

Scenario 1: Unleashing the Creative Spirit, Europe Innovative Societies...



4.2 Scenario 1: Unleashing the Creative Spirit. Europe’s Innovative Societies

Summary: The Scenario in a Nutshell

By2025, the European Union has become energised by a new spirit of creativity and has turned into the world’s innovation centre, a global innovation hotspot, offering excellent research conditions and providing the world with sustainable innovations, helping it to cope with the grand challenges of our times. European societies have become a highly valued source for new product and services ideas, but above all for social innovation. In addition, sustainable business and consumption patterns have become the norm – economic growth and social welfare are no longer exclusively defined in monetary values.

Morphological Box: The Premises

INFU - FUTURE OF INNOVATION LANDSCAPE								
Global Innovation Centers	Crossover innovation	Impact of Resource Scarcity and	Sustainable and Systemic Thinking	Societies' innovation Capability	Peoples' Involvement	Mediators of Innovation	Innovation Facilitating Technologies	Welfare and Growth Paradigm
Emerging Countries Catch Up	Crossover Innovation At it Best	Strong Impact: Global Rethinking	Holistic Perspective on Sustainability	Life-Long Innovation	Unleashing the Creative Spirit	Society Driven Innovation	Rapid & Widespread Diffusion	Gradual Paradigm Change
Rapid Shift to Emerging Countries	Inefficient Crossover Innovation	Low Impact: Global Waste	No One Cares	Innovation Gap	Wanted: Entrepreneurs	State Moderated Innovation	Slow Diffusion	Traditional Paradigm Prevails
Status Quo	Backlash to Crossover Innovation	Different Impacts: Regional	Sustainability Mistaken	The Youth Pays the Bill	Wasted Potential	Business Driven Innovation	No Diffusion	
Stronger Position of Europe	Status Quo				Innovation Fatigue	Locally Originated Innovation		
						No mediator		

(Premises are highlighted in blue.)

Key Aspects of the European Innovation Landscape in 2025

- The European Union is one of the world’s leading innovation regions, both for market-oriented and social innovations
- European STI and RTD framework programs, as well as innovation, education and research policies are improved and efficiently organised
- The innovation potential of the societies in the Union has been extensively activated - social communities and creative individuals are the main source for innovations

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- Innovation patterns have changed - innovation activities happen everywhere and people are tremendously willing and highly motivated to innovate
- Companies are able to rely on a large pool of highly-skilled and creative people
- Crossover innovation has reached an apex: Extensive cross-disciplinary and cross-sectoral collaboration of policy-makers, governments, society, and the business community across all industries lead to constantly evolving insights and breakthroughs
- Systemic thinking – widespread consideration of closed loop models and cradle-to-cradle design in production and innovation processes
- Gradual paradigm shift: Social welfare and economic growth are no longer exclusively measured in monetary values
- Social innovations are highly regarded and create new patterns of living together, changing the overall cohesion of society
- The grand challenges of the 21st century are fully addressed
- Advancements in innovation technologies and tools, e.g. co-working facilities, collaboration tools and rapid/virtual prototyping technologies
- Widespread and intensive use of innovation facilitating technologies on- and off-the job, such as virtual prototyping, fab labs, augmented reality and other technologies

Description

By 2025, the “old continent” has turned into something that people back in this century’s first decade might have labelled “Europe’s Dream” – or in other words: “Europe’s Ideal”. One could arguably claim that many kept on dreaming of it, but only few were truly expecting this: In 2025, the EU has become the global innovation hot spot, the global centre of creativity and design, supplying the world with breakthrough innovations and providing sustainable solutions to the grand challenges of our time. The innovation gap between industrialised “Western” economies and emerging countries has not decreased as the experts had not only to some degree expected, but rather predict with absolute certainty. By 2025, the EU has not only succeeded in catching up with and overtaking the previous powerhouses of innovation and creativity, Japan or the US, but also managed to outdistance the emerging countries, particularly from Asia and South America, where markets reach the point of saturation and labour costs rise. However, others still closely follow Europe. So in the mid-2030s, metaphorically speaking, astronauts circling the globe and gazing down on Europe at night are able to witness the constant activity in the continent’s innovation clusters. As darkness falls, a spider web of lights spreads from the distant shores of the Estonian Lake Peipus to the rocky coast of the Portuguese Algarve.-



Improvement of education and innovation activities within societies and establishment of world-class research infrastructures

To some degree, this development is a logical outcome of the ambitious measures undertaken by the European Union and national governments around 2011. An important case in point is the 2011 “Europe 2020 Flagship Initiative ‘Innovation Union’” which spelled out how – even in times of tight budgets – Europe’s potentials could be realised. Over the years, new education models and the promotion of life-long learning concepts actively addressed the mounting challenges of demographic change such as the aging of societies. Today, the solutions to these challenges are within our reach. The innovation capability of European societies is on a level never previously achieved.

