



# 2021 INVESTOR MEETING

APRIL 6, 2021

# Forward-Looking Statements and Other Information

Today's presentations contain forward-looking statements, including those regarding anticipated growth and trends in our businesses and markets, industry outlooks and demand drivers, technology transitions, our business and financial performance and market share positions, our capital allocation and cash deployment strategies, our investment and growth strategies, our development of new products and technologies, our business outlook for fiscal 2021 and beyond, strategic acquisitions and investments, and other statements that are not historical facts. These statements and their underlying assumptions are subject to risks and uncertainties and are not guarantees of future performance.

Factors that could cause actual results to differ materially from those expressed or implied by such statements include, without limitation: the level of demand for our products; global economic and industry conditions; the effects of regional or global health epidemics, including the severity and duration of the ongoing COVID-19 pandemic; global trade issues and changes in trade and export license policies, including the recent rules and interpretations promulgated by the U.S. Department of Commerce expanding export license requirements for certain products sold to certain entities in China; consumer demand for electronic products; the demand for semiconductors; customers' technology and capacity requirements; the introduction of new and innovative technologies, and the timing of technology transitions; our ability to develop, deliver and support new products and technologies; the concentrated nature of our customer base; acquisitions, investments and divestitures; changes in income tax laws; our ability to expand our current markets, increase market share and develop new markets; market acceptance of existing and newly developed products; our ability to obtain and protect intellectual property rights in key technologies; our ability to achieve the objectives of operational and strategic initiatives, align our resources and cost structure with business conditions, and attract, motivate and retain key employees; the variability of operating expenses and results among products and segments, and our ability to accurately forecast future results, market conditions, customer requirements and business needs; our ability to ensure compliance with applicable law, rules and regulations; and other risks and uncertainties described in our SEC filings, including our recent Forms 10-Q and 8-K. All forward-looking statements are based on management's current estimates, projections and assumptions, and we assume no obligation to update them.

Today's presentations also contain non-GAAP financial measures. Reconciliations to GAAP measures are contained in the appendix to the presentations.

Applied Materials, the Applied Materials logo, and other trademarks so designated as product names are trademarks of Applied Materials, Inc. Other names and brands are the property of third parties.

# UPCOMING INVESTOR EVENTS

## MASTER CLASSES

<b>APRIL 6</b>	<b>May 5</b>	<b>June 16</b>	<b>Second Half 2021</b>
2021 Investor Meeting	Memory	Logic	<ul style="list-style-type: none"><li>▪ Specialty semiconductors</li><li>▪ Heterogeneous design and advanced packaging</li><li>▪ Inspection and process control</li></ul>

CHAPTER 1

# Market and Growth Outlook

# TAKEAWAY

## Messages

1. 'AI era' = **Secular growth** and accelerated innovation
2. Applied = The **PPACt enablement** company
3. Shifting more business to **subscription-style** revenues and integrated solutions
4. Optimizing portfolio for **growth and free cash flow\***
5. Operating model = Grow **EPS\*\* 1.7x to 2x revenue**

\* Free cash flow = operating cash flow – net capital expenditures

\*\* Non-GAAP adjusted EPS

Market Outlook = Innovation and Secular Growth

**Applied = PPACt Enablement Company**

Unit process leadership and broadest portfolio

+

Unique combinations of technologies

+

Actionable insight / time to market acceleration

+

Subscription style revenue growth

+

Synergistic materials engineering business with high FCF

High ROI Financial Model + Attractive Shareholder Returns

INFLECTION 1

Macro

Digital transformation of economy

INFLECTION 2

Computing

AI era

INFLECTION 3

Semiconductor Roadmap

Moore's Law 2D scaling to new PPACt playbook

INFLECTION 4

Sustainability

Responsible growth

INFLECTION 5

Business Models

Products → outcomes

VIBRANT MARKET SHAPED BY FIVE CONCURRENT INFLECTIONS

# DIGITAL TRANSFORMATION

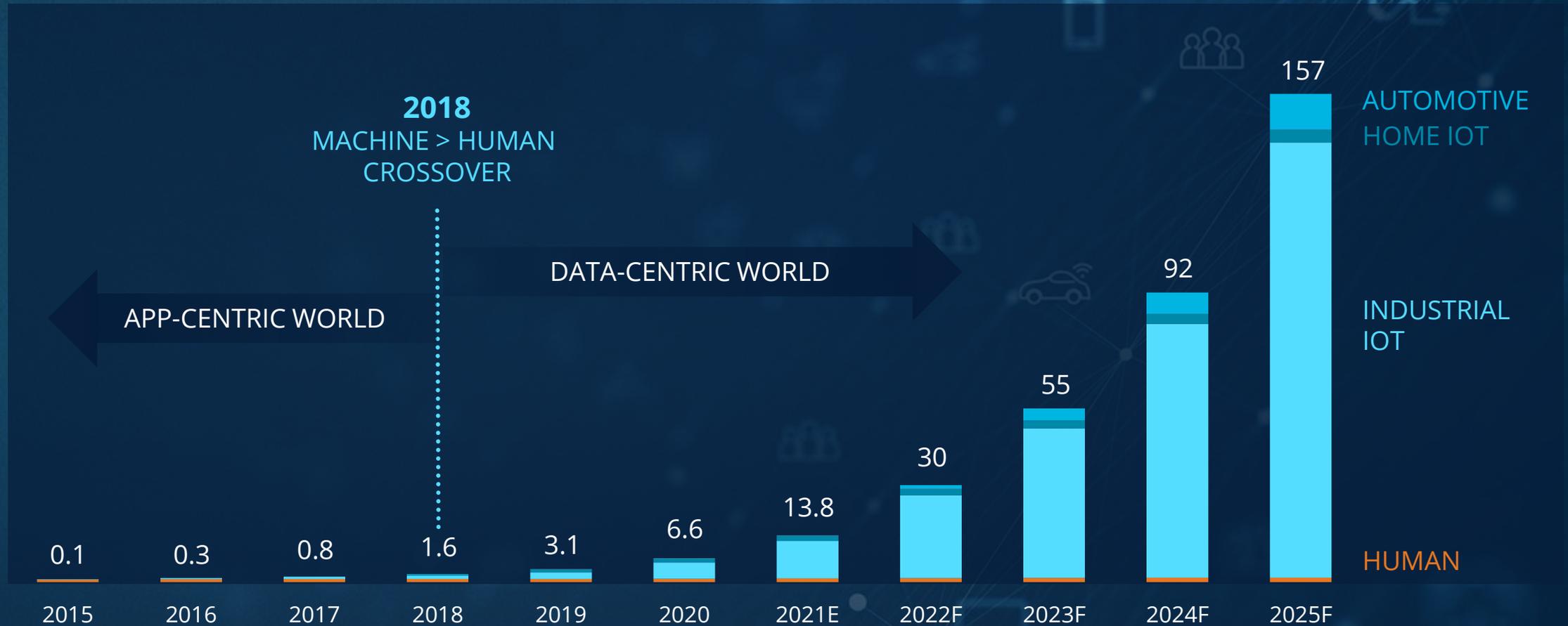
Impacts all areas of economy  
(including semiconductor industry)

Redefines vectors of competition  
(therefore adoption is non-discretionary)

Accelerated by pandemic

Built upon semiconductor innovation

# Data Generation By Category (ZB)



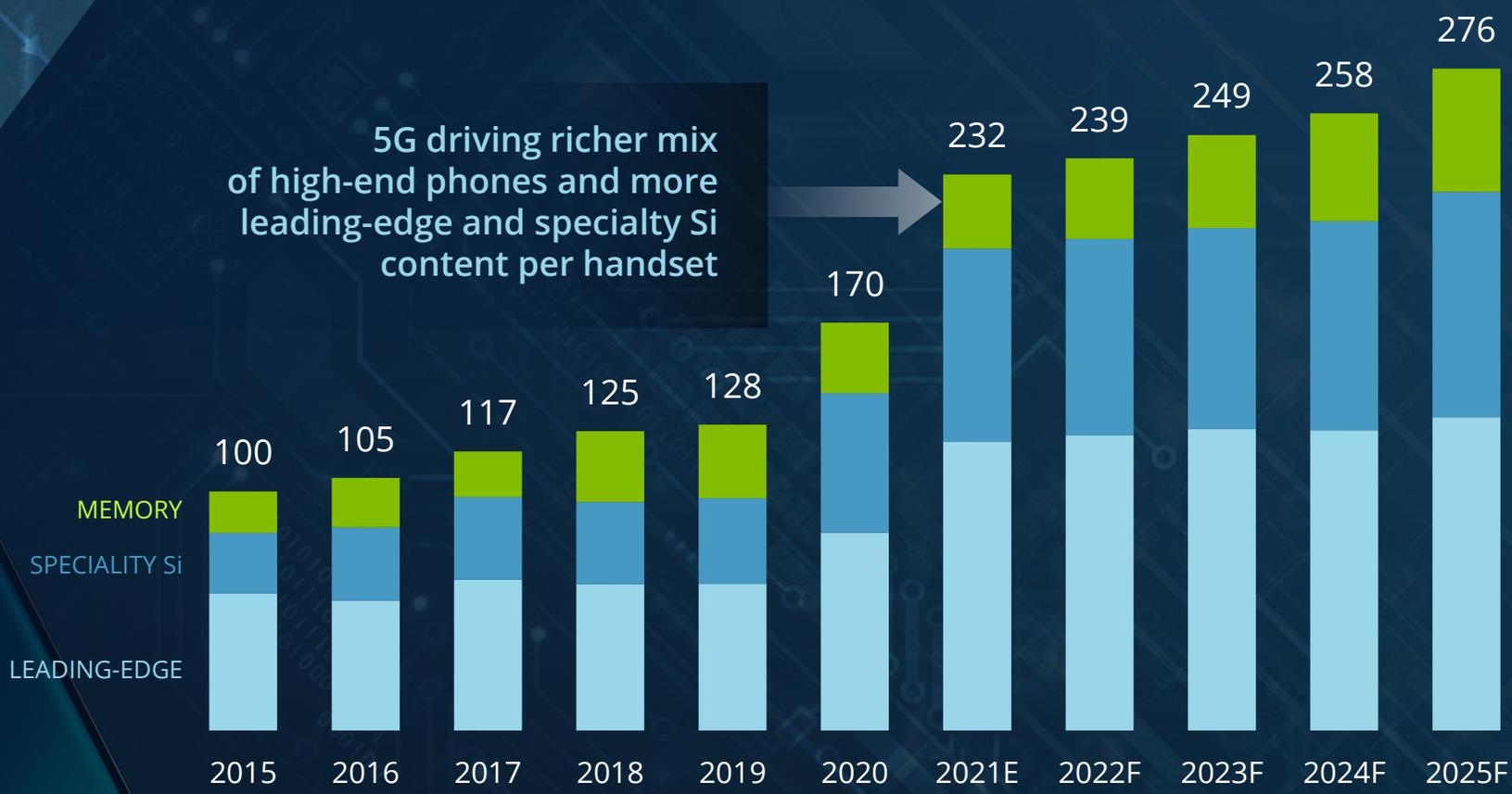
**SEMI GROWTH NO LONGER LIMITED BY HUMAN CONSUMPTION**

Semi content per unit		2015	2020	2025F
	HIGH END SMARTPHONE	\$100	\$170	\$275
	AUTO (GLOBAL AVERAGE)	\$310	\$460	\$690
	DATACENTER SERVER (CPU + ACCELERATOR)	\$1,620	\$2,810	\$5,600
	SMARTHOME (GLOBAL AVERAGE)	\$2	\$4	\$9

**SILICON CONTENT GROWING AS EVERYTHING GETS SMARTER**



## High-end Smartphone Silicon Content (\$)



**SMARTER DEVICES BUILT UPON MORE ADVANCED AND SPECIALIZED SILICON**

Source: Counterpoint and Applied Materials

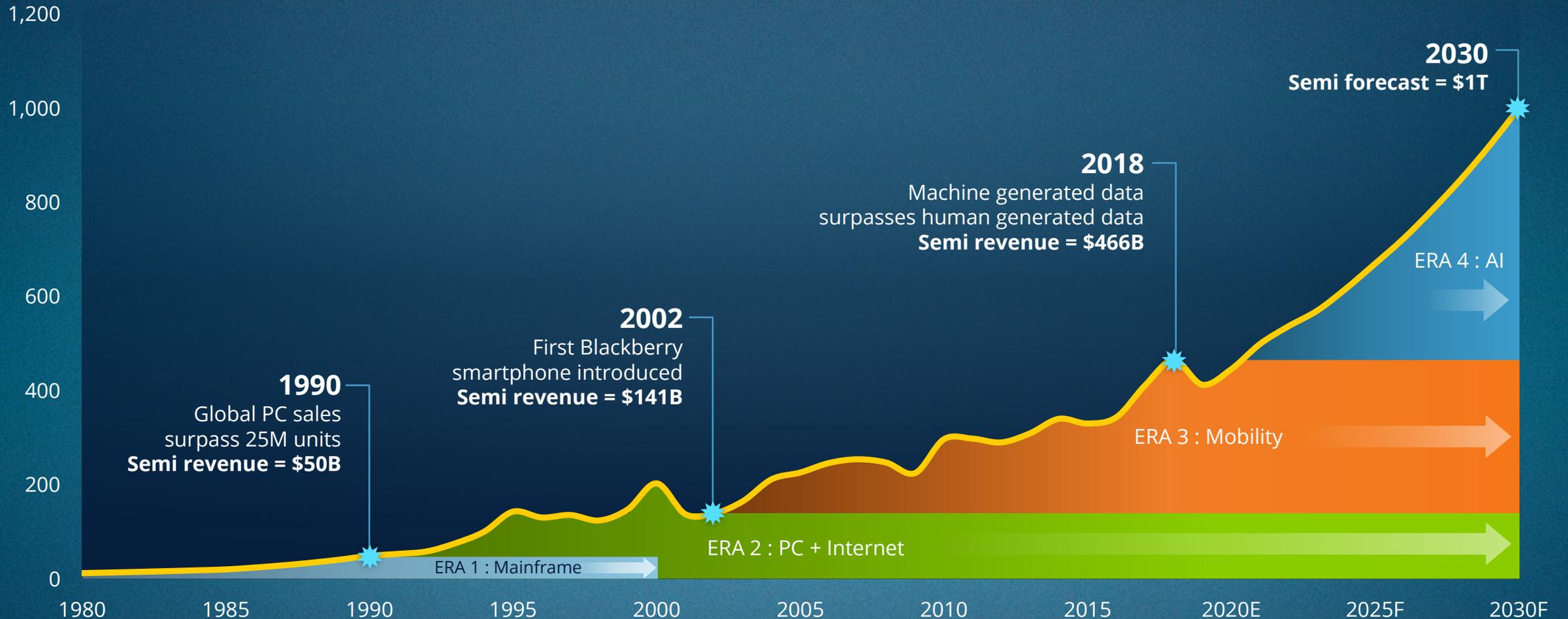
Semi \$ per capita	2015	2020	2025F
	1x	1.5x	2.5x
	0.4x	0.6x	1.1x
	0.1x	0.3x	0.5x

## STILL IN THE EARLY INNINGS OF GLOBAL BUILD OUT

Source: Applied Materials. Based on fixed FX as of March 2021

Applied Materials External Use

# Semiconductor Industry Revenue (\$B)



## AI ERA WILL BE BIGGEST AGE OF COMPUTING



Explosion of  
**data generation**

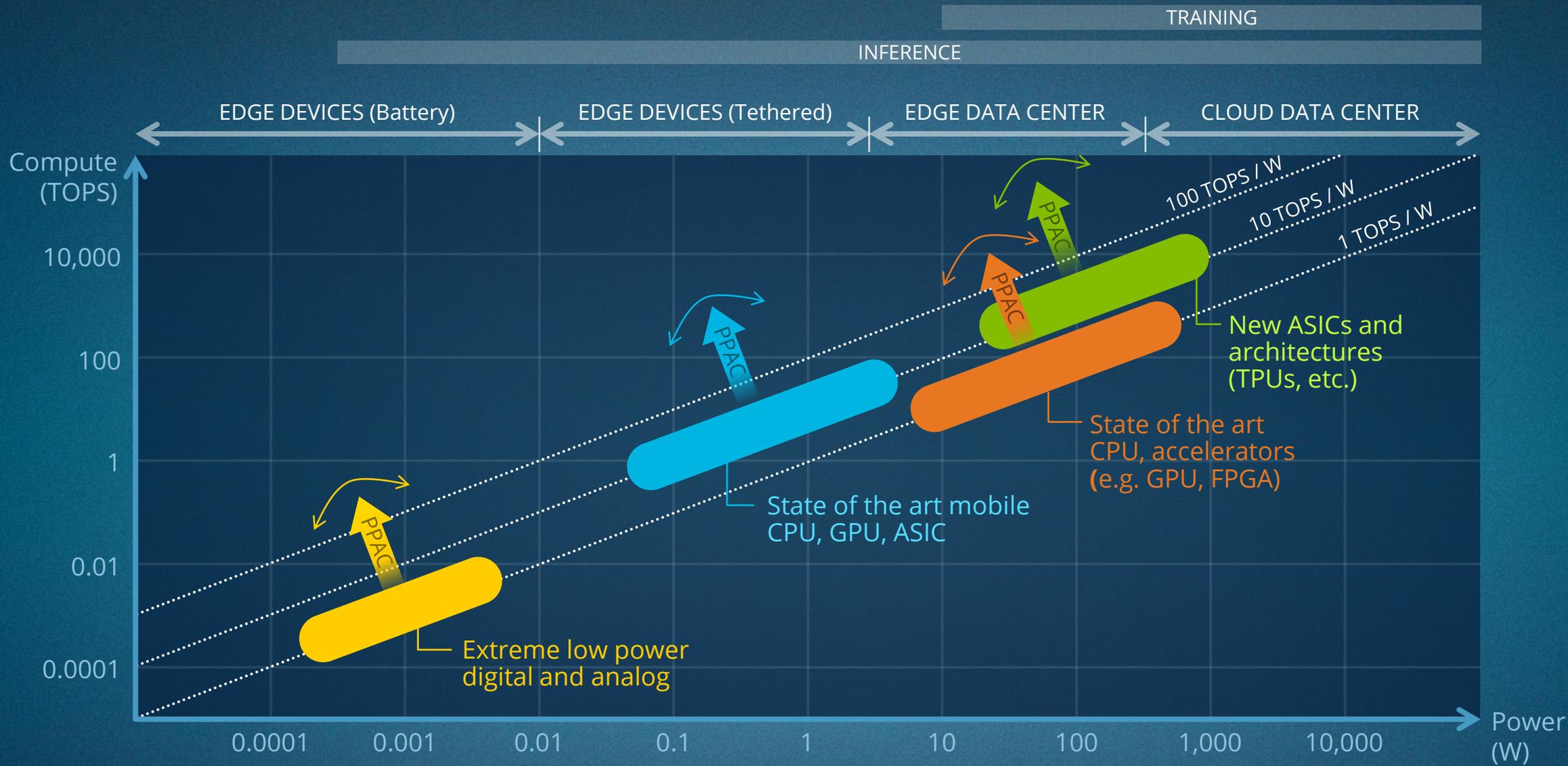
+

**Faster, higher-bandwidth  
communications** to  
move data around

+

**AI computing** to  
make sense of all the  
data and create value

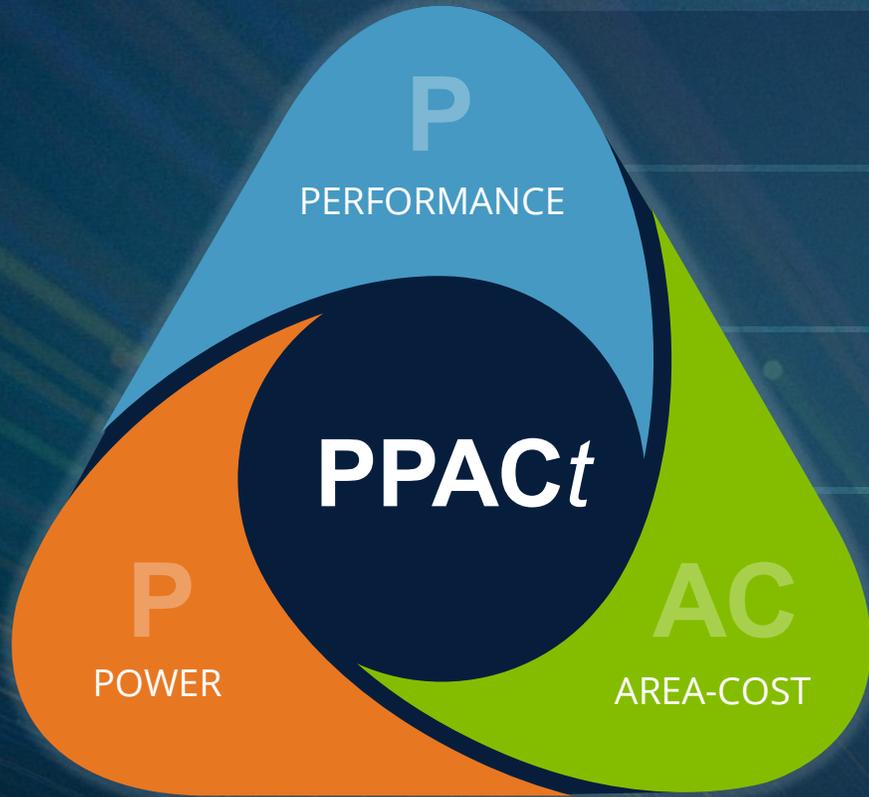
**AI = ACTIONABLE INSIGHT**



# AI DRIVING NEW COMPUTE TECHNOLOGY LANDSCAPE

Source: Applied Materials

Applied Materials External Use



## ENABLED BY

**New architectures**

**New structures / 3D**

**New materials**

**New ways to shrink**

**Advanced packaging**

## EXAMPLE INFLECTIONS

- New ASICs and accelerators
- New memory / in-memory compute
- Specialty, CIS, power

