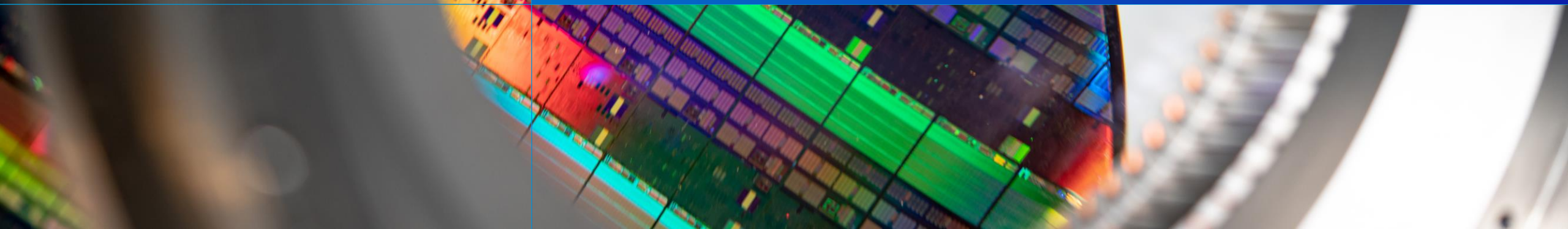


Changing the World, One Nanometer at a Time, Together

→ **Organize for Growth: Enable suppliers to meet your growth demands**

Paul Enders
Head of Supply Chain Transformations

May 2025



Our story begins in the Philips lab in 1984

Humble beginnings make for a strong can-do culture



Started as a joint venture by Philips and ASMI

Just 31 employees with a can-do attitude

It took a decade of perseverance to break into the market

Public

Innovation and perseverance have brought us here



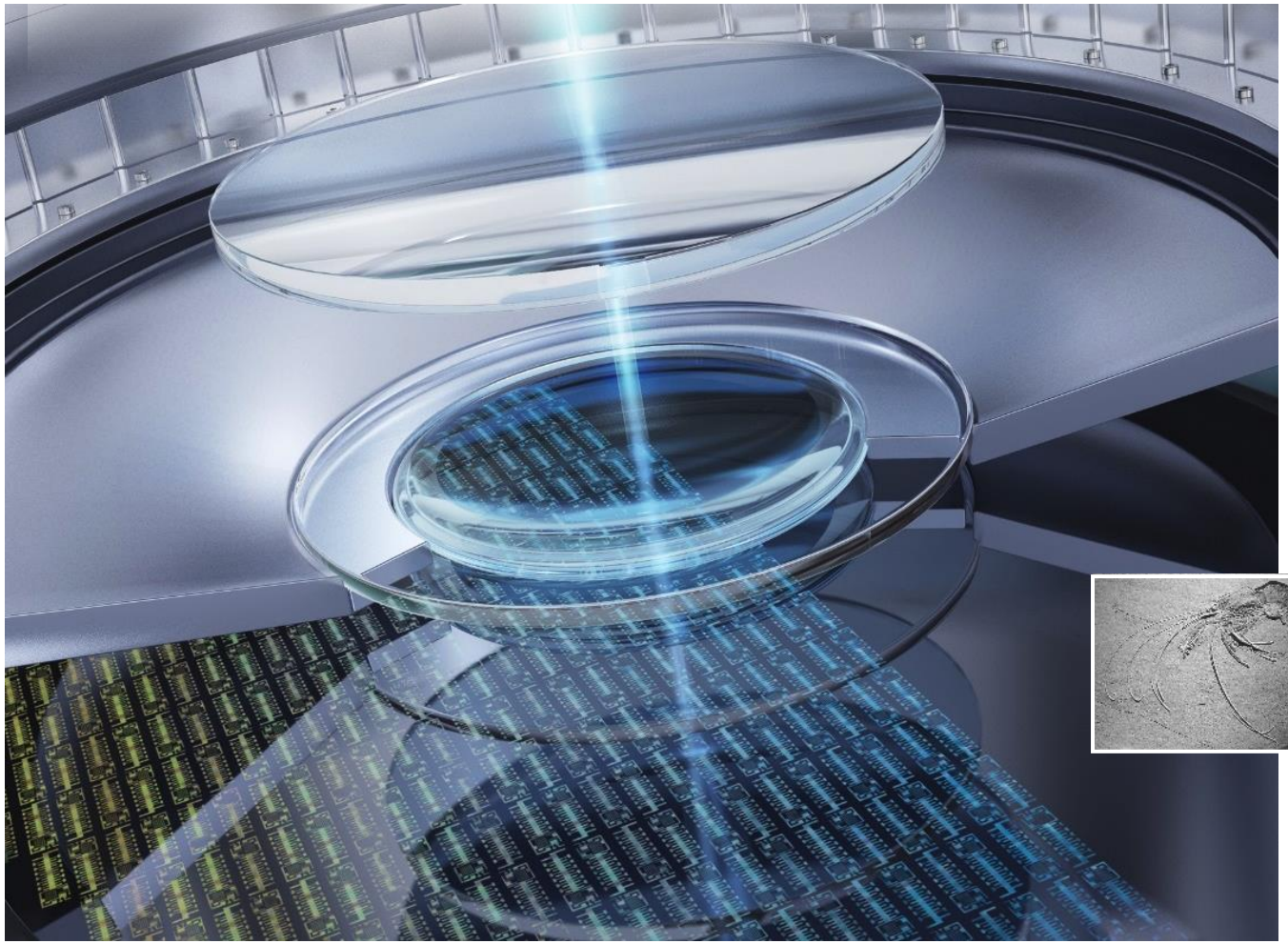
All major chipmakers use ASML's technology