It always starts with education. By 2025, education primarily focuses on developing creativity skills and innovative mindsets. The art of thinking has been turned into a science. With traditional classes and teachers abolished, new teaching methods such as edutainment (education based on entertainment), tutors and coaches have become common and widespread. Starting in the first years at kindergarten, children are trained in skills related to innovation and creativity. Kids are motivated to stay curious and learn how to question facts and see things differently. Many kindergartens in the EU closely collaborate with academic institutions and offer traineeships and playful creativity workshops specifically designed for children¹⁰. The integration of kindergarten classes into research and innovation projects can be increasingly observed across the whole continent. But not only education policies have been tailored to demographic change and fostering of innovative capability. Companies have redefined their corporate structures and offer their employees a broad portfolio of opportunities to improve qualifications, skills, capabilities, and competencies. Life-long learning is considered a key driver for corporate competitiveness and long-term success. At the same time, temporarily expanding public debt, the EU launched an extensive innovation package. In addition to incentive programs, e.g. innovation contests offering considerable prize money and tax reliefs for companies with high innovation rates and investments in local R&D and researchers’ education, large sums were spent on high-performance research infrastructures. *Innovation Camps*, where people gather for specific innovation tasks for a certain time are becoming increasingly popular. Often the idea is linked to the *open source society*, where a number of products and services are developed in close interaction among users. This extensive set of complementary measures had the aim of creating a competitive edge in the global economic race, in particular with regards to the ever-growing pressure from the emerging powers in the Far East and South America. Besides these jointly designed education and innovation policies, changed, more favourable, immigration policies that had been adapted to social and political struggles caused by pro-democracy movements in the near east have attracted large numbers of foreign experts and workforce. They find high educational standards and excellent conditions for carrying out scientific research. Effective policies of integration enable immigrants to quickly to get in with private and professional life and to contribute to innovation and progress.

¹⁰ For more details see the box on the next page.

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...excellent research conditions...

...cross-ages and disciplines...

...creative communities...

...sustainable technologies...



...new education models...

...fabbing for all...

...entrepreneurial spirit...

Spotlight 2025

Interview with Mathilde Knudsen (37), childminder of the Svendsen kindergarten in Copenhagen

The Copenhagen Post: “Dear Mathilde, you and a group of ten children have just returned from a two-day innovation workshop at LEGO to develop ideas for a new range of building blocks. How did that come about, doesn’t it seem to be a strange idea to make kindergarten children a part of the business world?”

Mathilde: “Oh, that’s old hat for us here at the kindergarten. Each month, businesses invite the children to do things like that. Last month, VELUX asked them to join an innovation workshop. The company wanted the children to support their R&D department in developing new eco-efficient flat roof concepts. For the children, visiting a company is always a great adventure, to see the high buildings and to check out the big machines. And, of course, to sample all the sweets and lemonade on offer! But going to Lego was something special, to create ideas for toys rather than ideas for, as the children always say, “boring” stuff like rooftops or computer chips.”

The Copenhagen Post: “Yes, I can imagine that. When I was a young boy I would also have much rather played with LEGO than designed rooftops, that’s for sure. So what is your impression, why would major companies like LEGO or VELUX ask preschoolers to support highly business-relevant innovation activities?”

Mathilde: “Well, I would say that children are just that much more creative and imaginative than adults. Here at our kindergarten, the children have picked up a lot of innovation and creativity-related skills and competencies over the last year. We collaborate with the University of Copenhagen. A research assistant from the University comes here every week to teach creativity techniques to the children. At VELUX, for example, our children used the synectics method and built different analogies in order to develop new rooftop concepts. And the results are outstanding, every time...