- 3D NAND
- 3D DRAM
- GAA transistors

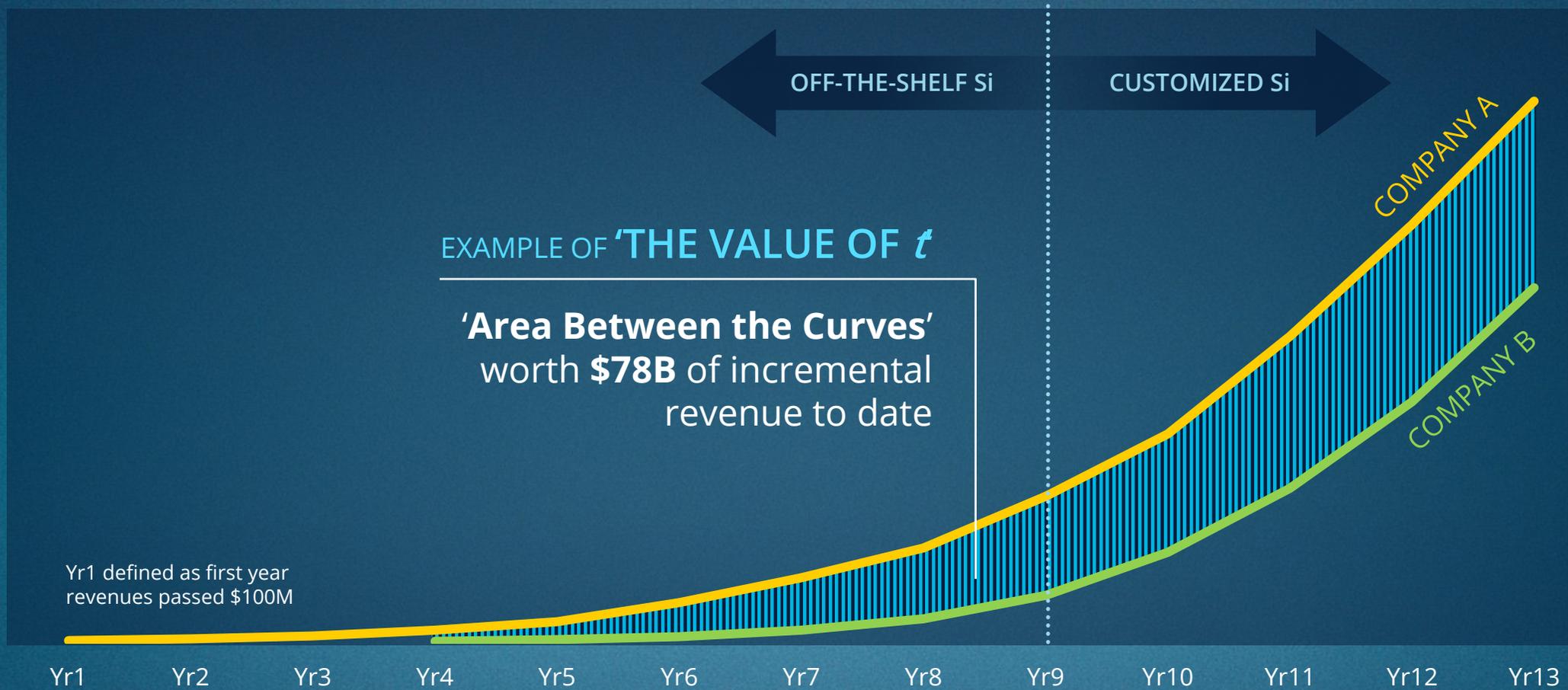
- Contact RC
- BEOL RC
- New channel

- EUV-enablement
- Materials-enabled patterning
- New layer-alignment approaches

- 2.5D / 3D packaging
- Heterogeneous integration / chiplets
- HBM / memory stacking

# INDUSTRY ADOPTING NEW **PPACT** PLAYBOOK

# Cloud Revenues Comparison (\$B)



## TIME-TO-MARKET ADVANTAGE WORTH \$BILLIONS

**145k**  
tCO<sub>2</sub>-e



Applied's  
Operations

**50M**  
tCO<sub>2</sub>-e



Semi Industry's  
Operations

**900M**  
tCO<sub>2</sub>-e



Global  
Electronics

**1x**

**100x**

**10,000x**

Source: Applied Materials

Applied Materials External Use

## Applied's Operations

# 1x

## Semi Industry's Operations

# 100x

## Global Electronics

# 10,000x

On-track for  
**100% renewable energy**  
in US by 2022 and  
globally by 2030

Assessments underway  
to support science-based  
targets and TCFD by 2022

Embedding  
**'Culture of Inclusion'**  
across the company

Significant momentum and  
broad engagement with  
**SuCCeSS2030** supply  
chain initiative

Strong collaboration with  
leading customers on  
**3x30 sustainability upgrades**  
and new product features

PPAcT engagements across  
ecosystem focus on  
energy-efficient devices  
and computing

### LATEST 3<sup>rd</sup> PARTY RATINGS

CDP Climate	<b>B-</b>
CDP Supplier Engagement	<b>B</b>
MSCI	<b>AA</b>
Sustainalytics	<b>TOP RATED</b>

# Applied = PPACt Enablement Company

Unit process  
leadership and  
broadest portfolio



Unique  
combinations  
of technologies



Actionable insight /  
time to market  
acceleration

MATERIALS CREATION,  
MODIFICATION,  
REMOVAL, ANALYSIS

INTEGRATED MATERIALS  
SOLUTIONS (IMS),  
PACKAGING

ACTIONABLE INSIGHT  
ACCELERATOR (AI<sup>X</sup>™),  
APPLIED GLOBAL SERVICES

CHAPTER 2  
PPAC*t* Enablement

# Applied = PPACt Enablement Company

Unit process  
leadership and  
broadest portfolio



Unique  
combinations  
of technologies



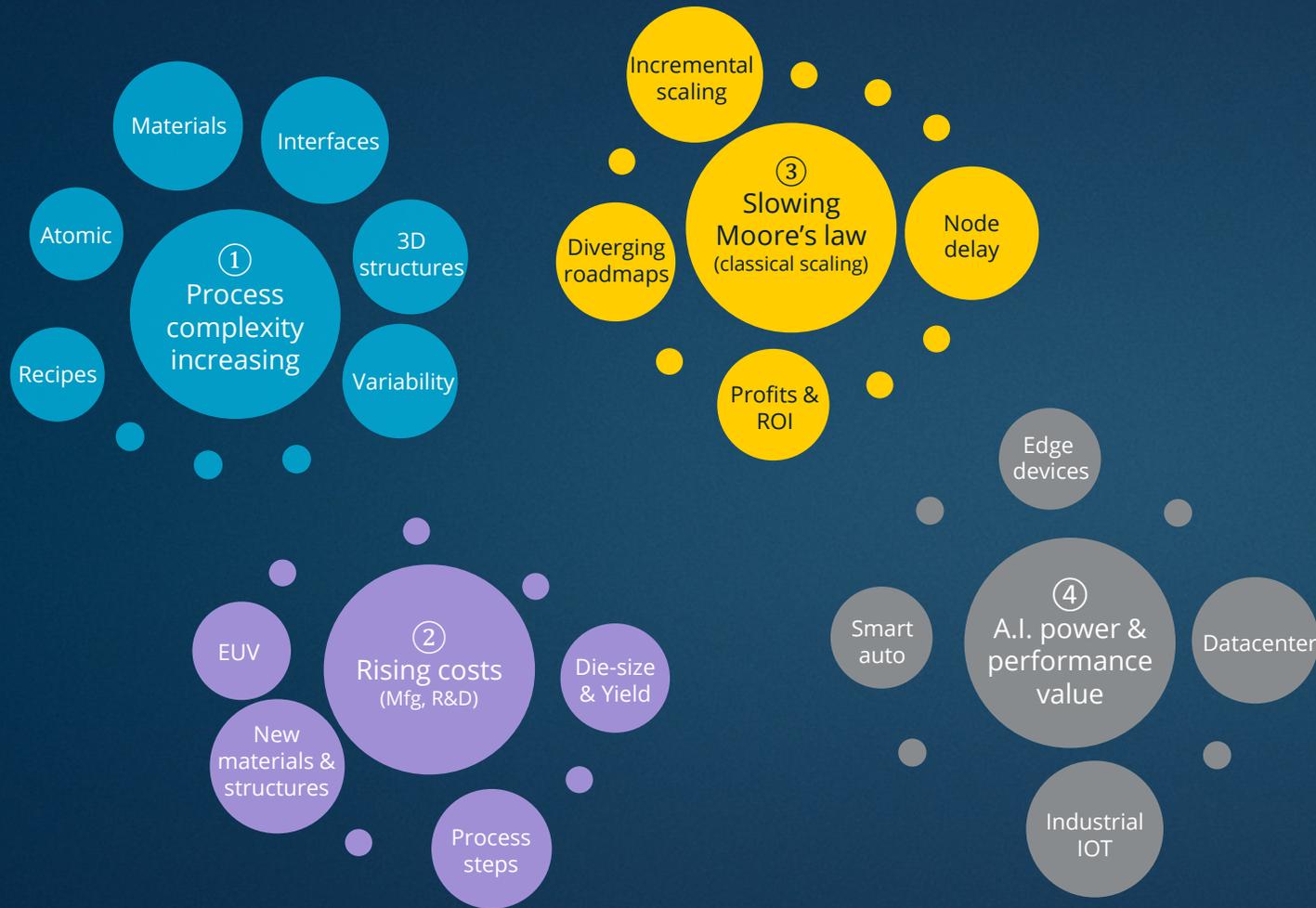
Actionable insight /  
time to market  
acceleration

MATERIALS CREATION,  
MODIFICATION,  
REMOVAL, ANALYSIS

INTEGRATED MATERIALS  
SOLUTIONS (IMS),  
PACKAGING

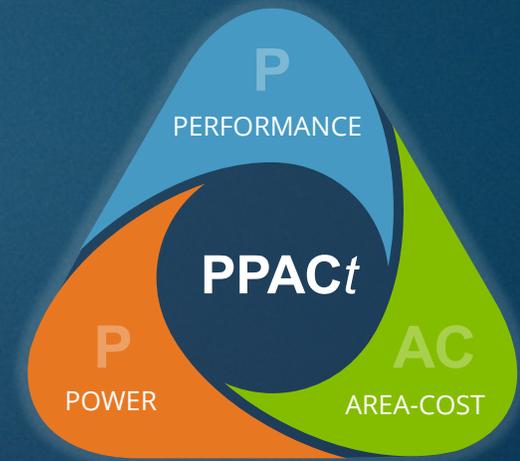
ACTIONABLE INSIGHT  
ACCELERATOR (AI<sup>X</sup>™),  
APPLIED GLOBAL SERVICES

# Right Time, Big Industry Need for PPAC<sub>t</sub> Solutions

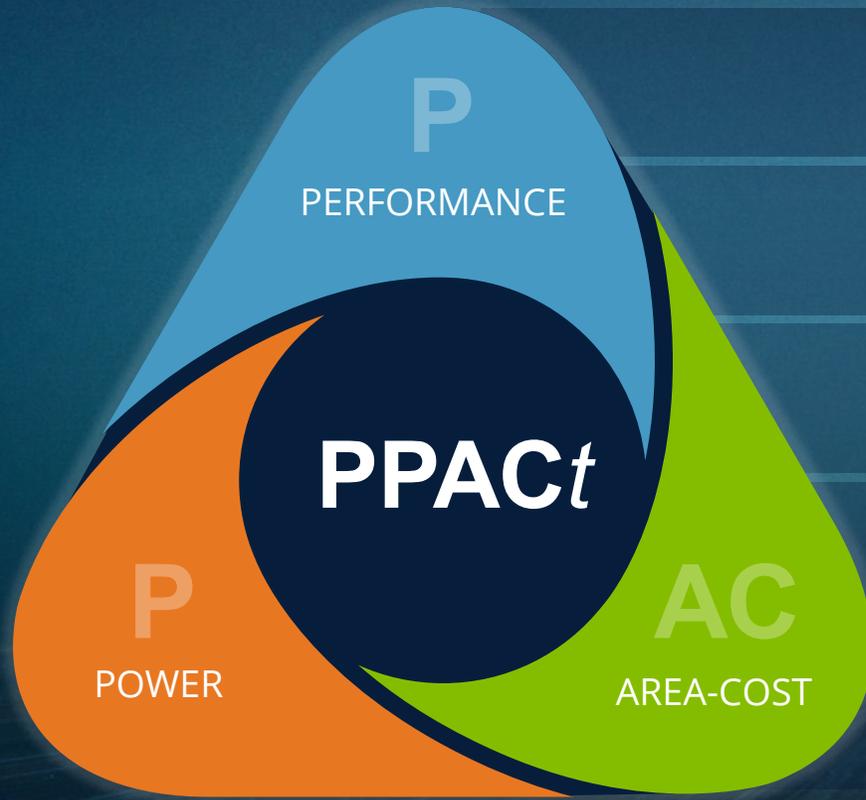


## REQUIREMENTS

- Lower power (P) consumption
- Higher performance (P)
- Smaller size/area (A)
- Lower cost (C)
- Faster time-to-market (t)



PPAC<sub>t</sub> = Power, Performance, Area-Cost, Time-to-Market



ENABLED BY

New architectures

New structures / 3D

New materials

New ways to shrink

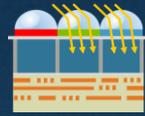
Advanced packaging

Time-to-Market

NEW INDUSTRY PLAYBOOK  
FOUNDATION IS MATERIALS ENGINEERING

# Future Device Inflections Enabled by PPACt Playbook

## New architectures / New devices



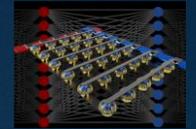
CMOS image sensors



Power

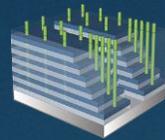


MRAM

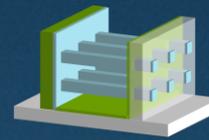


Analog compute-in-memory

## New structures / 3D



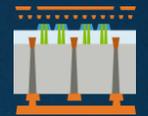
3D NAND



3D GAA Logic



3D DRAM

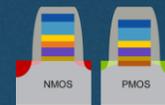


Buried /backside  
power Rail

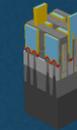
## New materials



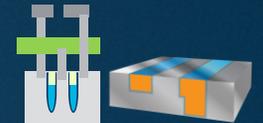
Low R wiring  
for Logic



HKMG for  
DRAM periphery

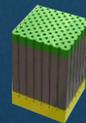


Low R contact  
for Logic



Low R metals  
for DRAM

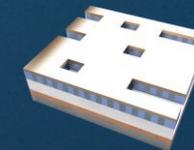
## New ways to shrink



New hard mask +  
hard mask open



Multi-patterning

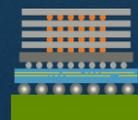


EUV



Self-alignment

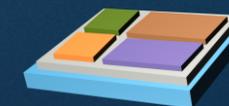
## Advanced packaging



HBM DRAM



CMOS bonded  
array NAND



2.5D logic

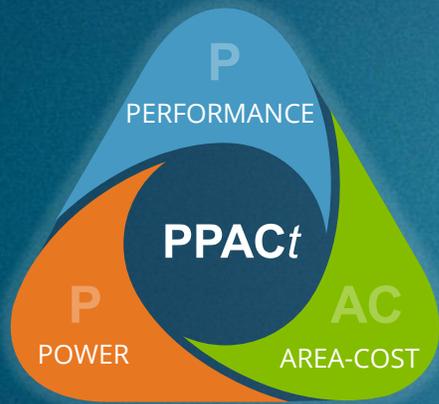


Logic chiplets

CMOS = Complementary metal-oxide-semiconductor  
GAA = Gate All Around

HKMG = High-k Metal Gate  
HBM = High Bandwidth Memory

# Playbook and Growth Drivers



New architectures/ New devices	Specialty devices, mature nodes (IoT), custom ASIC
New structures/3D	Future 3D devices favoring our served markets
New materials	Low resistance metals, high-speed DRAM periphery
New ways to shrink	Materials-enabled patterning, EUV enablement
Advanced packaging	Fine-pitch interconnect for multi-chip system integration
Accelerate time-to-market	Actionable insight: e-Beam, sensors + metrology + AI/ML

'20 to '24  
 Rev oppty. +\$7B  
 Rev CAGR 13%  
 WFE CAGR 8 to 9%

IoT = Internet of Things    ASIC = Application-specific Integrated Circuit    eBeam = Electron Beam

# Applied = PPACt Enablement Company

Unit process  
leadership and  
broadest portfolio



Unique  
combinations  
of technologies



Actionable insight /  
time to market  
acceleration

# Unique Product Portfolio

CREATE  
Materials deposition



Epitaxy



Metals  
deposition



Dielectrics  
deposition



Plating



ALD



Selective  
deposition

SHAPE  
Materials removal



Etch



Planarization



Selective removal

MODIFY  
Materials modification



Implant



Thermal



Treatments

ANALYZE  
Materials analysis



Optical inspection



Defect review



eBeam inspection



CD-SEM

Only company with  
Process + metrology  
Full flow chip lab  
Full flow packaging lab  
META R&D accelerator

# Unique Product Portfolio + Integrated Solutions

CREATE  
Materials deposition



Epitaxy



Metals deposition



Dielectrics deposition



Plating



ALD



Selective deposition

SHAPE  
Materials removal



Etch



Planarization

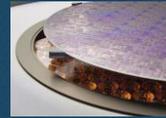


Selective removal

MODIFY  
Materials modification



Implant



Thermal



Treatments

ANALYZE  
Materials analysis



Optical Inspection



Defect Review



eBeam inspection



CD-SEM

SOLUTIONS &  
CONNECTED PRODUCTS



ICAPS

Only company with  
Process + metrology  
Full flow chip lab  
Full flow packaging lab  
META R&D accelerator

Unique combinations  
Breadth enables linking  
capabilities in new ways

# ICAPS

IoT

Comms

Auto

Power

Sensor

# Unique Product Portfolio + Integrated Solutions

CREATE  
Materials deposition



Epitaxy



Metals deposition



Dielectrics deposition



Plating



ALD



Selective deposition

SHAPE  
Materials removal



Etch



Planarization

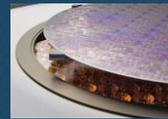


Selective removal

MODIFY  
Materials modification



Implant



Thermal



Treatments

ANALYZE  
Materials analysis



Optical inspection



Defect review



eBeam inspection



CD-SEM

SOLUTIONS &  
CONNECTED PRODUCTS



ICAPS



IMS



Packaging



Applied AI<sup>x</sup>™

Only company with  
Process + metrology  
Full flow chip lab  
Full flow packaging lab  
META R&D accelerator

Unique combinations  
Breadth enables linking  
capabilities in new ways

\* Applied AI<sup>x</sup>™ is a registered trademark of Applied Materials

# Materials Engineering Leadership

**CREATE**  
Materials deposition



Epitaxy



Metals deposition



Dielectrics deposition



Plating



ALD



Selective deposition

**SHAPE**  
Materials removal



Etch



Planarization



Selective removal

**MODIFY**  
Materials modification



Implant



Thermal



Treatments

**ANALYZE**  
Materials analysis



Optical inspection



Defect review



eBeam inspection



CD-SEM

**SOLUTIONS &  
CONNECTED PRODUCTS**



ICAPS



IMS



Packaging



Applied AI<sup>x</sup>™

**#1** Foundry/Logic

**#1** DRAM

**#2** NAND

**#1** Packaging

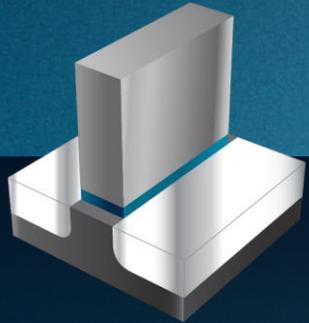
**#1** Integrated solutions  
transistor, interconnect,  
memory, packaging

For non-litho process peers

# Enabling the Transistor Roadmap

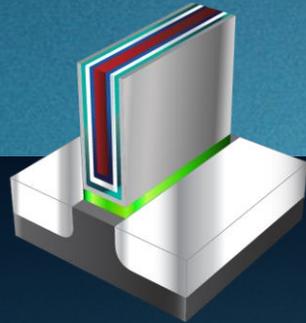


Selective Epi



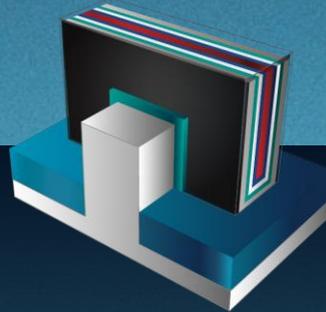
2002

High-k Metal Gate



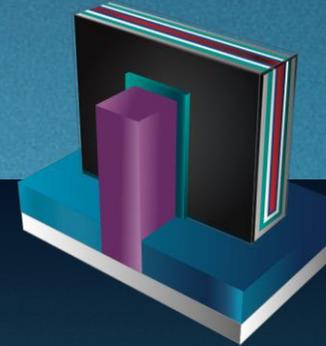
2007

FinFET



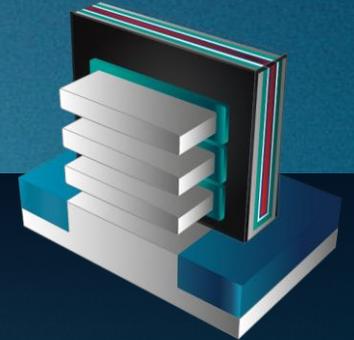
2012

Advanced FinFET



2020

Gate-All-Around



2023

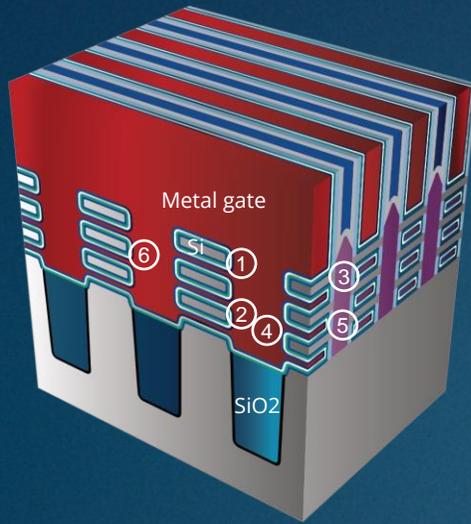
Unit Process Leadership

- Epi
- Implant
- Metal Gate
- RTP Anneal
- CMP
- Selective Removal



Integrated Materials Solutions Leadership

# Gate-All-Around: More Complex Transistor Fabrication



FinFET → GAA (value gains)

