uncertainty (e.g. increase in temperatures). The inclusion of the Delphi method was also suggested as helpful in providing quantifiable values for aggregated social behaviour.

Second, the combination of purely environmental data sources – such as the International Panel on Climate Change with selected variables from the previous work of the Bossel report – was deemed adequate for setting the limits of the contextual factors of the model. These sources can also be combined with contextual data on political and institutional systems, with a special emphasis on facility for policy change and overall governance.

Mid term project synthesis

An attempt was made to review the key results reported thus far by the various Work Packages and connect them by employing an original framework that emerged during the September 2015 meeting of the partners in Barcelona. The synthesized findings served as a basis for the sustainable futures detailed design to 2050 via the development of dynamic models. The multi-level perspective has been used as a framework for synthesizing the different work packages has proven to be very instrumental. Results suggest that more attention should be put on sociological, institutional, economical and managerial aspects of transitions to sustainable lifestyles and less on technology itself.

Challenges, which have emerged through the synthesis:

- Forecasting requires a multi-disciplinary approach, which combines different methods and theories. Further challenges therefore relate to data gathering and measurement.
- Future predictions are a paradox of practical policy recommendations versus futures based in different rules and values from today.
- The applied case study approach is context specific, which might impede generalizations

Detailed future scenarios

Within the framework of Sustainable Futures, detail design and simulation, one conclusion drawn was that sustainability is a dynamic state of continual transition that is best described by the social conditions in society. Accordingly, it was concluded that sustainable lifestyles are interdependent, nested systems within a sustainable society, and are dynamic by extension. It was also concluded that change takes place at an uneven pace along scenario pathways to 2050, and that achieving and sustaining dramatic resource efficiencies may transform capitalism.

Simulation models and resultant impacts at different points

Sustainability is a key consideration for society and the future, and the consequences of our lifestyle choices and behaviours are critical in terms of avoidable consumption and emissions. Policies and societal change, which supports and encourages the adoption of sustainable user innovation, can lead to beneficial system outcomes. By measuring the amount of carbon dioxide in the atmosphere and the amount of resources being consumed before and after innovation, with or without policy (or societal) change, we can prioritize those innovations which have the greatest positive outcomes and impact (figure 7).

Domain	Primary innovation	Domain	Primary innovation
Living	change type improve construction reduce space reduce household waste	Food	reduce consumption change source preparation reduce waste
Mobility	reduce km change mode change fuel	Energy	change source reduce consumption

Figure 7 – User innovation types (empirical study based)

Considering the diversity and complexity of the study, a computational model has been

created (EU-InnovatE simulation model). The model has been designed to show household consumption using sustainable performance metrics of carbon emissions and kilograms consumption. The key to the model design has been to recognize the integrated nature of households. The model is only a simplification of reality; nevertheless it is very powerful because it shows total consumption from the behaviours of integrated domains in each household, how each contributes to carbon dioxide emissions and resource consumption. This is important if we want to know how innovation can lead or support transition to sustainable lifestyles. We may therefore conclude that:

- Augmented scenarios deliver target resource consumption.
- Transition to sustainable lifestyles though sustainable user innovation requires innovation in every domain.
- Policy intervention can have negative or inconsequential impact depending on the scenario.

Users as “system changers”

The in-depth analysis of the behaviour of the user entrepreneur showed that user entrepreneurs indeed play a key role in changing system. Multiple enabling, supporting and reinforcing roles were identified. In addition the results show that policymaking is increasingly “behaviourally informed” through information, self-regulation and education.

Conclusions from expert evaluation

The expert evaluation was a valuable way to improve the model, its potential outcomes and its use by discussing how to use it in the different disciplines. The expert panel was embedded in the activity named “simulation evaluation and re-design”, which was intended to “present the results of our models to relevant experts in the field, returning to those parties engaged in [the measurement markers review] as well as other experts in the area.” The focus on user-entrepreneur behaviour as a system changer was validated by re-visiting a selection of cases in (WP3 and WP4)”. From this, we were able to conclude that:

- The heterogeneity of agents implemented in the model is considered to be a strength, as is the online availability of the model.
- Innovation adoption rate deals with a wide variety of factors.

3.6 WP6 – Policies for User Integration, Innovation and Entrepreneurship

WP6 aims at assessing current policies and instruments on communal, regional, national and on EU level, enhancing sustainable lifestyles with a special emphasis on user integration, innovation and entrepreneurship.

3.6.1 Work Undertaken

State-of-the-art: Systematic literature review

Utilizing a systematic literature review method, we scoped the available peer-reviewed literature on the field of sustainable user innovation and user entrepreneurship. The overall goal was to create a framework for understanding end user-driven sustainable innovation and the potential policy barriers and enablers of this type of innovation process. The review has since been published in the *Journal of Cleaner Production*.

Policy innovation workshops

CBS in collaboration with our partners organized two physical Policy Innovation Workshops in June 2015 and February 2016 with the expressed goal of creating systematic dialogue between science, policy, and users. The concept of the workshops was grounded in the notion of co-producing policy through the systematic engagement of sustainable user innovators, entrepreneurs, researchers and finally policy-makers. We had 22 participants for the June 2015 workshop and 27 participants for the February 2016 equivalent.

Reality check

Having systematically explored the role of individual citizens (or end-users) in the sustainable innovation process, and having identified how this frequently ignored actor within innovation processes could be supported policy-wise, we subsequently tested our insights by conducting 25 in-depth interviews with European policy-makers.

Laboratory experiment

A laboratory experiment (n=204) was conducted to analyse the effects of extra payments on the intrinsic motivation of funders and a possible crowding-out effect within a crowdfunding context. We found no crowding out when introducing an external financial support scheme.

Online experiment

An online experiment (N=994) was conducted in order to explore the phenomenon of crowdfunding, and specifically to examine the causation between (un)sustainability framed campaign texts and individual investment behavior. The aim was to understand when and if individuals invest in sustainability-oriented crowdfunding campaigns.

Online crowdsourcing event: “The Sustainable Innovation Exchange”

A one day, text-based, online crowdsourcing event was hosted jointly by Cranfield University and a professional research firm (GlobeScan) with the purpose of crowdsourcing ideas for potential policy innovations to support sustainable entrepreneurship. It engaged a diverse range of interested individuals, including sustainable entrepreneurs, academics, investors and policy-makers. 150 participants from 24 countries participated online, supported by a physical hub in the UK which brought together the conference organizers, technical support, moderators and some guest contributors. A total of 1,696 unique comments were posted during six hour long discussions. These were downloaded from the hosting website, analysed, and then developed into a policy framework which was subsequently shared with participants at an EU Policy Roundtable and at the Final Conference (see WP8).

3.6.2 Scientific Results

Based on the work undertaken WP 6 currently has a number of published, in review and work-in-progress papers that highlight our scientific contribution. The abstract of these works are included below.