Europe's biggest tech company by market cap

Annual R&D budget of €4 bn

Public

Lithography is critical for shrinking transistors



Lithography is the only semiconductor production step to process the wafer die per die, in contrast with all other production steps. This makes ASML's technology so pivotal in getting the highest yield and best performance in chip manufacturing

Lithography: Ancient Greek λίθος, lithos, meaning 'stone', and γράφειν, graphein, meaning 'to write')



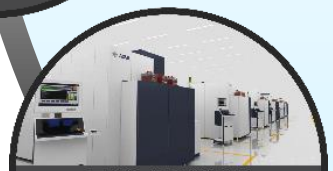
Public

Lithography innovation keeps chip manufacturing affordable



PAS 2500/10
Res: 900nm
W: 150mm
Wph: 66

80s
436 nm → 365 nm light
100 mm → 150 mm wafers



PAS 5500/60
Res: 450nm
W: 200mm
Wph: 48

90s
248 nm → 193 nm light
150 mm → 200 mm wafers
'step & repeat' → 'step & scan'

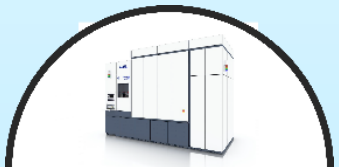


TWINSCAN AT:850
Res: 110nm
W: 300mm
Wph: 102



TWINSCAN XT:1400
Res: 65nm
W: 300mm
Wph: 145

00s
200 mm → 300 mm wafers
Dry → immersion lithography
Single stage → dual stage

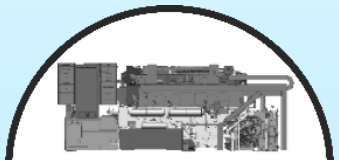


TWINSCAN NXT:1950i
Res: 38nm
W: 300mm
Wph: 190



TWINSCAN NXE:3400B
Res: 13nm
W: 300mm
Wph: 125

10s/20s
Litho → Holistic litho
Immersion → EUV
EUV 0.33 → EUV 0.55



High NA EUV
Res: <8nm
W: 300mm
Wph: 185

Relative cost per pixel

Public

Technology-wise, we had to move mountains

Sometimes it seemed impossible – until we did it

80s

436 nm → 365 nm light
100 mm → 150 mm wafers



90s

248 nm → 193 nm light
150 mm → 200 mm wafers
'step & repeat' → 'step & scan'





