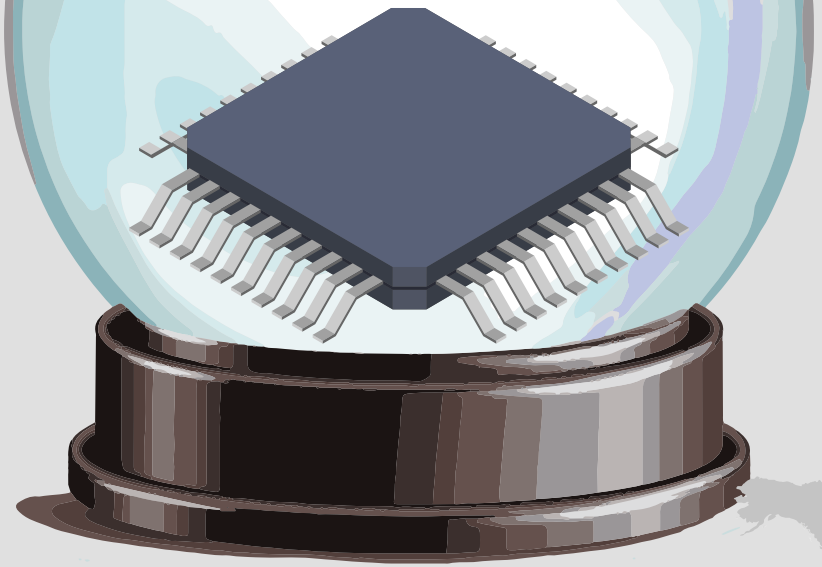
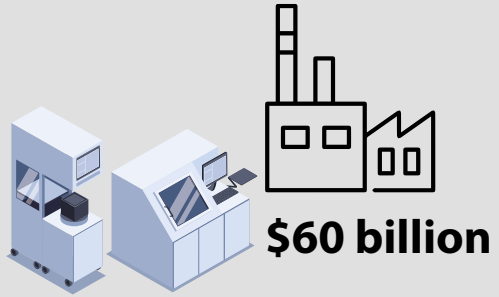
FAGOR ELECTRÓNICA

What will happen in 2022 with Semiconductors?

24 months of shortages

Many types of chips will still be in short supply throughout 2022, and with some component lead times pushing into 2023, meaning that the shortage will have lasted 24 months before it recedes, **similar to the duration of the 2008–2009 chip shortage.**





$60 billion

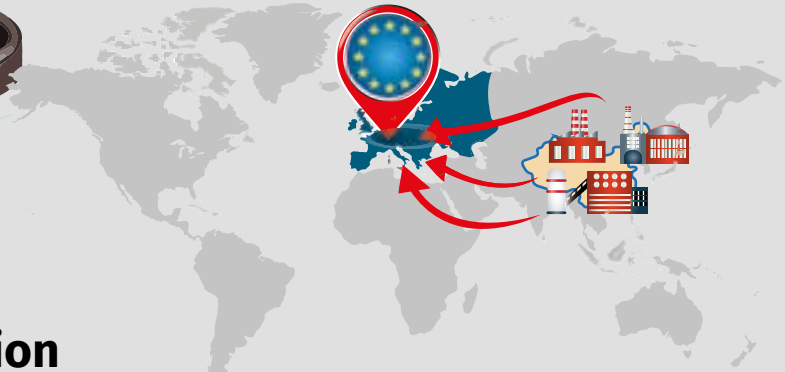
By 2022, the world's three largest semiconductor manufacturers will invest $60 billion to increase capacity at existing fabs and build new facilities.

2023, finally the balance

By the end of 2022, we expect lead times to be closer to 10-20 weeks and the industry will be in balance by early 2023.

2021 50 weeks of waiting time

2023 10-20 weeks



New trend: de-globalisation

To avoid future shortages, governments are pushing to increase local supply. By 2020, **81% of semiconductor contract manufacturing** was in Taiwan or South Korea. The United States, the European Union and China have committed to increasing semiconductor manufacturing capacity in their country or region, a process called **localisation.**