Sustainable user innovation from a policy perspective

Sustainable innovation is typically viewed through the lens of the producer innovator, whereas end-users (or consumers) are perceived to play only a peripheral role in the development of sustainable products and services. A growing literature stream, however, sharply departs from this view by suggesting that end-users often play a critical role with regard to sustainable innovation. The findings of our study reveal that the literature on end-user innovation within sustainability is both diverse and compartmentalized. Hence, policy mechanisms designed to support this type of innovation process need to be tailored to the independent or facilitated framework in which the end-user resides and to take into account how each framework is necessitated by a different actor logic and motivation, resulting in the

pursuit of different innovation types. It is concluded that the literature focusing on independent end-user innovation typically highlights policy aimed at enabling end-users with the necessary skills and resources to innovate, whereas literature focusing on facilitated end-user innovation typically emphasizes creating platforms that enable the effective introduction of end-user knowledge into an already existing framework.

A capability-based framework for stakeholder engagement in environmental innovation

Innovation for environmental sustainability requires firms to engage with external stakeholders to access expertise and ideas, address complex problems, and gain social legitimacy. In this open innovation context, stakeholder engagement is construed as a dynamic capability that can harness differences between external stakeholders to augment their respective resource bases. An integrative systematic review of evidence from 93 academic papers finds that engaging stakeholders in environmental innovation requires three levels of capabilities: specific operational capabilities; complex first-order dynamic capabilities to manage the engagement (engagement management capabilities); and second-order dynamic capabilities to allow organizations to co-create value (value framing), as well as to learn from their engagement (systematized learning). These findings enhance understanding of how firms can effectively incorporate stakeholder perspectives for environmental innovation, and provide an organizing framework for further research into open innovation and co-creation more broadly. Wider contributions to the dynamic capabilities literature are to 1) offer a departure point for further research into the relationship between first-order and second-order dynamic capabilities, 2) suggest how distinct institutional logics can explain how dynamic capabilities develop, 3) build on evidence that inter-institutional learning is contingent on not only the similarity but also the differences between organizational value frames, and 4) suggest that operating capabilities impact on the effectiveness of dynamic capabilities, rather than only the other way around, as is usually assumed.

Crowdfunding through a partial organization lens: The co-dependent organization

Crowdfunding (CF) has become a popular alternative source of finance for a variety of for- and non-profit activities from small local artistic projects to large ventures seeking millions of dollars in capital. Utilizing the literature on complete and partial organization the paper proposes a more nuanced conception of what CF is as compared to the current static approach. Encapsulating the process as a fluid and co-dependent interaction between various organization types, where complete and partial organisations do not emerge as separate entities each filling their own presupposed role, but do so co-dependently, which consequently allow for a fluid, but also entangled organizational structure. Crowdfunding is therefore conceived of as a ‘co-dependent organization’ where the central organizing agent (the platforms) reliance on external actors (founder campaigns and crowdfunders) has become so embedded that you can no organizationally discern them as separate. Second, that in creating this co-dependent organization the organizational structure of the process is maintained by different actors exerting degrees of organizing depending on agent in focus. Finally the paper seeks to introduce the notion that organizations can draw upon the organizing power of the crowd and rely on a large, diverse and shifting group of individuals to execute core organizational decisions.

Crowdfunding and institutional change

The emergence of crowdfunding within the field of seed funding and venture capital (SF&VC) has been characterized as a disruptive development that has challenged the existing logics within the field; resulting in an argued ‘democratization’ of SF&VC brought on by the ability of entrepreneurs to source funding directly from the “crowd”. Given this proposed

democratization and building upon the institutional change literature, the paper seeks to explore how the finances derived from crowdfunding have been distributed and evolved longitudinally. Observing that while we may conceive of “the crowd” as fluid and diverse there still exist institutionalizing pressures in the form of agglomeration and a Matthew-like Effect of professionalization that results in increasing resource clustering around certain individuals and geographical regions. Therefore while the bulk of recipients of crowdfunding remain newcomers there are signs that a core of well-positioned actors could garner increasing returns over time, challenging its argued democratizing capacity.

Policy for sustainable entrepreneurship: A crowdsourced framework

Sustainable entrepreneurship has the potential to play a significant role in addressing societal and environmental challenges. However, sustainability and entrepreneurship have hitherto been addressed through separate policy regimes, and it is not clear how policymakers can encourage sustainable entrepreneurship specifically. The authors develop a policy framework for sustainable entrepreneurship, using an open innovation approach with policymakers, business executives, academics, entrepreneurs and other relevant actors, including an online crowdsourcing event with 150 participants. The framework incorporates five policy domains: creating awareness and skills; building networks; funding and investing; measuring impact and performance; and innovating government. The article proposes a modified version of the multi-level perspective (MLP) on how socio-technical transitions occur, since the findings suggest that policy can catalyse the facilitation and aggregation of innovations coming from the niche level, thereby evolving the socio-technical regime, in addition to the role of policy described in earlier work in stabilising the socio-technical regime. Contributions to entrepreneurship policy literature include the policy domain of measuring impact and performance, as appropriate success measures are non-trivial in a triple bottom line environment, and the potential for open policy innovation in entrepreneurship policy. Contributions to sustainability policy literature include the requirements for support mechanisms and capacity building to empower individuals to contribute as innovators and entrepreneurs and not just consumers. The sustainable entrepreneurship framework can be applied by policymakers to develop context-specific policies: this is illustrated with a worked example of EU policy recommendations.

Crowdfunding for sustainability

Crowdfunding (CF) has become a popular alternative source of finance for a variety of for- and non-profit ventures and projects. By enabling small incremental investments, typically through intermediary platforms like Indiegogo, CF increasingly allows non-professional investors to directly support their preferred project/venture. This development has been hailed by some as a form of finance that could significantly enable more sustainable innovation, contending that crowdfunders are driven by a different investment logic as compared to professional investors that focuses on the projects’ core values and legitimacy. Using a novel online experimental design that mimics existing CF platforms, the paper proposes to explore how the respective value frames influence investment behaviour. The paper finds that both altruistic and biospheric values are strongly associated with increased levels of investments, while egocentric value frame have no significant affects. Strong moderators of these finding include the individuals own stated values and their respective evaluation of the given product. Supporting either therefore requires a varied policy approach given these inherent differences (figure 8).

	Independent Sustainable End-User Innovation	Facilitated Sustainable End-User Innovation
Framework	Individual and social-needs framework.	Market-driven framework.
Drivers	Personal projects based on interests, passions and idealism. Typically facilitated by individuals or small groups.	Typically firm, government or university driven projects. Typically facilitated by one or more institution(s).
Solutions	Localised and context specific solutions to larger issues. Dominance of system innovation.	Generalisable solutions to larger issues, built in part on end-user knowledge. Dominance of incremental innovation.
Resources	Family and friends, grant funding, voluntary input, crowd sourced competences via e.g. internet forums. Some commercial resources if successful.	Income from commercial viability of the given product or service. Larger government and university grants. Small SMEs can also seek crowd-funding

Figure 8 - Frameworks for independent and facilitated SEI (Source: Nielsen, K.R., Reisch, L.A. & Thøgersen, J., 2014. *Users, Innovation and Sustainability: The role of end-users and policy makers in sustainable innovation, Copenhagen.*)

From an independent sustainable end-user innovation (SEI) perspective, especially the utilisation of awards, competitions, DIY/self-building courses and groups represent simple and practical policy tools for supporting independent SEI. The proposed measures have the potential to increase end-user competences, facilitate intergroup collaboration and learning, and make sustainable innovation doable and enjoyable. Supporting facilitated SEI as opposed to independent SEI requires different types of policy interventions. Two methods that seem most favorable for encouraging end-user integration into facilitated sustainable innovation process is the lead user method and crowdsourcing (-funding). Lead user method seeks to identify particular active end-users, via e.g. online forums, and incorporating them into specific innovation processes. While crowdsourcing and -funding seeks to utilize the connectivity of the internet to draw upon either the aggregated power of the crowd or “hidden” experts.