00s

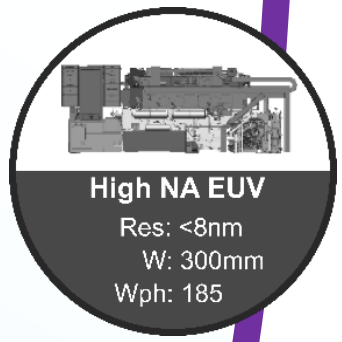
200 mm → 300 mm wafers
Dry → immersion lithography
Single stage → dual stage



10s/20s

Litho → Holistic litho
Immersion → EUV
EUV 0.33 → EUV 0.55



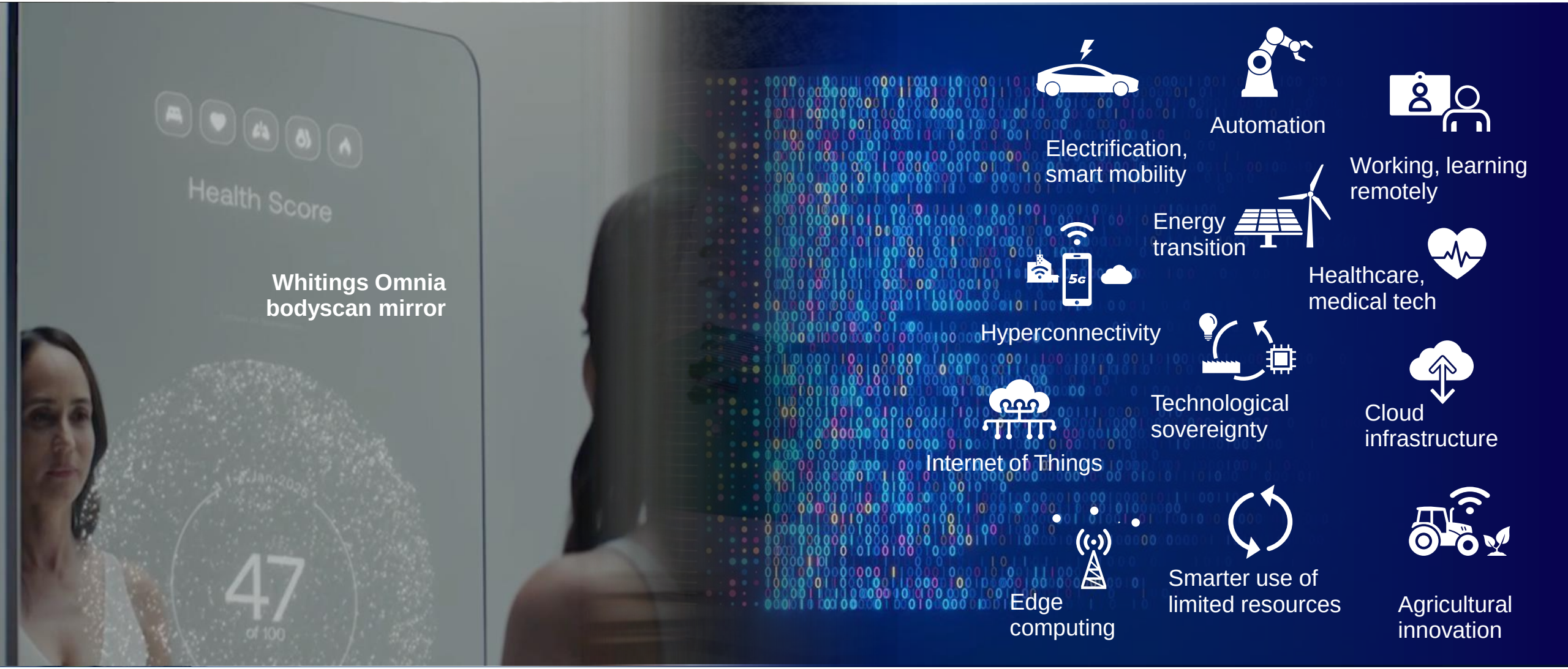


System complexity

Public

We see our society going from chips everywhere to AI chips everywhere

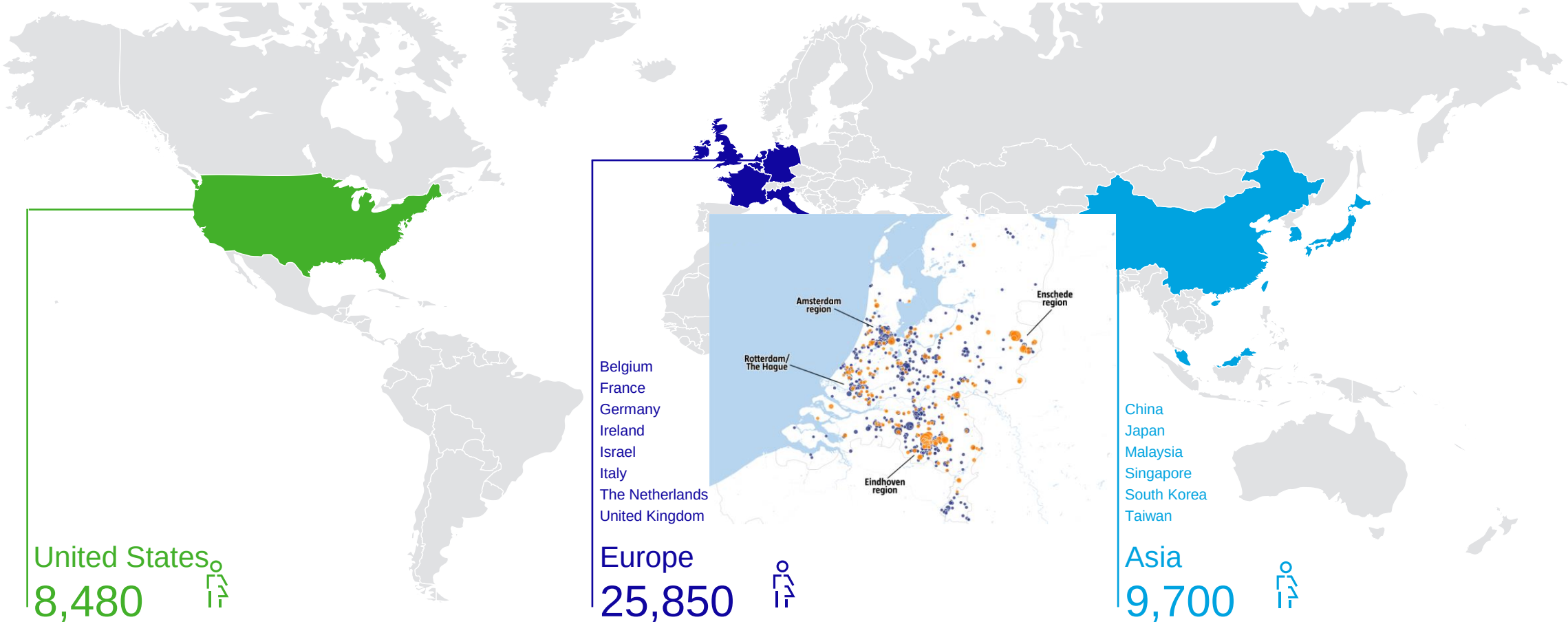
Generative AI opens endless opportunities



