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Archive

The Current Status of the Burn-in and Test Socket Market

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2021 was a great year for burn-in and test socket suppliers



19% Growth

Revenues of \$1.7Bn

So how was it for you?



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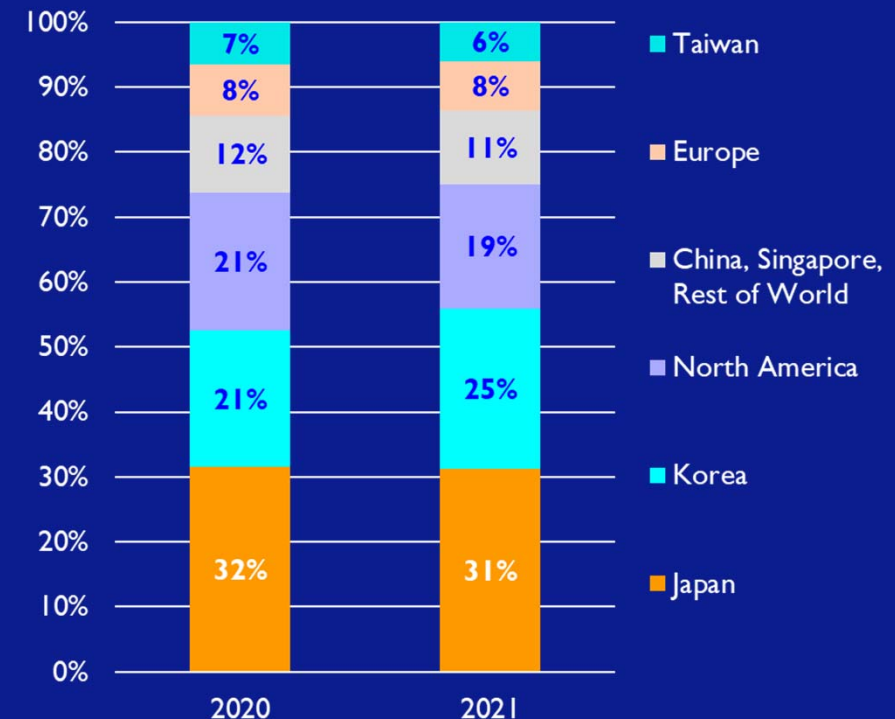
2021 was a great year for burn-in and test socket suppliers... ...but how good depended on region of company HQ

Korean suppliers knocked the ball out of the park

North American and Taiwanese suppliers struggled

While suppliers from all other regions were close to the 19% average growth rate

Share of Market by Supplier HQ



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Why the Big Differences?

- Supply Chain Challenges
- Customers and Applications
- Technology Restrictions by US on China



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Supply Chain Challenges

- Materials Shortages and Increased Lead Times
 - Engineering Plastics
 - Metals and Alloys
- Capacity Limitations
 - Suppliers with excess capacity at the beginning of 2020 or capacity expansion underway did well
 - Those without expansion plans had to wait at the back of the line
- COVID-19 Lockdowns
- Foreign socket suppliers with manufacturing in China



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Customers and Applications

- Automotive – impacted by fab shutdowns
- Memory – strong Q1 to Q3
- Advanced Logic – fewer new product introductions
- System Level Test – grew 21%



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Technology Restrictions by US on China

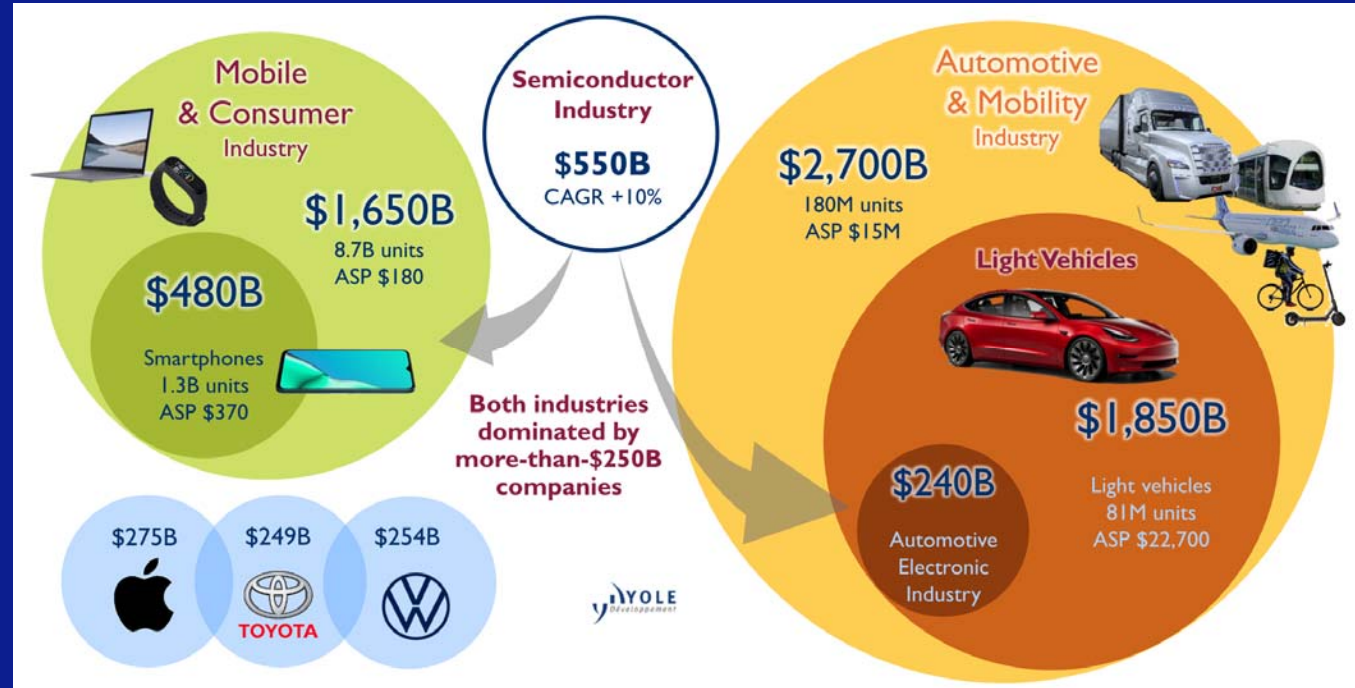
- Negative impact on US suppliers
- Tough for foreign suppliers with manufacturing in China
- Flow of investment from China to South East Asia
- Shift from Huawei to Taiwanese chipmakers



