



ASML

When expectation and specifications diverge

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Customer Supply Chain Management

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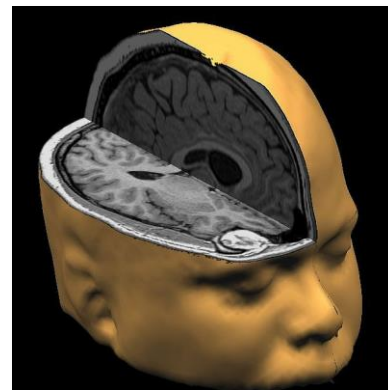
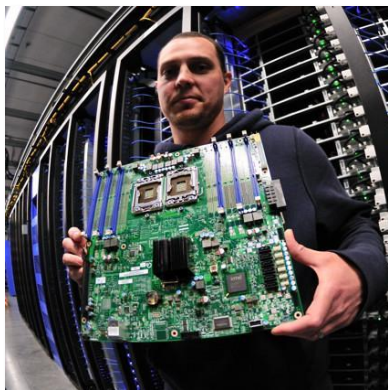
Agenda

Introduction ASML

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ASML

It's hard to imagine a world without chips



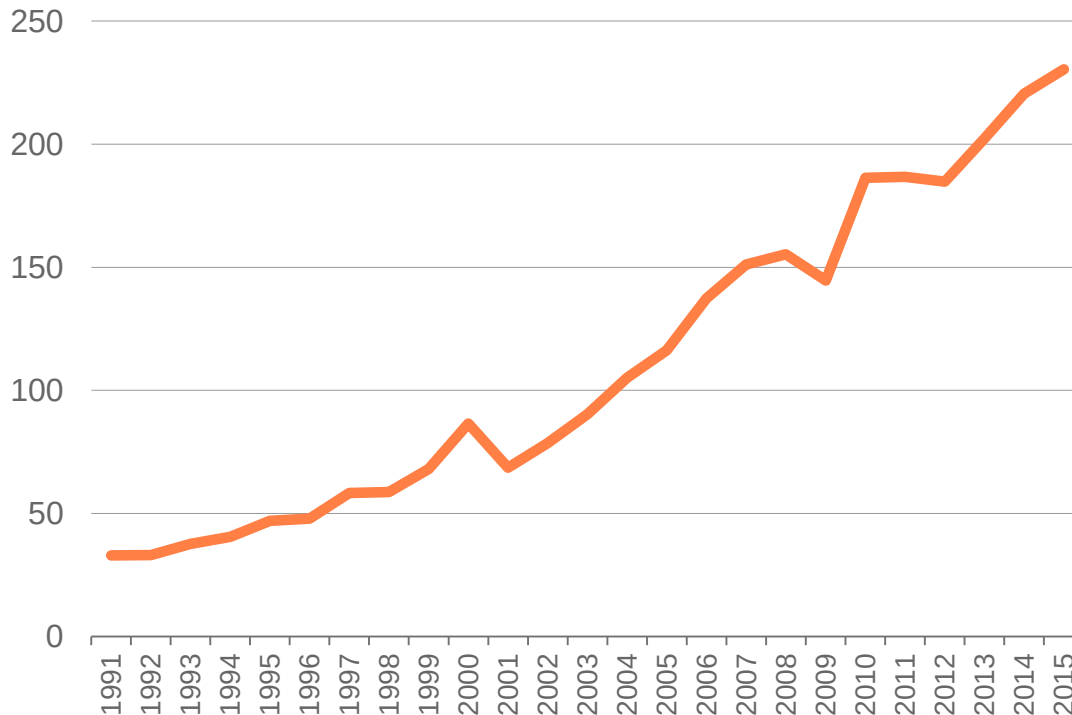


The *Internet of Things* will connect a growing number of devices
from 12 billion in 2012 to **50 billion in 2020**

60% 'Things'		30% Mobile		10% PC	
35% Consumer electronics	30% Buildings	10% Utilities	10% Automotive	5% Health	10% Other

More than 200 billion chips are made every year

IC units, in billions



In 2015, 230 billion chips were produced — 30 for every man, woman and child on the planet.

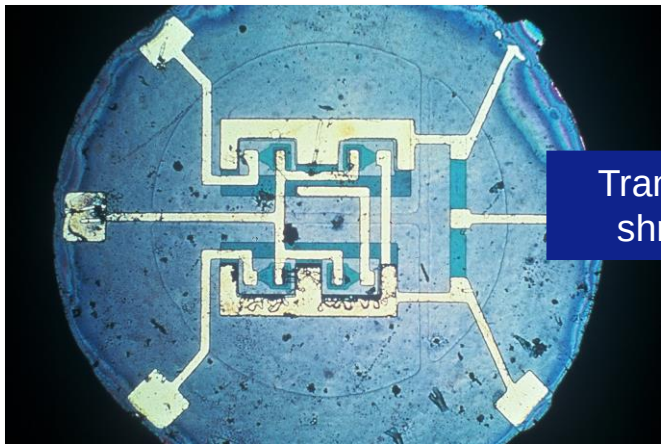
Global semiconductor industry sales were \$335 billion.