Facilitation of cross-disciplinary cooperation

In addition to the political measures, actions by economic actors have greatly contributed to the EU’s new standing as the global innovation hot spot. A new spirit of cross-disciplinary cooperation and open-mindedness has entered day-to-day business life. An ever-increasing number of companies, research institutions, and independent think tanks began to set up inter- and cross-disciplinary R&D cooperation networks, integrating all kinds of actors in multi-faceted and diverse settings and group constellations. Holistic and well-integrated age and diversity management practices are widely regarded as key strategies to improve creativity and innovation. Collisions between different mindsets and disciplinary backgrounds were not only not avoided but encouraged and they quickly started to pay off. As a result, radically new types of knowledge combinations and breakthrough innovations emerged from the long lasting trans-disciplinary cooperation efforts. This is supported by a number of new techniques of “*automatised innovation*” such as semantic web analysis and digital systems that randomly create and test innovation variants before selecting the “fittest” for further interdisciplinary development. Enormous amounts of variants are tested often with an unexpected outcome. Sophisticated semantic web-filters track changes in consumer preferences and new ideas in real time, and automatically extract innovation perspectives with outstanding market potential.

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Today, one can say that the alarmist warnings forecasting Europe's innovation decline have not only been heard but also were also given full consideration. The EU and the business community paved the way to this development; fostering the European Research Area (ERA) by fully integrating education, research, and innovation policies made Europe a place where scientific research, technological development and innovation thrive.

Spotlight 2025

Interview with Jose Ernesto de la Mora (26), cross-innovation manager at an Estonian packaging manufacturer

The Innovator: "Mr. de la Mora, upon on completion of your degree in business administration at the "Benito Juarez" University at Oaxaca, you received several interesting job offers from major Mexican companies. What prompted you to opt for a small packaging manufacturer in Estonia?"

De la Mora: "Oh, the decision wasn't that difficult to make. I made up my mind almost immediately. A fellow student from my university had completed a one-month traineeship at the company's innovation department half a year before and he came back impressed with the work culture, all the further education options, the free flow of knowledge, and the way innovation actually happens over here in Europe."

The Innovator: "Could you give some brief examples for our readers? What do you mean when you say "the way innovation happens"?"

De la Mora: "The whole culture of innovation, not only at my company or in Estonia but in the European Union as such is just astonishing. What really blew my mind was the total openness, the intense dialogues between different actors, the interdisciplinary cooperation, and last but not least, the incredibly high status of social innovations and sustainability.

The Innovator: "Could you give us a current example from your ongoing business activities?"

De la Mora: "We are just now conducting an open innovation project on new packaging materials. Our main objective is to finally implement full cradle-to-cradle compatibility of the materials and composites that are used in our packaging products. The whole project is wide open to internal and external sources of knowledge. We cooperate with the Tallinn University of Technology and several companies from the biotech industry. But in my opinion, the most important aspect of the project is the integration of our customers, of ordinary people using our products every day. One month ago we launched a virtual user community to get ideas on new materials and sustainable packaging solutions. The amount of feedback and particularly the ideas we have received since the launch day – it is just overwhelming. I've never expected anything like that, although it is known around the globe that Europe is a place of ideas and creativity.

Open innovation accomplished

Previously, the main actors on the innovation landscape had been business corporations, interdisciplinary research centres equipped with cutting-edge research tools, or departments of internationally renowned universities. Now, in 2025, the innovation path is increasingly defined by society as a whole. European societies exhibit a tremendous enthusiasm for innovation. As mentioned above, people gather for instance in company funded *Innovation Camps*, go freely for specific innovation tasks. Everyone, from lawyers to nurses and simple workers, wants to be involved; more and more people wish to invent and

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show their creative potential. The entrepreneurial spirit transcends borders and even the most traditional companies provide conditions, which make it easy for their employees to innovate, ranging from free time for innovation activities to specific creativity tools and high-tech laboratories. Most non-creative elements of business processes have been automated and managers have taken on a fundamentally new role— rather than coordinating workflows, they have become creativity-enhancing facilitators. Employees are constantly involved in internal process and product innovation projects. For the first time, 70% of all product innovations at a major consumer goods business are based on ideas emerging from a company-wide idea and creativity contest. Almost all companies have annual innovation contests, which focus on ideas for new products or services or have the objective of improving internal processes and working conditions. During the first decade of the century, a very small number of forward-thinking companies had already started to integrate their employees in all stages of innovation processes, but even more so their customers. Virtual user communities were the core of this process, playing the role of idea generators and test markets for product and service innovations. One thing is for sure: at the time, this kind of user integration and free flow of ideas and knowledge took place mainly in scientific literature and theoretical models – in practice, this concept was more sporadic in nature. In 2025, as a key feature of corporate innovation policies, customer communities are fully integrated into innovation projects, ranging from conventional product developments to new service concepts to social innovations. One key driver for this break from the isolated innovation silos at internal R&D departments were extensive reforms of copyright and intellectual property rights. Over the years, creative commons has become the standard for the protection for original works and authorship. Free flow of knowledge is now the norm. Community members, in particular, share information and jointly innovate, triggered both by a normative pressure and pure pleasure. Key aspects are peer recognition, pride of authorship, and intellectual stimulation.