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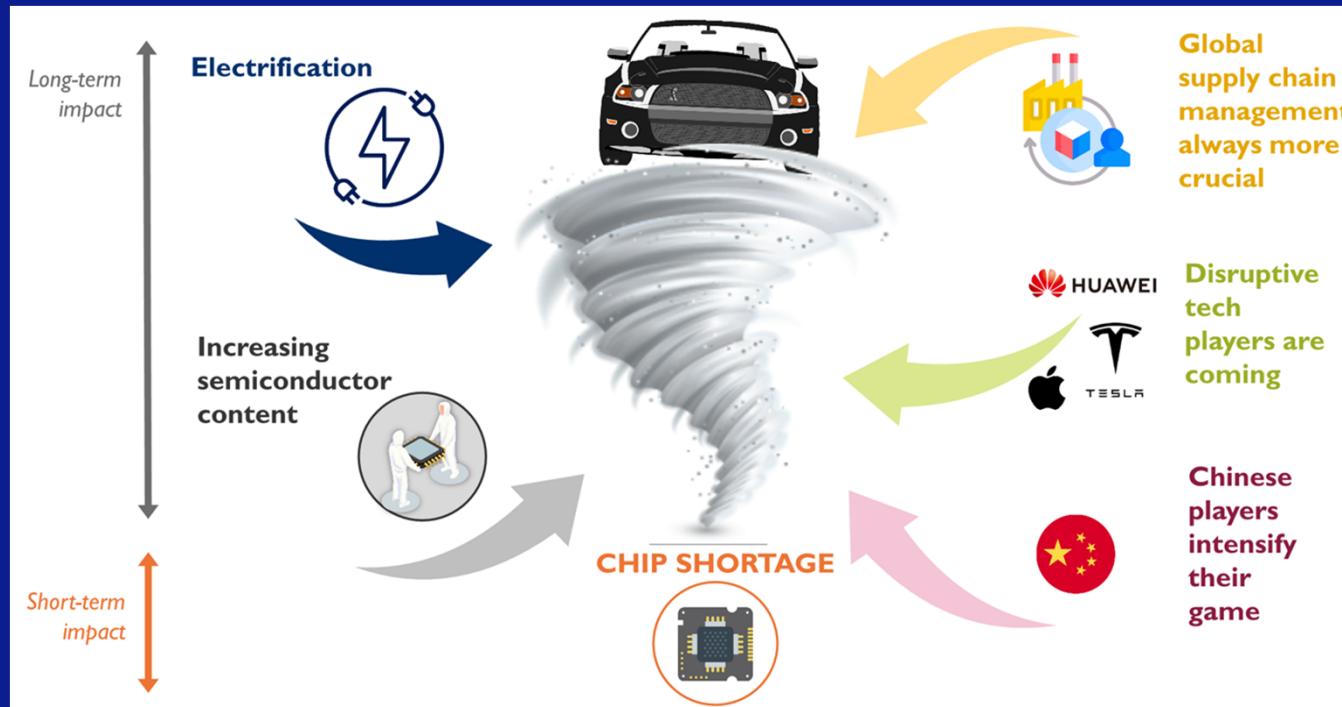
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2021 Industry Overview



