

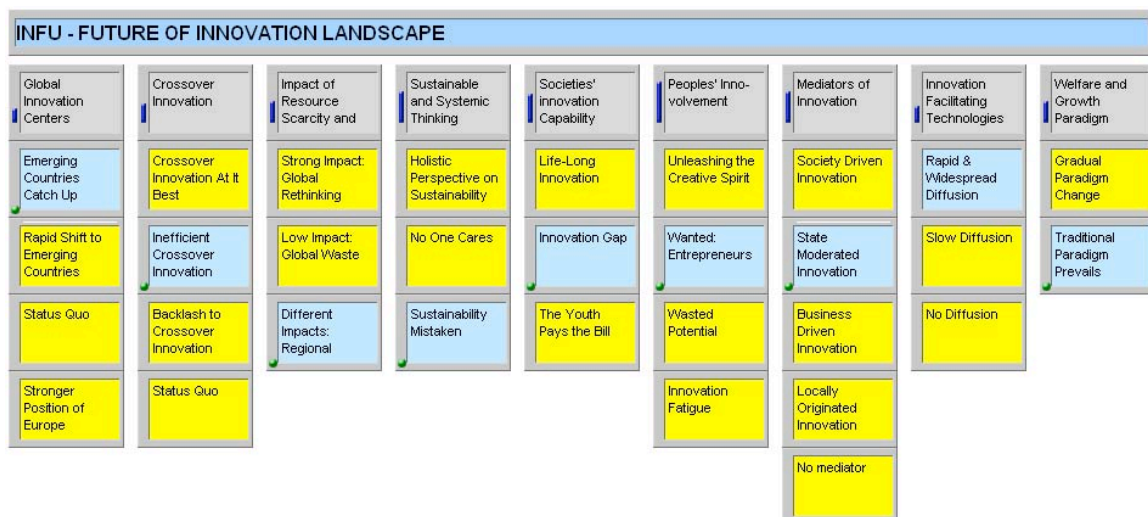
4. Scenarios

4.1 Scenario 0: If Nothing Changes⁹

Summary: The Scenario in a Nutshell

The baseline, or reference, scenario shows an almost unaltered future as regards present structures and present innovation patterns. The challenges resulting from an ageing and shrinking population, global competition, environmental issues and resource scarcity are inadequately met. Ultimately, muddling-through politics lead to decline. In the global innovation race, the European Union falls behind.

Morphological Box: The Premises*



(*Premises are highlighted in blue.)

Key Aspects of the European Innovation Landscape in 2025

- No major changes to innovation structures and patterns. The political and business communities rely on tried-and-tested models
- Internal and external challenges are not successfully addressed, leading to a slow, comprehensive decline of the EU's capacity for innovation compared to other world regions
- Innovation skill shortages and shrinking domestic markets lower the competitiveness of companies based in the EU. Europe is less and less valued as pilot market for new products

⁹This scenario is based on the assumption that key factors remain virtually unchanged. As there are major conflicts and interactions between these factors, the project team considered the scenario to be little likely and as providing little insight. Therefore, it was not developed in detail. It is used here as a backdrop for the other scenarios. Most of the challenges and problems addressed in this scenario are more closely developed in Scenario 2, "The Exhausted Giant".

- The societies' innovation potential remains largely untapped. Notwithstanding some “brain gains”, less and less people are engaged in innovation, e.g. due to ageing and shrinking populations.
- Political support and funding are sufficient, yet remain unable to boost the number of start-ups significantly. Entrepreneurs grumble about ‘red tape’ and other limiting factors

Description

In 2025, the European innovation landscape remains almost unchanged. Naturally, there have been some gradual shifts, but nothing that would have amount to an earth-shattering shake-up.

Innovation remains high on the agenda of the EU and its member states, and governments spend a considerable part of their shrinking budgets on innovation and its prerequisites: education, research, innovation infrastructures, and subsidies for innovating companies. But all-in-all, Europe is considered to be a runner-up in the global innovation race, and important trends threaten even this less-than-enviable position. Firstly, the European population is not only ageing, but has started to shrink. Fewer and fewer children visit school, the number of students graduating from university keeps dropping. Europe has tried to attract “brains” from other continents, and it is true that its research infrastructure remains a good reason to come, as is its continuously well-running social system and highly recognised old universities. But even successful brain gains cannot compensate for the shrinking young age cohorts. Measures aimed at fostering life-long learning have provided some breathing space, and the elderly have extended their working lives considerably, but businesses complain about a dearth of recently trained and innovative staff of all age groups. For some years now, the number of start-up companies, esp. in high-tech fields, has stagnated and now seems to decline, notwithstanding a somewhat improved supply of venture capital and public funding. Society itself seems to lack innovators. While some people are naturally willing to try new models of living together, new models of care for the elderly, new models in agriculture, new forms of business organisation and new ways of collaboration in innovation, there is considerable bureaucratic interference, and risk-taking is not really encouraged. Policy-makers stick to tried-and-tested models from the beginning of the century, partly due to a fear that the electorate will not appreciate change, partly as a result of mind-numbing and lengthy deliberation procedures.