Innovating societies: Social innovation on the rise

In addition to the business-driven perspective on innovation, people frequently organise in all different kinds of social groups and communities in the social sphere. They want to invent, innovate, and shape the world they live in. The inspiration for innovation has changed – next to pride of authorship and intrinsic motivation, the contribution to addressing social and environmental challenges by innovation has become a major incentive for people to engage in innovation processes. As a result, there is a boom in social and sustainable innovations. People regularly join “Social Innovation camps”, protected spaces for experimental, collaborative problem solving, participatory decision making and learning in the social realm. Almost every region of the EU boasts one or more of these camps, most are equipped with state-of-the-art innovation facilitating technologies, e.g. “fabbers”, augmented reality systems, and rapid prototyping machines. These technologies allow camp participants to create fully functional prototypes on the spot and test them in their considered application context. People consider holding or joining an innovation camp to give new value to their lives. They want to find answers to the great challenges of the 21st century – how can we guarantee our energy supply without further harming the environment and natural ecosystems, without further exploiting limited natural resources? How can we make political decision processes more transparent and enable the active involvement of all sorts of stakeholders? How can we support a growing world population with sufficient

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medical care and access to clean drinking water? These are just some of the basic questions addressed by the various social innovation camps.

Spotlight 2025

Report from the Social Innovation Blog, April 2nd 2025

“And the ‘European Innovation Wizard 2025’ goes to...”. The glittering award ceremony provided an appropriate finale to the two-week innovation contest of the same name in Brussels, sponsored by the European Commission and the European automotive industry. At first glance, the task had looked almost impossible to solve (it should come as no surprise that not even the best and brightest at the manufacturers’ R&D departments had not yet been able to provide a workable solution, which is but one of the reasons for this contest): “Develop a prototype of a megacity vehicle neither powered by electricity, hydrogen, fossil nor bio fuels”. One look at the list of competitors made it clear to anyone even slightly familiar with open innovation and co-creation that if there was a solution, it would come from this crowd. At the start was the “who is who” of the European innovation scene: motivated citizens, independent thinkers and tinkerers, as well as scientists. Everyone intended on applying their creativity beyond their day job; eager for a battle of wits with other innovation colleagues from all over the continent. The list of participants comprised the “Berlin Innoboy” to the “Criadores do Lisboa”. Isolated from each other in special innovation spaces, specifically built for the “Innovation Wizard” and equipped with cutting-edge innovation technologies – among them the FabMaster 2050 and the Real Environment Emulator 3.1 – the innovators set out into the world of future mobility on March 1. Two incredibly (as most participants said) intense weeks of researching, creating, fabbing, discussing, developing, and fine-tuning later, the eagerly awaited prototypes were presented to the world. And as in any other contest there could only be one winner. This year, the “Bratislava Tricky Workers” took the crown. Their triumph came as a surprise, as many still consider them newcomers to the European innovation scene. But even the old hands had to admit that their prototype of a simple pedal car couldn’t be topped...

Shift towards sustainable development

Between 2010 and 2015, the impacts of the increasing scarcity of strategic resources and manmade environmental problems became considerably more severe – oil prices surged, emerging countries introduced export bans on rare earths, and environmental disasters had stopped to be merely occasional phenomena which happened to other people on the evening news every now and then. An ever-greater share of the population suffered from devastating environmental disasters. The Elbe River reached its highest mark ever, and the annual wildfires in Spain and Greece brought more devastation than ever before. Actors from all areas began to recognise the urgency of mastering these challenges and that the ambitious goals could only be achieved together. In recent years, an interdisciplinary circle of international experts developed a new system of indicators for social welfare and economic growth, a system, which no longer measures growth exclusively by monetary values, i.e. by GDP. Growth is calculated using a comprehensive set of categories, which cover all aspects that define social welfare and prosperity, such as life expectancy, environmental impacts, or the extent of volunteer work. Some experts claim that this gradual paradigm shift is merely a natural outcome of recent developments observable in several industries and last but not least in society. This ‘mental overhaul’ was triggered by the increased environmental impacts of industrial manufacturing and product usage and the

