"The European Union needs a technological balance of power."

The worldwide chip industry has grown explosively over the last years and won't stop growing in the coming years. The European Union wants to respond to this growth with the European Chips Act.
Jean Schreurs, Executive Director of NXP Semiconductors Netherlands, shares his opinion on the act and what it means to the worldwide industry of chips and semiconductors.

Jean Schreurs, Executive Director of NXP Semiconductors Netherlands

"Chips are the new oil, the driving force in this century," Jean kicks off. "Without chips, the world would come to a standstill. No cars, no trains, not even coffee from your machine." The influence chips have on our technology has consequences for everyone.

Therefore, Jean is pleased that Europe understands that they have a role to play in these developments. "The worldwide market was worth 555 billion euros in 2021 and is expected to increase to approximately $1 trillion of annual revenues by the end of the decade. Because of that, a technological balance of power is essential."

However, according to Jean, the Chips Act will not fully solve this problem. "The chip industry is and will remain part of a global ecosystem. The global semiconductor industry is based on a collaborative system of mutual dependencies. No single region possesses end-to-end capabilities for semiconductor design and manufacturing. Around the world, semiconductor chip designers use intellectual property licenses and design verification to design wafer fabricators, which use raw materials, photomasks and equipment to create chips. It's a truly global process, with suppliers around the world.

Snowball effect

"The Chips Act aims to support an increase in semiconductor R&D and production across Europe in response to rising demand, to build on existing strengths and to reduce dependency on suppliers outside Europe. We now represent about 10% of the market. The European Union wants to double that in 2030."

Jean says that we have to be realistic. "It sounds like a lot, billions of euros to boost the industry. But in the semiconductor industry, substantial investments are needed to remain competitive. For example, NXP invests about 16% of its revenue each year in R&D - in 2021 this was approximately EUR 1,8 billion. And other companies won't stop investing." Jean hopes the European investment will cause a snowball effect.

"Imagine that Europe plays a leading role in developing 6G technology. That would give us a powerful position within the industry. It would make Europe a vital partner for other players."

A stronger position

The European plans will have a direct effect on NXP. "We are strongly present in Europe as a company, with plants and research labs in the Netherlands, Germany, France, Austria, Belgium and Hungary. These EU investment plans enable us to do more in Europe. We are a multinational, so we usually go where the knowledge and talent are for new developments. Through the EU Chips Act, Europe will strengthen its position in the global semiconductor ecosystem by supporting the leading capabilities and performance of European products and technologies that others rely on, incentivising R&D and manufacturing in the EU and encouraging the development of new technologies and innovation. This also will attract more talent in Europe, and thus will be an extra reason for us to work on new developments in Europe. The development of radar chips, for example, is something we are already doing in Europe. Knowledge about 5G and 6G is also potentially available at universities here."

Jean explains that businesses in this industry are dependent on bringing in knowledge and new people. "Universities get more opportunities to create courses. That is perfect for the long term because a lot more knowledge will become available."

Chips are everywhere

The Chip Act sets out measures to prevent, prepare, anticipate and respond to future supply chain disruption. How did the current chip shortage arise? Jean explains:

"There are actually a couple of reasons. First and foremost: global megatrends (like increasing use of the cloud, deployment of 5G, artificial intelligence applications, and compute capability) are shaping the intelligent, connected world that we live in and are fueling a significantly increasing demand for microchips. Almost all modern products use chips, which means that we cannot keep up with the demand. Another reason is related to the corona pandemic."

"During the first lockdowns in the second quarter of 2020, manufacturing plants worldwide, and also of our customers, closed. Especially the demand from the car industry suddenly fell away. But other industries, such as computer and communications companies, took their place. The problem is, making chips takes a long time. About three to six months."

"In the second half of 2020, the demand for chips accelerated at a very rapid rate. As the auto and industrial markets began to rebound in the second half of 2020, the available foundry capacity was already sold out. As a result, we and others in the industry were experiencing significant increases in lead times. The semiconductor industry is still struggling with that imbalance today, and that will not be solved overnight." Building additional factories is also not a simple matter. "Factories in which chips are built are complex and very hightech. Building a new factory takes at least 4 to 5 years, and maybe an investment of over 7 billion euros. Several companies have plans to build new, but it will take some time."

Pictured is NXP Semiconductors in Nijmegen, The Netherlands.