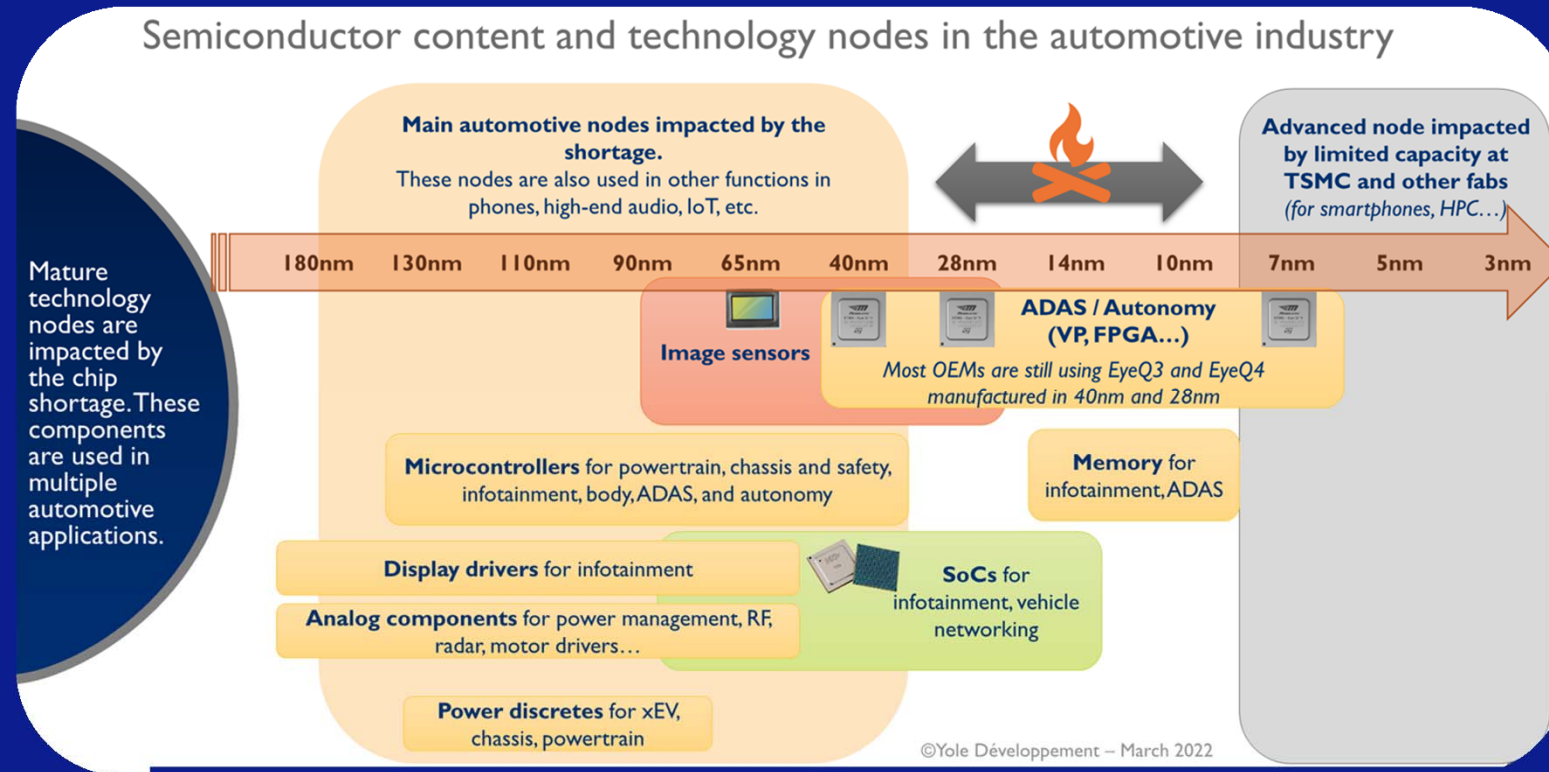
Semi industry was driven by strong demand across all end markets reaching a total value of \$550B in 2021

Focus on Automotive – Semi Shortage



Inside & outside forces have created a shortage crisis of chips using in Automotive & Mobility industry.

Focus on Automotive – Semi Shortage



Focus on Automotive – The Snowball Effect

Many companies are shifting from multisourcing of ICs to single sourcing from TSMC.

Sanctions are causing some companies to begin stockpiling.

Companies reduce workforce.

OEMs reduce IC orders.

Rise of consumer electronics demand.