Public

A global presence with >44,000 employees

For every ASML FTE there are 3 FTE working in our value chain



United States
8,480

Belgium
France
Germany
Ireland
Israel
Italy
The Netherlands
United Kingdom

Europe
25,850

China
Japan
Malaysia
Singapore
South Korea
Taiwan

Asia
9,700

Source: ASML's 2024 Annual Report

Public

Significant variety exists across our supply base; some examples

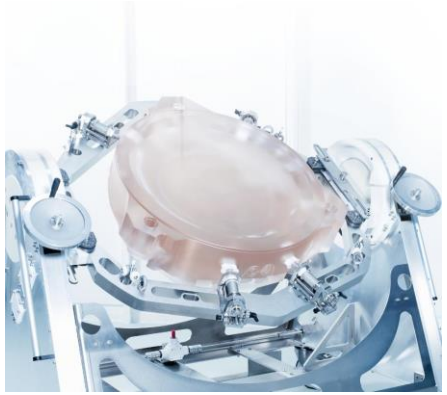
Large & IP heavy

Major, complex, modules

Multinational

Owns significant amount of IP; joint Research & Development

High mutual dependency



Large, contract manufacturer

Complex assemblies

Multi-site, multi-country

Owns only limited IP, some joint development

High mutual dependency & high switching cost



Local mechanics

Relatively simple mono-parts

Single manufacturing site

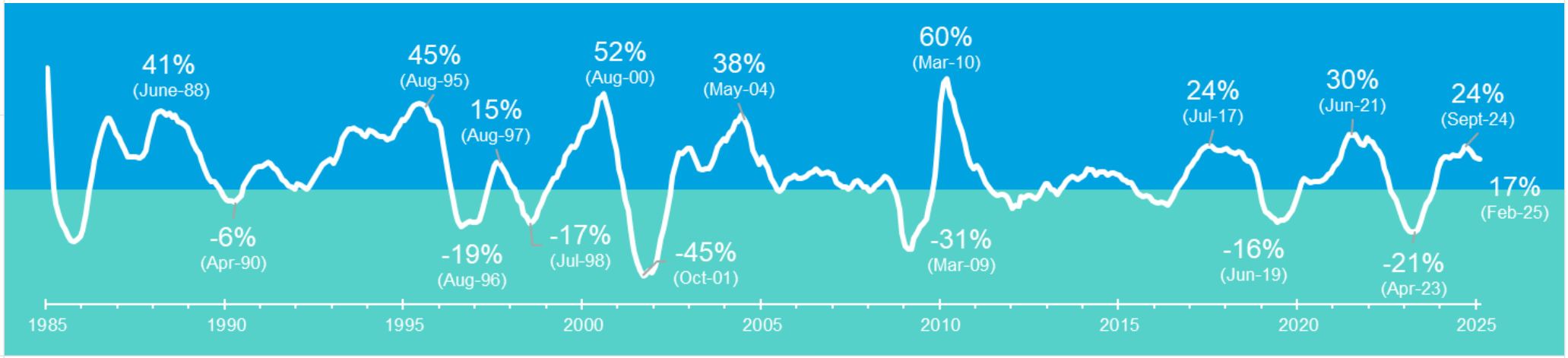
ASML owns design, manufacturing expertise with supplier

One-way dependency



Public

The semiconductor industry remains very cyclical



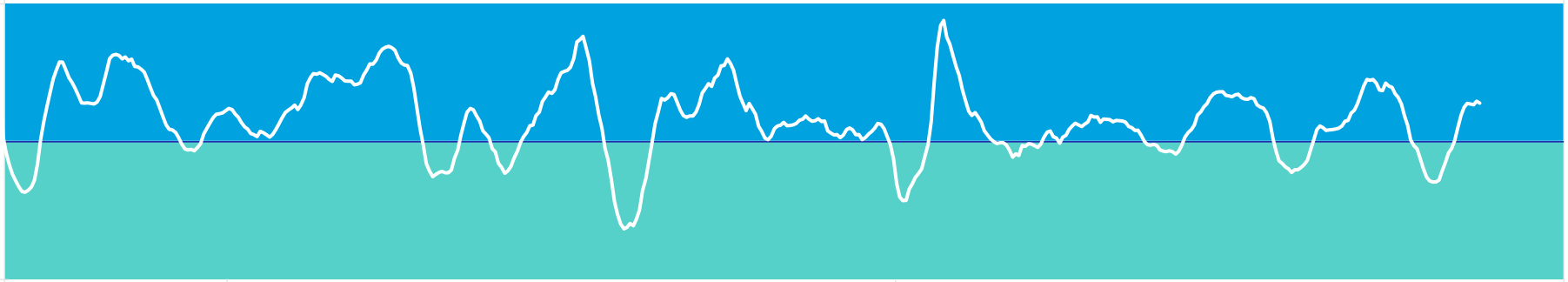
Public

During downturns, let's take the opportunity to make structural improvements

Continue to reduce cost, improve quality, shorten lead-times and increase repair and reuse

