Installed Base Management Opportunity

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Customer Support

Public

Installed Base Management

Key messages

Installed Base revenue is expected to **grow ~12% CAGR** (2020-2025) with a **value-based service model** plus **productivity and performance upgrades**

As Lithography is the constraint in the fab, **maximizing good wafers per day** is key to **optimizing fab capital asset utilization** and **increasing customer return on investment**

Customer service value depends on **three fundamentals:**

- High availability and minimal long-term downs
- Lowest possible service cost per wafer
- Maximum good wafers per day

Upgrades provide an efficient means **of improving system output** and **extending the useful life of the tool** for future nodes

- **Installed Base business growth**

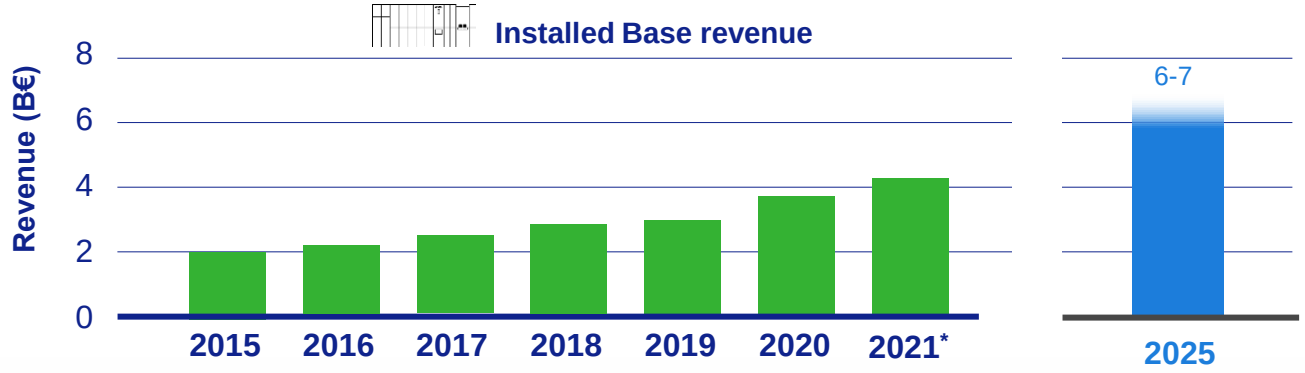
Maximizing service value

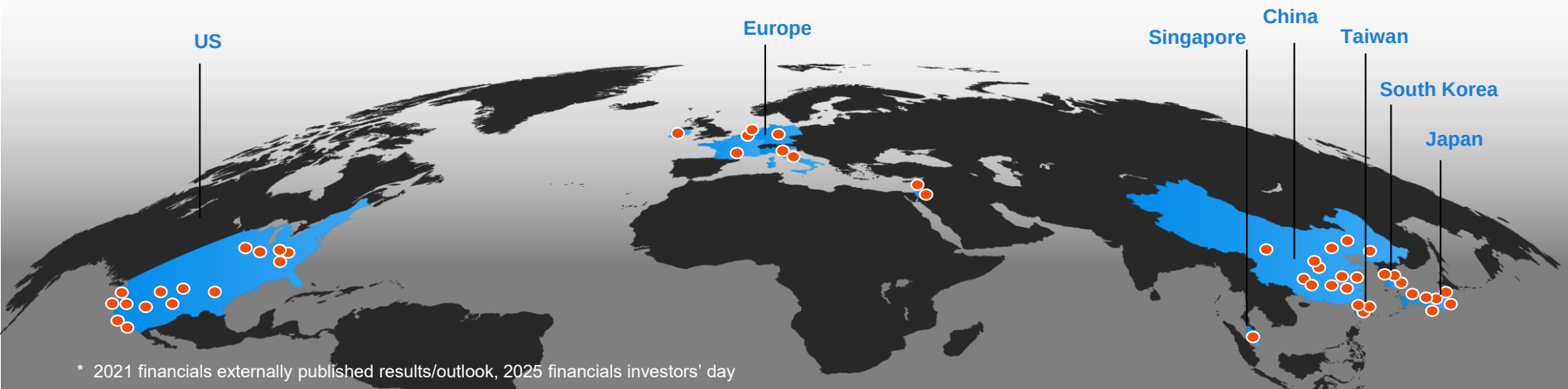
- High availability and minimal long-term downs
- Lowest possible service cost per wafer
- Maximum good wafers per day