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growing mistrust in health safety of biotech and nanotech solutions. Back in 2015, society and economy started to adapt their processes to sustainable development. Corporate environmental protection is now characterised by preventive measures in all departments and business processes. Almost all economic decision-making and new technology is evaluated prior to implementation using sustainability and safety criteria. Thus, sustainable consumption has become the established norm in 2025. The rethinking of production and consumption has brought a fundamental shift towards closed material loops and sustainable business patterns. At the fuzzy front end of innovation processes, future material loops along the entire life-cycles and all types of detrimental impacts on the environment are already assessed, recycled materials and used components regularly define the starting point of product innovation. The establishment of innovation patterns that are fully consistent with a circular flow of resources is unanimously assessed as top priority. *Waste based innovation* is the case. Cradle-to-cradle has finally become reality and the general benchmark. Interdependency has arrived at the root of society. Some innovations even only exist in virtual spheres: A further fundamental step towards even more dematerialisation of the economy has been taken.

Basic Impacts

Positive Impacts

- European societies benefit from high educational standards. Social welfare is on an exceptionally high level
- Researchers have access to superb research conditions and excellently equipped research infrastructures
- Favourable framework conditions for entrepreneurs. Very low administrative barriers and widespread presence of private and public innovation spaces
- Very high business and innovative potential for globally operating companies from other world regions that relocated R&D departments and other critical business units to Europe at an early stage
- Very low detrimental impacts of R&D and business activities on the environment. Very high impact of environmental problems and resource scarcity on business and innovation models – sustainable production and consumption is the status quo
- Social innovations have been mainstreamed

Negative Impacts

- Increased risks for companies and research institutions outside Europe (due to possible loss of skilled researchers and talent who might be attracted by European research conditions and innovation policies)
- Decreasing competitiveness of European companies that fail to open their processes to external innovation sources and stick to non-sustainable manufacturing



Main Milestones: A Short Roadmap

- 2011** Ambitious measures taken by the EC and national governments to improve the European Union's sustainable development and competitiveness, particularly by initiating numerous innovation initiatives such as the "Europe 2020 Flagship Initiative 'Innovation Union'". Also, a growing number of companies and other business actors start to found cross-disciplinary R&D networks and cooperation
- 2013** Impacts of demographic change increasingly become evident. To counteract the growing shortfalls of young skilled employees, life-long learning concepts increasingly become an integral part of the working world and culture. National governments introduce broad education reforms under the aegis of the European Union. New teaching methods, which focus on creativity skills and innovative mindsets start to achieve popularity.
- 2015** The increasing severity of environmental problems pushes executives to finally overhaul their business models. The goal of "Environmental sustainability" becomes one of the basic pillars of corporate strategies across all industries. Furthermore, enthusiasm for creativity and innovation increases in European societies. All sorts of stakeholders, particularly employees, customers and environmental organisations are increasingly integrated into innovation and decision-making processes
- 2020** Business and politics provide the most favourable conditions for idea generation, experimentation and innovation
- 2025** Full consideration of social and environmental aspects, systemic and crossover innovations in all areas. Free flow of information: All stakeholders are fully integrated in all kinds of innovation processes

Related Innovation Visions

The following (consolidated) visions, which have been developed and discussed in the previous INFU work packages, are particularly relevant and become mainstream within this scenario:

Open Source / Innocamp Society

Innovation Camps of limited duration in which people gather to solve specific innovation tasks are becoming increasingly popular. The idea is often closely connected to the open source society where some products and services are developed in close interaction among users.

Businesses, public sector, and civil society use Innovation Camps to solve most pressing problems, ranging from coping with high-tech challenges to providing neighbourhood facilities. Most people regularly join innovation camps.

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Automated Innovation

Several new techniques, e.g. semantic web analysis, make it possible to automate parts of the innovation process, from idea generation to design and testing. Sophisticated semantic filters track changes in consumer preferences and new ideas in real time, and autonomously identify innovations with exceptional market potential. Virtual-only products satisfy the human appetite for newness. They can be accessed by the public in virtual galleries or be projected on demand into homes and offices for individuals. Some of these products are never materialised.

Waste-Based Innovation

What if the principle of “waste equals food”/”cradle-to-cradle” was widely adopted? Rather than raw materials, databases with used components and materials become starting points for innovations. The whole world enters an eternal circle. Everything that is made of something is part of making something.