↓ leakage/power (geometry)

↑ drive current/speed (stacking)

↑ density (narrower sheet width)

↓ variability (epi defined vs. litho/etch)

↓ 25-30% power; ↑ 10-15% performance<sup>#</sup>

## KEY NEW MODULE STEPS

## REQUIREMENTS

① Super lattice epitaxy	Sharp interfaces, thickness control
② Selective removal	Etch selectivity, no nanosheet collapse
③ S/D stressors (etch, epitaxy)	Controlled recess & growth
④ Metal gate between nanosheets	New materials + void-free gapfill
⑤ Inner spacer (sel. removal, dep)	Controlled lateral recess, gapfill
⑥ Super lattice metrology	Buried defect detection, measurement

**New process steps + increased complexity of existing steps  
~ \$1B TAM opportunity\***

<sup>#</sup>SAFE - Samsung Advanced Foundry Ecosystem, Oct 2020

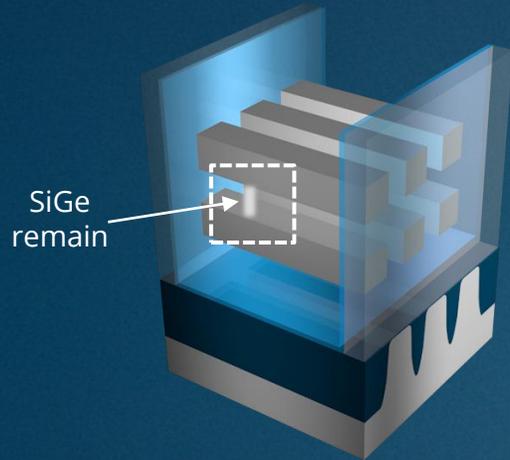
\* 100K WSPM

S/D = Source / Drain

# Applied's eBeam Inspection and Metrology Leadership

## Unique challenges with 3D structures

eBeam inspection

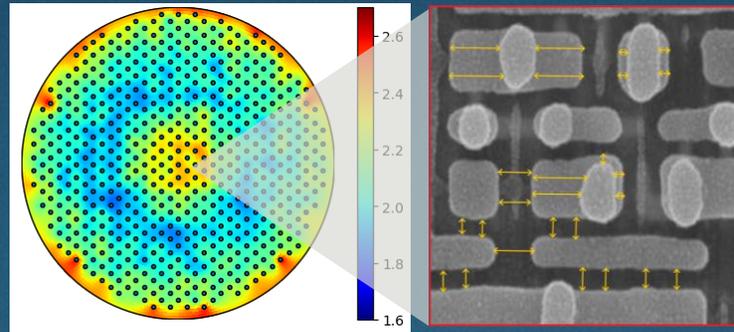


Gate-All-Around

Finding buried defects in 3D structures  
5X faster

## Full wafer statistics needed

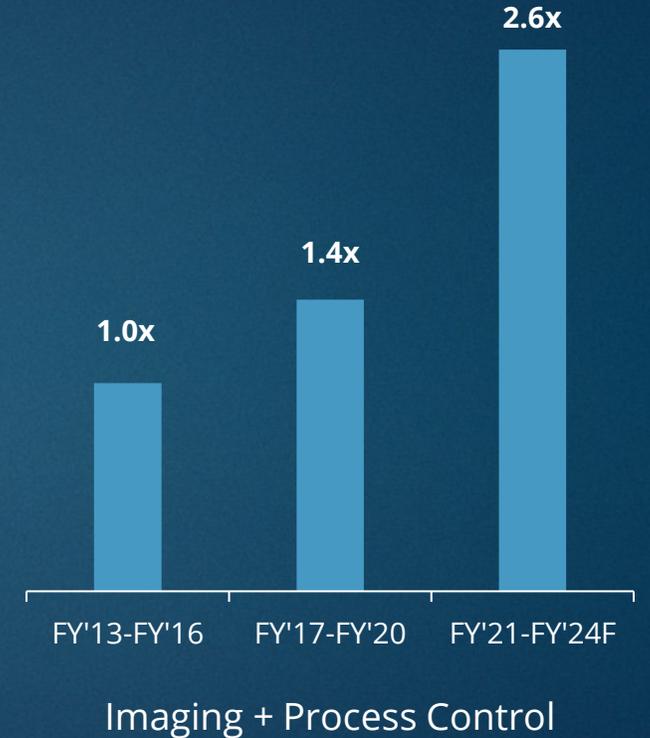
eBeam metrology



In-device CD and overlay

Enabling millions of data points to provide  
full-wafer actionable data

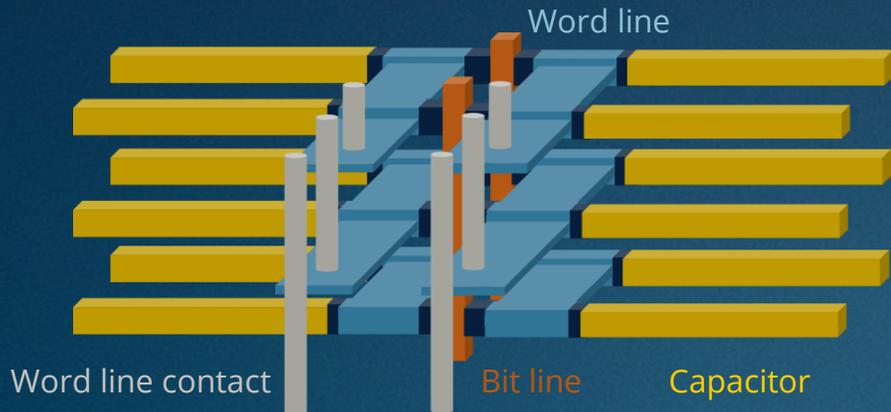
## Driving revenue growth



Actionable insights. PPACt acceleration.

# Future 3D Devices Favoring Our Served Markets

## 3D DRAM

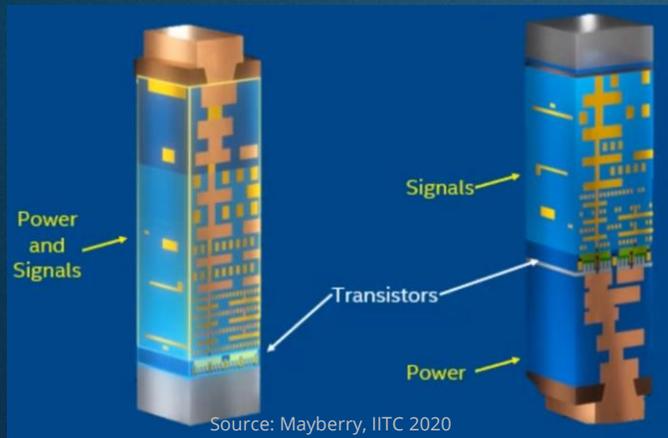


Conductor materials deposition and etch

More steps in our leadership areas: selective removal, implant, anneals, CMP, PVD, eBeam

Materials enable 3D scaling path

## Buried/Backside power distribution



New steps in buried power rails, TSV and backside processing: PVD, CMP, CVD, selective removal, etch

#1 in interconnect

Materials/DTCO enable up to 30% area savings

CMP = Chemical Mechanical Planarization  
PVD = Physical Vapor Deposition  
eBeam = Electron Beam

TSV = Through Silicon Via  
CVD = Chemical Vapor Deposition  
DTCO = Design Technology Co-optimization

# Applied = PPACt Enablement Company

Unit process  
leadership and  
broadest portfolio



Unique  
combinations  
of technologies



Actionable insight /  
time to market  
acceleration

# Going Beyond Unit Process Tools to Deliver Solutions

FASTER TIME TO MARKET, HIGHER VALUE, STICKIER



UNIT PROCESS LEADERSHIP  
+ BROADEST PORTFOLIO



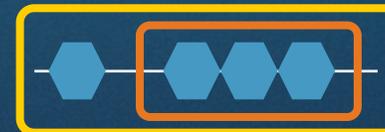
CO-OPTIMIZATION OF  
PROCESSES / TOOLS

~40% of our products  
now co-optimized



INTEGRATED  
MATERIALS  
SOLUTIONS

~30% of our products  
now integrated



SENSORS + eBeam + AI / ML

ACTIONABLE INSIGHT  
ACCELERATION

New

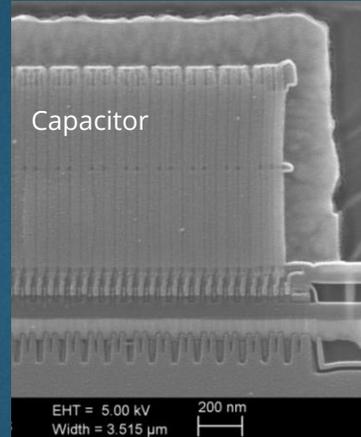
# Zooming in on Server DRAM Capacitors



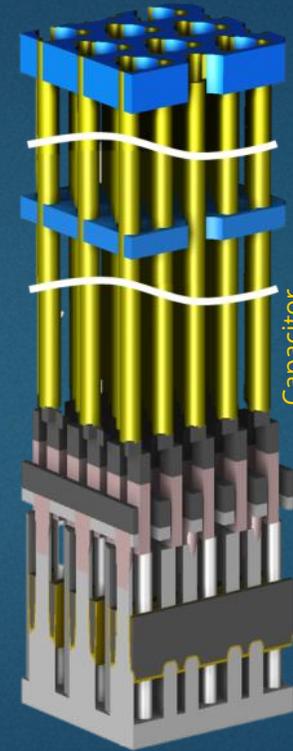
Datacenter



Server RDIMM with DRAM chips  
(black blocks)



Microscope cross section view of chip  
Source: Tech Insights



3D model of structure  
of DRAM array area

Critical and challenging process module

30nm size cylinder ~ 1/250<sup>th</sup> blood cell

16 billion capacitors in 65mm<sup>2</sup> area\*

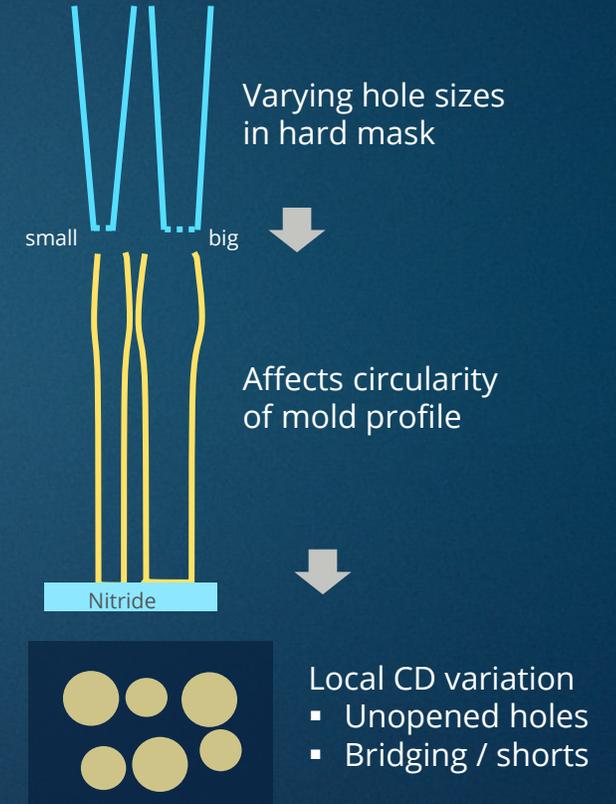
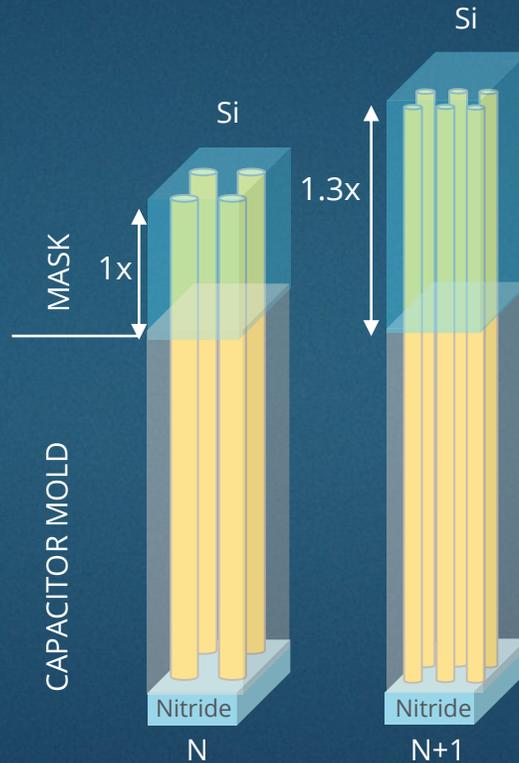
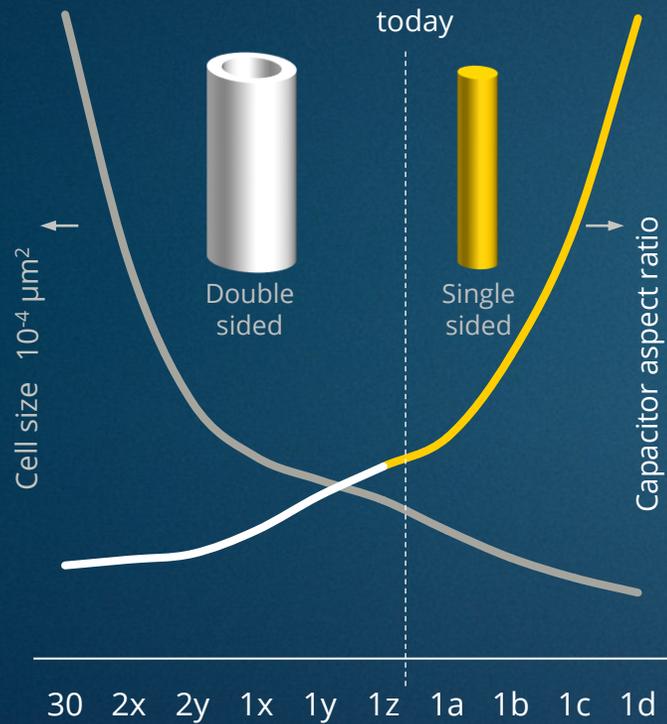
\*16Gbit DRAM  
RDIMM = Registered Dual In-Line Memory Module

# Capacitor Etch Profile Variability: Showstopper for Scaling

Shrink + geometry change = High AR

Need taller mask for patterning

Higher etch variability and defects

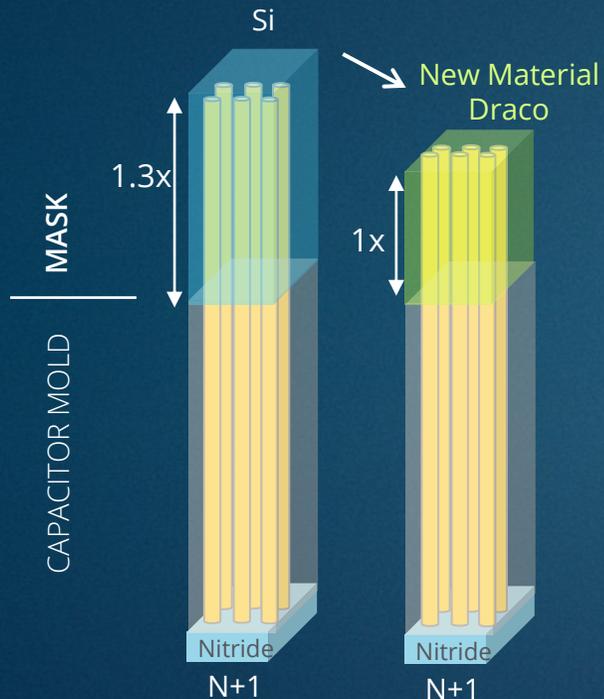


AR = Aspect Ratio

CD = Critical Dimension

# Innovations to Enable Low Variability High AR Etch Process

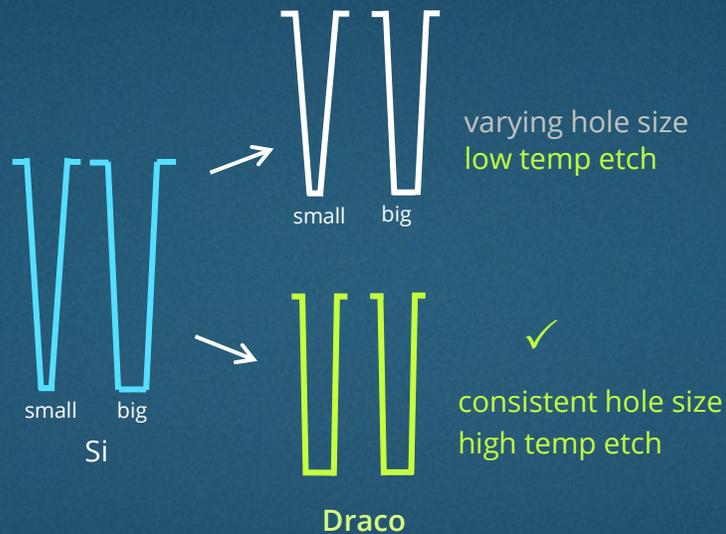
Draco™: New hard mask material  
(Higher modulus and selectivity)



Tunable film properties for selectivity  
Unique precursor chemistry

+

New high temp etch technology  
(Better profile and CD uniformity)



Industry leading >200°C capability  
Higher conductance Sym3® design

+

Unique metrology  
(Faster and better sampling error)

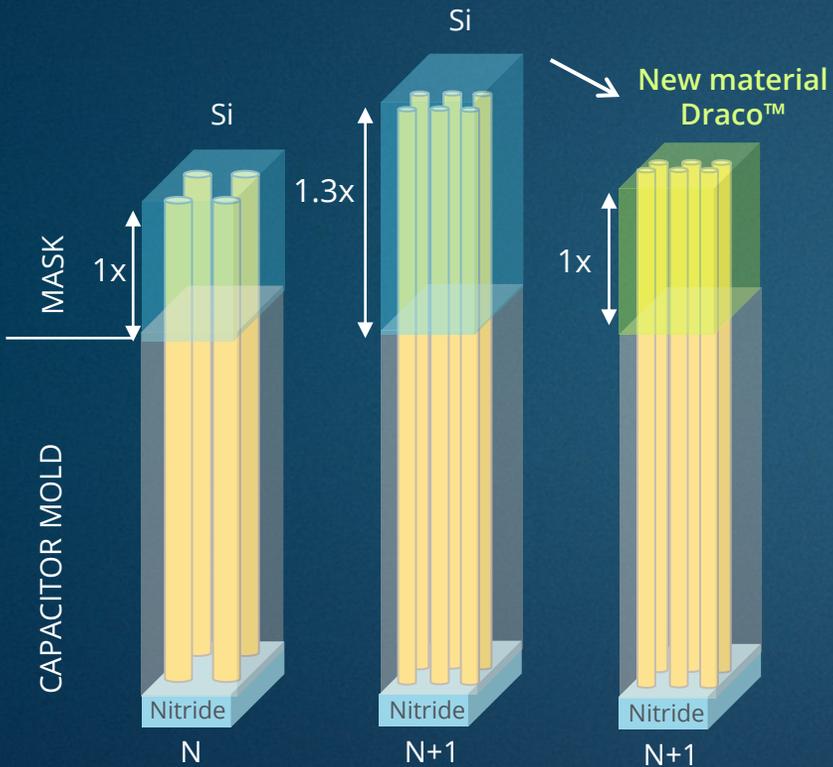


Non-destructive, bottom imaging with  
actionable measurements

\* CD = Critical Dimension

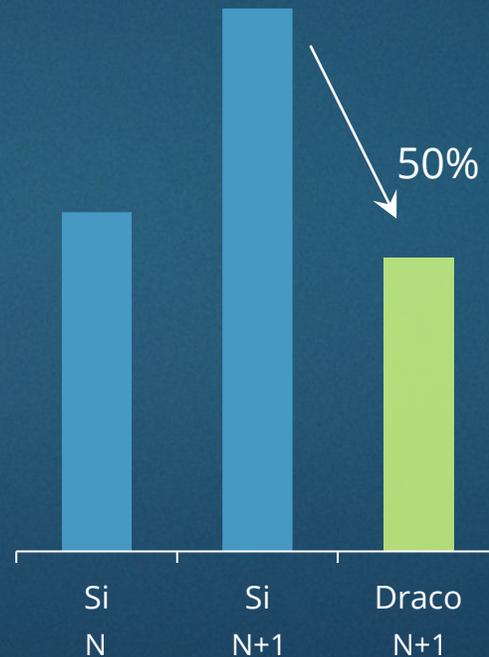
# Variability and Defect Reduction with Co-optimization