Extending useful life of equipment through upgrades

Installed Base revenue is a growing portion of ASML business

Installed Base revenue expected to grow ~12% CAGR (2020 – 2025)





* 2021 financials externally published results/outlook, 2025 financials investors' day

Services and upgrades extend value and life of tool

Over DUV tool lifetime Installed Base revenue is ~130% of system sales

Example: NXT:1960Bi

Upgrades / Options revenue
Performance, productivity & lifetime extensions

Service revenue
Service contract for scanner and laser, service on optics, relocations

System revenue

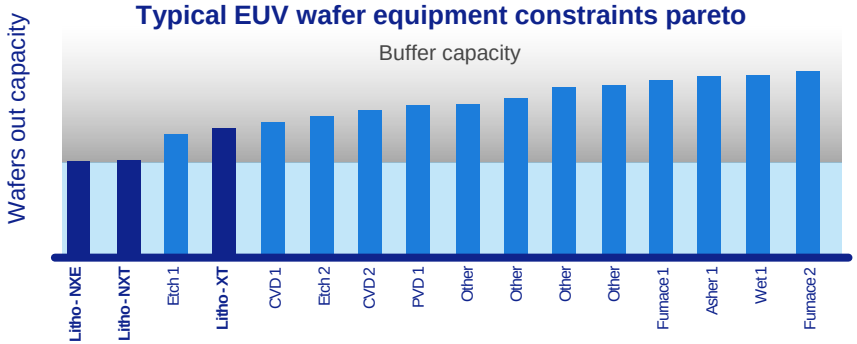
Installed Base business growth

- **Maximizing service value**
  - **High availability and minimal long-term downs**
  - **Lowest possible service cost per wafer**
  - **Maximum good wafers per day**

Extending useful life of equipment through upgrades

Fabs are designed with lithography as the constraint

Increasing litho availability increases customer return on investment

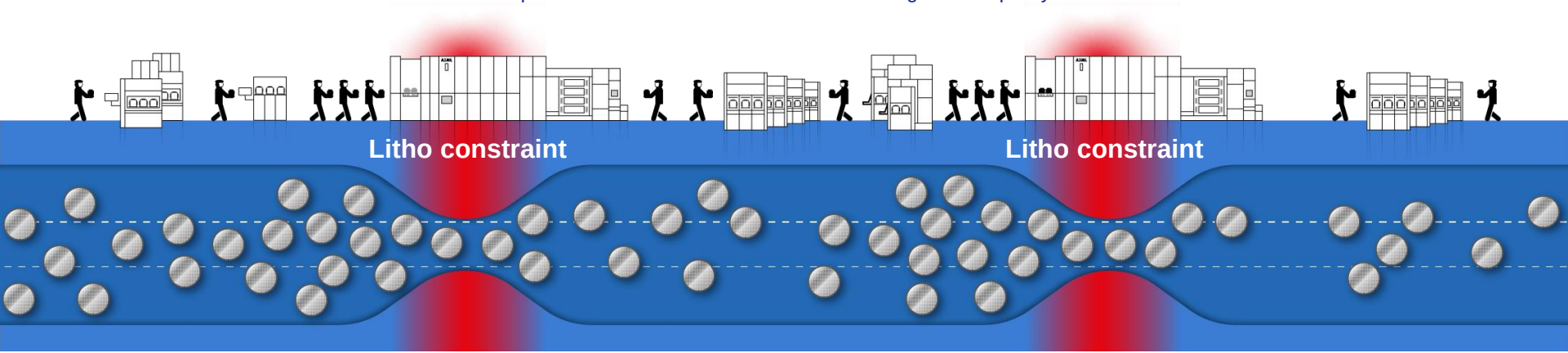


Availability

Fab type	Volume (starts/month)	Estimated capital expenditure		1% improvement in Fab capital asset utilization
		Total (fab + equipment)	NXT (DUV) NXE+NXT (EUV)	
DUV Logic	100k	€16B	€2B	€160m
EUV Logic	100k	€24B	€6B	€240m