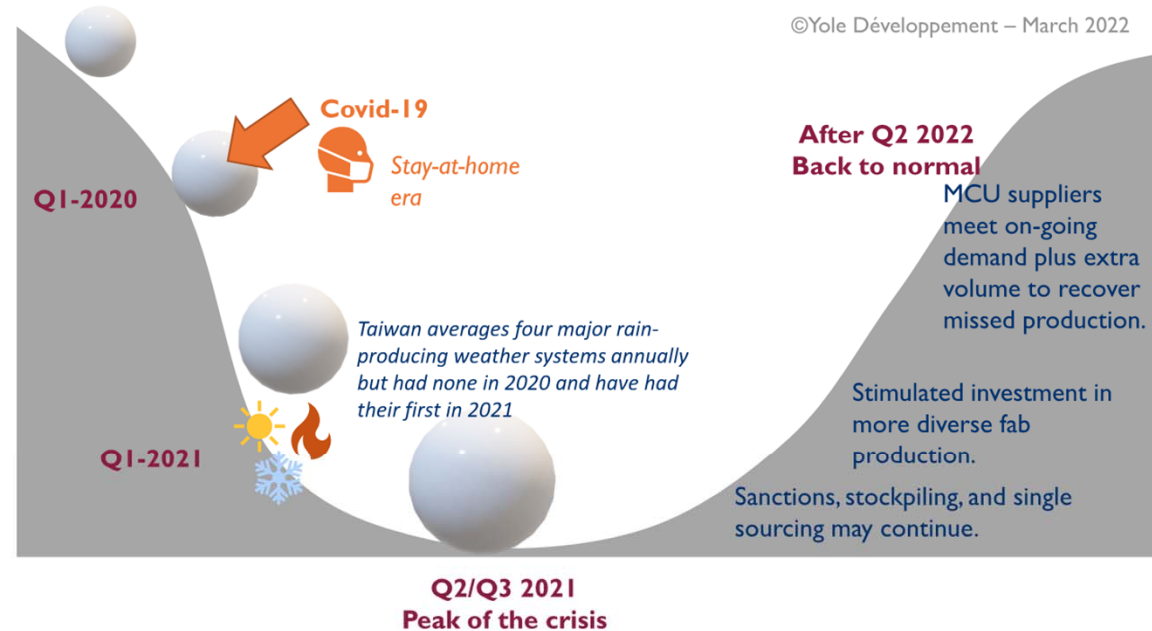
Chip manufacturers reallocate capacity to fill consumer demand and increase the price of automotive chips by **30 - 40%**.

Fear of public transportation leads to a rapid increase in demand for new cars.

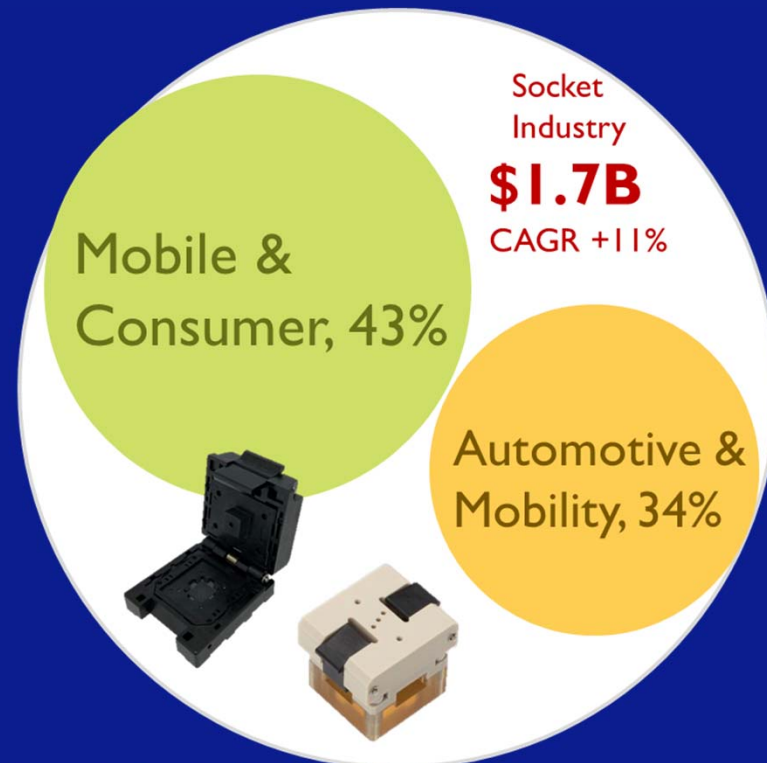
Public incentives to buy electric cars and/or second-hand cars/penalties for polluting cars.

Disasters such as severe winter in the U.S., fire at Renesas factory, and drought in Taiwan.

Introduction of new products from Apple, Microsoft, Nvidia, AMD, Intel.



2021 Socket Revenues by End Market



2021 Socket Market Size – **\$1.7B**

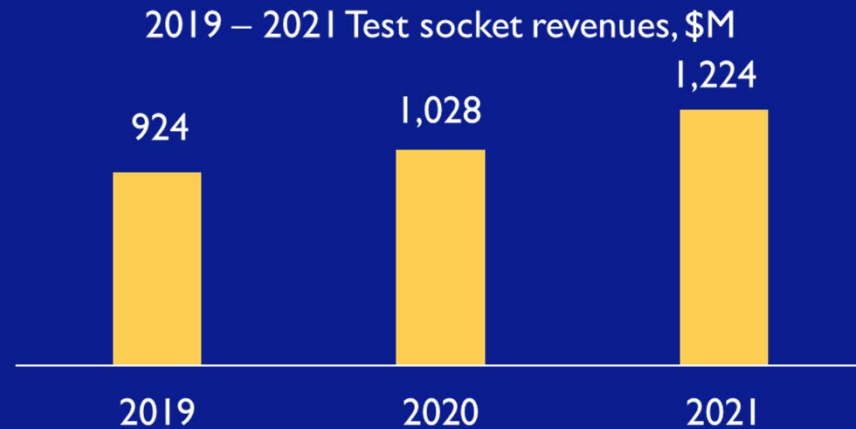
Revenue growth in 2021 would have been greater if the supply chain were able to respond faster.