Thinner mask with lower AR + New etch

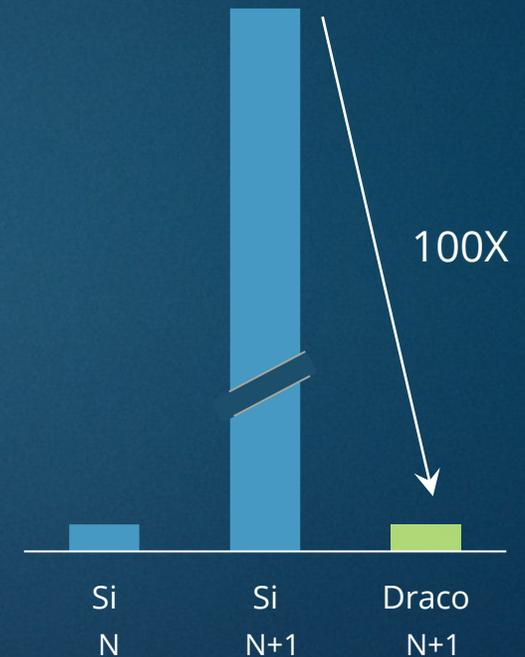


Enabling improved CD uniformity and defect performance

Local CD uniformity improved



Bridging defects substantially reduced



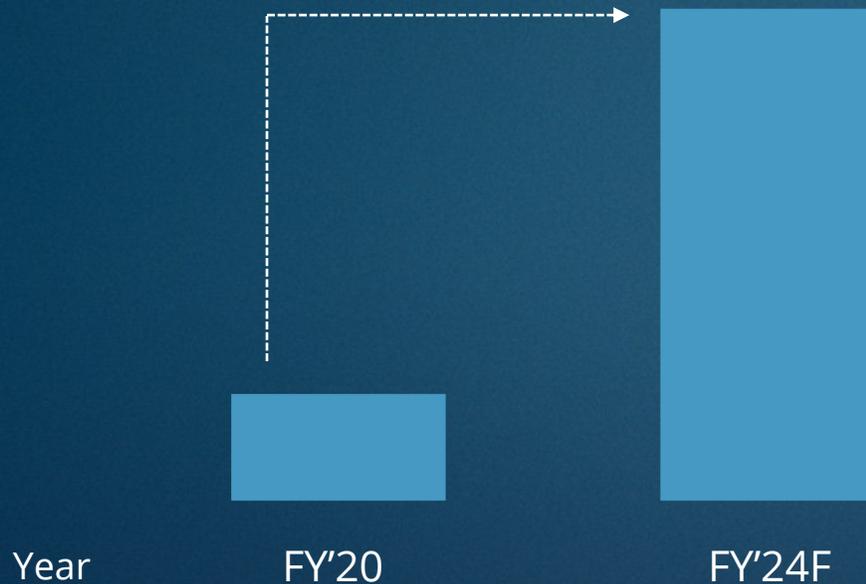
AR = Aspect Ratio  
CD = Critical Dimension

# Extending the Capacitor Roadmap



**\$1B** cumulative TAM opportunity

>4X annual revenue growth



Breaking tradeoffs: area, capacitance, variability

Innovative technologies + acceleration with co-optimization + acceleration with metrology

Delivering node-over-node PPACt gains  
↑performance, ↑yield, ↓area

DTOR / PTOR at major DRAM customers

DTOR = Development Tool of Record  
PTOR = Production Tool of Record

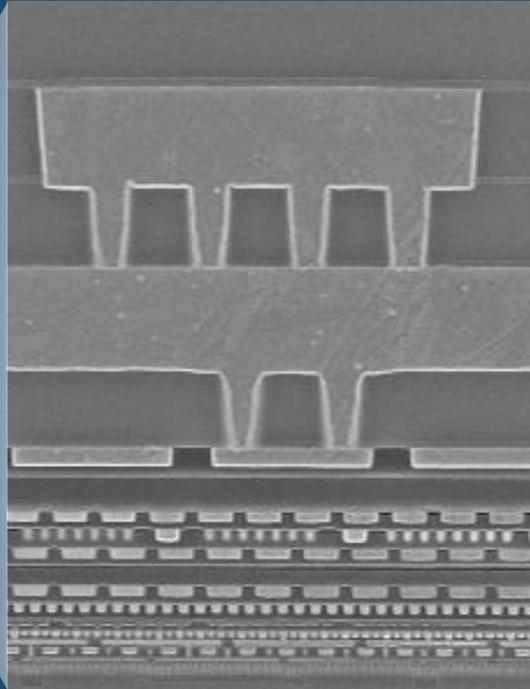
# Zooming in on Smartphone Chip Interconnects that Power Transistors



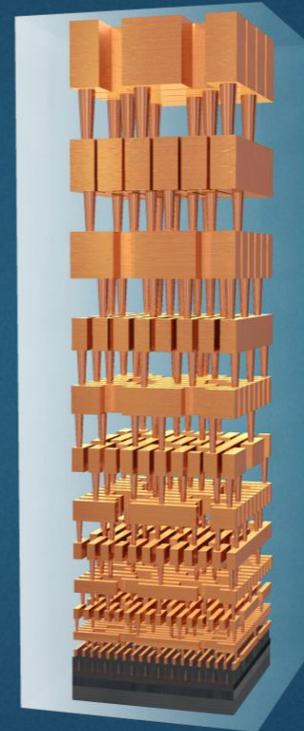
Source: Apple



Processor chip: 88mm<sup>2</sup> size  
8.57 mm x 10.23 mm



Microscope cross section view of chip  
Source: Tech Insights



3D model of a chip

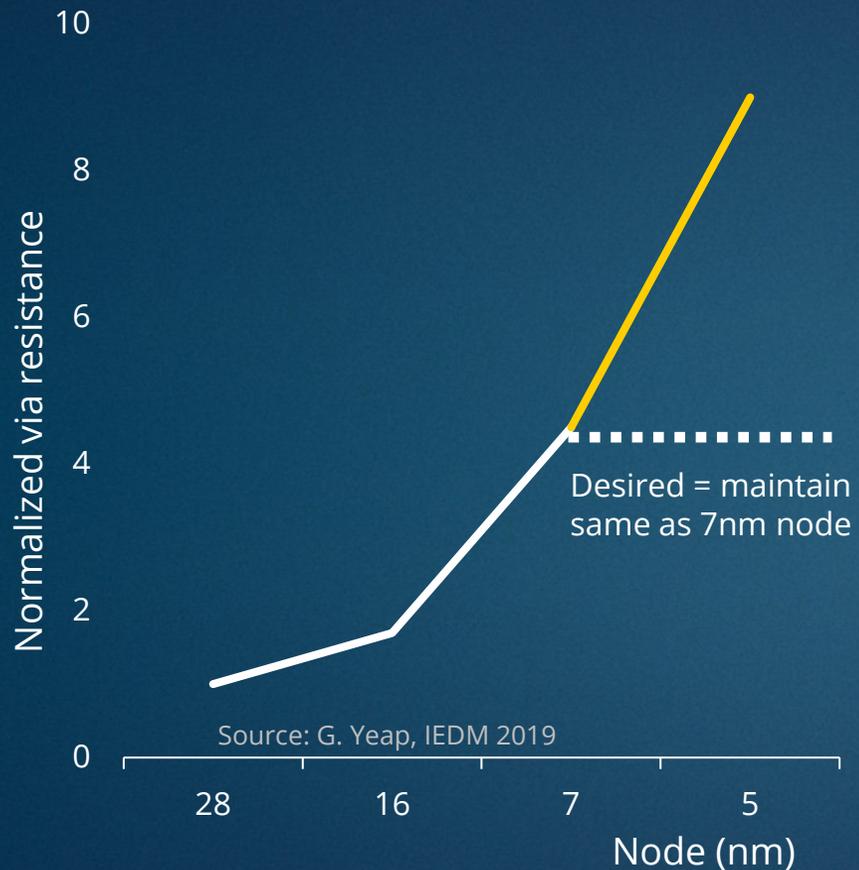
**>15 layers**  
stacked copper interconnects

**>10 billion**  
copper interconnect via connections

**11.8 billion**  
transistors

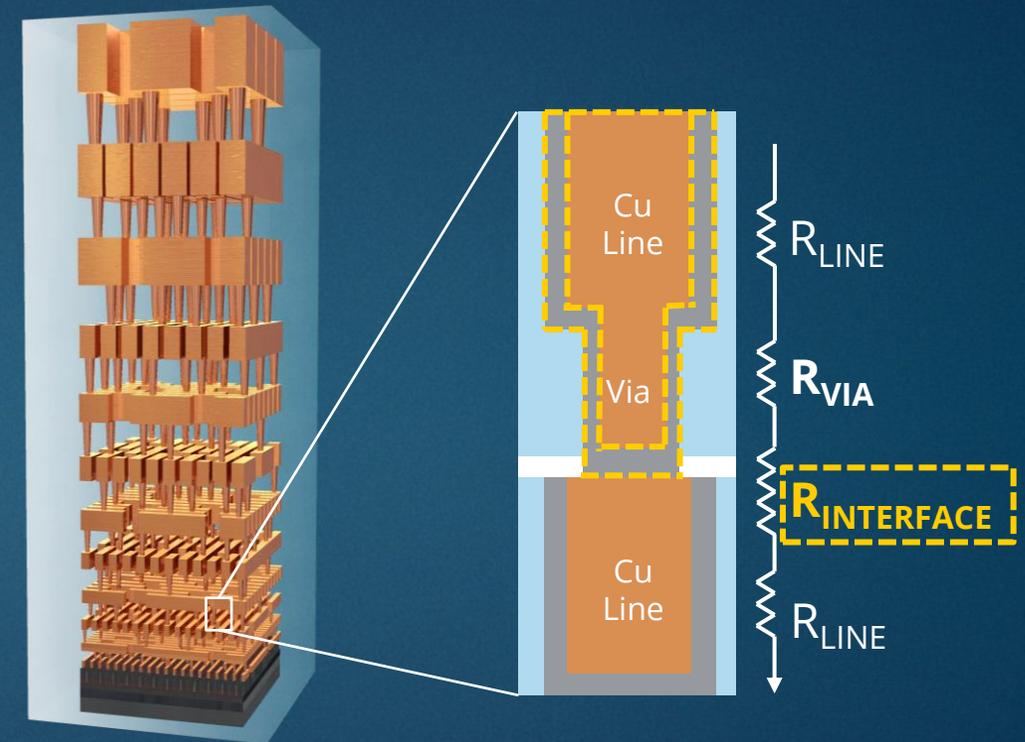
# Interconnect Resistance: A Major Scaling Roadblock

Resistance (R) escalates at small dimensions



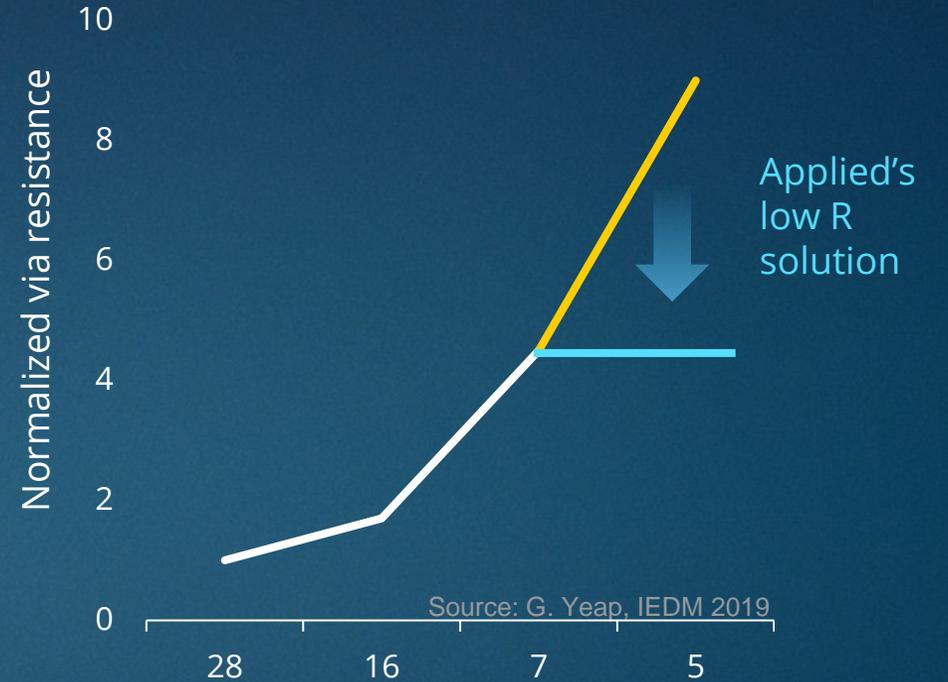
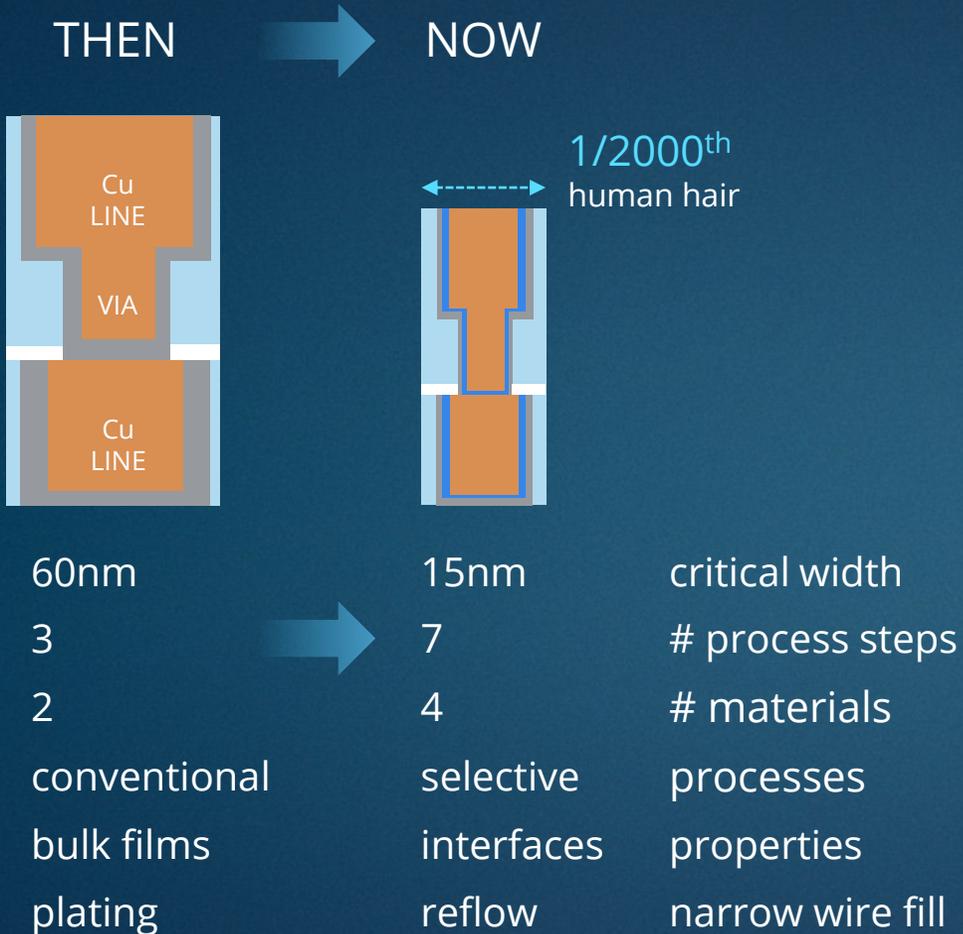
Higher resistance = higher dynamic power loss  
>1/3<sup>rd</sup> of chip power is consumed in interconnects

Interfaces contribute >50% of resistance



More than 5 interfaces at narrow via-line connections  
Atomic-level nucleation and termination of interfaces critical

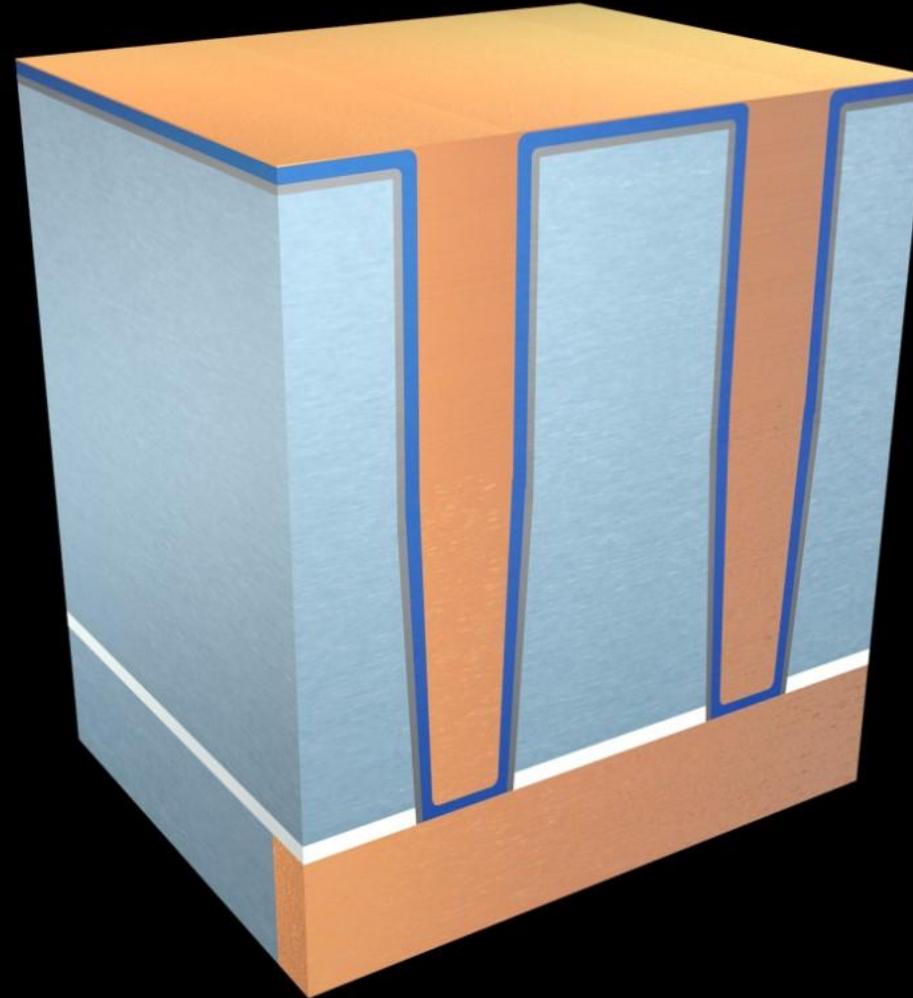
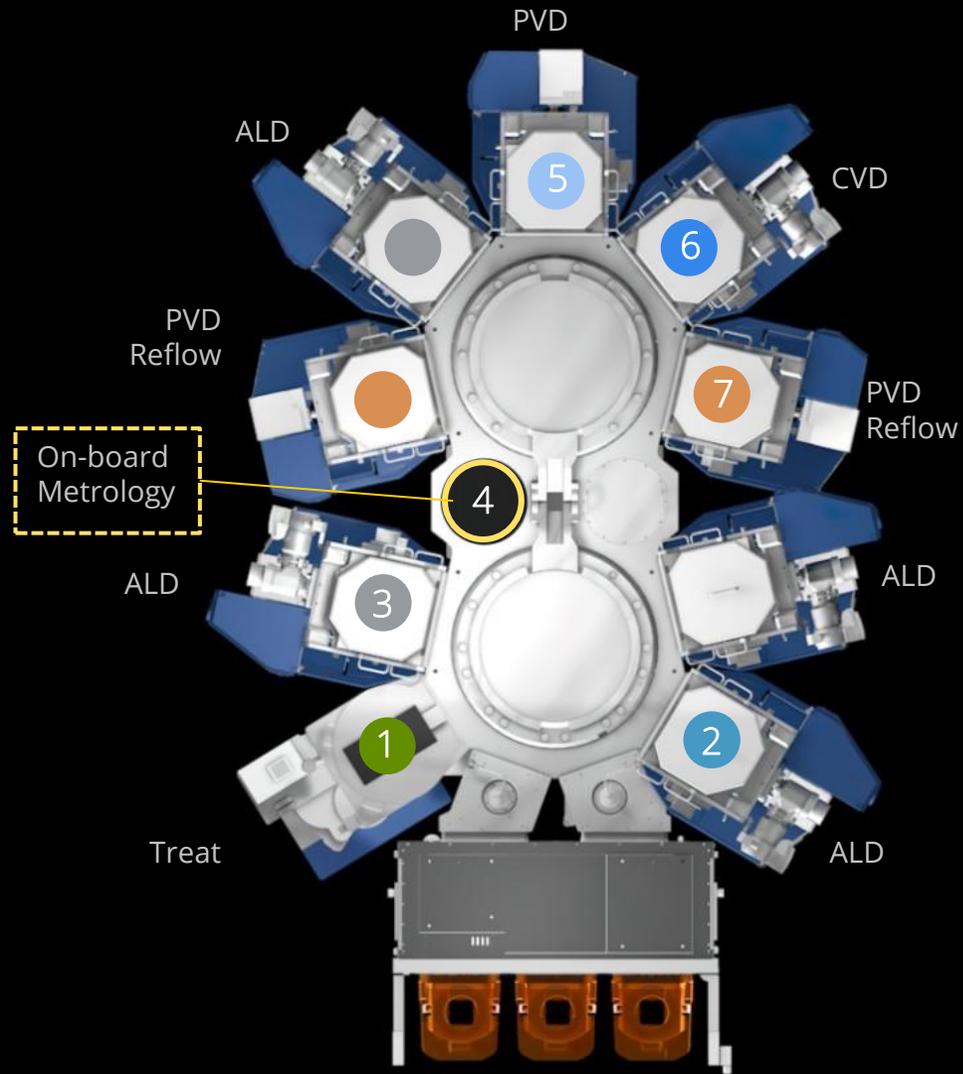
# Applied's Unique Solution Lowers Interconnect Resistance



$\sim 50\% \downarrow$  via R (single via)
 \*  $>1B$  vias (via per layer)
 \* 5 critical levels (# of layers)
 = scaled power savings (net gains)