Source: Capital expenditure from ASML Market Research

Litho is the fab constraint by design. Improvement in litho availability yields significant improvement in overall Fab capital asset utilization due to rest of Fab having buffer capacity:



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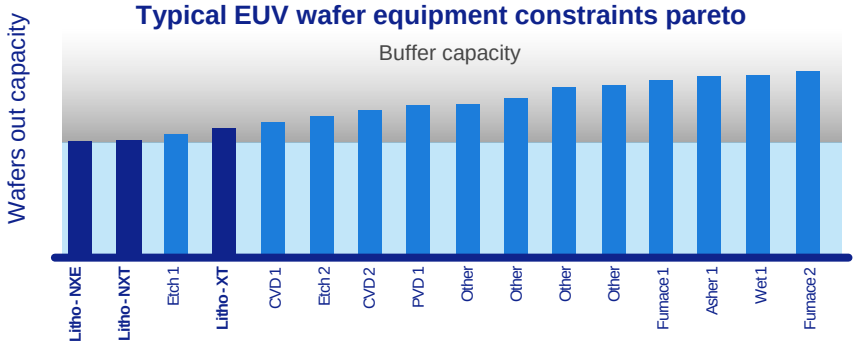

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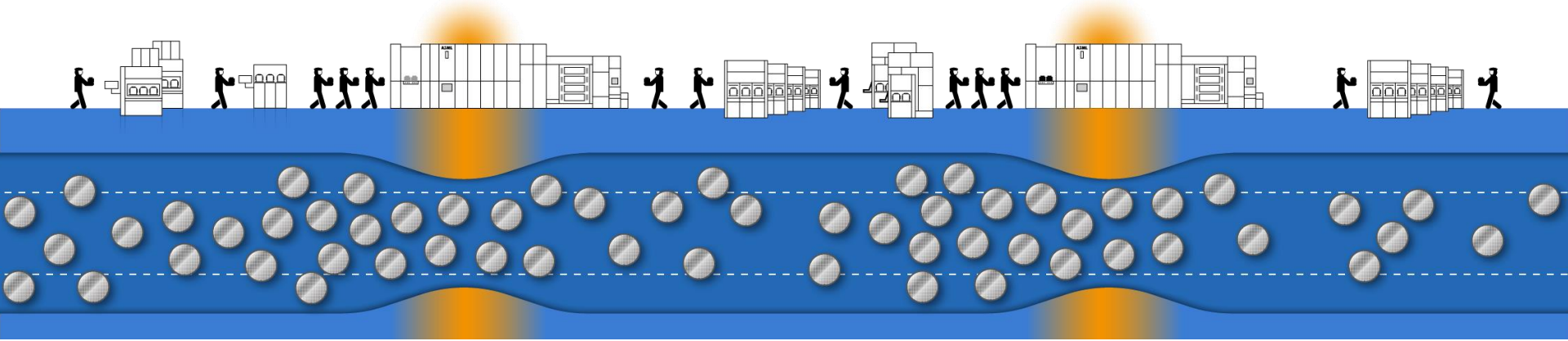

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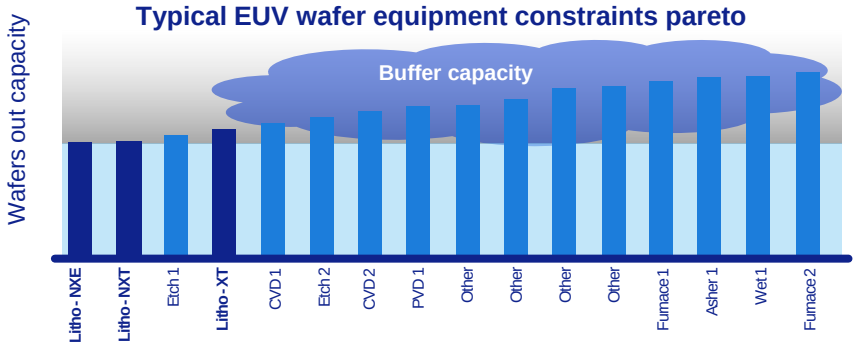