Mobile and Consumer - 43%, \$725M

Auto and Mobility - 34%, \$587M

Other (industrial, medical, defense, and telecom infrastructure) - 23%, \$393M

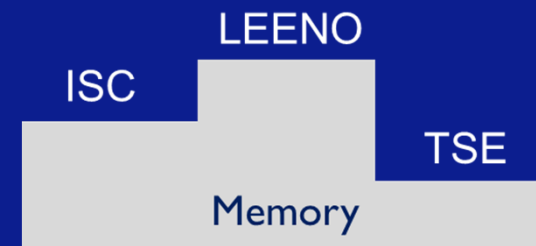
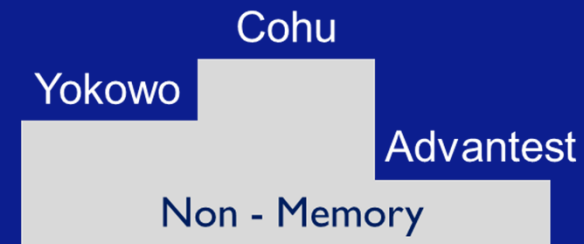
2021 Test Socket Market and Key Players



Annual growth rate 2021: +19%

Market drivers: Memory and Power Management

Most suppliers feel positive up to Q4 2023



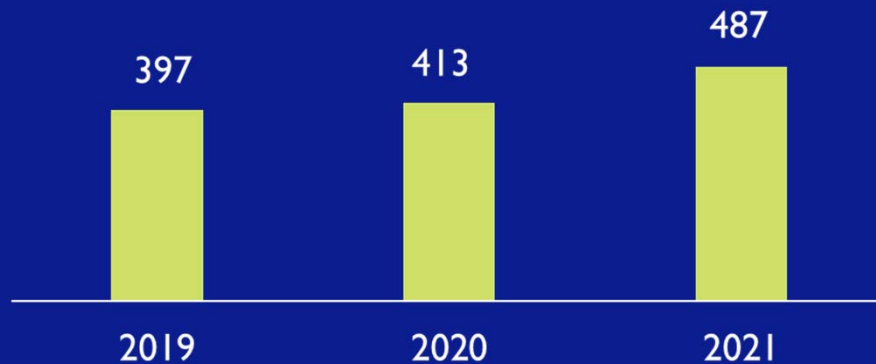
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2021 Burn-in Socket Market and Key Players

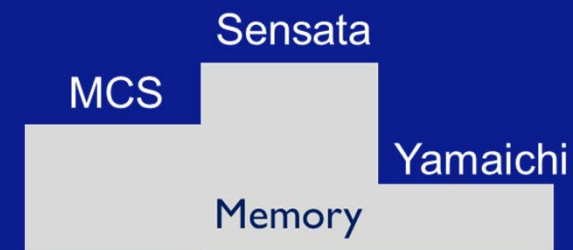
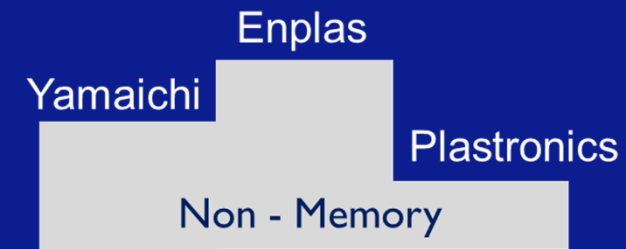
2019 – 2021 Burn-in socket revenues, \$M