## INTEGRATED SOLUTIONS

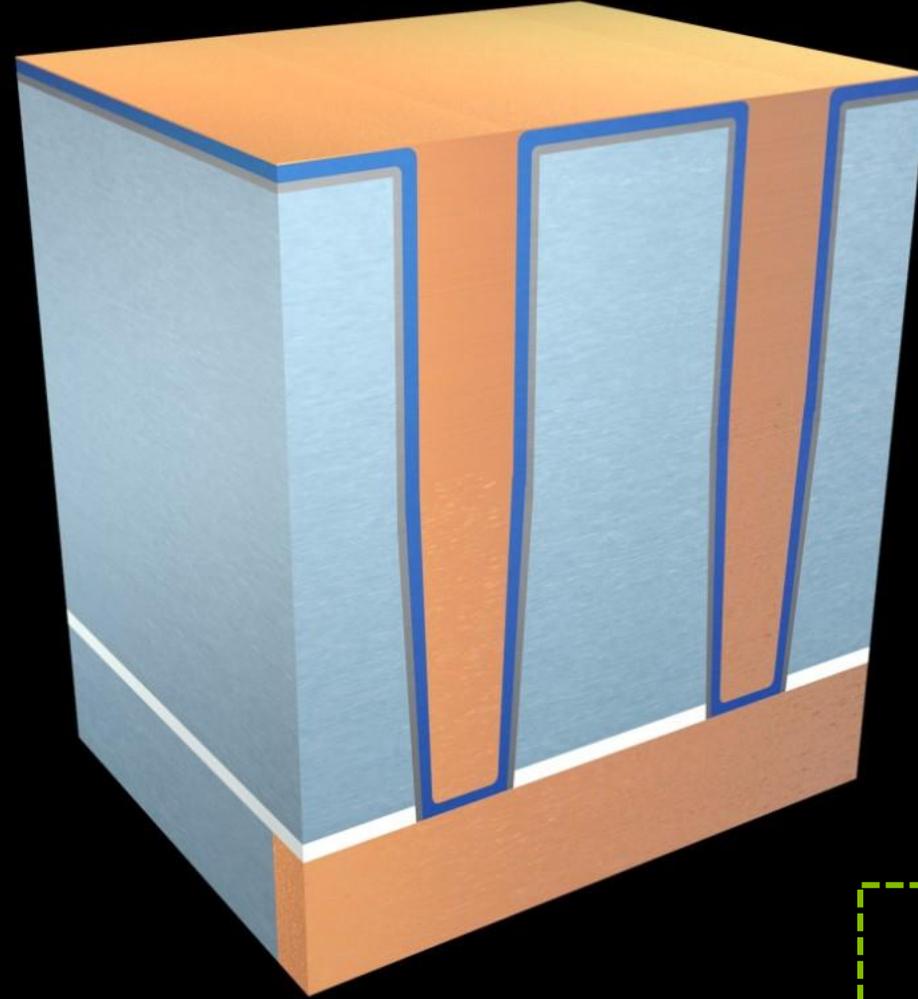
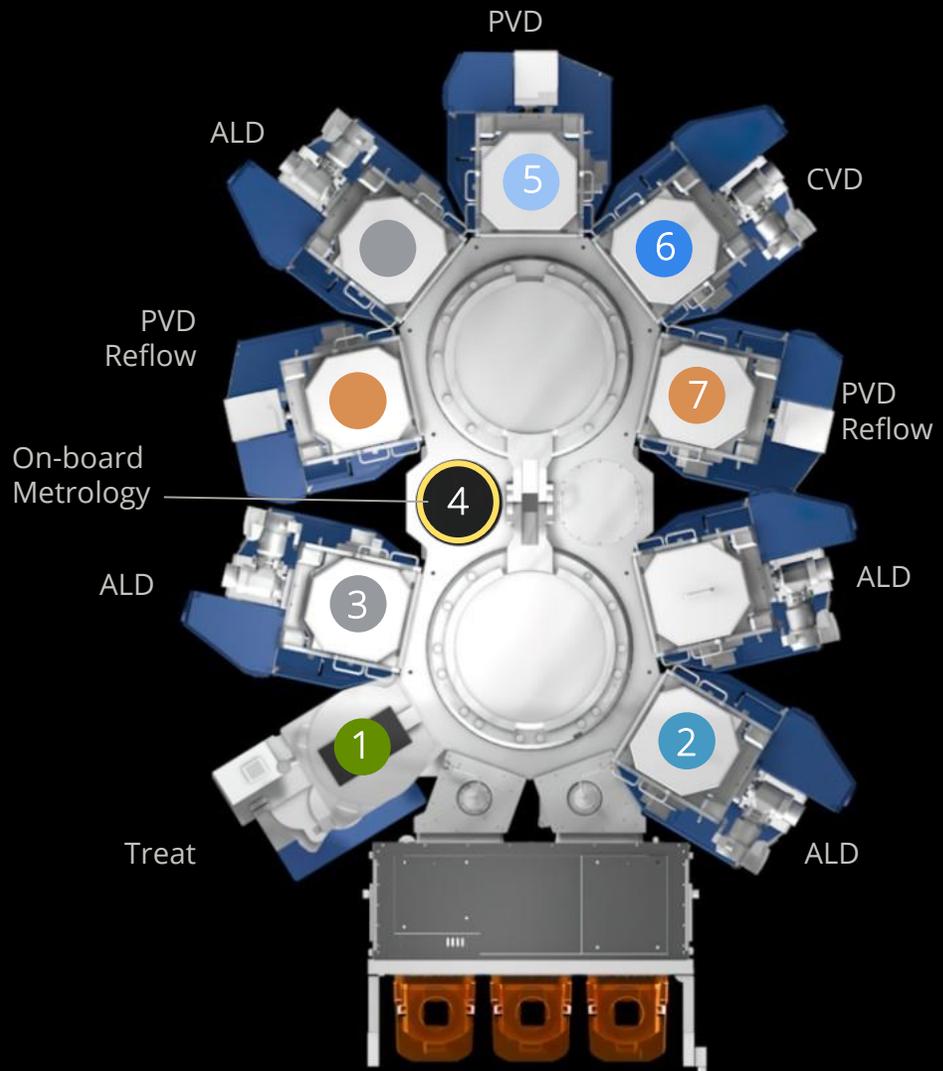


1. Surface Preparation
2. Interface Engineering
3. Selective ALD Deposition
4. Integrated On-Board Metrology
5. Material Modification Treatment
6. Liner Deposition
7. Copper Reflow

**All 7 steps in vacuum  
Unique to Applied**



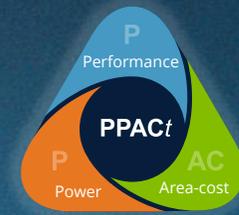
## INTEGRATED SOLUTIONS



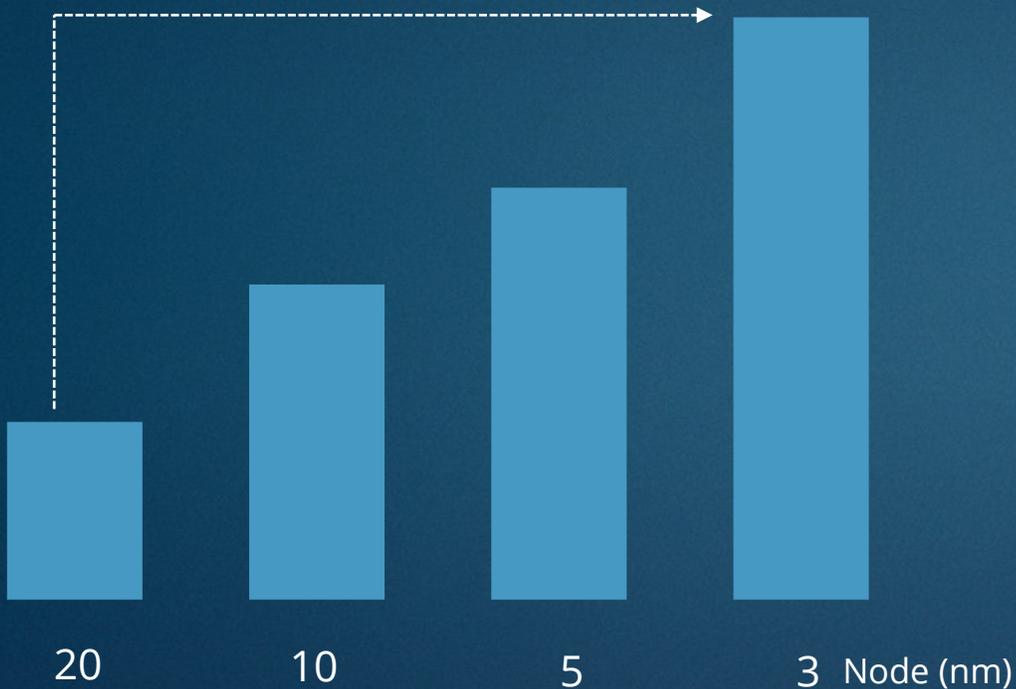
7. Copper Reflow
6. Liner Deposition
5. Material Modification Treatment
4. Integrated On-Board Metrology
3. Selective ALD Deposition
2. Interface Engineering
1. Surface Preparation

**All 7 steps in vacuum  
Unique to Applied**

# Enabling the Interconnect Roadmap



>2X process step growth  
>3X TAM growth



>30 years of PVD market leadership  
>25,000 Endura<sup>®</sup> installed base chambers

Breakthrough technologies + new materials +  
unique combinations + interface engineering

Delivering node-over-node PPACt gains  
↓ R, ↓ power, ↑ yield, ↑ reliability, ↓ area

# Advanced Packaging: PPACtValue and Requirements

## Parallel, shorter interconnects

Higher I/Os  
Reduced latency  
Lower power



## 3D stacking

Tighter integration  
Many chips per package  
High bandwidth



## Chipselets

Customization  
More good chips per wafer  
Higher yield



On-chip like interconnect

High process complexity

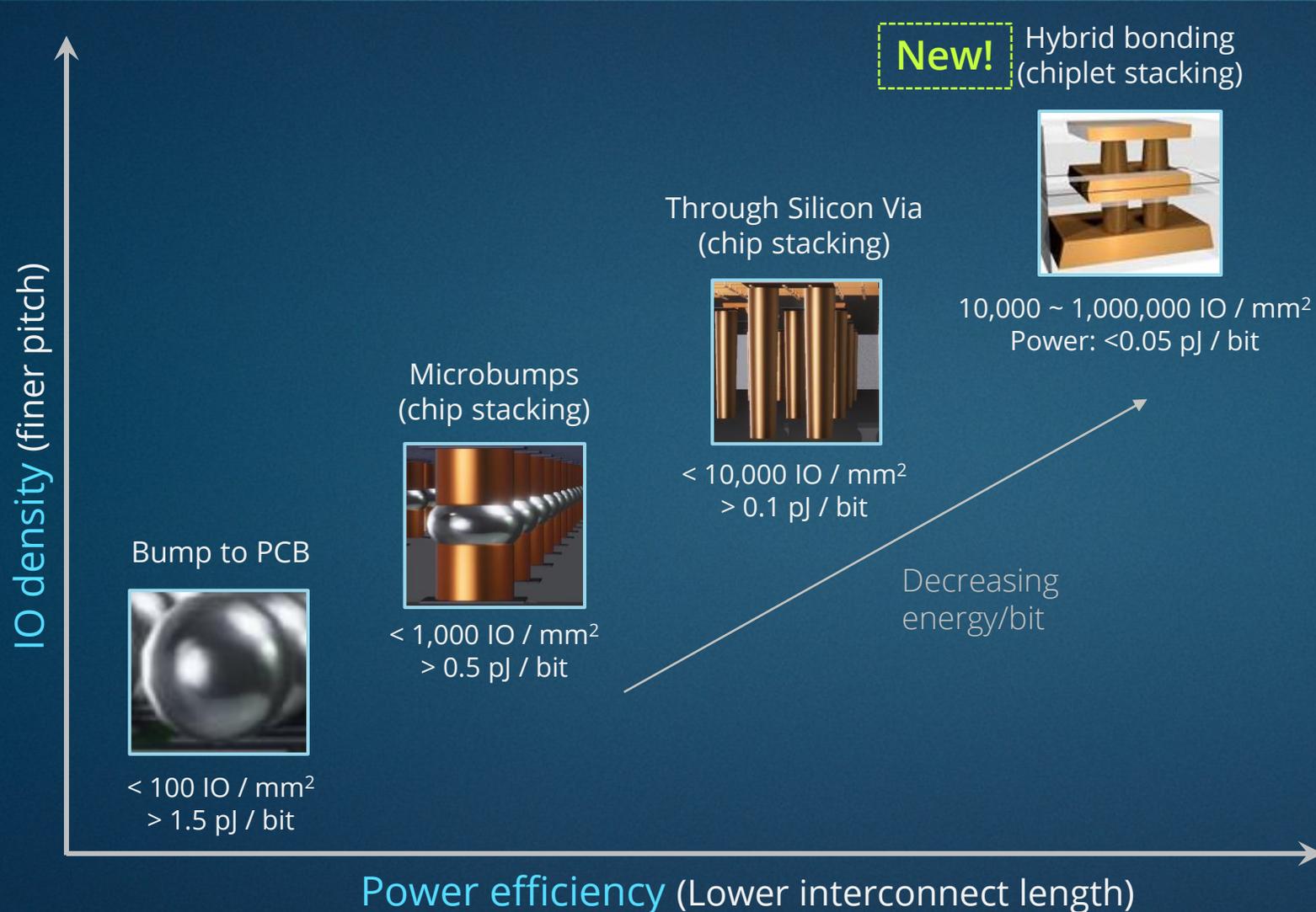
Requires broad product portfolio + combinations

\*Source: Samsung HBM whitepaper 2018

I/O = Input / Output  
GPU = Graphic Processing Unit

HBM = High Bandwidth Memory  
GDDR = Graphic Double Data Rate

# Advanced Packaging: System Interconnect Roadmap



Better power efficiency w/  
finer pitch, shorter lengths

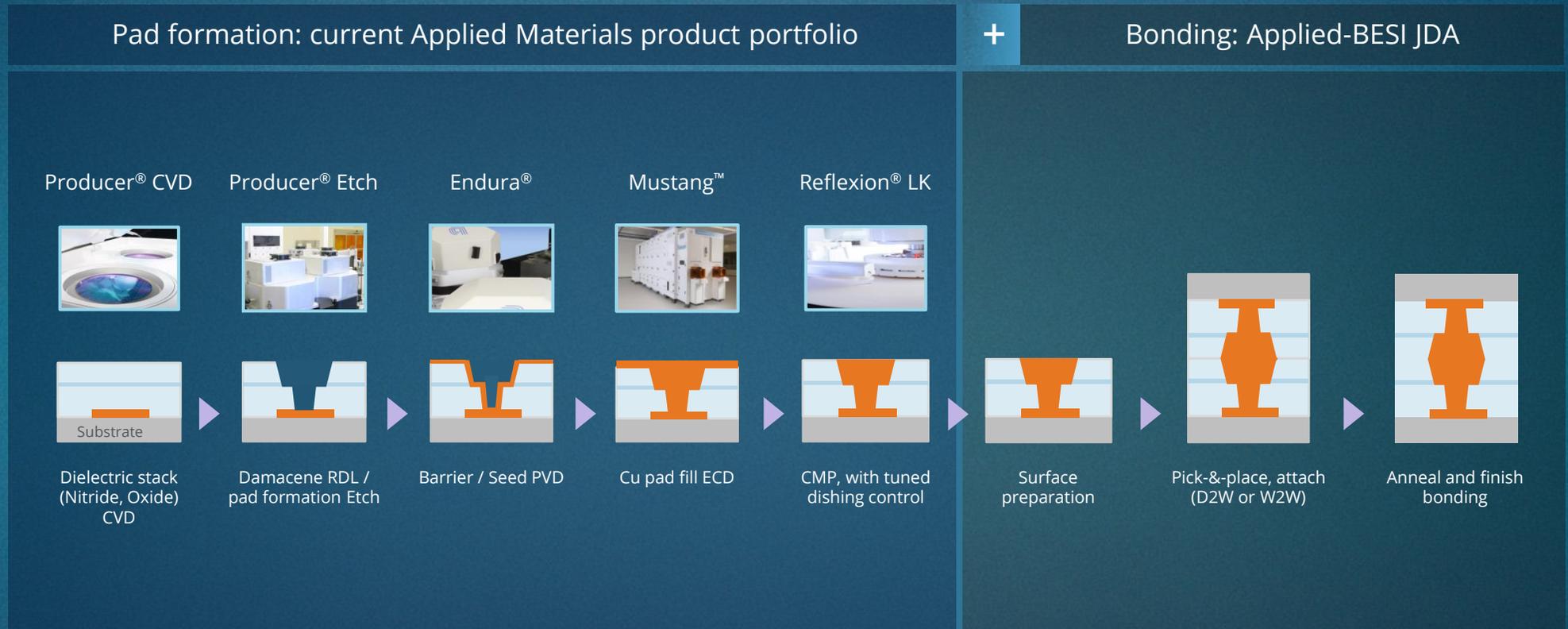
Hybrid bonding reduces  
lengths to micron scale

Future integration:  
Logic + Memory + PMIC

# Hybrid Bonding: Unique Portfolio + Solutions + Partnership



Pad formation + Bonding

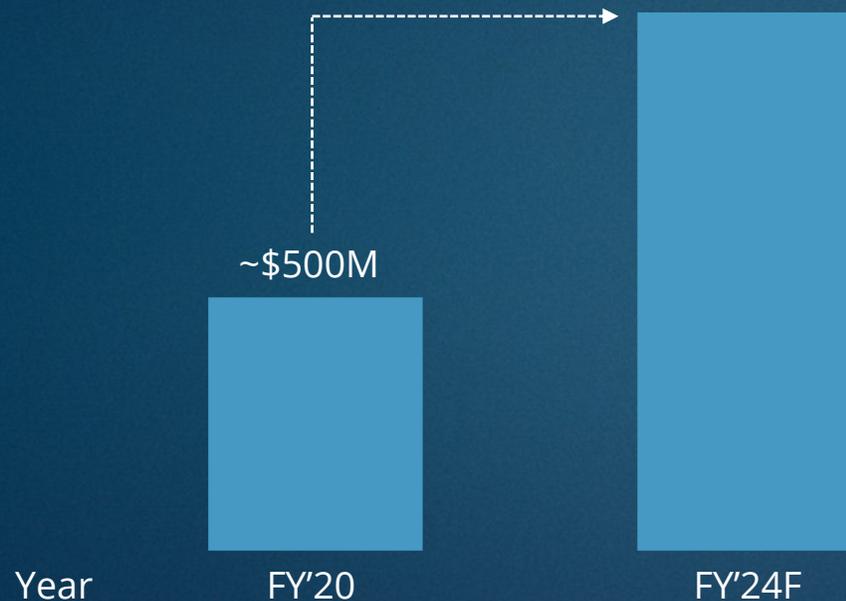


CVD = Chemical Vapor Deposition  
 RDL = Redistribution Layer  
 PVD = Physical Vapor Deposition  
 ECD = Electrochemical Deposition

CMP = Chemical Mechanical Planarization  
 D2W = Die to Wafer  
 W2W = Wafer to Wafer  
 JDA = Joint Development Agreement

# Positioned for Growth in Packaging

Early innings of multi-year growth



#1 in bond-pad, bump and TSV

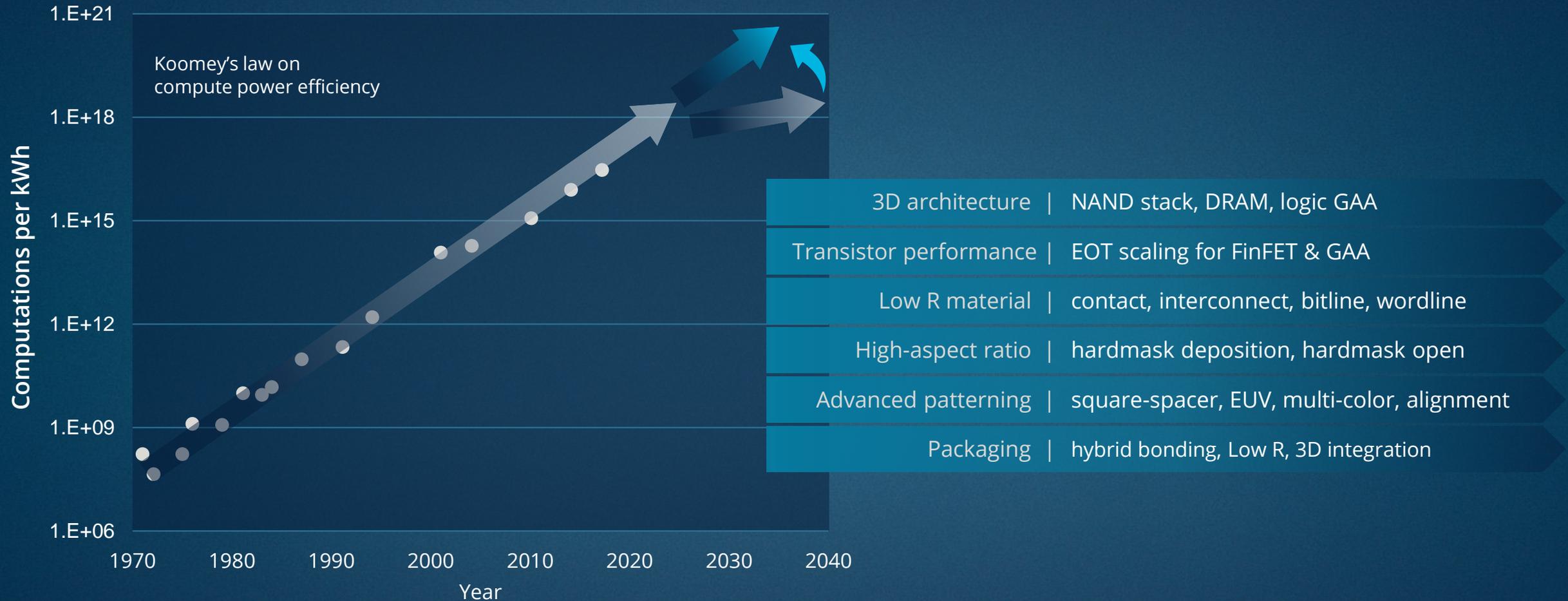
Broad product portfolio + full-flow lab

Key eco-system partnerships

Delivering system level PPACt gains  
↓ R, ↓ power, ↓ area, ↑ performance

TSV = Through Silicon Via

# Industry Enabling PPAC $t$ Programs in Pipeline



Sources  
 J Koomey, et al, IEEE Annals of the History of Computing, Vol.33, Iss. 3, March 2010  
 D Hutcheson, SPIE Advanced Lithography, February 2018

GAA = Gate All Around  
 EOT = Equivalent Oxide Thickness  
 FinFET = Fin Field-effect Transistor  
 EUV = Extreme Ultraviolet Lithography