Independent and facilitated innovation processes are very different in their aims and motivations – an observation that is also relevant when recounting potential policy options. Specifically, policy options to support independent SEI appear to be primarily aimed at enabling end-users with the necessary skills and resources to innovate. Promising approaches include tailored DIY workshops, resources, networks and knowledge access. While policies aimed at facilitated SEI conversely appear to be primarily focused on creating platforms that enable the effective introduction of end-user knowledge into an already existing framework. This is done, for example, through the lead user method, crowdsourcing, open source and sustainable living labs.

3.7 WP7 – Synthesis from the Multi-Level-Perspective

The central objective for WP7 is to develop and identify new insights into the future role of users in influencing the transition of socio-technical systems towards sustainable lifestyles. In addition, WP7 strives to translate these insights into concrete recommendations for 1) innovators and entrepreneurs; 2) managers and companies; and 3) policy-makers.

3.7.1 Work Undertaken

Summary of research insights

To consolidate the research insights from work packages 1-6 an executive summary from all work package leaders was drafted and distributed among all workshop participants. Based on these insights key propositions for the thought leadership workshop were derived.

Thought leadership workshop

The two-day workshop with 20 researchers from different work packages took place in Brussels, March 21-22, 2016. The workshop provided a unique opportunity for sharing the latest research findings and to collaboratively synthesize the insights from a Multi-Level Perspective.

Synthesis of results from a Multi-Level-Perspective

Based on the results from the thought leadership workshop, as well as a thorough review of all deliverables, the role and significance of users in achieving changes in socio-technical systems was evaluated. A particular focus was put on identifying key messages for the different key stakeholder groups of EU-InnovatE. The results were discussed among the members of the EU-InnovatE consortium in a second workshop, which took place in Weihenstephan, June 6-7, 2016.

Learning from synthesis: Conceptual framework for socio-technical systems transition towards sustainable lifestyles from a user perspective

Taking the results from the synthesis one step further, a conceptual framework was established. This framework builds upon the Multi-Level-Perspective, integrating and allocating the different user types.

Identification of future research needs / directions

In collaboration with the synthesis committee, a future research agenda was developed, highlighting the potential for novel scientific inquiries.

3.7.2 Scientific Results

The power of people

The main insight from the EU-InnovatE project is that people have the power to change established, dominant systems. Key to the explanation of change is the interaction between three nested levels that constitute socio-technical systems over time: niches at the micro level, socio-technical regimes at the meso level, and a socio-technical landscape at the macro level. The transition towards sustainability can only be achieved when combining bottom up and top down approaches. While the former is needed to create radical innovations on a niche level, the latter is required to promote, distribute, and establish such innovations on a regime level. This compounded impact of small sustainable enterprises and incumbents that engage in corporate sustainable activities has the potential to promote the transition towards a sustainable system.

The active roles of users

On basis of the synthesis of the work conducted in WP1-6, the most important finding is that users have a significant role to play in realizing sustainable lifestyle scenarios through to 2050. The results of EU-Innovate provide compelling evidence for the increasingly active roles of users, either by taking part in sustainable innovation processes of companies (user-integrated innovation) or by starting their own ventures (sustainable entrepreneurship).A

surprising observation was made regarding the specific role of users, which is much more diverse than expected (see figure 9 below). Accordingly, the multiplicity of user roles – as producers, legitimators, intermediaries, citizens, and consumers – is integral to the entire transition process (albeit with varying prevalence in different phases of the process).

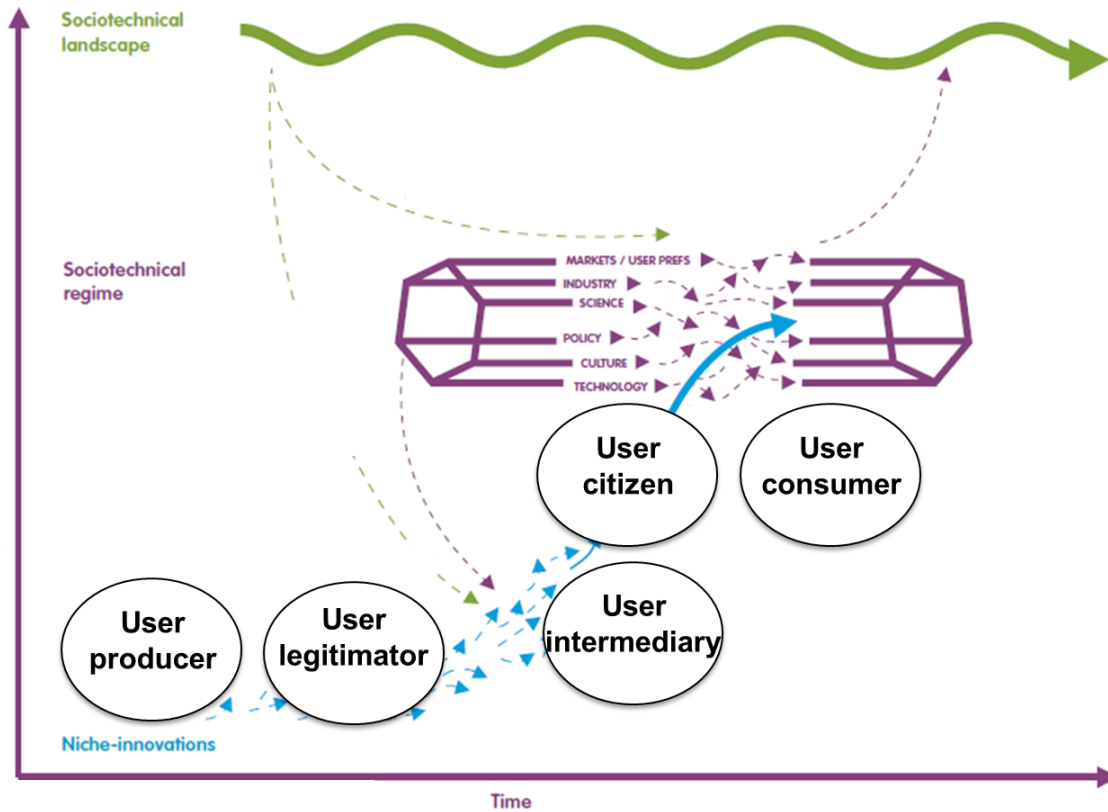


Figure 9 – Model of WP1(Based on Schot et al. 2016; Schot & Kanger 2016)

Reflecting the project’s aim to explore the innovative, creative, and entrepreneurial role of users, a particular focus was put on the user producer, which EU-InnovatE finds to be a steadily increasing group of sustainable entrepreneurs who are driven by their values, norms, and beliefs in bringing about change. In addition, we find first evidence of user consumers taking over active roles in the sustainable innovation processes of companies. The results therefore suggest that companies and policy makers put a stronger emphasis on enabling users in exploiting their innovative and entrepreneurial potential to foster sustainable transitions.