Highest annual growth rate (+18%) since 2010

Driven by DRAM and general non-memory applications

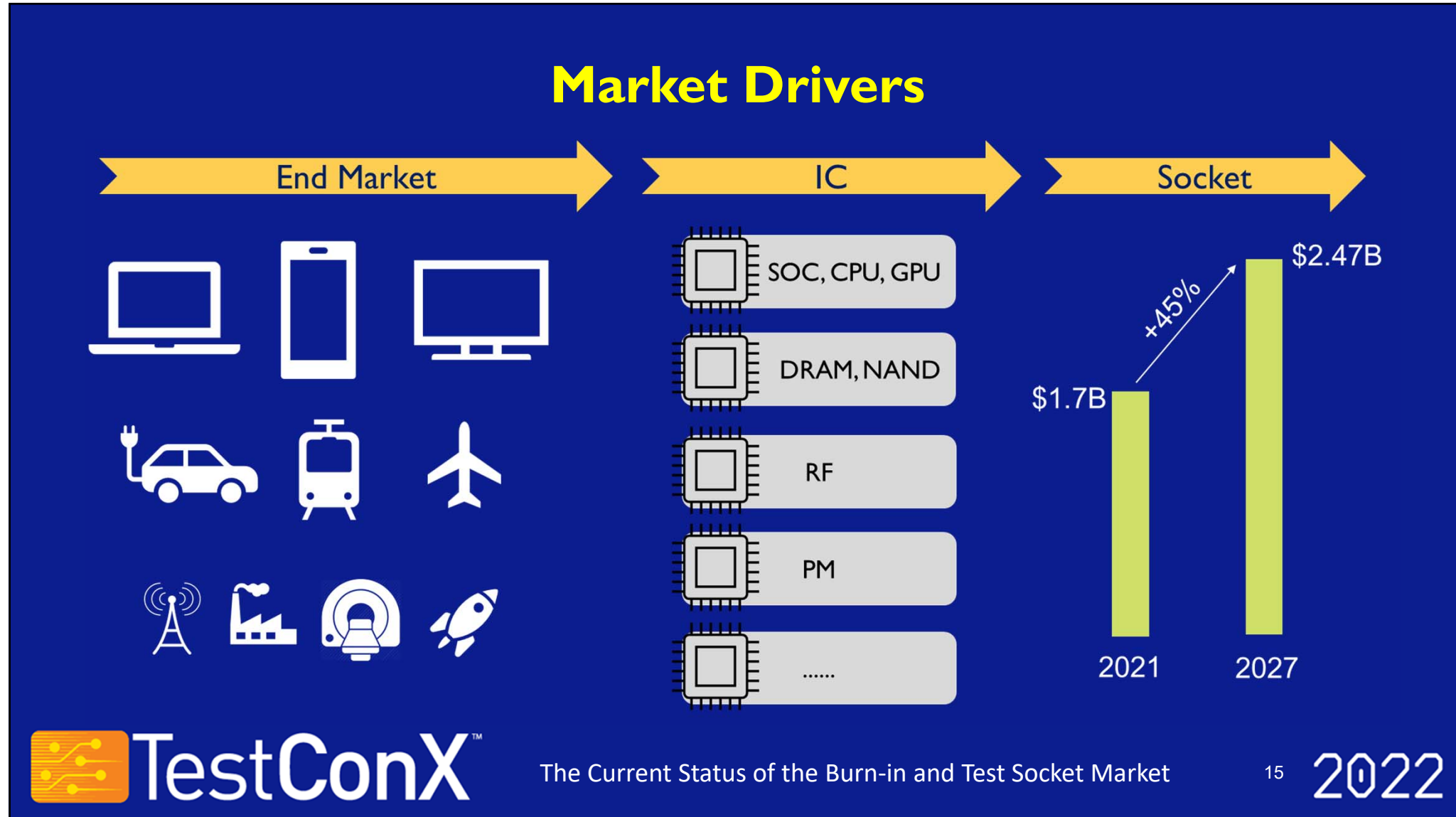
Concerns about inventory held by big customers