All major chipmakers are our customers

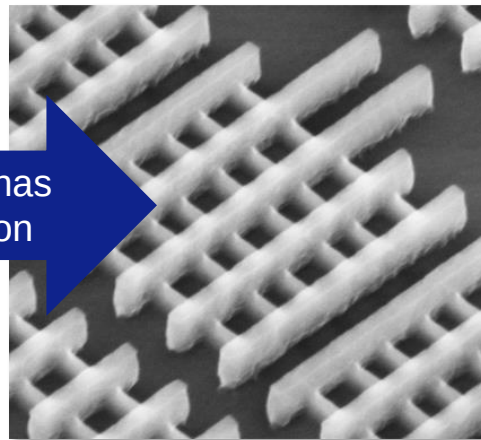


Company	2016 semi capex (\$M)
Samsung	11,500
TSMC Group	10,200
Intel	9,500
Micron	6,200
SK hynix	5,200
Toshiba/Sandisk	3,600
UMC	2,800
SMIC	2,600
GLOBALFOUNDRIES	2,500
Sony	0,700
Others	18,200
Total	73,000

Key to Moore's Law: Making smaller transistors



Transistor length has
shrunk by a million



The first integrated circuit
on silicon, on a **wafer the size
of a fingernail**
(Fairchild Semiconductor, 1959)

Today: **More than a
billion transistors on
the same area**
(Intel, 2012)

System performance and complexity revolutionize



1984

PAS 2000

Resolution: 1200 nm
Overlay: 300 nm
Wafer size: 100 mm
Productivity: 20 wafers /hr



2015

TWINSKAN NXT:1980Di

Resolution: ≤ 38 nm
Overlay: 1.2 nm
Wafer size: 300 mm
Productivity: 275 wafers /hr



2017

TWINSKAN NXE:3350B

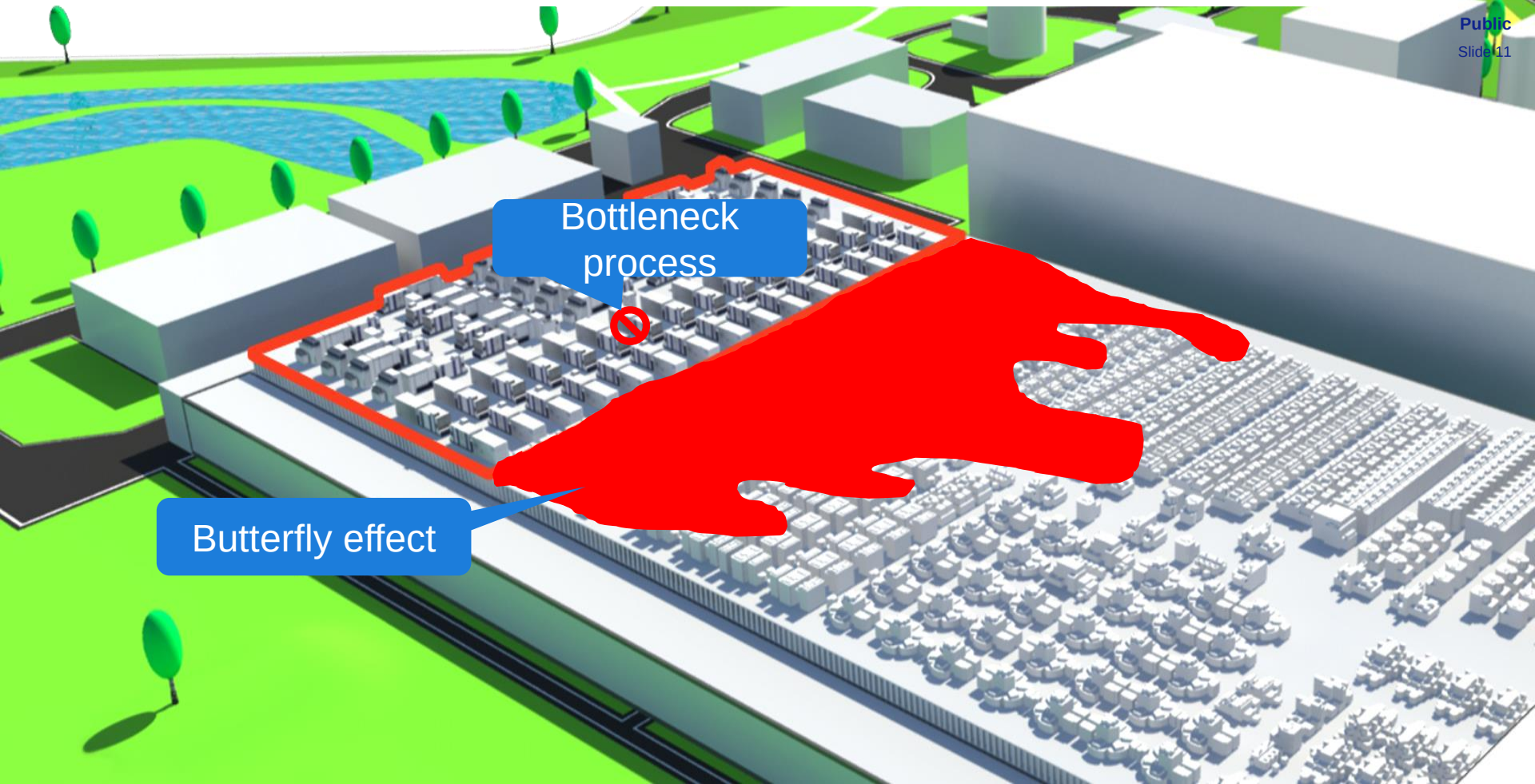
Resolution: ≤ 22 nm
Overlay: 1.0 nm
Wafer size: 300 mm
Productivity: 125 wafers /hr