4 POTENTIAL IMPACT AND MAIN DISSEMINATION ACTIVITIES

4.1 Impact of WP1

At the beginning of the project, WP1 laid the conceptual foundations for the other work-packages. Contributing to a clearer understanding of the central theme, WP1 delivered a very high amount of data and examples for the heterogeneity of European engagements. Furthermore the workshops served as an excellent opportunity to transport the project and its scope to a broader scientific and practical community around Europe.

In addition findings in WP1 contribute to the emerging stream of research investigating the relationship between lifestyles and sustainable consumption and the potential of lifestyle

changes to drive the transition towards low-carbon futures. By developing domain-specific lifestyle instruments with a strong theoretical foundation for the three consumption areas responsible for most of the environmental impacts of consumption (i.e., food, transport and housing), it offers new opportunities to targeting promotion and other interventions to specific consumer groups and consumption domains, for higher potential effectiveness.

One of WP1’s primary outputs was the production of a model (see Figure 10 below) that maps the relationship between citizens (as innovators) and Politics, NGOs, Business, Consumers and Academics in achieving impact results on sustainable lifestyles (and also within the dimension of the newly launched United Nations Sustainable Development Goals).

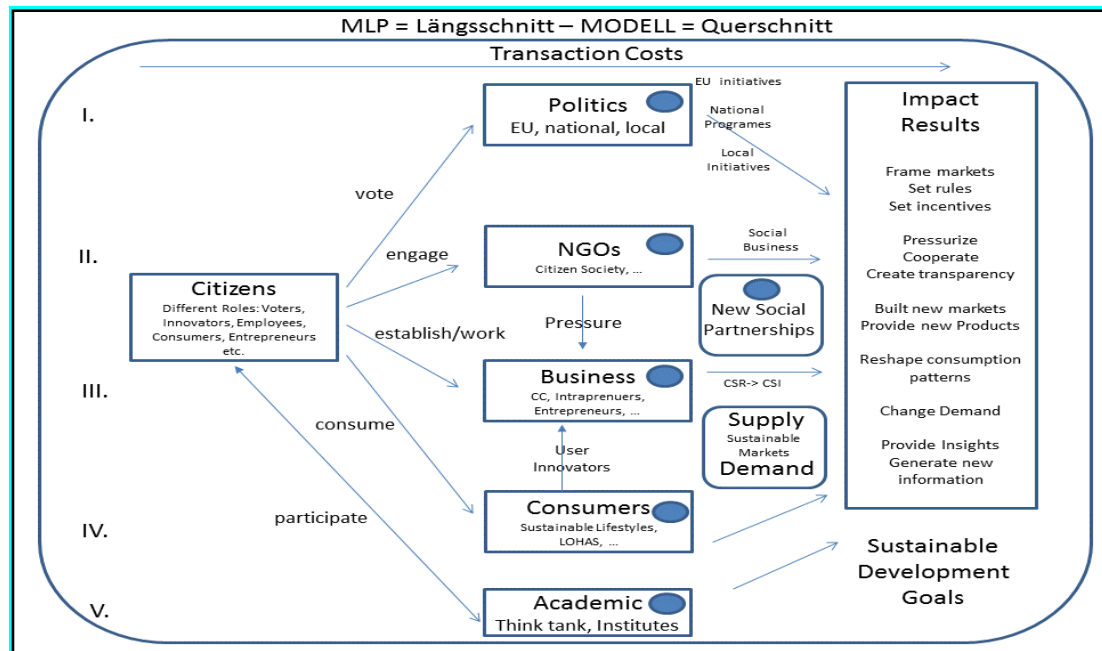


Figure 10 – Model of WP1

4.2 Impact of WP2

The results of WP2 hold important implications for many different audiences; not only entrepreneurs, innovators, citizens and communities, but also for large and small enterprises, civil society organisations, policy-makers, funders and foundations.

A common thread through the WP2 work has been the need to develop the ability to think and act more systemically in order to support the desired transitions. WP2 has hosted and designed a whole series of events and workshops, involving more than 250 people across the course of the project, which have engaged people with these future scenarios in a manner that is inherently more systemic and holistic in outlook.

In addition, via the FutureShapers network it has brought visibility to an emerging field of change makers, approximately 300 people in all – currently unrecognized and under-supported by the existing system and innovation support available. This is a growing community of people committed to creating sustainable change that needs to continue to be nurtured and involved in the transition to a sustainable Europe.

One of the tools that has been developed is the EU-InnovatE Scenarios Exploration Game (derived from the EU Commission’s Joint Research Centre prototype). We plan to use this game as a vehicle to engage a variety of different practitioners and organisations with the materials and perspectives developed through the course of the project. As we reach the end of the project, we have also created a permanent online home to share the

WP2 materials and to be a place to continue the dialogue, interaction and activity that this project has inspired: <https://www.thefuturescentre.org/citizens-bringing-future-forward>. Forum for the Future, as practitioner partners, will also be exploring ways to include the insights and materials from this project into its work with organisations and business via our network of 120 global partners, and to influence our own future strategy and direction.

4.3 Impact of WP3

The results of WP3 hold important implications for companies, policy makers, educators, NGOs and end users. With such different audiences in mind, the deliverables of WP3 are represented by scientific reports, scientific journal articles, a short film (7 min), practitioner-oriented guidelines for collaborative sustainability innovation, and teaching cases (forthcoming).

WP3 findings advance the stakeholder-oriented domain of management research, and enrich the open innovation literature with perspectives from sustainability-oriented innovations. The results emphasize the importance of collaborative perspectives in successful innovation for sustainability, and moreover suggest a variety of roles that different actors could take on in the process.

The stakeholder roles identified in WP3 are of high potential value to policy makers, NGOs and other types of stakeholders interested in the advancement of sustainability. These roles are a concrete representation of how different organizations could participate in innovation for sustainability, and for example, how public bodies could stimulate and promote such activities among companies in different domains. The roles are described for practitioners in the brief set of guidelines available at <http://eu-innovate.com/business/>. A more elaborate version of guidelines is now being prepared into a “Cookbook for Collaborative Innovation” with the help of a designer. This “cookbook” is especially directed at practitioners because it offers “recipes”/ successful strategies for sustainability innovation.

Business practitioners are further able to benefit from our research insights (into end user integration), as well as re-consider exactly how stakeholders could be engaged in the innovation process for enhanced sustainability outcomes. For these purposes, the scientific findings have been re-formulated into a set of practitioner-oriented guidelines for collaborative sustainability innovation. In addition, a short film has been made from the interviews with companies that engage in collaborative sustainability innovation. The video is available on the EU-Innovate website (www.eu-innovate.com), accessible and relevant to a wide variety of audiences.

The long case studies from WP3 have been developed into three-page-long case “snapshots” that are available online on <http://eu-innovate.com/cases-2/>. These public snapshot cases have been approved with case companies, and are available for teaching purposes. Development of narrative-based teaching cases using the services of a professional writer is under way. WP3 case data is already being utilized in the teaching of “Sustainable Business & Consumption” in a Master’s Degree of Creative Sustainability at Aalto University School of Business.