Long-term downs (XLD)

Fab Type	Volume (starts/month)	Estimated capital expenditure		50% ↓ in XLD ↓buffer capacity by 10%-15%
		Total (fab + equipment)	NXT (DUV) NXE+NXT (EUV)	
DUV Logic	100k	€16B	€2B	€140-210m
EUV Logic	100k	€24B	€6B	€180-270m

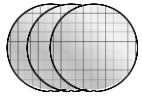
Source: Capital expenditure from ASML Market Research

Reducing long-term downs reduces need for excess capacity in non-litho workstations which saves capital expenditure. 50% reduction in long-term downs potentially reduce buffer capacity by ~10%-15%:

Customer service value depends on three fundamentals

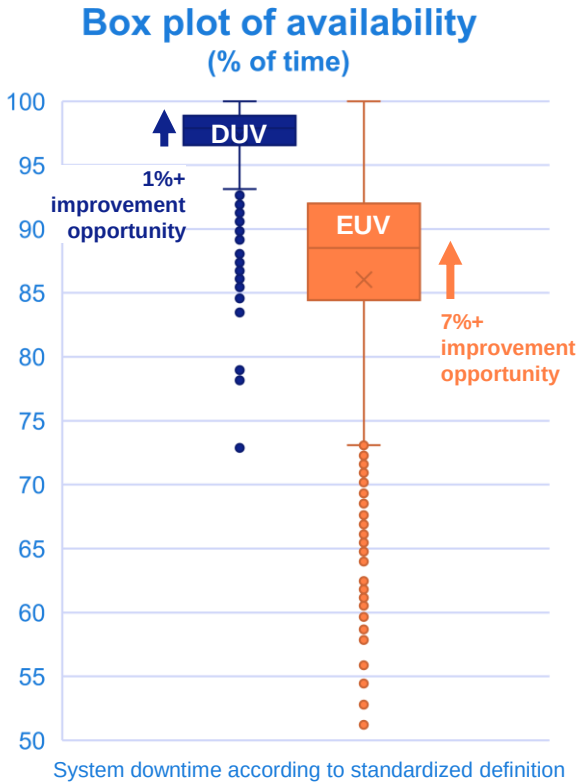
High availability and minimal long-term downs

Lowest possible service cost per wafer



Maximum good wafers per day

High availability and minimal long-term downs



13 weeks moving average June/ July/ August 2021 Actuals

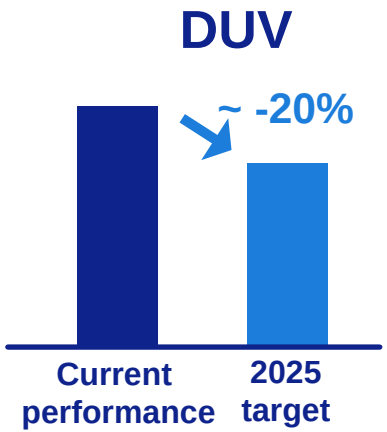
DUV: mature platform with >97% average availability. 1%+ availability improvement still possible

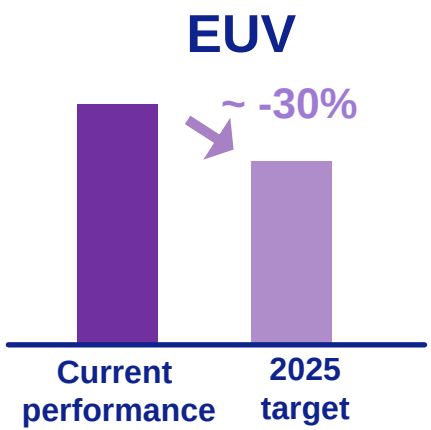
EUV: relatively immature platform with larger opportunity of 7%+ availability improvement