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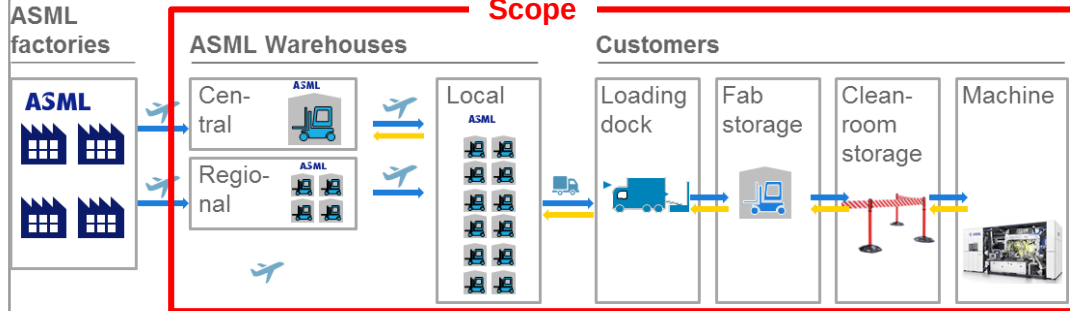
Breakdown in our (bottleneck) system affects whole customer fab



Customer Supply Chain Management

Customer SC characteristics

- System downtime cost about > 1.5 million Euro p/day
- Recovery of downtime takes between 1-3 months
- SLA's allow us just 20 minutes per week to deliver parts



CSCM, part of SCM

Mission

Deliver **supply chain solutions** to provide customers with reliable and affordable production capacity

Vision

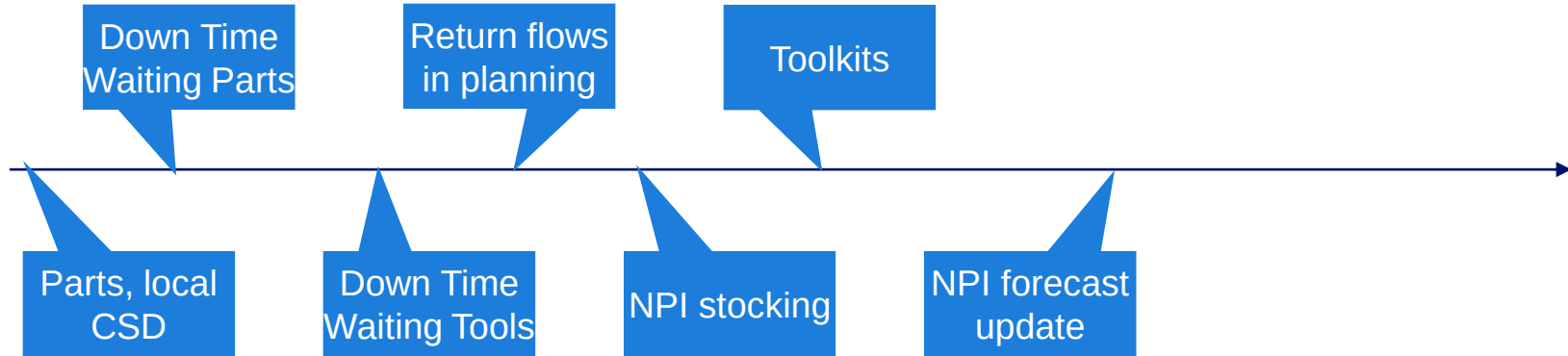
Develop and deliver solutions to support Service Business growth ambition
Be the **Supply Chain partner** for our key customers