# Applied = PPACt Enablement Company

Unit process  
leadership and  
broadest portfolio



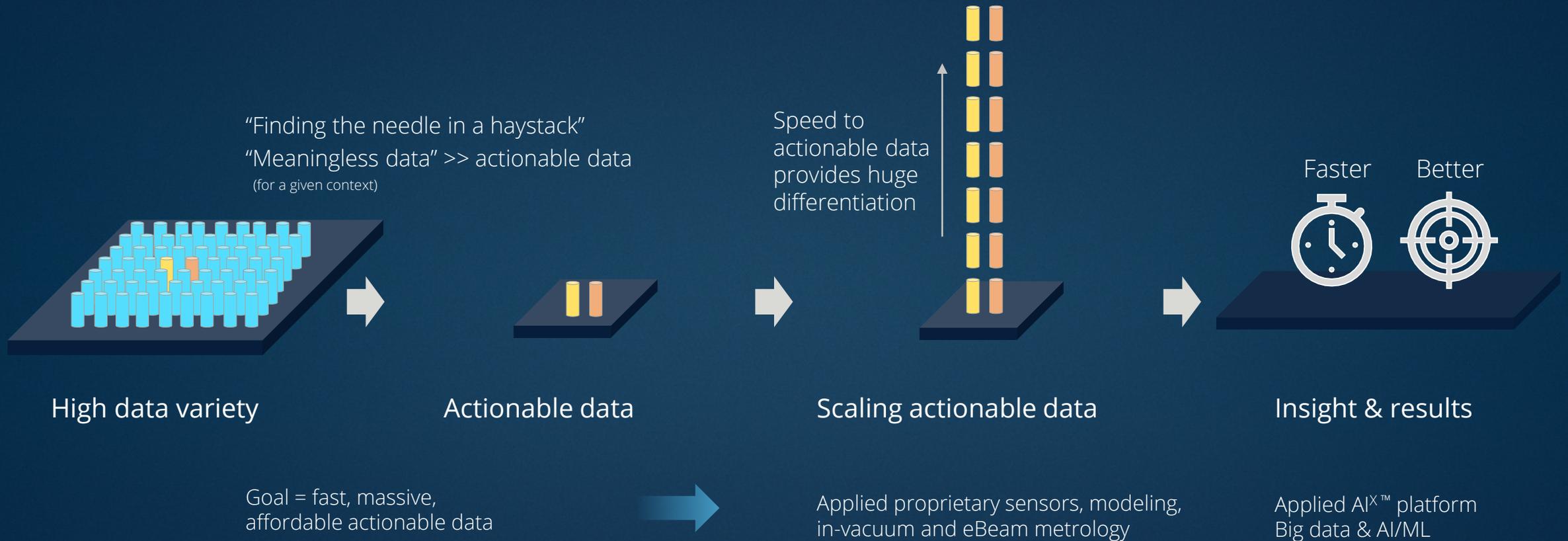
Unique  
combinations  
of technologies



Actionable insight /  
time to market  
acceleration

Applied AI<sup>X</sup>™  
Case studies

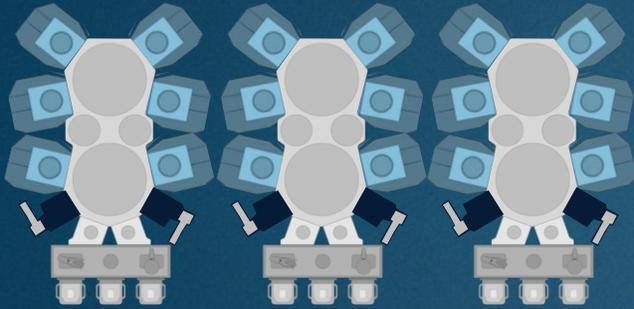
# What is Actionable Insight?



eBeam = Electron Beam

# Applied AI<sup>x</sup>™ Actionable Insight Accelerator

**real-time ability to see into the process**  
with innovative sensors, in-vacuum metrology



Process tools

>10,000 process possibilities per tool  
>1,000,000 possibilities per integrated flow

+

massive **actionable data**  
with **unique metrology**



PROvision®

100X faster  
50% higher resolution

+

**AI<sup>x</sup>™ analytics platform**  
across all Applied tools



ChamberAI™ ML algorithms



AppliedPRO™



Digital twin models

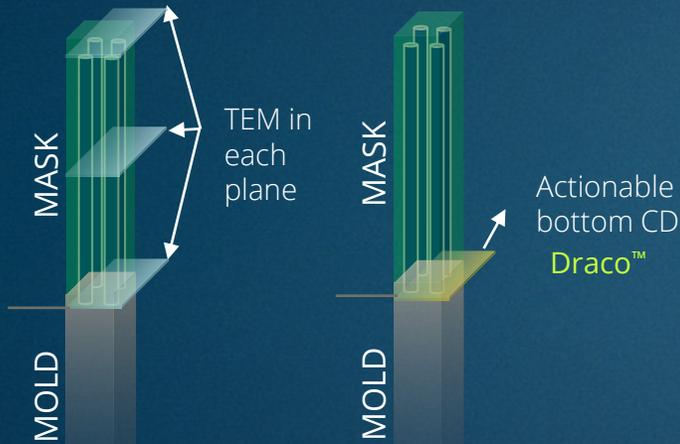


Integrated controls

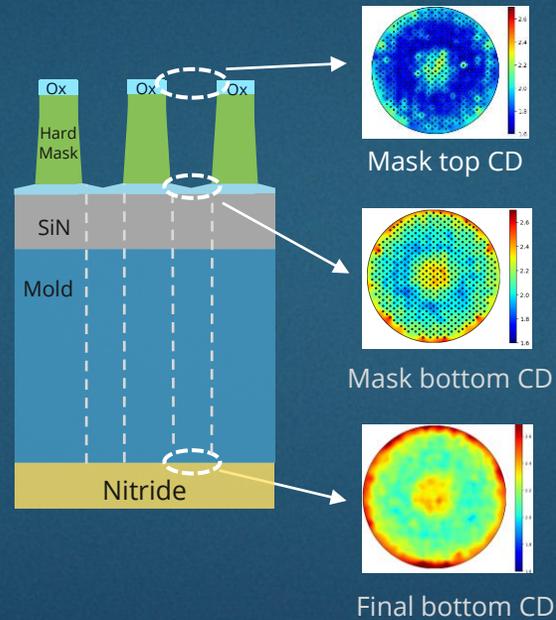
Making every stage faster and better: R&D, ramp and HVM  
2X faster with 30% better process window

# Actionable Insight: Draco™ Hard Mask Case Study

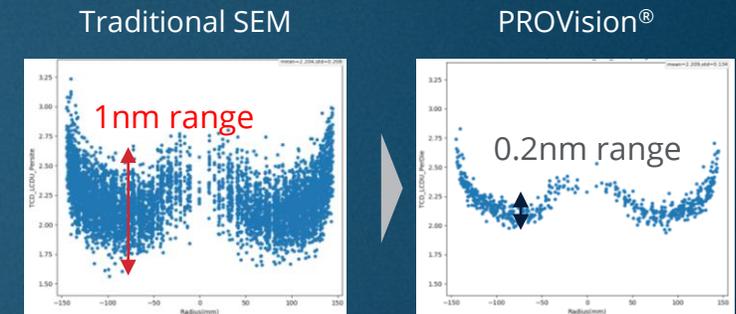
Identifying actionable data  
(Bottom mask CD)



Scaling with unique  
PROVision® metrology  
(Spatial signatures)



Faster insights and results  
(Better process variability)



10X sampling  
5X improvement within-wafer CDU

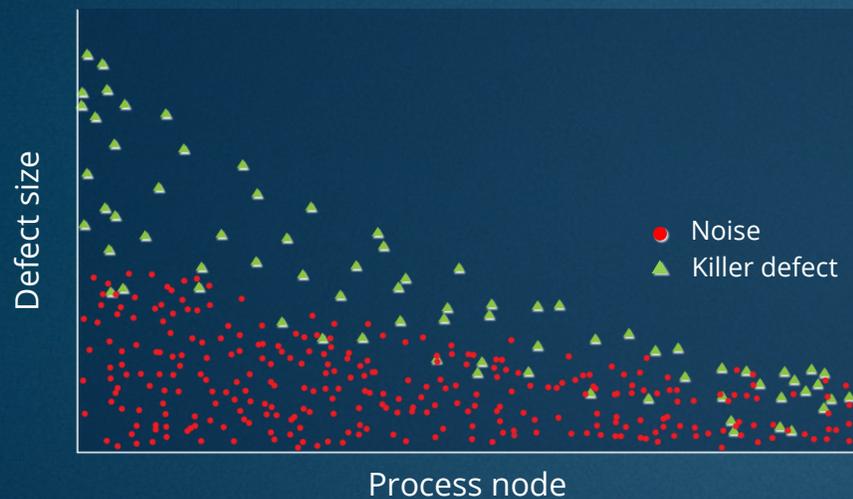
Integrated solutions + eBeam leadership + Applied AI<sup>x</sup>™ = **Unique to Applied**

CD = Critical Dimension  
TEM = Transmission Electron Microscope  
CDU = Critical Dimension Uniformity  
eBeam = Electron Beam

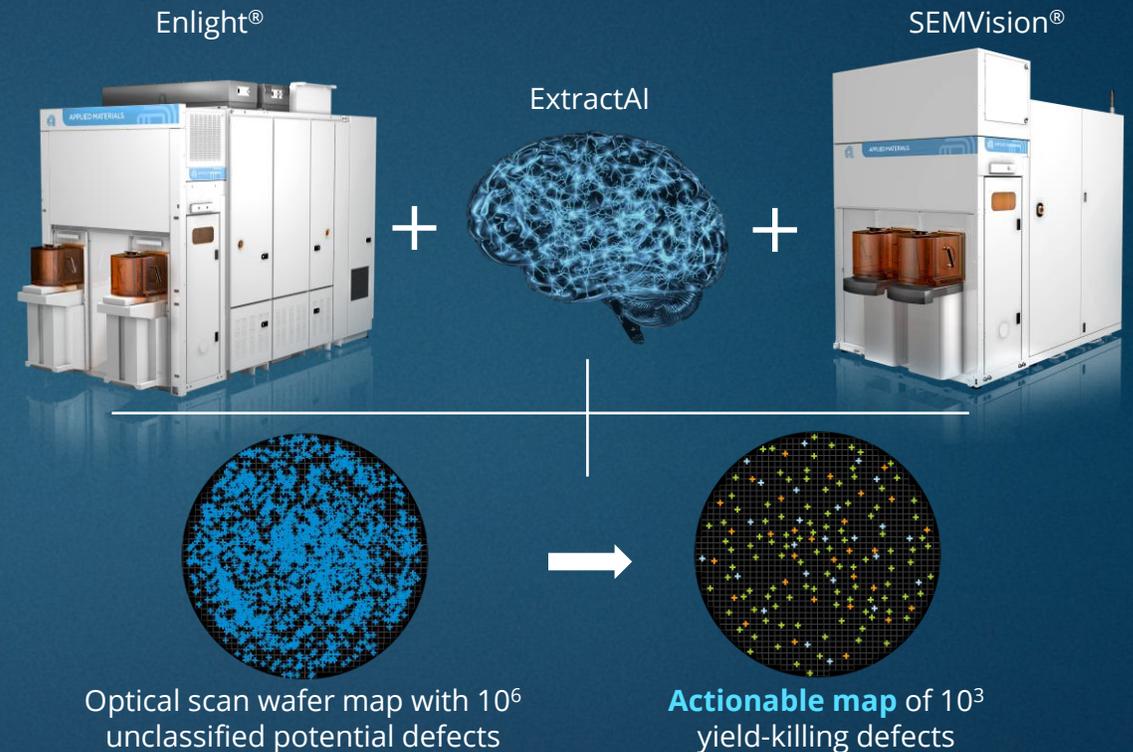
# ExtractAI™: A New Playbook for Process Control

## Problem

Distinguishing defects from “noise”



## Solution



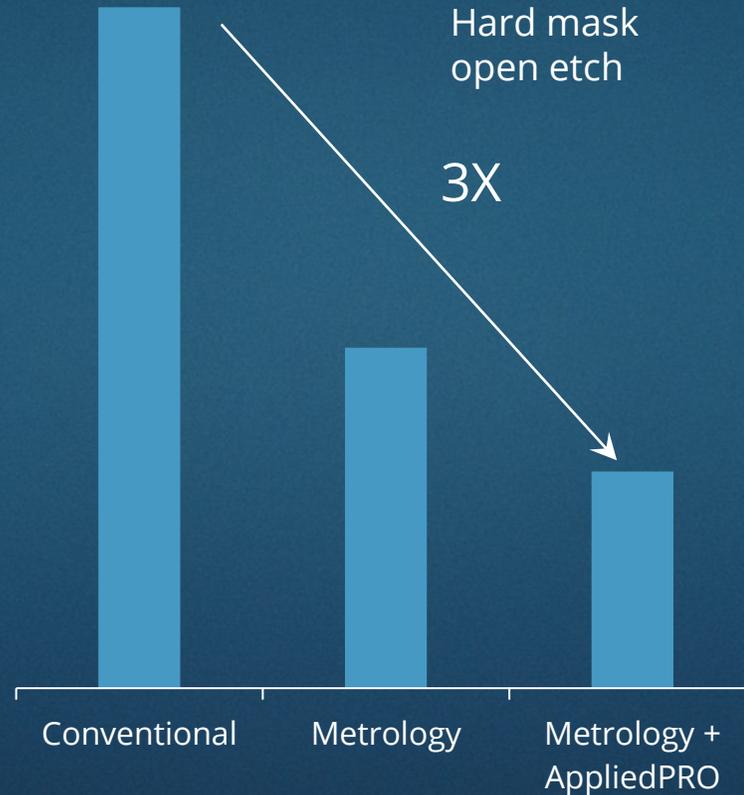
AI technology to quickly classify defects, remove noise

# Applied AI<sup>X</sup>™ Accelerated R&D: Etch Process

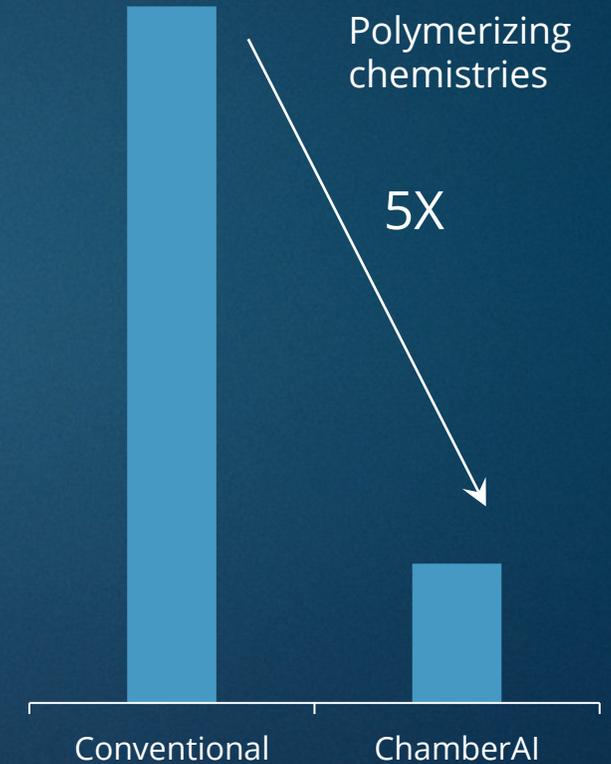
## Etch process complexity

- >100 process knobs
- >10,000 combinations
- Ultra-fast pulsing (kHz)
- Transient effects
- Real-time chamber conditions
- Incoming variations

Process recipe development time  
(Unique metrology + AppliedPRO™)



Clean recipe development time  
(Unique ChamberAI™ sensors)



# AppliedPRO: Expanding Process Windows → Higher Yield

## Process parameters



Centris® Sym3®

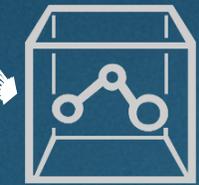
- RF
- Chemistry
- Pressure
- Temperature
- Bias
- Time
- ...

## On-wafer metrics



PROVision®, Enlight®,  
on-board metrology

- CD
- Defectivity
- Tilt
- Composition
- Stress
- Ellipticity
- ...



AppliedPRO™

Few → many actionable data

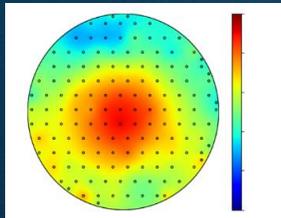
Multi-dimensional optimum

Process space maps

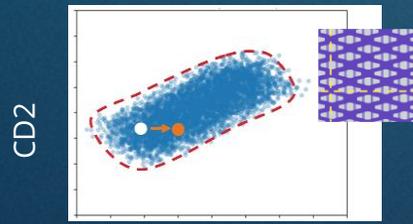
Predictability & control

Matching across tool fleet

## Spatial signatures



## Process tradeoffs



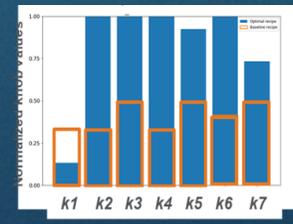
CD1

## Defect windows



CD1

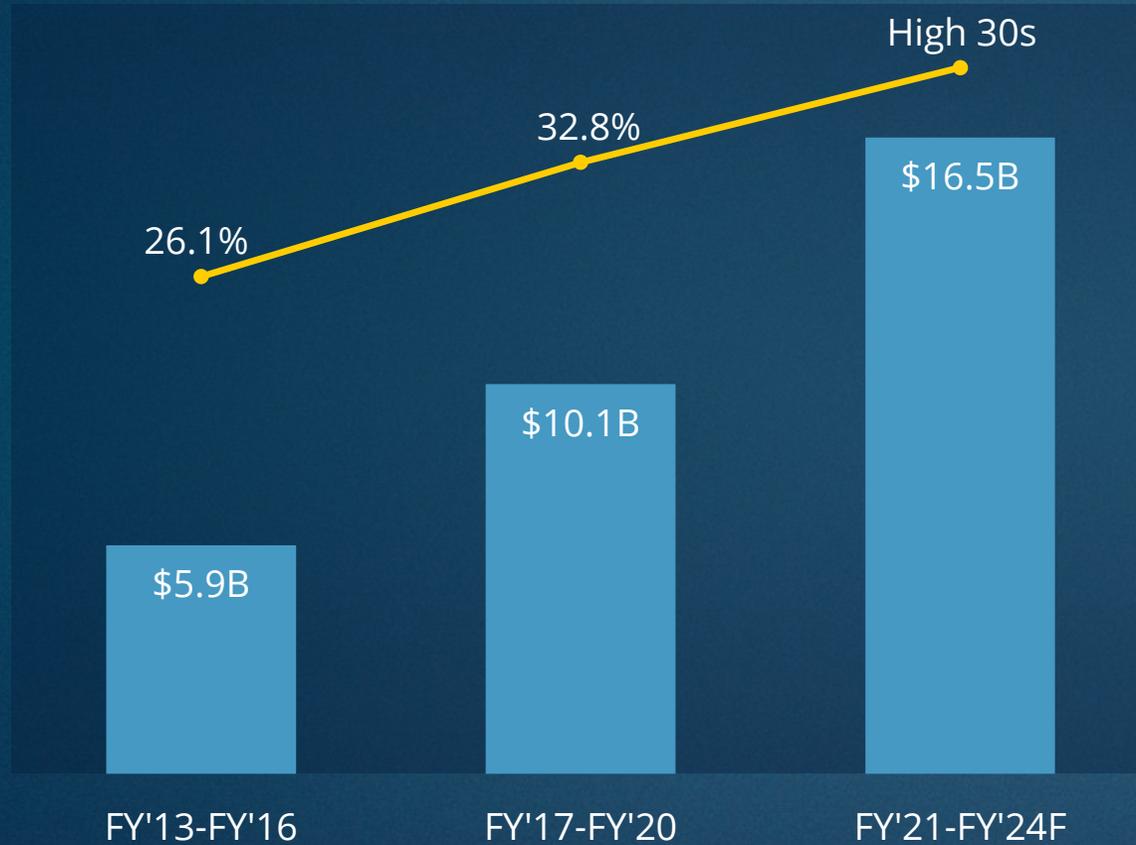
## Recipe prediction



RF = Radio Frequency  
CD = Critical Dimension

# Semi Systems Growth Outlook

4-year average revenue & operating margin\*



PPACt enablement is highly valuable

Uniquely positioned to accelerate PPACt

- Leadership positions
- Unique product portfolio
- Unique combinations of technologies
- Actionable insight acceleration

Multiple inflections, huge opportunities  
Unit processes → solutions expands growth

\*Non-GAAP adjusted Operating margin. For reconciliation of GAAP to non-GAAP measures, see appendix of this presentation.