4.4 Impact of WP4

The results of WP4 hold important implications for (prospective) entrepreneurs, policy-makers and educators. For (prospective) entrepreneurs, the results highlight the possibilities of creating ventures that go beyond a profit focus to achieve multiple value gains simultaneously. The recommendations outlined in the respective deliverables and scientific publications aim to provide entrepreneurs with clear indicators of how sustainable new

ventures can be founded, managed, and sustained. To further increase the impact of the scientific results, the findings are disseminated through a blog (<https://euinnovateblog.com>). In addition, EU-InnovatE was a co-sponsor of the Sustainable Entrepreneurship Award (in short SEA; <http://se-award.org>) for the past two years. The impact of the award can be seen as threefold: 1) visibility and publicity; 2) legitimizing sustainable ventures; 3) access to funding.

For policy makers, our results highlight relevant implications for novel support schemes for sustainable entrepreneurs, for instance by providing entrepreneurial ecosystems, financial and administrative support, and by incentivizing triple bottom line innovations. The full list of recommendations, including a prioritization of the different measures can be found in WP6.

For educators, the findings can be used to develop sustainable entrepreneurship courses. For instance, TUM is currently developing two courses based on the results of WP4: (1) Sustainable Entrepreneurship in Theory, and (2) Sustainable Entrepreneurship in Practice. The syllabi will be open source, so that educators worldwide can apply and adapt the course design. Ultimately, the aim is to collaboratively foster and develop sustainable entrepreneurship on an academic level as an intellectual and career inspiration to current and future students.

4.5 Impact of WP5

The results of the EU-InnovatE project shows that there is room for transitioning to more sustainable systems and that the EU can take a central role in accelerating this movement.

In terms of impact directly connected to WP5, it might be said that the simulation models in each of the four areas of sustainability: food, living, mobility and energy, show that more attention should be put on sociological, institutional, economical and managerial aspects of the transitions to sustainable lifestyles and less on technology itself.

More pointedly, the EU Innovate model developed in WP5 provides a way for sustainable entrepreneurs, user innovators, agencies or organizations, to assess the impact of their innovation upon sustainability targets of carbon emissions' reduction and upon overall household consumption reduction. The model is available on-line for free and returns results in real-time indicating the potential impact of the innovation. The results vary according to both the characteristics of the population being considered (the scenario) and the degree of adoption (diffusion of the innovation). Data on population characteristics are generally readily available at national level but, if data is available, any scale of scenario can be used: street, city, region, bloc, all EU countries, the world! Actual adoption in a population is determined by the attractiveness of the innovation, policy incentives, social fashions, etc. and the model shows the potential impact of the innovation over time as the innovation is diffused into the population.

The power of the agent based model lies in its ability to: create a diverse virtual (simulated) population which recognizes the real variety of households; and to recognize feedback at the agent level which arises non-linearly when innovations are adopted. It represents reality more strongly than other methods of innovation assessment, providing a robust assessment of sustainability impact.

4.6 Impact of WP6

The results of WP6 hold important implications for especially two actors – sustainable entrepreneurs and policy makers. Firstly, we identify that end-users do indeed play a significant role within sustainability-oriented innovation, as active players within a wide

range of fields and in various capacities. Having identified the various roles that end-users can play within sustainability-oriented innovation, we have identified a wide range of policy instruments to support these emergent actors – both by conducting a literature review of currently proposed policies, but also through crowdsourcing ideas and recommendations from 150 expert stakeholders. We have also identified a range of policy domains that can hold the greatest potential to support sustainable entrepreneurship (see figure 11 below).

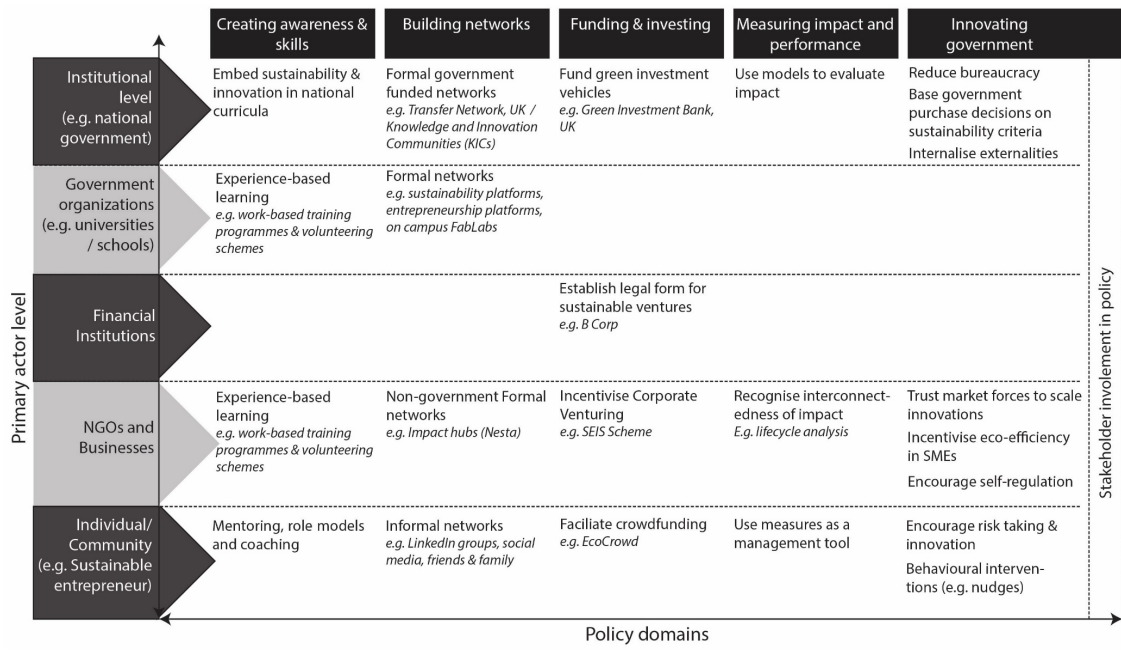


Figure 11 – Selected example policies and the levels at which they are enacted

These policy innovation ideas are especially timely and relevant, as there is currently an identifiable lack of coherent policy within the field. (This has been highlighted through the systematic literature review, but also underlined in the policy-maker interviews.) Our recommendations and insights have been outlined in our respective deliverables and scientific publications where we focused on instruments and tools that can be employed to support end-user driven sustainable innovation. To further increase the impact of the scientific results, the findings are disseminated through two blogs (<https://euinnovateblog.com> & <http://www.bos-cbscsr.dk/>).

4.7 Impact of WP7

The synthesis of the results provides support for the value of the Multi-Level perspective to support long-term policy planning, targets and frameworks for sustainable entrepreneurship and innovations. The impact of the synthesis of results can be regarded as an accumulation of the potential impacts listed for WP 1-6. In addition, WP7 provides stakeholder specific implications for five key target groups: researchers, end-users, companies, policy-makers, public. The detailed impacts and dissemination activities are listed in section 6. “Use and Dissemination of Foreground” of this report.