Recognized by customer for delivered solutions

Enable **efficient upgrade solutions** that limit machine downtime for customers

Evolution of planning logic over the years

Close cooperation with TU/e



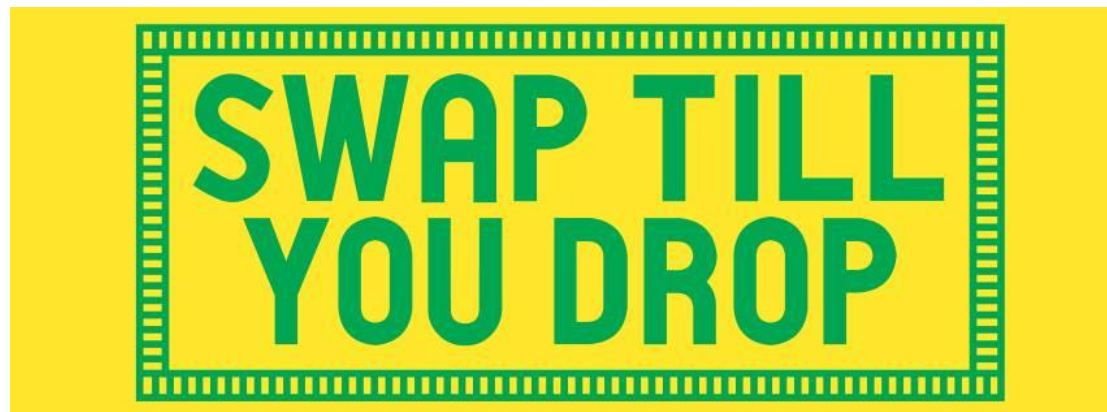
The background of the slide features a series of light blue, wavy lines that originate from the left side and curve towards the right, creating a sense of motion and depth. The lines are thin and closely spaced, fading out as they move towards the right.

And then reality hits
Some of our current challenges

Customer expectations

Some topics we're hearing more regularly

1. Amazonification
2. 'Usage' & Diagnostics
3. XLD – not all events are equal



Systemic changes

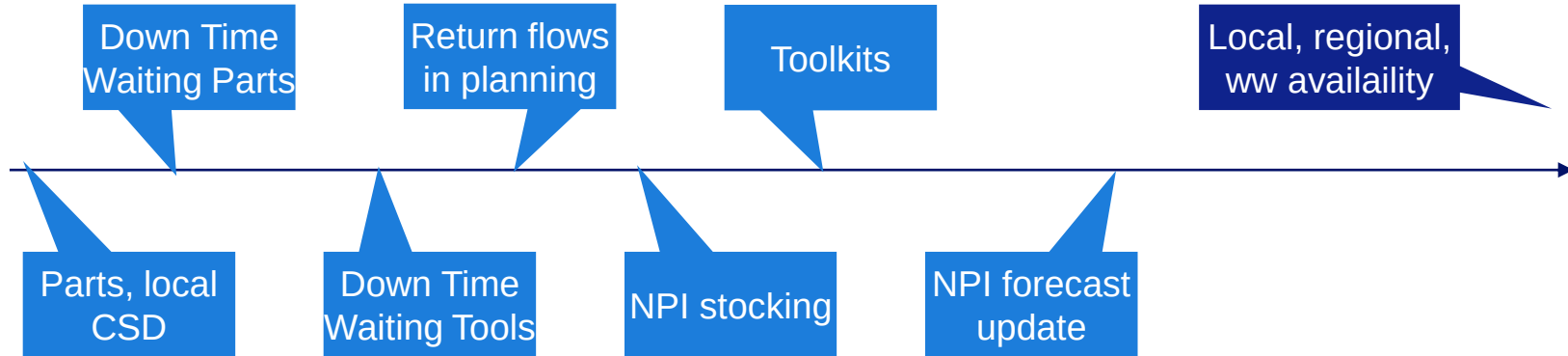
With increasing complexity and extended lifetime...

1. Increase complexity demands dynamic kids
2. Interference between preventive, corrective maintenance and upgrades
3. Nfor backup parts



Evolution of planning logic over the years

Close cooperation with TU/e



The image features the ASML logo in a bold, dark blue, sans-serif font. The logo is positioned on the left side of the frame. The background is a light blue gradient with abstract, flowing white lines that create a sense of movement and depth, resembling stylized waves or a modern architectural design.

ASML