Key improvements:

- Design improvements
- Software upgrades
- Using technology to service our systems
- Parts and tools availability
- Operational improvements: site-to-site benchmarking

Lowest possible service cost per wafer

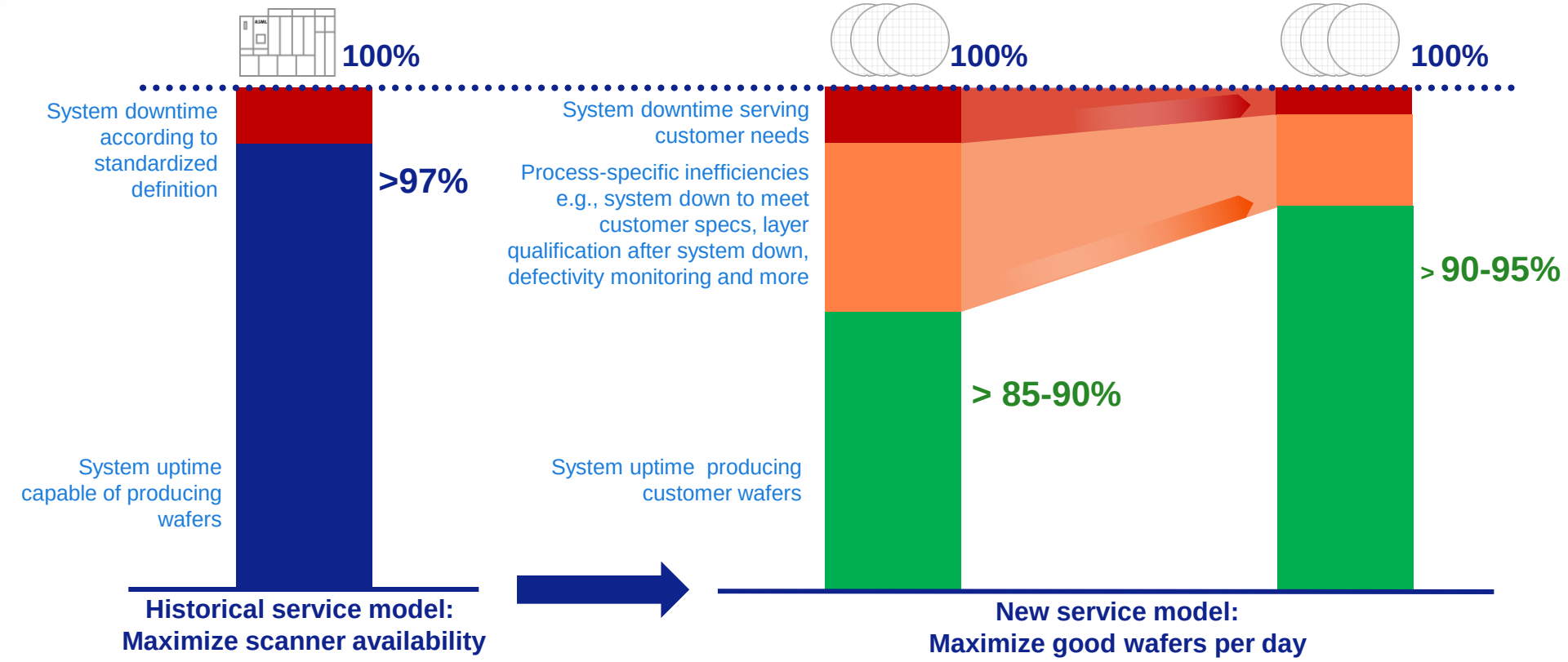




- Perfecting the machine (closed-loop feedback process to perfect the parts, tools and service actions)
- Technology (e.g., diagnostics, Remote Expert Support)
- Standardized processes supported by automation
- Increased parts lifetime and quality
- Logistics: freight, warehousing cost reduction