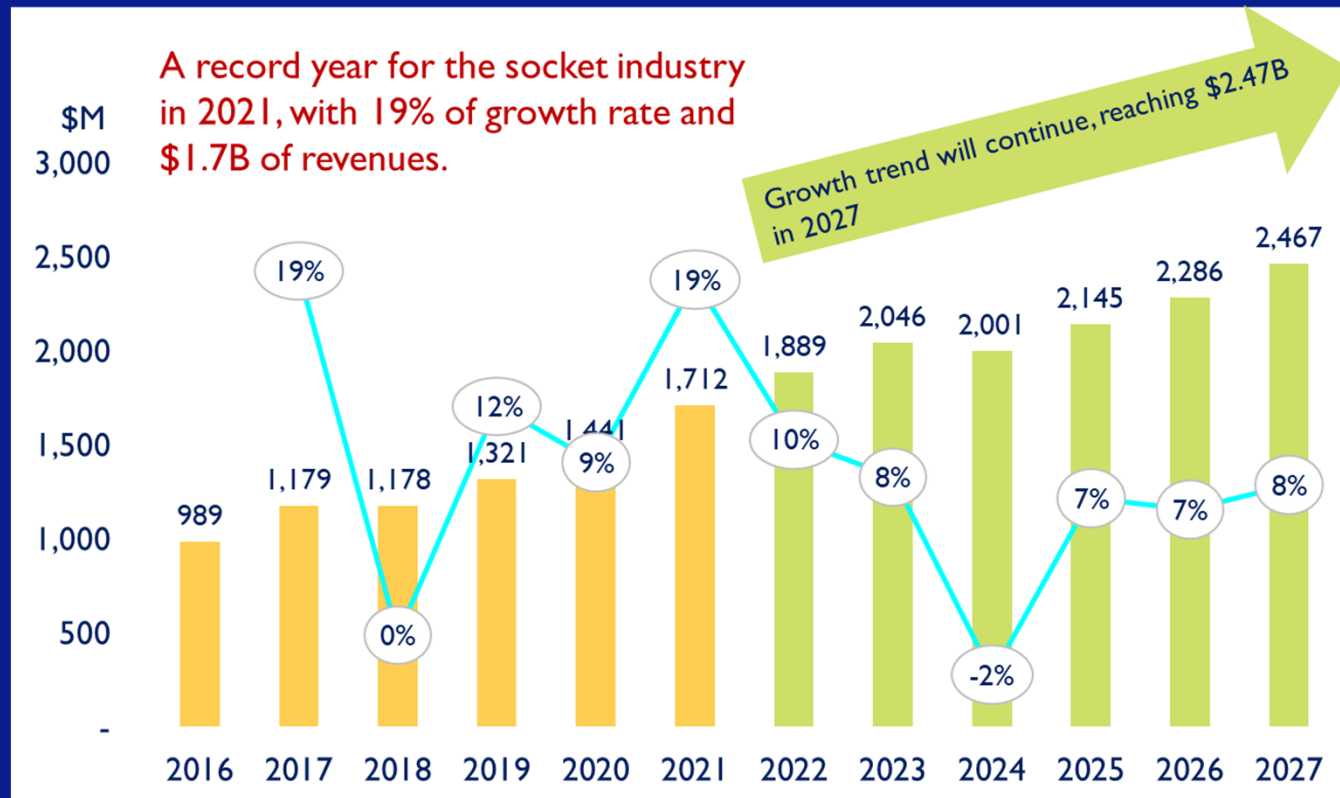
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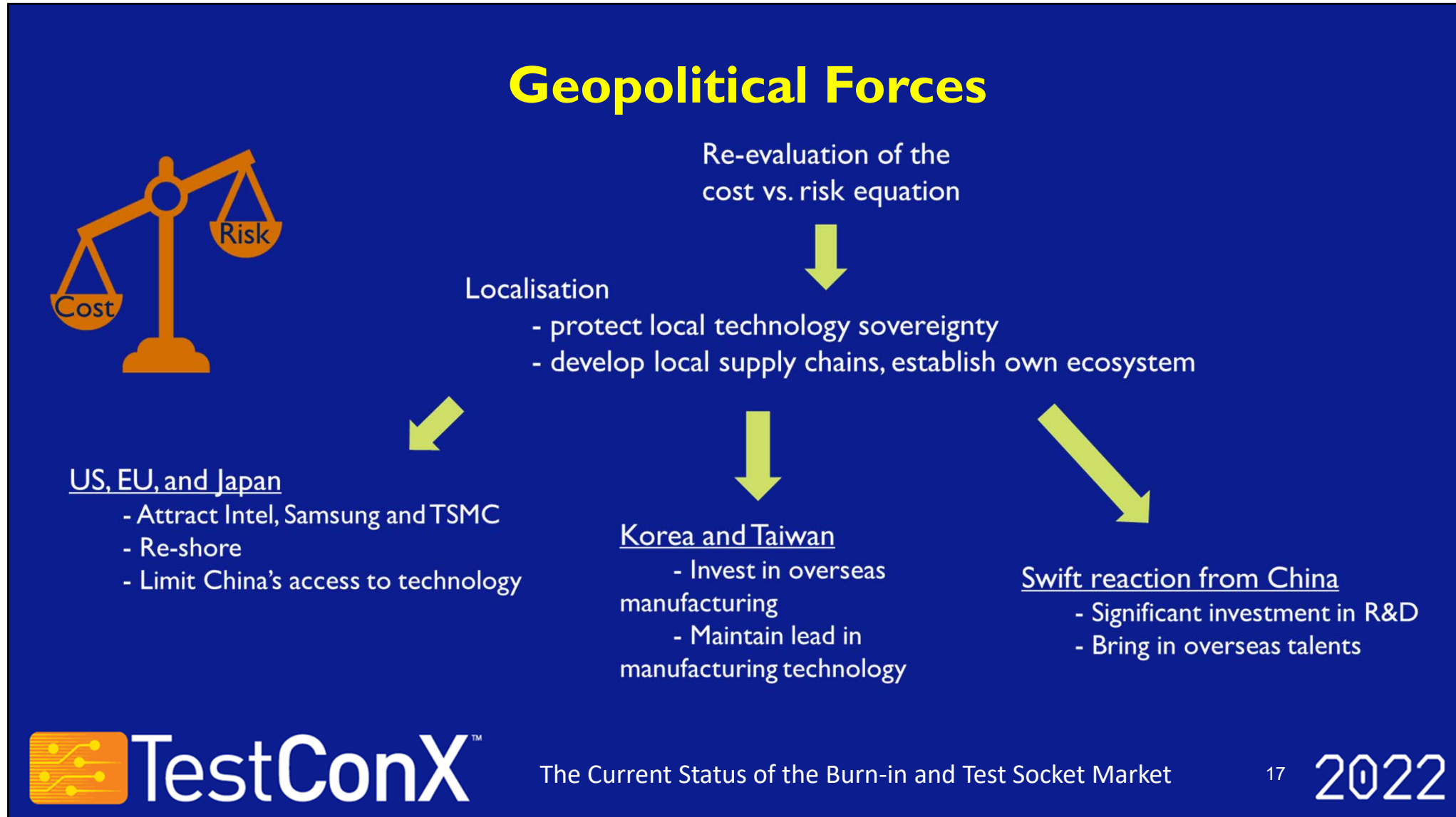
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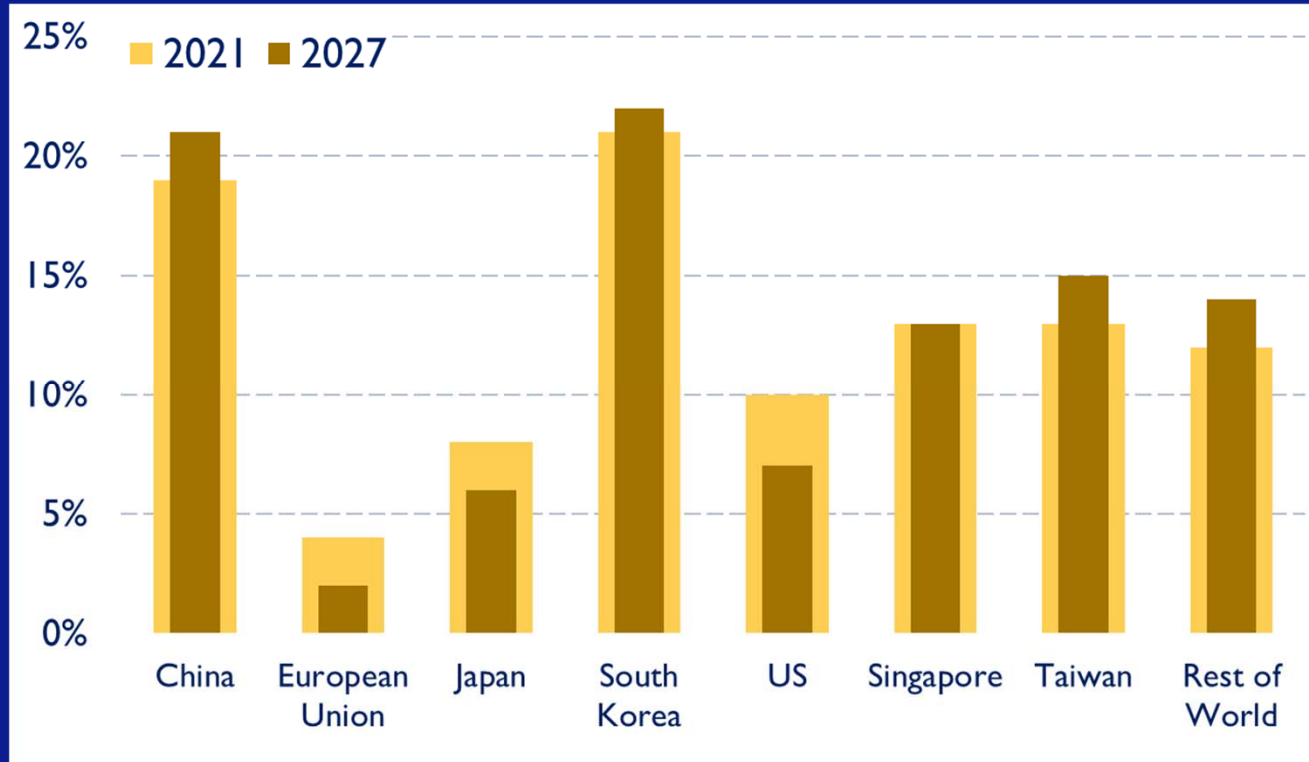
Market Trend 2022 - 2027



