

- To ensure European economic prosperity, boost competitiveness and close the productivity gap, Europe should develop long-term comprehensive policies and financing for advanced technologies, that stimulates research, innovation and industry.
- The Netherlands has a rich history of technological innovation and entrepreneurship that constitutes its welfare. In order to continue to play a meaningful role in a world that is increasingly being determined by technology we must create the growth engines of the future.
- For its competitiveness to prosper and for its security, the Netherlands benefits greatly from a European Union that acts decisively geopolitically and that requires a healthy, competitive and a resilient European economy.
- In order to boost competitiveness, the Netherlands should call for comprehensive and long-term European strategies that aim to
 - o cut red tape, make it more easier for SMEs, startups and scaleups to access EU instruments, funds and unlock dormant capital,
 - o provide more funds for research and innovation in the next EU Framework for Research and Innovation (FP10), leverage already earmarked investments,
 - o a level-playing field in Europe and avoid unwanted competition between Member States, but focus on Member States's strengths',
 - o build up a high-skilled workforce that is essential for maintaining innovation and staying competitive in the global market.

Background

Europe is currently being squeezed from two sides and the diagnostics from the Draghi Report made this very clear. The EU's share in world trade is deteriorating and its position in advanced technologies that will drive future growth, is declining. The EU's share in worldwide manufacturing is reducing. EU's research strengths are weakening. The EU files less patents in strategic technologies. The EU's deep-tech startups and scale-ups are at a significant disadvantage with regard to the availability of investments compared to their peers. Just 4 out of the 50 tech companies that lead globally are European.

As rightly pointed out by Draghi, Europe largely missed out on the digital revolution driven by the internet and the productivity gains it brought. Although the EU has a well-established role in fundamental research and there is a strong cooperation between industry and research and technology organizations, the productivity gap between the EU and US is largely explained by the technology sector. Therefore Europe urgently needs to accelerate its tech industry and innovation to develop new breakthrough technologies, to create its growth engines of the future.

On the eve of a new era of innovation and digitization powered by AI, it is of utmost importance for the Netherlands and Europe to strengthen its advanced technology sector in order to prevent from being further squeezed. This sector will be the main driver of our future national and European competitiveness.¹ Europe should not re-invent industries, but rather support industries that can become control points in international value chains and leverage this position. A thriving technology sector provides for much-needed answers to societal challenges and contributes to strategic autonomy and our security.

Therefore, Europe should develop comprehensive policies for advanced technologies, that stimulate research, innovation and industry. Advanced technologies are research- and capital intensive,

¹ Draghi Report, Part A, p. 20.

increasing FP10's part of the EU budget is recommended. The semiconductor industry in The Netherlands would not have existed as we know it now without extensive public support in the Netherlands. Ensure European capital to flow more freely over the continent and unlock Europe's dormant capital. Lower administrative burdens and make critical instruments that boost competitiveness simpler to access. Furthermore, industry should be given a more important role in instruments like the IPCEIs as for example the EU Chips Act pilot lines. The EU should dramatically simplify these instruments and make them easier available. It is easier for European companies to access the US Chips act than its European equivalent. As mentioned by Draghi, competition policy should adapt to changes in the economy and not be a barrier to Europe's goals.² Lastly, Europe should focus on attracting, educating and retaining more high-skilled talent in order to build up a futureproof skilled workforce.

If one focuses on the photonic chip industry and compare the EU and US, then, a few points become apparent:

- The US government substantial and comprehensive policies and support for research, innovation and industry. Not only does the US transcends the EU in its public investments and in industry, but US high-tech industries thrive because it acts as well as customer and carries out an extensive promote and protect policy.
- Availability of (venture) capital in the US and public funding is to access.
- The biggest pull in photonic chips comes from data communication, not in the last place to power AI, an industry the US champions by afar
- Given the size of the US tech industry, there is a larger pool of high-skilled workers, educated on top universities and offered better working conditions.

Some differences will also be more difficult to overcome, which are partly determined by history, culture or market size. A point of criticism of the Draghi Report could be that it primarily focuses on the risks of dependence on China, while giving insufficient attention to increased entanglement with the U.S. The growing trend toward protectionism in the U.S. has negative effects on European industry. The recent call in U.S. Congress to scrutinize photonic chips further is an important warning sign for the European photonic chip industry.³ It is crucial to recognize that, without turning a blind eye to legitimate national security concerns, the U.S. is also pursuing technological leadership.

The Netherlands' photonic chip ecosystem is a world class end-to-end value chain for photonic chips that designs, develops, and manufactures innovative solutions that contribute to a better world. The Netherlands' leading position in the European photonic chip industry was recently underlined by the PIXEurope pilot line from the EU Chips Act. Photonic chips are unique because of their ability to transfer and process data using light in a sustainable way. They offer significant benefits in terms of speed, energy efficiency, and scalability. In addition, photonic chips are helping to introduce new sensing solutions in various industries, including healthcare, food & agriculture, and automotive. For example, on sensing, Europe and the Netherlands are leading. However, this is still a precompetitive market so we must ensure that our startups continue to grow to scale ups without being seduced to moving to the US. The funding from the National Growth Fund is essential for the photonic chip ecosystem to develop into a major player.

² Draghi Report, Part A, p. 13.

³ "Moolenaar, Krishnamoorthi Encourage Restricting Advanced Photonic Semiconductor Technology to China and Bolstering American Innovation",