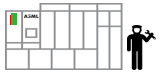
Maximizing customers' good wafers per day

Next to minimizing system down time



Overview of examples driving three fundamentals

Foundational aspects

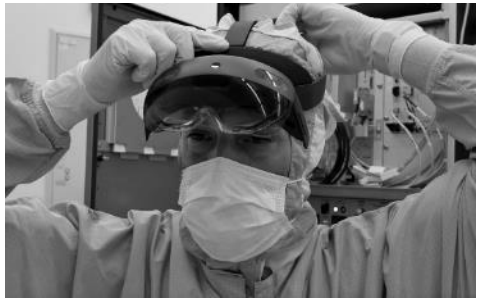


	Availability & long-term downs	Good Wafers per day	Cost down
Improve system capabilities			
Top X continuous module / part improvements	●	●	●
Lifecycle management & leveraging commonality between platforms	●	●	●
Automated recovery / calibration of systems after maintenance	●	●	
Improved recoveries to avoid process fingerprint change after part swap		●	
Improve process capabilities			
Improved monitoring capabilities & leveraging machine learning towards predictive maintenance	●	●	
Improved diagnostics capabilities (deterministic diagnostics)	●	●	
Self-sufficiency of local field offices	●	●	●
Over-the-shoulder remote support using augmented reality	●	●	●
Inline defectivity monitoring and control strategies		●	
Scanner matching improvements		●	
Alignment mark optimization		●	
Track-delay reductions		●	
Cost reduction			
Freight cost reduction			●
Inventory reduction via dynamic stocking strategies			●
Standardized & optimized processes			●
Excess & obsolescence reduction via improved configuration management & re-use			●
Establish local repair centers			●

Technology innovations are improving service

ASML Remote Expert Support connects experts virtually to the field

- COVID-19 travel restrictions and quarantine requirements impacted fly-in support of experts to the field
- Real-time data connectivity and over-the-shoulder HoloLens augmented reality enable
  - Faster service recovery cycle time with immediate access to factory experts
  - Reduced service incidents with improved preventative maintenance
  - Pro-actively monitoring tool health to enhance roadmap for predictive maintenance in the field

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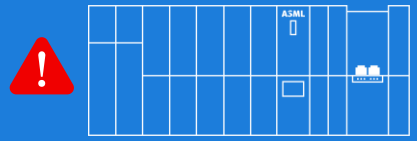
Technology innovations are improving service

Using diagnostics to improve availability, reduce long-term downs & cost

Reactive diagnostics



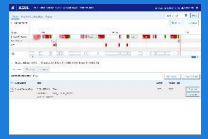
Machine down

Data

Status monitoring

Automated monitoring to detect real-time failures

Smart diagnostics



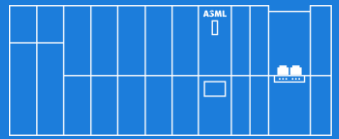
Pattern recognition to identify failure modes