Inflation in the OECD area keeps rising (7.2% in Jan 2022, the highest since 1991). It is putting upward pressure on prices.



Regional trend : Consumption 2022 & 2027



- China and most of other Asia will continue to increase market share in package & test due to relatively low barriers compared to front-end IC manufacturing.
- US, EU and Japan will pay more attention to re-shore wafer fab manufacturing

Final Thoughts

Supply chains (burn-in and test sockets) subject to disruptions for a few more quarters

- Current upturn expected to last until Q3-Q4 2023
- Peak quarterly burn-in and test socket shipments expected in Q3 2023

Keep track of customer inventories

Think big

Act smart – stay informed and up to date



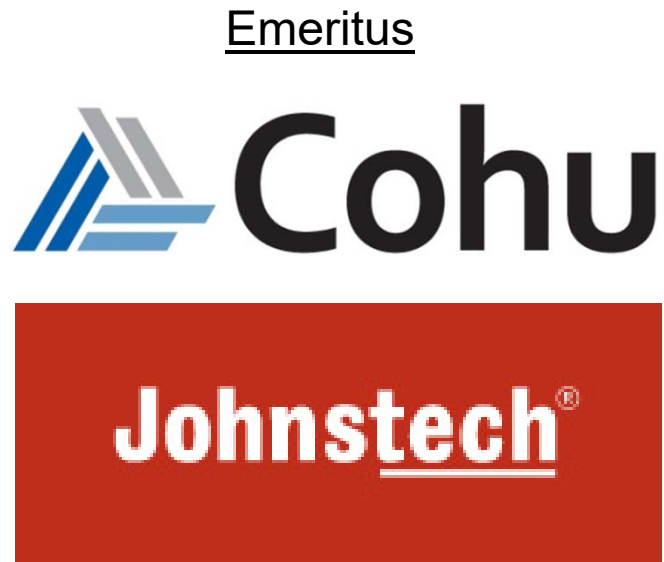
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