Digital Transformation and the Pandemic, the causes of demand increase

Computer sales
50% increase

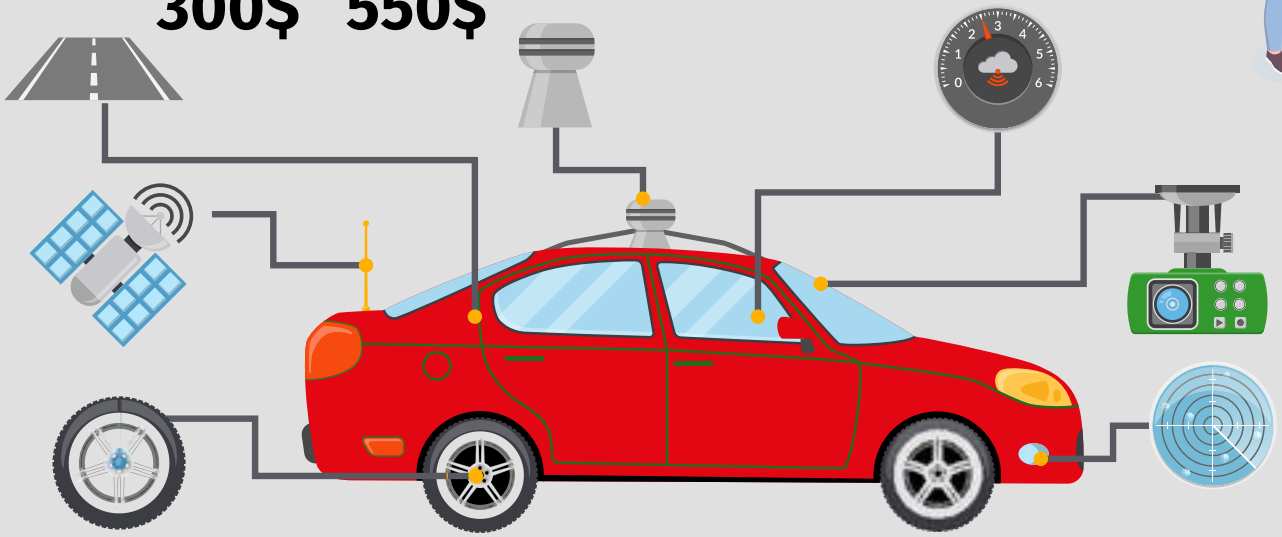
The pandemic has accelerated digitisation and the sale of computers and electronic devices has **increased by 50%**. Likewise, the need for chips for cloud computing data centres **rose by 30%.** Although growth in both areas slowed somewhat in the last months of 2021, demand in 2022 is forecast to remain well above long-term trends

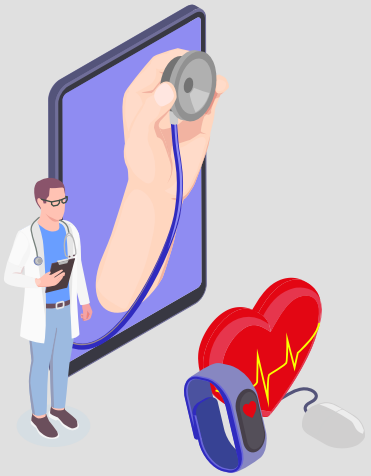
Increase of chips
in the automotive sector

The automotive industry's use of chips is growing fast and will probably keep growing for the foreseeable future. The average car in 2010 contained US$300 worth of microchips. As cars become increasingly digital, that figure will likely rise to more than US$500 in 2022, totaling more than US$60 billion for the year.

2010 **Microchips per car** **300$**

2021 **Microchips per car** **550$**





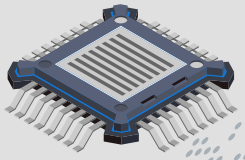
Increase in chips
in the health sector

The health care industry's use of chips will likely grow. Regulators are approving connected home health care devices such as **wearables and smart patches** whose use may span hundreds of millions of units, especially given the rise in virtual visits

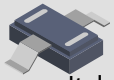
The manufacturers' challenge

There has been a historical **concentration** of the chip manufacturing industry in a few geographic areas: Silicon Valley in the past, and Taiwan and South Korea more recently.

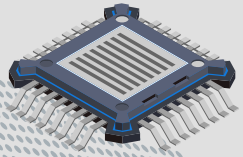
This clustering **improved efficiency, lead times and profitability** in good times, but, as we have seen, it also amplified risk.



Microprocessors
Silicon Valley



Semiconductors
France, Italy, Holland, Spain, Germany



Microprocessors
Taiwan, Korea & China

Fagor Electrónica is **the only manufacturer** of semiconductor components (Discrete) in Spain.

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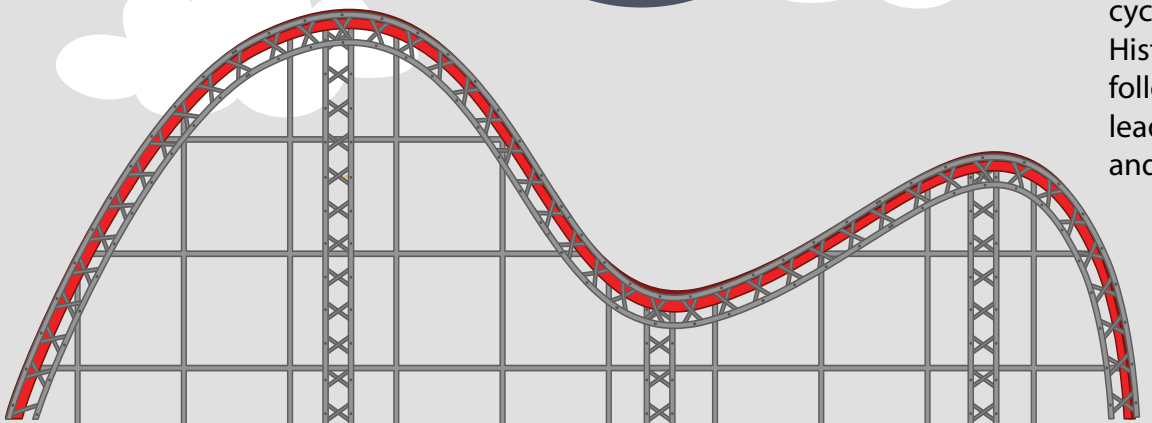

The biggest challenge for semiconductor manufacturers, distributors and equipment suppliers is likely to be **avoiding the boom and bust** cycle for which the industry is known. Historically, every shortage has been followed by a period of oversupply, leading to falling prices, revenues and profits.