Diagnostic action plan

Interactive deterministic flow to guide engineer

Feedback loop

Proactive diagnostics



Machine risks

Data

Health monitoring

Automated Fab health monitoring to detect risks

Health analytics

AI & knowledge-based models to identify corrective actions

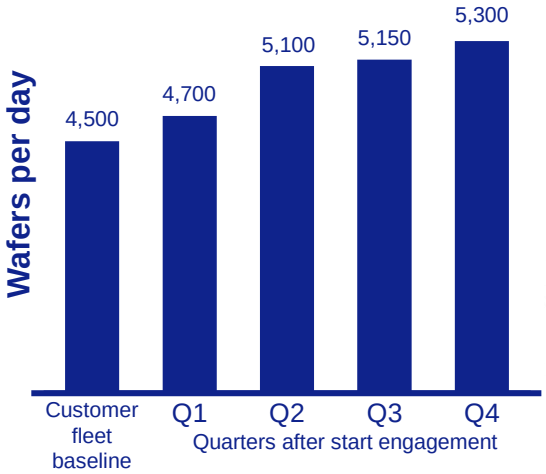
Diagnostic action plan

Interactive deterministic flow to guide engineer

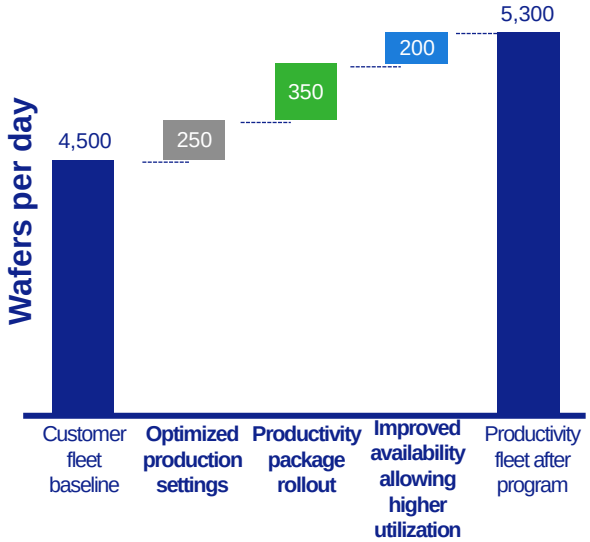
Feedback loop

Improving NXT:1980Di fleet productivity at a Memory customer

Average scanner output



Improvement breakdown



Installed Base business growth

Maximizing service value

- High availability and minimal long-term downs
- Lowest possible service cost per wafer
- Maximum good wafers per day

- **Extending useful life of equipment through upgrades**

Types of upgrades and buying behavior

Upgrades are a relatively quick and cost-effective way to improve output and process capability of lithography in the fab

- Productivity
- Imaging and overlay
- Life-time extension

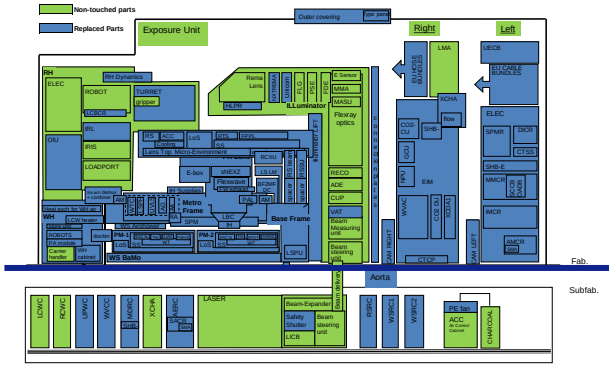
Factory utilization dictates ability to install upgrades

- Software upgrades provide quick improvements, always in demand
- Hardware upgrades require longer downtime, in higher demand in time of lower utilization

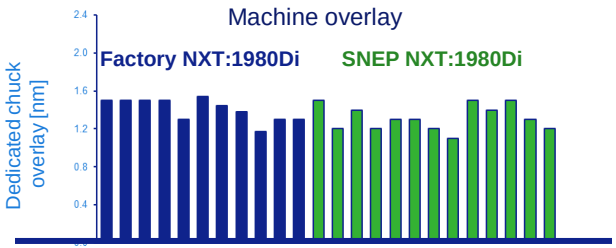
System Node Enhancement Package (SNEP)

Upgrade to re-use existing scanners for more advanced technology nodes

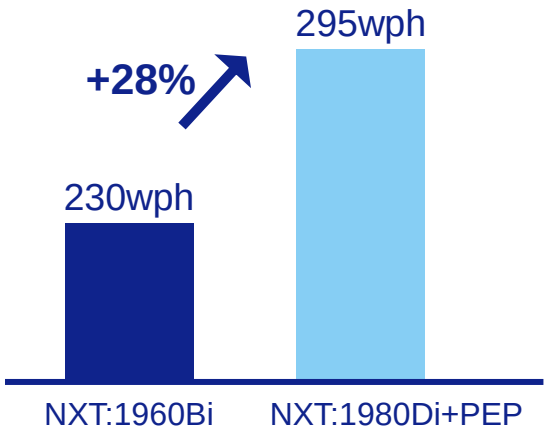
SNEP brings NXT:1960 to NXT:1980 in 6 weeks with field upgrade