# CHAPTER 3

# Subscription Style Revenue

Market Outlook = Innovation and Secular Growth

**Applied = PPACt Enablement Company**

Unit process  
leadership and  
broadest portfolio

+

Unique  
combinations  
of technologies

+

Actionable insight  
/ time to market  
acceleration

+

Subscription  
style revenue  
growth

+

Synergistic  
materials  
engineering  
business with  
high FCF

High ROI Financial Model + Attractive Shareholder Returns

Market Outlook = Innovation and Secular Growth

**Applied = PPACt Enablement Company**

Unit process leadership and broadest portfolio

+

Unique combinations of technologies

+

Actionable insight / time to market acceleration

+

**Subscription style revenue growth**

+

**Synergistic materials engineering business with high FCF**

High ROI Financial Model + Attractive Shareholder Returns

# Going Beyond Unit Process Tools to Deliver Solutions

FASTER TIME TO MARKET, HIGHER VALUE, STICKIER



UNIT PROCESS LEADERSHIP  
+ BROADEST PORTFOLIO



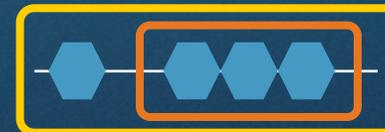
CO-OPTIMIZATION OF  
PROCESSES / TOOLS

~40% of our products  
now co-optimized



INTEGRATED  
MATERIALS  
SOLUTIONS

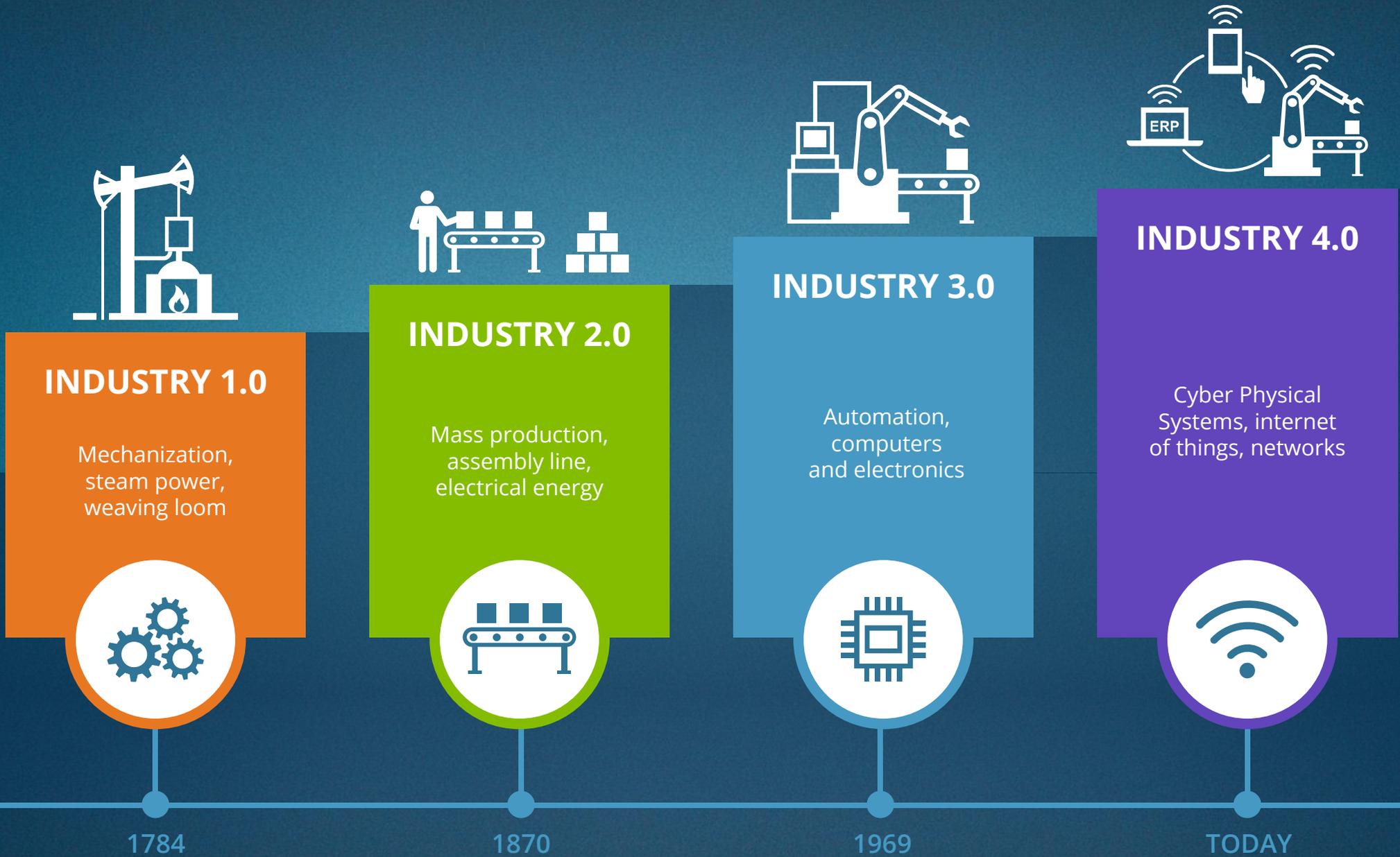
~30% of our products  
now integrated



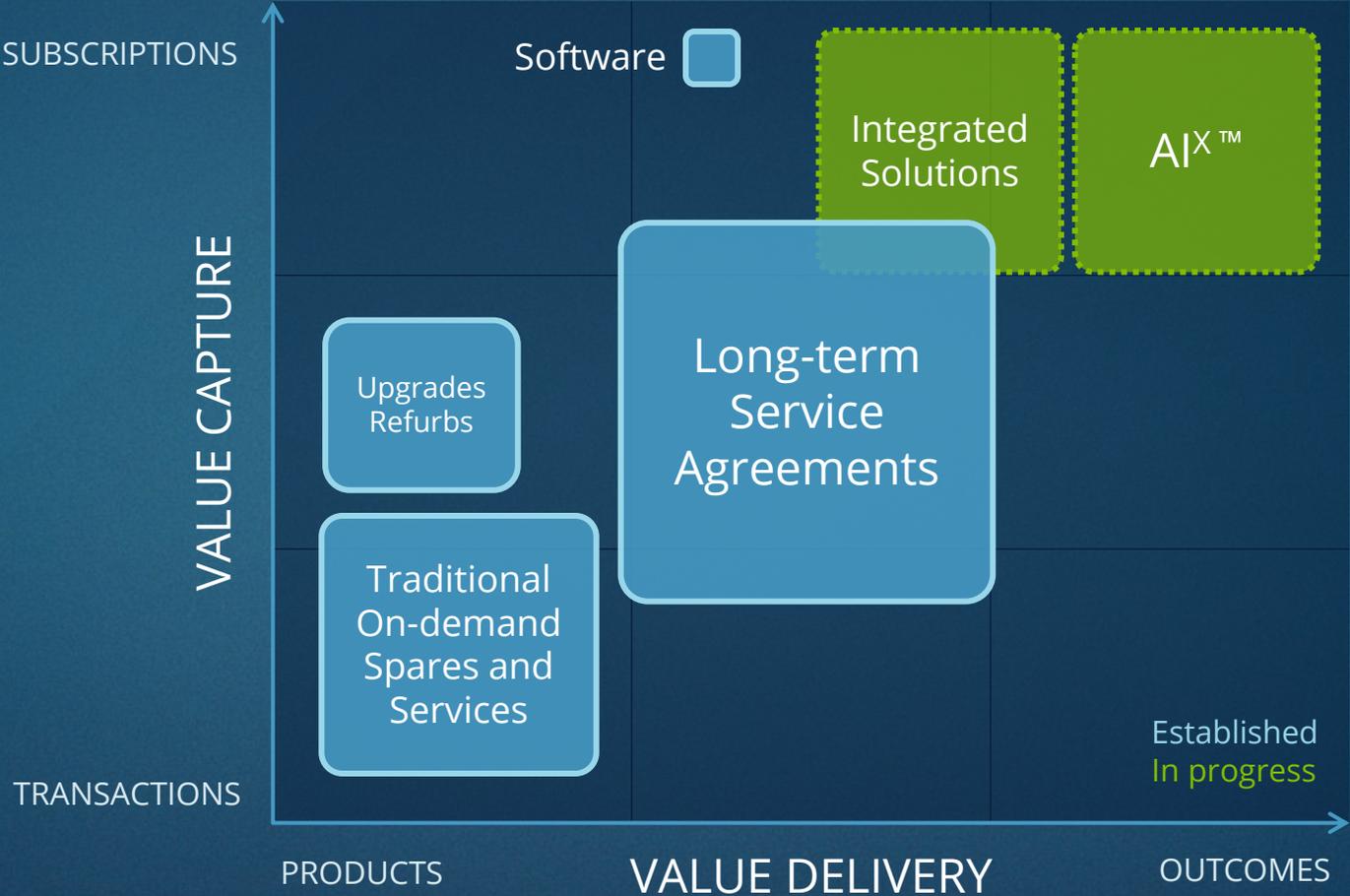
SENSORS + eBeam + AI / ML

ACTIONABLE INSIGHT  
ACCELERATION

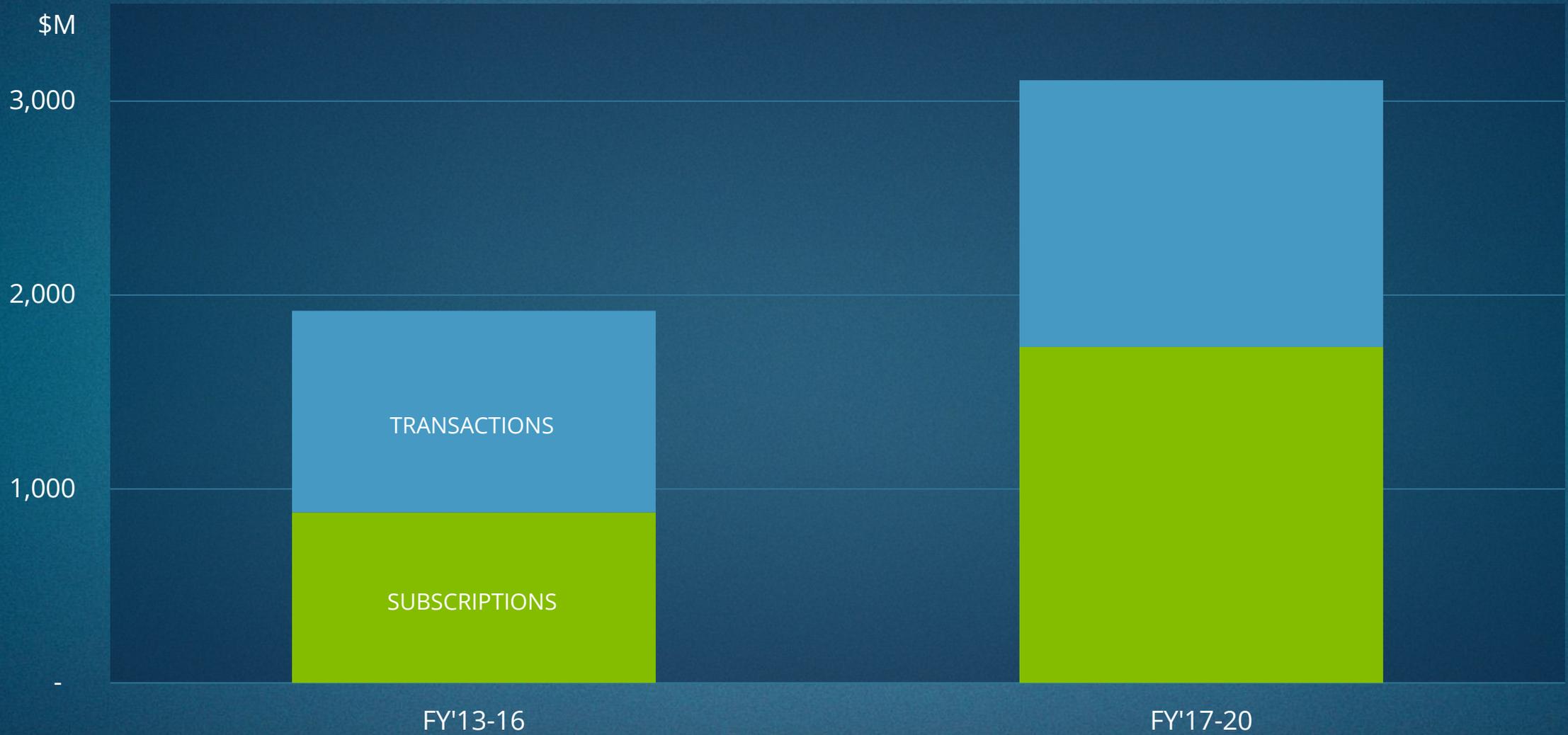
New



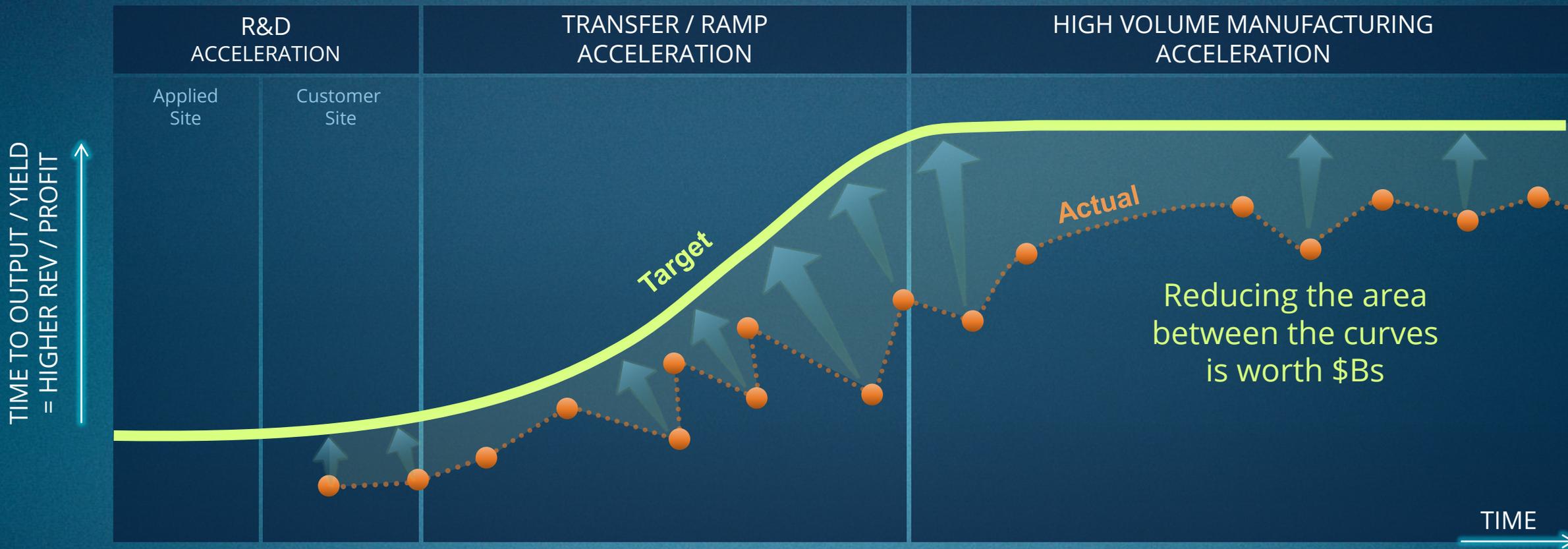
# SUBSCRIPTION STYLE Revenue



# AGS Services and Spares Average Revenue



# PPAC $t$ Acceleration Driving Demand for Subscription Services



WINNING PPAC $t$  RACE IS WORTH \$BILLIONS TO CUSTOMERS AND ECOSYSTEM

BY 2024, CUSTOMERS WILL SPEND >\$20B ANNUALLY TO MANAGE APPLIED INSTALLED BASE

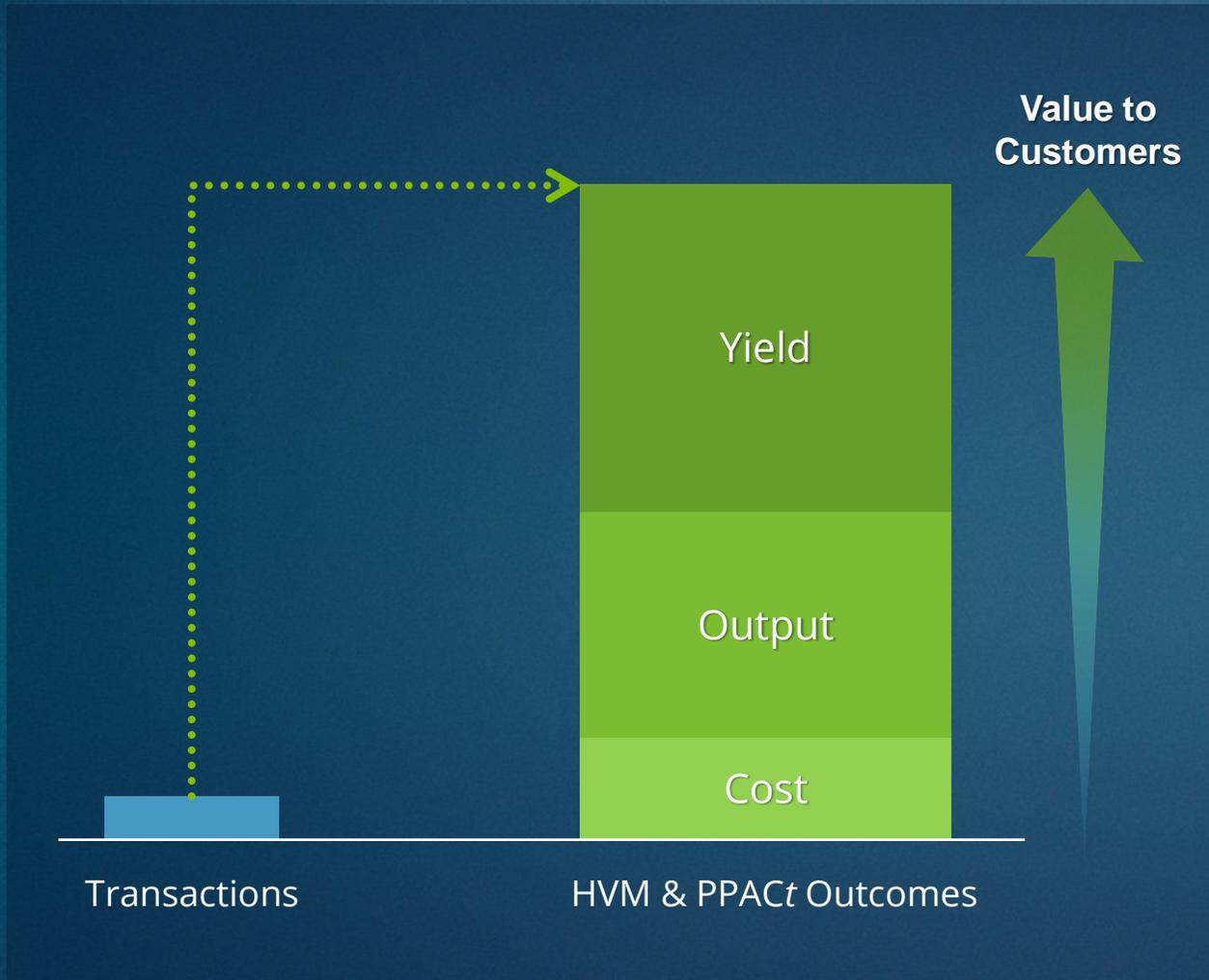
STRONG DEMAND FOR SUBSCRIPTION-LIKE SERVICES TO ENABLE PPAC $t$  ACCELERATION

Source: Applied Materials

Applied Materials External Use



# Strategy: From Transactions to Subscriptions



**Largest installed base >40K tools**

Created a new class of **digital services to accelerate PPACt** and HVM cost, output and yield

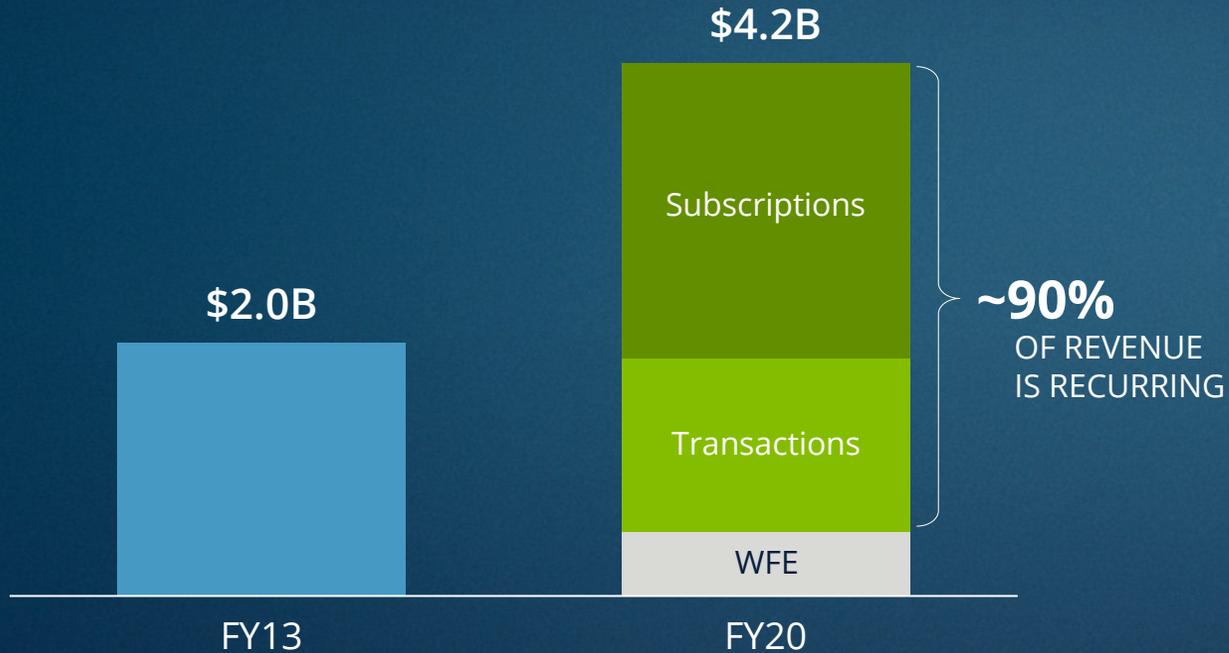
Moving from transactions to **outcome-based subscriptions**