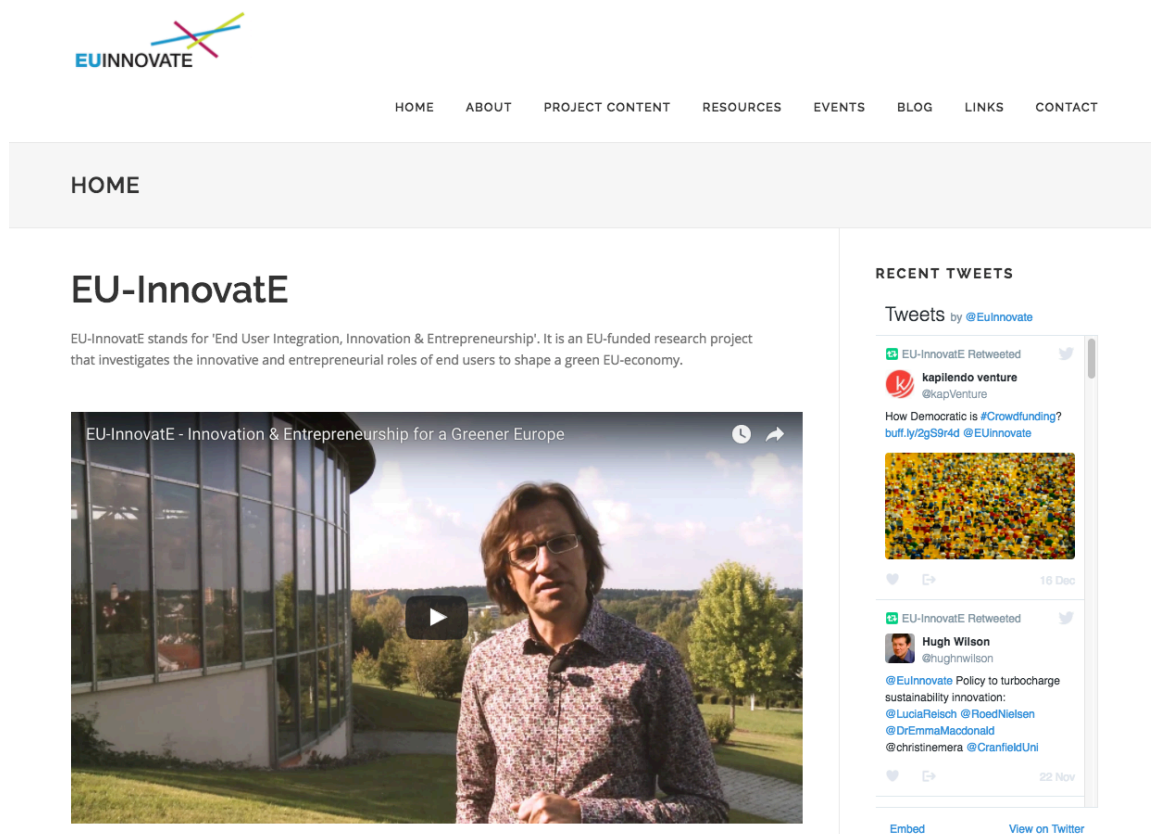
4.8. Dissemination Activities, and Exploitation of Results

WP8 reflects the EU-InnovatE ambition to create lasting impact on science and society through its research. The objectives of WP8 have been twofold during the project: (1) to communicate the project results in high-quality, relevant, accessible formats to the widest possible audience in Europe and beyond, and (2) to facilitate knowledge exchange and dialogue between and among key stakeholder groups.

Since the beginning of the initiative, the project has carried a clear identity and brand, which has also been reflected in the individual presentations and supporting resources used by consortium partners as part of the wider dissemination goals. A summary of the key tools and materials developed during the project's lifespan is summarized below, building on the original Description of Work. In parallel, a Post-Project Dissemination Plan (D8.12) has been created by ABIS as WP leader, which will be shared with all project partners for exploitation in 2017.

4.8.1 Online Platforms

Website: The [project website](#) was designed and launched in Q1 2014 to communicate the projects framework, research approach and to distribute the initial results to the widest possible audience along the life cycle of the project. In 2016, ABIS as WP8 leader undertook a redesign of the entire website via an open access software source, primarily to increase the user-friendliness of the site, but also to avoid incurring significant additional development costs with the original designers. The new website now includes a far more comprehensive classification and presentation of all the project outputs. The domain name and license have been secured by ABIS through to mid 2018, which will ensure that the EU-InnovatE project and its resources will remain publicly available well beyond the end of the GA.



EU-INNOVATE

HOME ABOUT PROJECT CONTENT RESOURCES EVENTS BLOG LINKS CONTACT

HOME

EU-InnovatE

EU-InnovatE stands for 'End User Integration, Innovation & Entrepreneurship'. It is an EU-funded research project that investigates the innovative and entrepreneurial roles of end users to shape a green EU-economy.

EU-InnovatE - Innovation & Entrepreneurship for a Greener Europe

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Blog: From September 2016, EU-InnovatE started to share some of its project highlights and other relevant news in form of summaries posted on a newly established Project Blog (<https://euinnovateblog.com>). The blog is updated on an almost weekly basis, with collaborative entries from various project members sharing their research findings and insights. The blog has also helped to reconnect the project with international participants in the AoM Professional Development Workshop (August 2015), and to create valuable momentum around our Final Conference (November 2016).



www.eu-innovate.com

EU-INNOVATE STANDS FOR:

Sustainable Lifestyles 2.0:
End User Integration, Innovation,
and Entrepreneurship

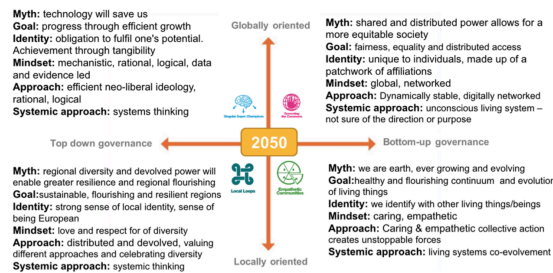
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Future Tense: Four Sustainable Worlds in 2050

Sustainable future scenarios

Looking forward to 2050 through the lens of sustainable scenarios, we know that deep, radical, paradigm level changes may lie ahead. As part of the EU-InnovatE project we have been developing a series of scenarios set in 2050, which depict what sustainable lifestyles might look like and the different ways in which we might get there.



Intranet: Since the project launch, ABIS has maintained a dedicated SharePoint platform to support the archiving and sharing of relevant materials generated by other Work Packages, including publications, presentations and data sets. This will remain active throughout 2017 for all partners to be able to access and source project material.

Webinars: In September and October 2016, ABIS hosted six international webinars to profile the emerging insights produced by each of our empirical work packages (WP1 – WP6). The hour-long presentations were framed by ABIS as WP leader, with an introduction to the project and its overarching objectives, following which each Work Package leader delivered an in-depth overview of the key results emerging from their research. The supporting PowerPoint presentations and recordings of each webinar are hosted on the project website. The site also includes two introductory webinars about the project from 2014 (minus audio files).