Major global companies have found that they are no longer able to rely on a sufficiently large pool of European engineers and researchers. Hence, they are looking into options for off-shoring their R&D facilities to more welcoming regions, especially in Asia, where most of them have had a strong foothold for decades. Its cautious population makes Europe little suited as a pilot market for new products – with the exception of health care services, pharmaceuticals and similar products. Europe has even lost its trailblazing position as a forerunner in the global environmental and energy technology fields. All member states and, most prominently, the Union itself indisputably promote “green” technologies. However, it often seems that without the necessary comprehensive understanding of sustainability. Occasionally, measures are taken where the effects cancel each other out. Efforts aimed at mitigating climate change hurt biodiversity, etc. One reason for this disadvantage may be that success is still measured in obsolete, purely financial terms such as GDP...

Overall, the old continent is still doing well in 2025. Yet its innovation capacity is in a gradual decline which happens at so a place that it seems hardly noticeable.

Spotlight 2025

Visit at an R&D engineer's office

Upon entering Simon Jerchow's office, you feel thrown back to the first decade of the 21st century: Large displays, keyboards and so-called "energy-saving" lamps. In Asia or Australia, the construction engineer would most likely be a retiree, but here in Southern Germany, he remains in very high demand.

"You see", he explains with a strongly pronounced German accent, "we simply lack younger people. I have been in the car business for more than fifty years; I'd like to train someone younger, but our country suffers from demographic decline. When my boss advertised the job, the salary he promised was as high as mine – for a graduate with no hands-on experience! –, but nobody applied."

Jerchow loves talking about past successes, about how he and his contemporaries improved carburetor. "We really did build highly efficient engines, with lower fuel consumption, higher mile-ages, you know, and we are still able to sell large numbers of them in Europe. The people here like our cars, cars they have been used to since a long time. However, yes, we lost huge market shares globally in recent years. Some say on account of electric vehicles, we entered the market a little late with it and others were able to manufacture at lower cost..."

He really likes the German word "Aber", and starts every other sentence this way. "But I think that the blame shouldn't rest with us engineers. If anyone's, it is the designers' fault. They were unable to come up with design which would resonate with the Asian and African markets. Our engines remain the best in the world, I think. But our image has suffered. Latin American bloggers call our engines 'old fashioned'. But, you see, internal combustion has not changed since Otto invented it. So every non-electric car is old-fashioned per definition, not only the ones manufactured here. And we put so many new ideas into this technology. Look..."

Very proudly he points at the display. "These are micro-valves based on capillary forces. We worked on it for three years, and improved engine efficiency by 0.1%. You may consider this a negligible improvement, but it all adds up. We even collaborated with construction teams of our competitors on a joint platform called 'Motor 2040'. But don't put this in your article, it is still most secret..."

He stands up, goes to the window. "I like my work. It gives me the feeling that I am still needed. But in fact, I would also like to retire. I hope that I won't be forced to relearn my job and have to work with these novel nano-based machines that operate like muscles. I know almost everything you need to know about internal combustion engines. But – could it be possible that this age is over like the steam age? Perhaps my epoch is over – but I remain in charge..."

Basic Impacts

Positive Impacts

- Increasing business potential of globally operating European companies which re-located R&D departments and other critical business units to Asian and Latin American regions at an early stage.

Negative Impacts

- Worsening economic situation and declining European competitiveness.
- Increasing pressure on social systems and decreasing welfare spending.
- Unfavourable conditions for enthusiastic researchers due to shrinking research budgets.
- Increased risks for entrepreneurs due to lack of trained staff and uncertain financial perspectives.

- High pressure on globally operating companies from Europe which failed to relocate R&D departments at an early stage and do not manage to attract creative people from other world regions.

Main Milestones: A Short Roadmap

- 2010** European population is shrinking, high public debt; increasing awareness of demographic challenges.
Overall, a high level of governmental support for R&D, education and innovation.
- 2015** Pervasive lack of young and skilled workforce reduces the innovation capacities of some major and many small enterprises.
Declining public spending on education systems and innovation.
Insufficient efforts to streamline administrative systems.
- 2020** Europe has lost its pioneering role in environmental technologies.
The European Union is no longer attractive for innovators from other world regions and skilled people increasingly try their luck in aspiring third countries.
- 2025** Stagnation in all fields – in commerce, politics, and social life.