During upturns

Pull out all the stops to meet customer demand



Short order lead-times to handle cyclicality and lower working capital

During downturns

Preserve cash

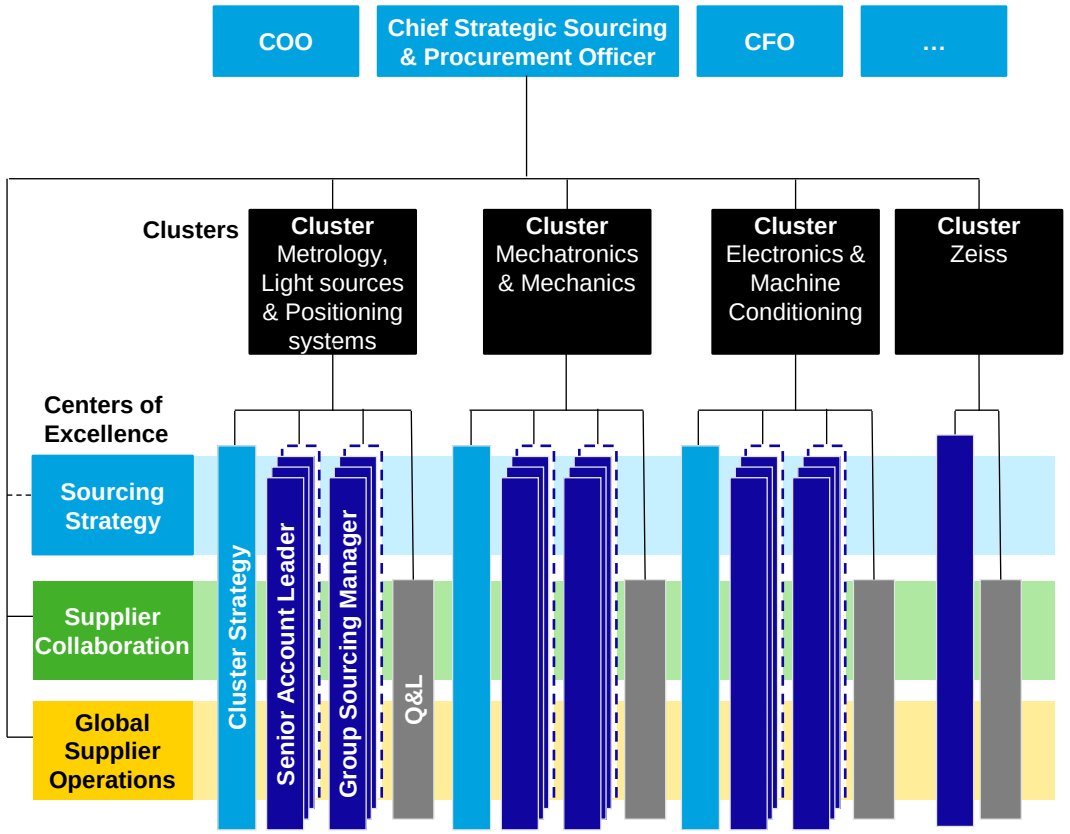
Make structural improvements (incl. quality, cost, reuse)