Social Media: Throughout the project, ABIS has used various social media channels to promote EU-InnovatE and engage with its audience. Next to the official website, ABIS managed a [LinkedIn Group](#) with 78 followers by the end of 2016. Next to that, a [Twitter account](#) established in mid 2016 generated over 1700 impressions in only a few months. Finally, the EU-InnovatE [Youtube channel](#) hosts a total of 10 videos, which include the webinars and general project videos.

4.8.2 Conferences & Workshops

Scientific Conferences: Over the course of the project, the emerging insights and theoretical advances of the project have been showcased and shared on **55 occasions** at some of the leading international conferences relevant to sustainable entrepreneurship and related areas of the EU-InnovatE investigation. These have included:

- 74th and 75th Annual Meetings of the Academy of Management (Philadelphia, 2014 & Vancouver, 2015)
- ABIS 13th, 14th & 15th Annual Colloquia (Cambridge, 2014; Milan, 2015 & Brussels, 2016)
- 11th International Conference on Environmental Cultural Economic and Social Sustainability (Copenhagen, 2015)
- 13th Annual Open and User Innovation Conference (Lisbon, 2015)
- UN Global Compact Annual Conference (New York, 2015)
- Babson College Entrepreneurship Research Conference (Babson, 2015 & Bodø, 2016)
- European Group of Organisational Studies Conference (Athens, 2015 & Naples, 2016)
- 7th International Conference on Corporate Sustainability and Responsibility (Berlin, 2016)

During these events, a range of different engagement protocols have been employed, including (at a basic level) the distribution of flyers, reports, papers and other presentations from the project, and (at a more advanced level) engaged debate around the new conceptual and theoretical frameworks which seek to advance sustainable entrepreneurship as a field of international science. The highlight of these has been a prestigious Professional Development Workshop at the 2015 Annual Meeting of the Academy of Management (Vancouver, Canada) – “Theorizing on Sustainable Entrepreneurship” – which attracted 60 researchers from all over the world.

Policy Roundtables: ABIS, Copenhagen and Cranfield staged a policy round table in Brussels (October 2016) which featured the presentation and discussion of the 10 high level recommendations emerging from EU-InnovatE. Participants included senior policy officers from DG GROW, EMPL, EAC, RTD, and the Joint Research Centre. In parallel, ABIS and Forum for the Future held a series of round table meetings in 2016 with the JRC to co-develop a dedicated version of the Scenarios Exploration System based on the project. As outlined below, these in-depth meetings allowed for a deeper understanding of EU policy considerations around sustainable lifestyles, and the “road-testing” of our augmented scenarios in the wider context of policy priorities to advance Europe towards long-term outcomes.

Stakeholder Roundtables: Key findings have been introduced into various large scale stakeholder fora over the course of the project. These have included the following:

- United Nations PRME Global Conference (New York, 2015). A workshop with 40+ Deans and researchers from leading international business schools to discuss the implications of sustainable entrepreneurship and innovation for mainstream teaching and research.
- CSR Europe Enterprise 2020 Summit (Brussels, 2015). An interactive stand and dedicated breakout session
- ABIS Annual Colloquia (Milan, 2015 & Brussels, 2016). Interactive workshops with a combination of senior business and academic representatives.

Final Conference: The final conference of EU-InnovatE was staged in Brussels on November 21-22, 2016, bringing together over 120 participants from public, private and civil sector backgrounds. The event began with a convening of all consortium partners to share and review headline findings from their respective activities in the project (“Research Fest”). Within the final conference itself, headline insights from the project were presented, including the PhD projects being developed through the Summer Academy, leading to a series of interactive sessions and workshops devoted to pathways to building sustainable entrepreneurship and citizen innovation as a EU movement for progressive change.

4.8.3 Briefings & Recommendations

The project has already created a “Business Cookbook” briefing manual for companies to implement new approaches for user-driven sustainability innovation. ABIS is currently leading on the finalisation of various policy and executive briefings which build on the final conclusions and analyses of the project. Our original proposal foresaw interim briefings in the middle of the project, but given the immature state of empirical work at that point in the project’s implementation, and the relative lack of insight available for key stakeholders, the decision was taken to focus on a more comprehensive set of briefings around final outputs.

In a related exercise, the EU-InnovatE project has already produced a set of 10 high level policy recommendations for the European Commission and other agencies (e.g. European Investment Bank) to advance the field of citizen innovation and sustainable entrepreneurship in different areas. These recommendations have been drawn primarily from the activities in WP6, specifically the Policy Innovation Workshops and the Sustainable Innovation Exchange, an online forum which connected 150 participants from 40 countries to propose and debate new policy interventions in six key areas deemed essential to accelerate CI & SE in Europe: Networks, Funding, Impact Assessment, Education, Open Policy Making, and Scaling Up.

4.8.4 Reports & Publications

In line with its overarching impact objectives, the EU-InnovatE consortium has generated a steady stream of high quality scientific papers which have already been published, accepted for publication, or are in the peer review process in leading scientific journals. The full list of publications can be found in template A1.

Beyond scientific publications, ABIS and partners have embarked on a truly innovative approach to translating research insights into materials that can be used by a wider international stakeholder community. This followed a strategic decision in the Steering Committee (March 2016) to move away from static print publications – whose impact is widely seen as negligible beyond academic circles – to more engaged, accessible resources.

The most significant of these is an adaptation of the European Commission’s Scenarios Exploration System, created by the Joint Research Centre as a stakeholder engagement tool linked to its landmark “Towards 2035: Pathways to a Sustainable European Economy” report. Structured as a role-playing, multi-actor board game, the EU-InnovatE version of SES allows stakeholders to engage in a three-hour exercise to understand the evolution of sustainable living scenarios over the course of the next 30 years, and the interdependencies of various stakeholder interests in achieving desirable outcomes. In this regard, the augmented scenarios developed in WP2 are at the heart of the content, which underpins our version of the board game.

Our primary focus here is on education and stakeholder engagement. Developed with the active support of the JRC, 100 copies of the EU-InnovatE SES are being manufactured in January 2017 to be distributed to all consortium partners, another 70+ business schools and universities within the ABIS network, and to other key agencies such as the JRC and DG Research in the European Commission. Given the nature and structure of the SES, this output will be a valid teaching and stakeholder engagement tool for several years – and given the number of students passing through sustainability-related courses in the recipient network, it may reach thousands of individuals in the years to come.

In line with wider educational goals around the project, ABIS has also worked with an expert case writer (based in the UK, and linked to Cranfield University) to develop 16 short teaching cases based on 8 representative companies from each of WP3 and WP4 (with two per domain in energy, food, living and mobility). These illustrative cases of user-driven sustainability innovation in practice will be similarly circulated to the consortium and ABIS network – but perhaps more importantly will also be distributed to the UN Principles of Responsible Management Education community of over 700 business schools and universities worldwide.

In synthesizing the findings from the case studies in WP3 and WP4, ESADE has produced an openly accessible publication titled “[Innovating in Search of Sustainability](#)”. This publication aims at showcasing how citizen-led sustainability innovation is becoming an emerging reality in Europe. It describes how multinationals, SME’s, start-ups and cooperatives are co-creating with citizens and end users, sustainable innovation products, services and enterprises aimed at solving complex societal and/or environmental challenges.