...with the same overlay performance



...and a 28% productivity increase



Installed Base Management

Key messages

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Forward Looking Statements

This presentation contains statements that are forward-looking, including statements with respect to expected industry and business environment trends including expected growth, outlook and expected financial results, including expected net sales, gross margin, R&D costs, SG&A costs and effective tax rate, annual revenue opportunity for 2025, financial model for 2025 and assumptions and expected growth rates and drivers, expected growth including growth rates 2020-2025 and 2020-2030, total addressable market, growth opportunities beyond 2025 and expected annual growth rate in lithography and metrology and inspection systems and expected annual growth rate in installed base management, expected trends in addressable market up to 2030, expected trends in Logic and Memory revenue opportunities, long term growth opportunities and outlook, expected trends in demand and demand drivers, expected benefits and performance of systems and applications, semiconductor end market trends, expected growth in the semiconductor industry including expected demand growth and capital spend in coming years, expected wafer demand growth and investments in wafer capacity, expected lithography market demand and growth and spend, growth opportunities and drivers, expected trends in EUV and DUV demand, sales, outlook, roadmaps, opportunities and capacity growth and expected EUV adoption, profitability, availability, productivity and output and estimated wafer demand and improvement in value, expected trends in the applications business, expected trends in installed base management including expected revenues and target margins, expected trends and growth opportunity in the applications business, expectations with respect to high-NA, the expectation of increased output capacity, plans, strategies and strategic priorities and direction, expectation to increase capacity, output and production to meet demand, the expectation that Moore's law will continue and Moore's law evolution, product, technology and customer roadmaps, and statements and intentions with respect to capital allocation policy, dividends and share buybacks, including the intention to continue to return significant amounts of cash to shareholders through a combination of share buybacks and growing annualized dividends and statements with respect to ESG commitment, sustainability strategy, targets, initiatives and milestones. You can generally identify these statements by the use of words like "may", "will", "could", "should", "project", "believe", "anticipate", "expect", "plan", "estimate", "forecast", "potential", "intend", "continue", "target", "future", "progress", "goal" and variations of these words or comparable words. These statements are not historical facts, but rather are based on current expectations, estimates, assumptions and projections about our business and our future financial results and readers should not place undue reliance on them. Forward-looking statements do not guarantee future performance and involve a number of substantial known and unknown risks and uncertainties. These risks and uncertainties include, without limitation, economic conditions; product demand and semiconductor equipment industry capacity, worldwide demand and manufacturing capacity utilization for semiconductors, semiconductor end-market trends, the impact of general economic conditions on consumer confidence and demand for our customers' products, performance of our systems, the impact of the COVID-19 outbreak and measures taken to contain it on the global economy and financial markets, as well as on ASML and its customers and suppliers, and other factors that may impact ASML's sales and gross margin, including customer demand and ASML's ability to obtain supplies for its products, the success of R&D programs and technology advances and the pace of new product development and customer acceptance of and demand for new products, production capacity and our ability to increase capacity to meet demand, the number and timing of systems ordered, shipped and recognized in revenue, and the risk of order cancellation or push out, production capacity for our systems including the risk of delays in system production and supply chain capacity, constraints, shortages and disruptions, trends in the semi-conductor industry, our ability to enforce patents and protect intellectual property rights and the outcome of intellectual property disputes and litigation, availability of raw materials, critical manufacturing equipment and qualified employees and trends in labor markets, geopolitical factors, trade environment; import/export and national security regulations and orders and their impact on us, ability to meet sustainability targets, changes in exchange and tax rates, available liquidity and liquidity requirements, our ability to refinance our indebtedness, available cash and distributable reserves for, and other factors impacting, dividend payments and share repurchases, results of the share repurchase programs and other risks indicated in the risk factors included in ASML's Annual Report on Form 20-F for the year ended December 31, 2020 and other filings with and submissions to the US Securities and Exchange Commission. 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