Prepare capacity for the next upturn

ASML

Public

Matrix setup in Strategic Sourcing & Procurement creates natural tension



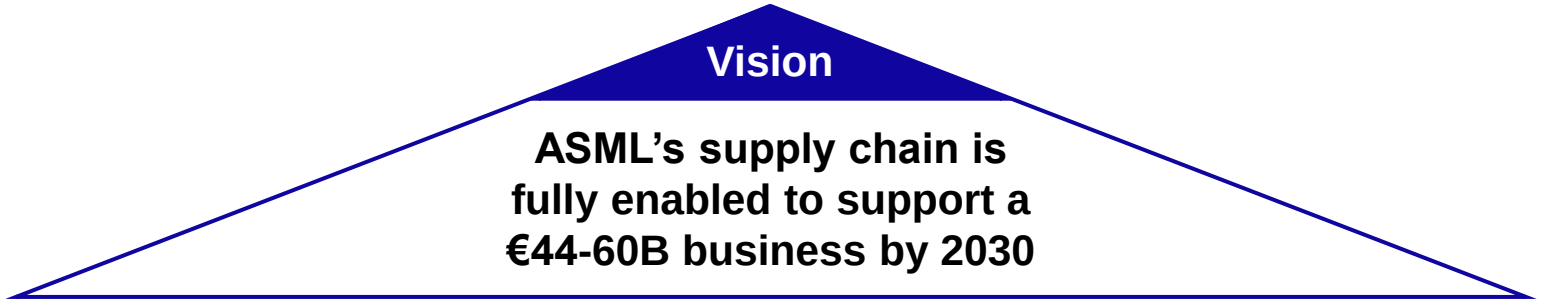
Senior Account Leader	Accountable for overall business model, relationship, communication and performance of individual supplier (material availability)
Cluster Strategy	Define cluster and category strategy, incl N-tier, in close collaboration with account mgmt. and supported by Sourcing Strategy
Sourcing Strategy	Support definition of cluster / category strategy, support technology- and product- roadmap creation, and lead scouting for new suppliers and technology in line with Industrial Policy
Supplier Collaboration	**Drive the step-up in readiness of our supply chain network** through capability assessments, and structural QLTCS performance improvements. Leads both the NPI and industrialization interface to Program/D&E
Global Supplier Operations	Drive regional direct-supplier performance, global order book, and indirect-supplier management across all (factory) locations. Secure close collaboration with all stakeholders in the regions

ASML

Public

Two years ago, we started our journey of supplier collaboration

“A supply chain is only as strong as its weakest link!”



Mission

Prepare ASML’s supply chain for 2030:
Drive the step-up in readiness of our supply chain network through capability assessments, and structural QLTCS performance improvements

Goals

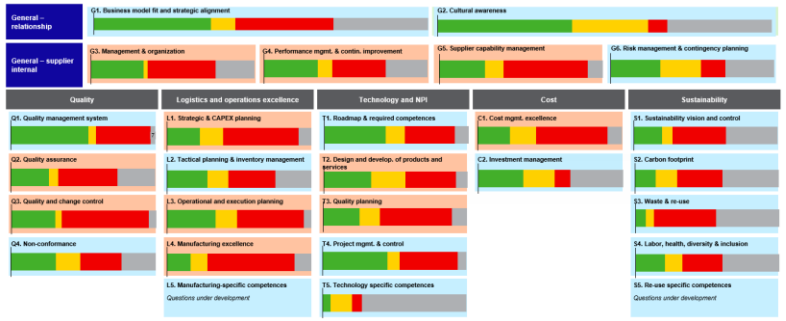
Proactive shaping and development of **supplier landscape**	Industrialization of product and production processes	**QLTCS** heartbeats and capabilities in supplier account teams	Empowerment, and sustainable work force

Public

Supplier's continuous performance is critical to our success, therefore we have established a QLTCS metric

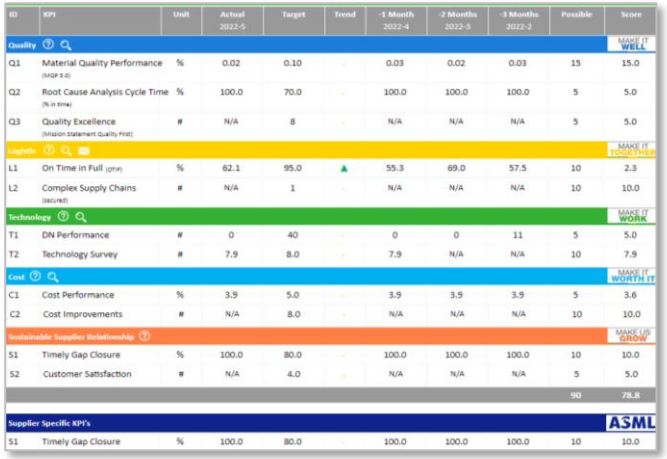
Supplier capability assessment

Assessment of supplier capability and maturity on dimensions of Supplier Profile (SP11)