Last but not least, TUM has led the development of a “Learning History” report based on partners’ experience of engagement in the EU-InnovatE project. Building on a range of interviews with Work Package leaders and other partners, this report offers a critical, constructive and valuable analysis of the key success factors (and barriers to progress) encountered in scientific delivery and management of the project. This is in turn intended to allow consortium partners to engage internally with research directors and colleagues to improve their own research design and coordination processes for future projects.

4.8.5 Stakeholder & Media Communications

Project Flyer: Throughout the project, two flyers have been leveraged for dissemination purposes: one for scientific and research communities, and another for business and stakeholder audiences.

Media Kit: For the beginning of the project, a Media Kit was developed by professional designers. This included an identity book for correct use of logo, colours and fonts. Next to that and apart from the previously mentioned flyers, it also included a document that provides an overview of the project and its key people as well as the impact it aims to achieve. Finally, the Media Kit also included the official press release by TUM, published in December 2013.

Newsletter: The EU-InnovatE newsletter has been disseminated on a quarterly basis to approximately 350 recipients over the second half of the project. By extension, new publications, reports and presentations have been shared with a wider stakeholder group via the ABIS newsletter, reaching almost 7,000 individuals around the world.

Communications Group: In the early stages of the project, ABIS compiled a list of media and press contacts for consortium partners, who have regularly received project updates and latest research materials to promote through their own channels and networks.

Open access data base: A mapping exercise of examples of user driven innovation was performed. A comprehensive list of examples of cases has been made publicly available in the resources section of the project website (www.eu-innovate.com). Individual cases featured in the database have been prominently profiled on the website and in the quarterly newsletters.

In-kind content partnerships: The main partnership established has been with the Sustainable Entrepreneurship Award platform (www.se-award.org), as outlined below. This engagement has enabled the EU-InnovatE project – and the dedicated prize that has been generated through this collaboration – to be widely communicated to relevant international audiences and constituencies, through instruments such as a co-created [Press Release](#).

Press releases, media alerts, print editorials etc: Dedicated brochures for different audiences and communities (Business & Society, Scientist & Researchers) capturing the key insights and main gaps addressed by the projects have been designed, printed and made publicly available. A Media Kit with a summary of the overall description of the projects including key objectives and research questions addressed as well as biographies from main was produced. Find in the table below attached some of the main media and communication tools that have been created.

Post-Project Dissemination Plan: As mentioned earlier, ABIS has developed a PP Dissemination Plan which is readily available to all consortium partners to guide further exploitation of project results. The DP also sets out a range of commitments to be fulfilled by ABIS and other partners to promote the outcomes of EU-InnovatE at international conferences, through different stakeholder channels, and to relevant agencies within the European policy institutions to the end of 2017.

4.8.6 Specialist Network for User Integration in Sustainability for Innovation

EU-InnovatE has surpassed its original aspirations with regard to network-building in line with the overall project design. First and foremost, within Work Package 2, Forum for the Future (with the support of ABIS and other partners) convened what became known as the [“Future Shapers Network”](#) to drive forward the augmentation process of the SPREAD 2050 scenarios. This community of lead innovators for sustainability is made up of around 200 industry representatives, entrepreneurs, citizens, policy makers and academics, all of whom have a material interest in the core themes of the project.

In Work Package 6, the [Sustainability Innovation Exchange](#) (staged in May 2016 with the support of GlobeScan, one of the world’s foremost stakeholder intelligence consultancies) brought together over 150 experts from the private, public and civil sectors to debate and propose policy innovations to advance sustainable entrepreneurship and citizen innovation in Europe. This audience has remained actively engaged with the project since the Exchange took place, and – if plans fall into place – will be “reconvened and reconnected” in 2017 for a follow-up online forum to further expand the initial insights generated in May.

The other network established by the project has been the audience for the Final Conference, numbering just over 120 participants. Our Final Conference prioritized the engagement of user innovators and entrepreneurs as a means to catalyse a movement of change agents in

Europe. These individuals will remain connected to the project via our Post-Project Dissemination Plan, and a valuable channel for wider dissemination of the project's results and resources.

4.8.7 European Annual Award for User Sustainability Innovation

As reflected in the mid-project amendment agreed with the EU Commission, ABIS and TUM negotiated a strategic partnership agreement with the [Sustainable Entrepreneurship Award](#) to deliver on Activity 8.7. Instead of creating a new award, EU-InnovatE has instead benefitted from a close alliance with SEA – the first and highest visibility scheme of its kind in Europe – to promote the project and its core principles to a global audience.

In 2015 and 2016, EU-InnovatE's Scientific Coordinator, Prof. Frank-Martin Belz, chaired an esteemed jury of leading sustainability entrepreneurship figures to identify the recipient of an annual prize of EUR 10,000 (ten thousand euros), given to a company which exemplified the triple-bottom line criteria of case study selection in Work Package 4.

In both years, over 200 applications were reviewed by the TUM research team, resulting in a final jury selection ahead of the Gala Awards ceremony staged in Vienna. Throughout the two year process, SEA has been an active partner in promoting the EU-InnovatE project and its brand on its website and supporting communications, and recognising the sponsorship of the project for this flagship award at the Gala event itself. The SEA has a considerable level of media exposure, including a strategic partnership with Forbes, which has ensured that the EU-InnovatE prize has been widely disseminated in relevant sustainable entrepreneurship communities around the world.

As a footnote, Professor Belz will continue to serve on the SEA jury in 2017 and potentially beyond to ensure continuity of the relationship, and where possible, SEA will support dissemination and outreach activities of the project to its wider constituency of sustainable entrepreneurs spread around the globe.

4.8.8 Annual PhD Summer Academy

Over the course of the project, EU-InnovatE has staged three annual PhD Summer Academies, each one having been hosted by Politecnico di Milano. The Academies have adopted a dynamic, interdisciplinary approach in order to expose approximately 20 young researchers (recruited by individual consortium partners) to some of the leading international scholars in the field, and to enable them to benefit from expert mentoring on areas such as methodological approaches, data management, publication strategy, and more.

5 WEBSITE AND CONTACT

5.1 Website

The EU-InnovatE Website can be found at the following link
www.eu-innovate.com

5.2 Coordination

The project is coordinated by the Technical University of Munich

Coordinator:

Prof. Dr. Frank-Martin Belz

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 TUM School of Management
 Chair of Corporate Sustainability
 Alte Akademie 14
 85354 Freising, Germany

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Fax: +49 8161 71 3209

E-Mail: frank.belz@tum.de**5.3. Project Logo****5.4 List of Participants with Main Scientific Contact**

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2	Aalto-Korkeakoulusaatio	Minna Halme
3	Aarhus Universitet	John Thogersen
4	Akademia Leona Kozminskiego	Boleslaw Rok
5	Copenhagen Business School	Lucia Reisch
6	Cranfield University	Hugh Wilson
7	EABIS - The Academy of Business in Society	Simon Pickard
8	Forum for the Future	James Goodman
9	Katholische Universität Eichstätt-Ingolstadt	Andre Habisch
10	Politecnico di Milano	Paolo Landoni
11	Technische Universiteit Eindhoven	Geert Verbong
12	Fundacion ESADE	Simon Dolan
13	Università Cattolica del Sacro Cuore	Matteo Pedrini
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