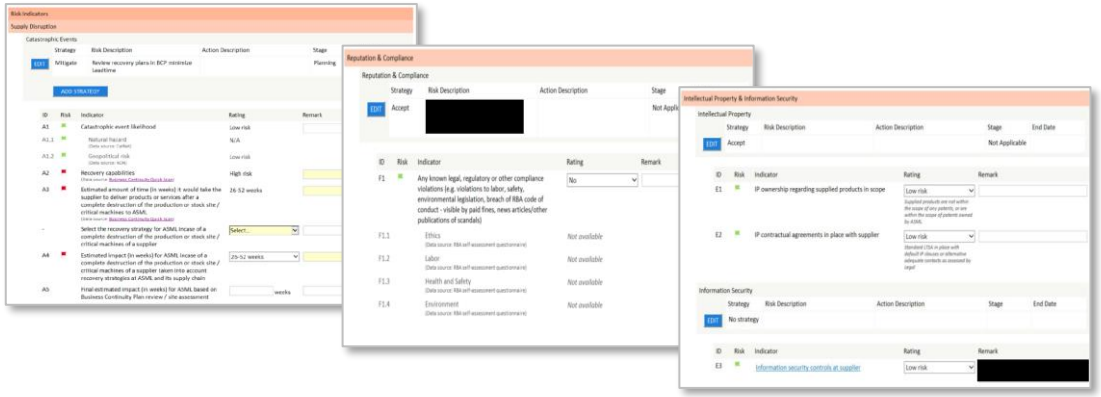
Supplier performance

Supplier performance tracking using several KPIs along QLTCS dimensions



Broader risk assessment

Broader risk assessment on supplier context (e.g., geopolitical risks, ownership changes etc.)



Public

We are preparing the ASML ecosystem in multiple ways

Preparing for growth in strong years, and for efficiency during slower years

Knowledge sharing

- Supplier day (CEOs)
- Supplier collaboration day (COOs)
- HR round table (CHROs)

Training

- Operational trainings on Quality & Logistics topics
- High Tech Supply Chain Excellence program (with Logistics Community Brabant)
- **Masterclass Management & Organization**

Joint projects

- **Technician training program** (with Brainport development/ Beethoven, starting up)

Public

Masterclass Management & Organization is to equip ASML suppliers with concrete next steps to prepare for continued rapid growth

Context

Growth requires significant scaling and adjustments to both ASML's and its suppliers' **organizations**

Management & Organizational readiness is identified as a key area for improvement: approximately **50% of suppliers have gaps in this area**

This is not a typical "business as usual" topic; it requires **focused effort**, and specialized expertise

Objectives

Elevate participant's leadership skills to enable further growth

Inspire suppliers with **practical tools and actionable steps** to improve their Management & Organizational capabilities to prepare for growth

Foster a supplier **community**, promoting collaboration and knowledge-sharing for mutual growth

Content

Developed together with ASML Leadership Academy, Maastricht University, McKinsey

Covering

- Strategy
- Adaptive leadership
- Organizational structure
- People/ talent
- Cross company collaboration

Public

Project Beethoven is investing in education and networking

Focused on the Eindhoven Brainport region, but scalable to ASML's total ecosystem

Education partners:

Participants:

…and many others

Building a training program 'technician level' to support onboarding of new employees across the ecosystem

- Content developed by ASML and partners
- Delivery through educational institution
- Including certification

Public

Our interaction with the ecosystem is guided by the ‘trust equation’

Not every supplier

- Output
- Innovation
- Cost
- Sustainability

- Quality
- Availability
- Order lead time

- Openness
- Dialogue
- Collaboration

Trust = $\dfrac{\textbf{capability} \times \textbf{reliability} \times \textbf{transparency}}{\textbf{self-interest}}$

- Fair share of risks and rewards

ASML

Public

ASML

Paul Enders
Head of Supply Chain
Transformations

Veldhoven

Public