2020: **>14K tools under subscription**, >90% renewal rate

# Growth Impact of Shifting to Subscriptions

## AGS Revenue Growth

**11% CAGR**



## Largest recurring revenue ~90%

- Grew >2X rate of installed base
- Revenue per tool up 1.4X

## Subscriptions

- >60% of recurring revenue, up from ~40%
- Grew 1.5X rate of overall AGS

## Accelerated digital services offerings

- >4K tools connected to Applied servers, up 35% in 2020

# 2020 Services Revenue: Company-Reported vs. VLSI\*

## Top 5 SPE Companies



**APPLIED IS #1**

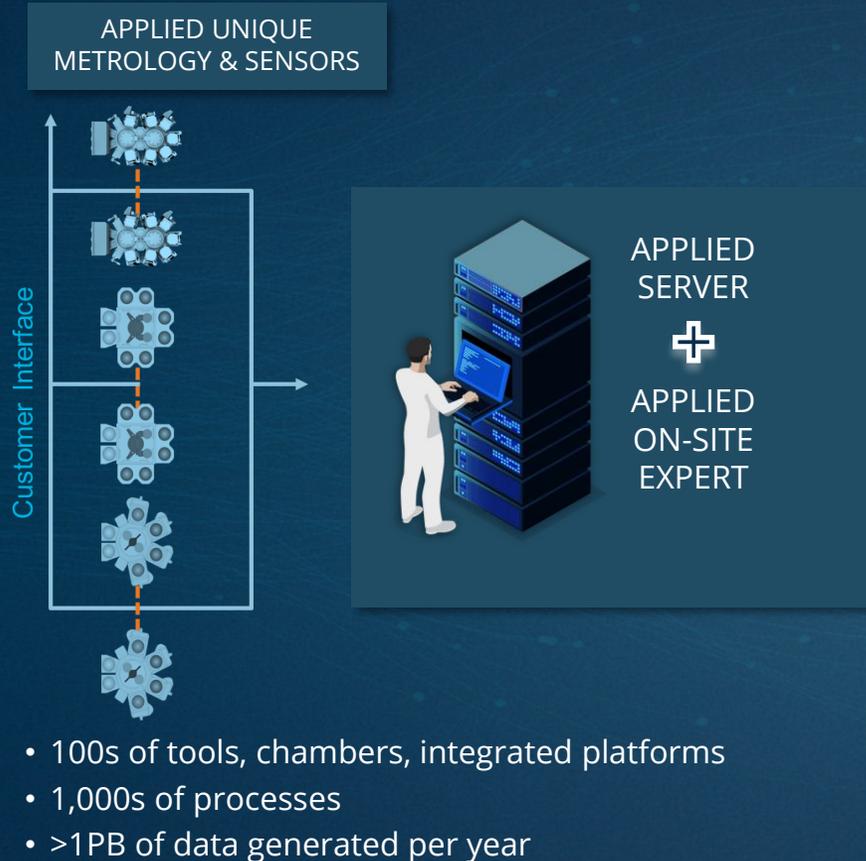
in services revenue  
as reported by VLSI

Applied AGS has  
highest recurring  
services revenue  
among peers

\*VLSI 2020 Total Service & Support Revenues

# Accelerating Digital Service Technology

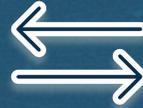
## CUSTOMER SITE



## REMOTE CONNECTION



SECURE  
PROTOCOLS



## APPLIED MATERIALS



EXPERT / REMOTE  
AR SUPPORT



AUTO-DISPATCH EXPERT /  
HIGH YIELD PARTS



BENCH MARKING

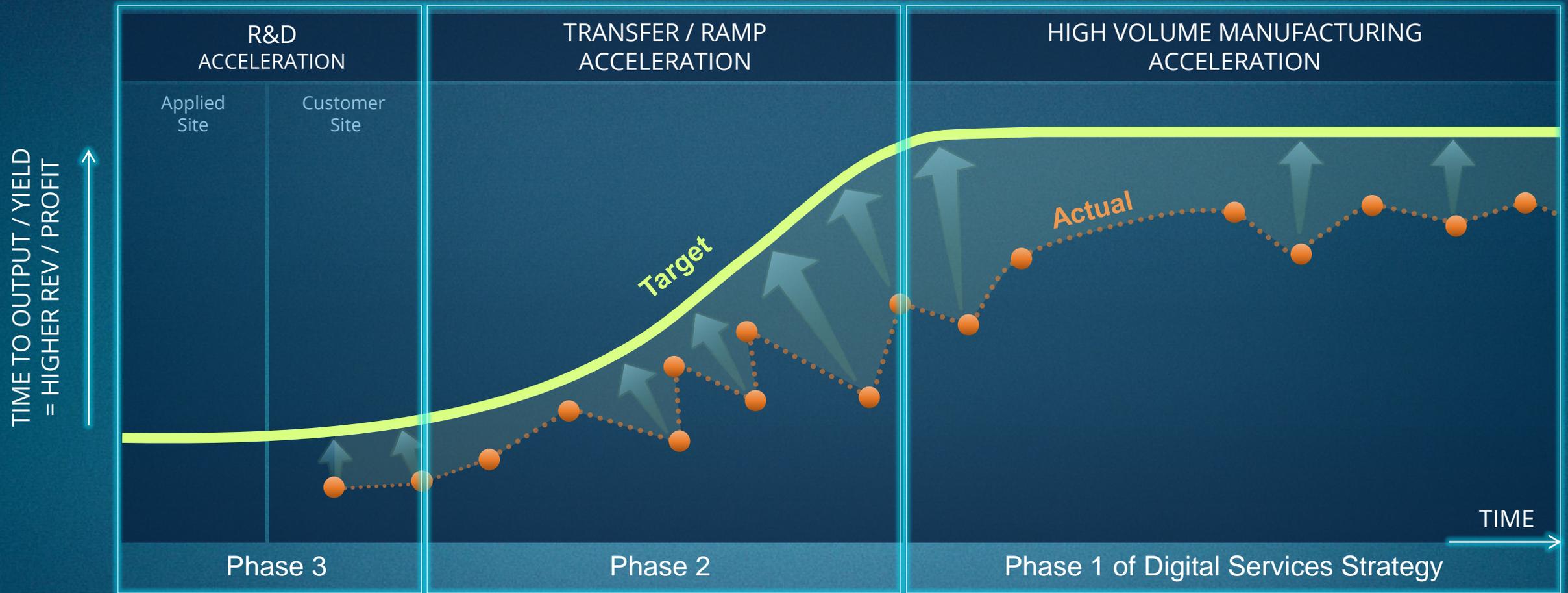


ANALYTICS &  
DIGITAL SERVICES

- >4,000 connected tools (35% growth in 2020)
- >400 application services
- Experts and consulting engineers + data scientists

1PB DATA → ACTIONABLE INSIGHTS → OUTCOMES  
ACTIONABLE INSIGHTS: DAYS → HOURS → MINUTES → REAL-TIME

# Subscription Drivers = R&D and Ramp Acceleration, HVM Services



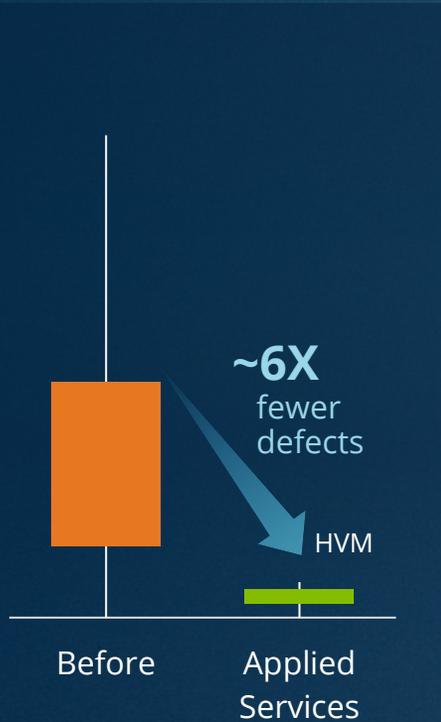
STRONG CUSTOMER PULL FOR FASTER AND BETTER R&D → RAMP → PPAC<sub>t</sub>SUCCESS

HVM AGREEMENTS AT ALL ADVANCED NODES AND ICAPS CUSTOMERS

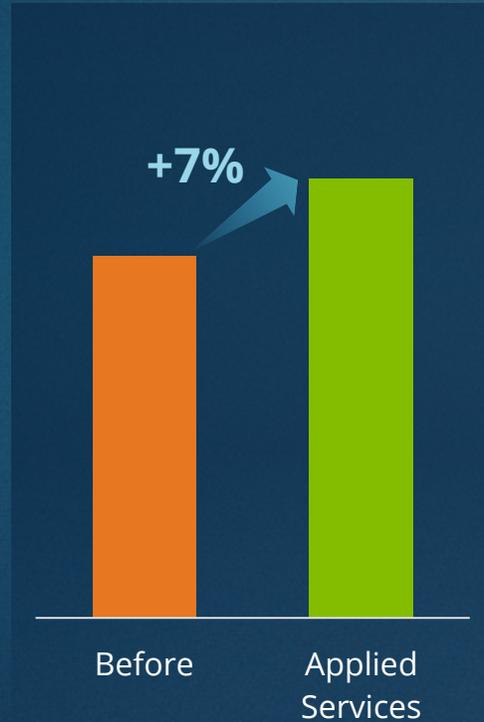
# Accelerating HVM – Improve Yield, Output and Cost

## Applied HVM Services Case Studies

### FOUNDRY Yield



### DRAM Output



### NAND Output and Yield



## ACCELERATING BETTER OUTCOMES

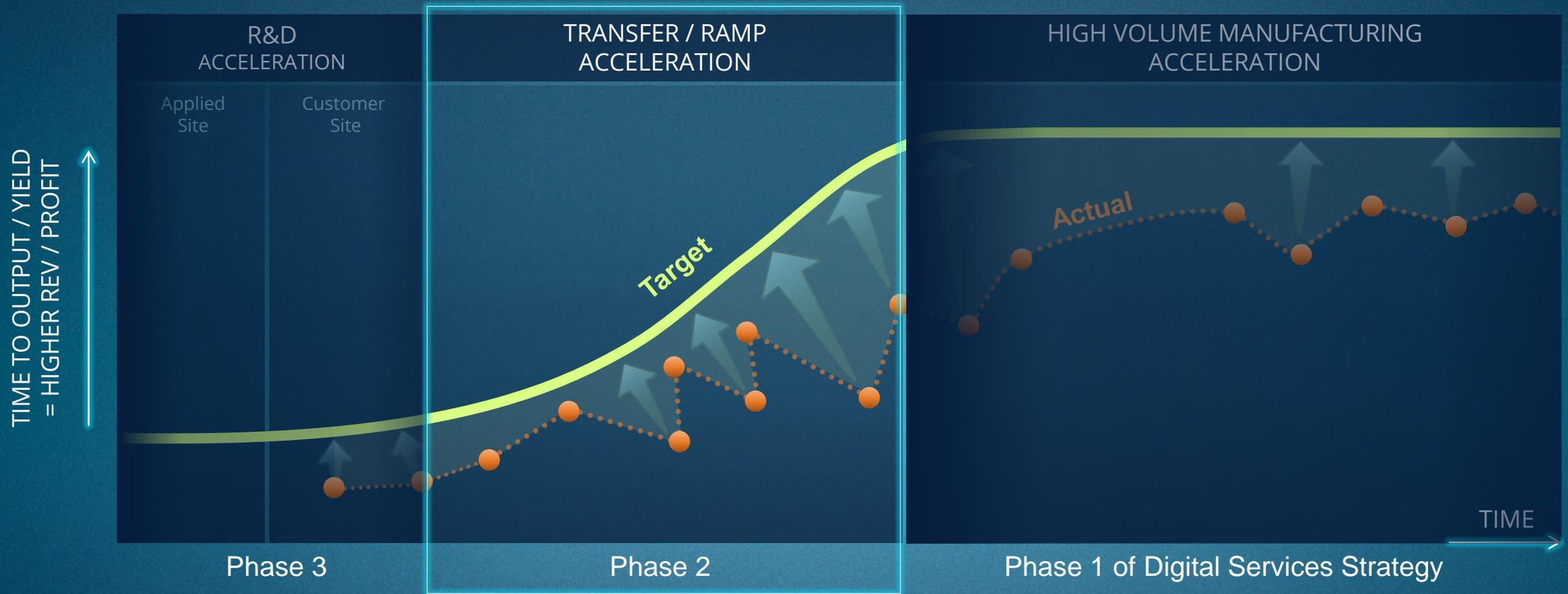
>14K tools under long-term agreements

HVM agreements at all advanced nodes and ICAPS customers

>90% subscription renewal rate

Connected tools +35% in 2020

# Subscription Drivers = R&D and Ramp Acceleration, HVM Services

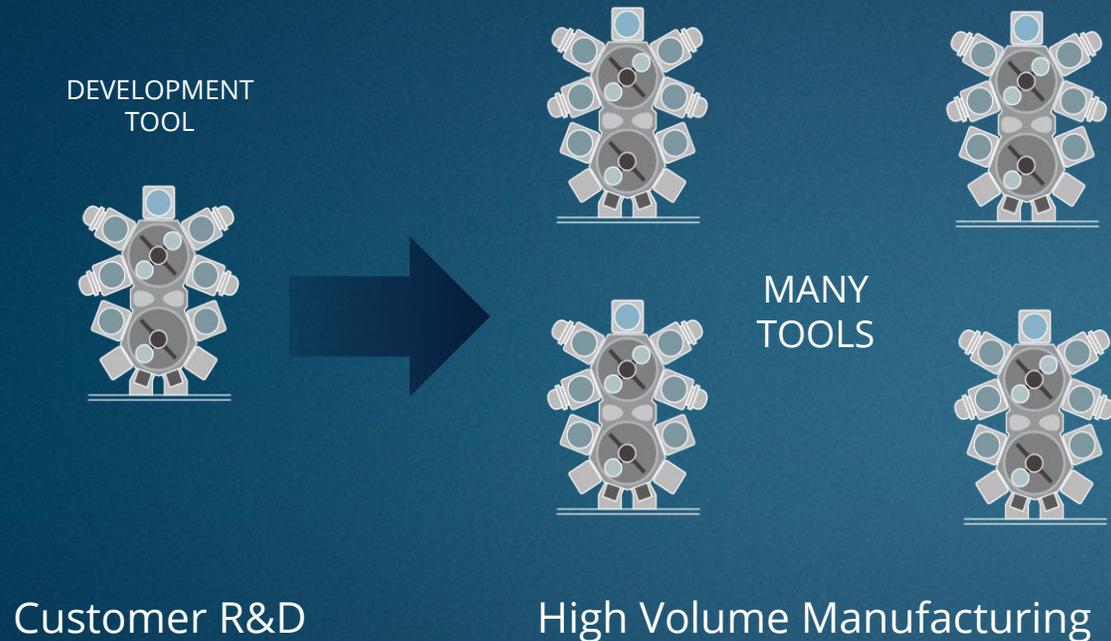


STRONG CUSTOMER PULL FOR FASTER AND BETTER R&D → RAMP → PPAC<sub>t</sub>SUCCESS

HVM AGREEMENTS AT ALL ADVANCED NODES AND ICAPS CUSTOMERS

# Accelerating Ramps

2X Faster and 30% Better Process Margins\* (Drive Improved Yield)



## CVD Hardmask Example

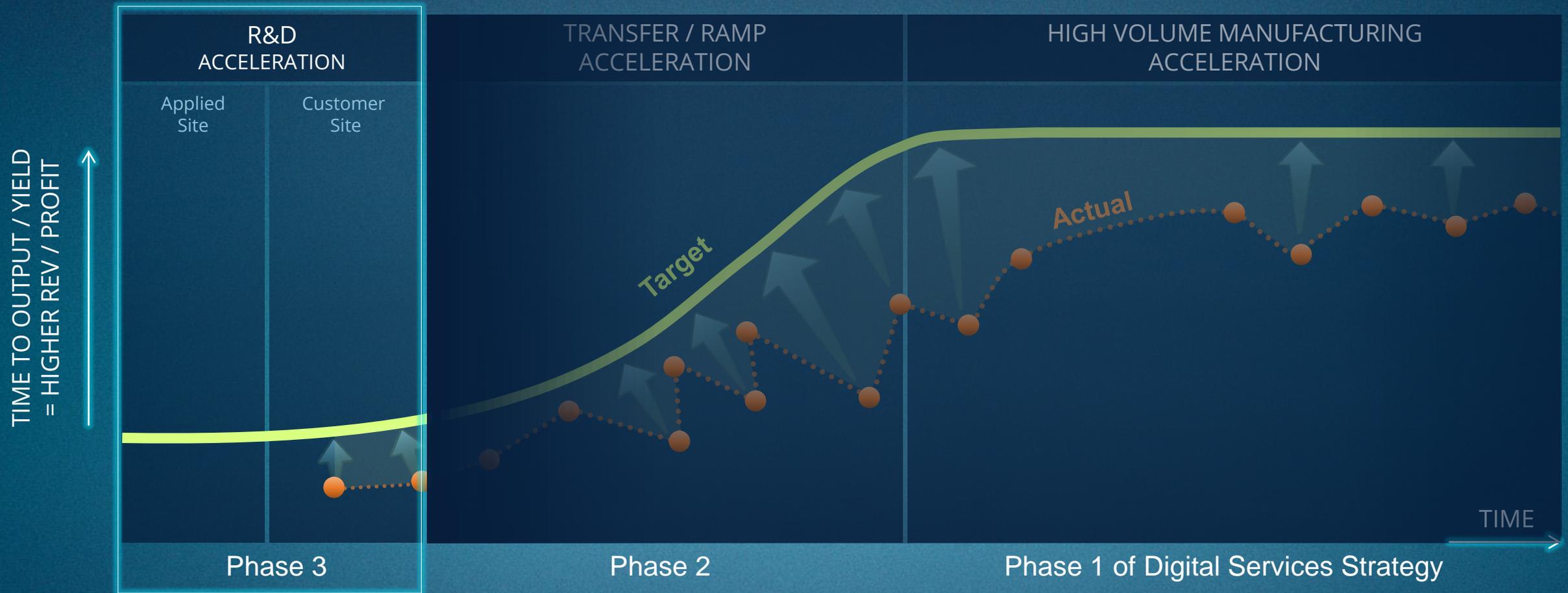


61% better process margin delivers higher yield and 36% output increase

**STRONG CUSTOMER PULL FOR FASTER AND BETTER RAMPS**  
DUE TO INCREASING COMPLEXITY AND FAB COSTS (>\$20B COST FOR 5NM LOGIC FAB)

\* Average of last 50 ramp acceleration projects

# Subscription Drivers = R&D and Ramp Acceleration, HVM Services



STRONG CUSTOMER PULL FOR FASTER AND BETTER R&D → RAMP → PPAC<sub>t</sub>SUCCESS

HVM AGREEMENTS AT ALL ADVANCED NODES AND ICAPS CUSTOMERS

# Accelerating R&D (Faster and Better)

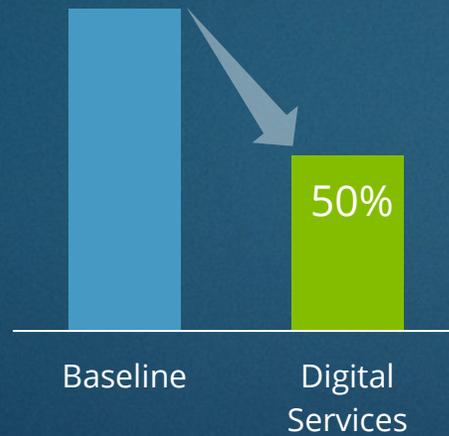
## Applied Digital Services

75% Faster R&D + Higher Yield

### Time Savings



### Uniformity Improvement



## Applied Surface Engineering

4X ↓ particles → Higher Yield + 5% ↑ Output

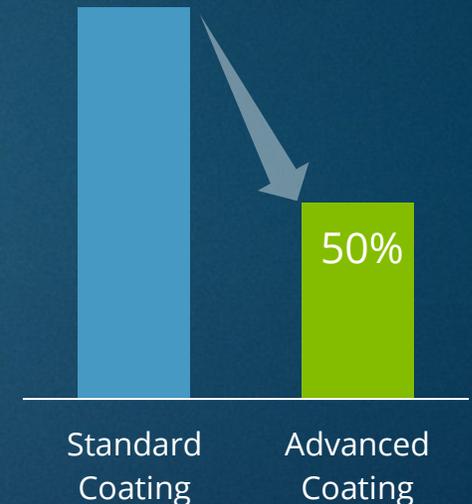
Standard Coating



Applied Advanced Coating



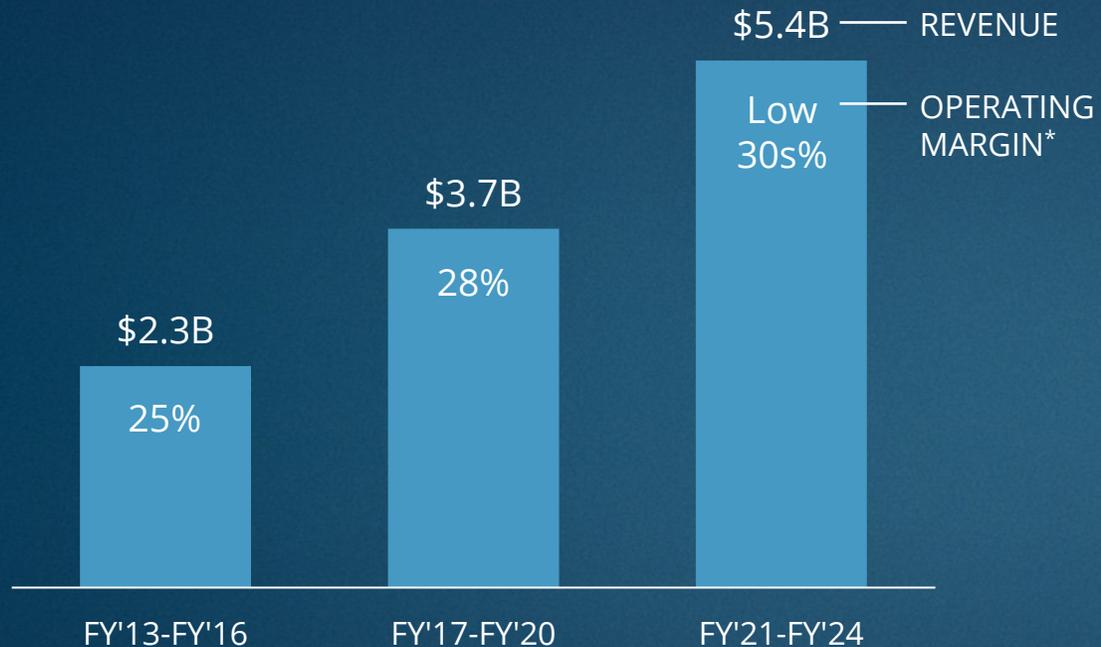
### 4x Fewer Particles



R&D ACCELERATION TO WIN PPAC *t*RACE  
INCREASED SERVICES PENETRATION BY 4X

# Profitable Growth by Accelerating PPACt

## AGS 4 Year-Averages



## FY'20 → FY'24 Targets

Grow revenue by ~\$2B, >45%

Grow OP\* by >3pts

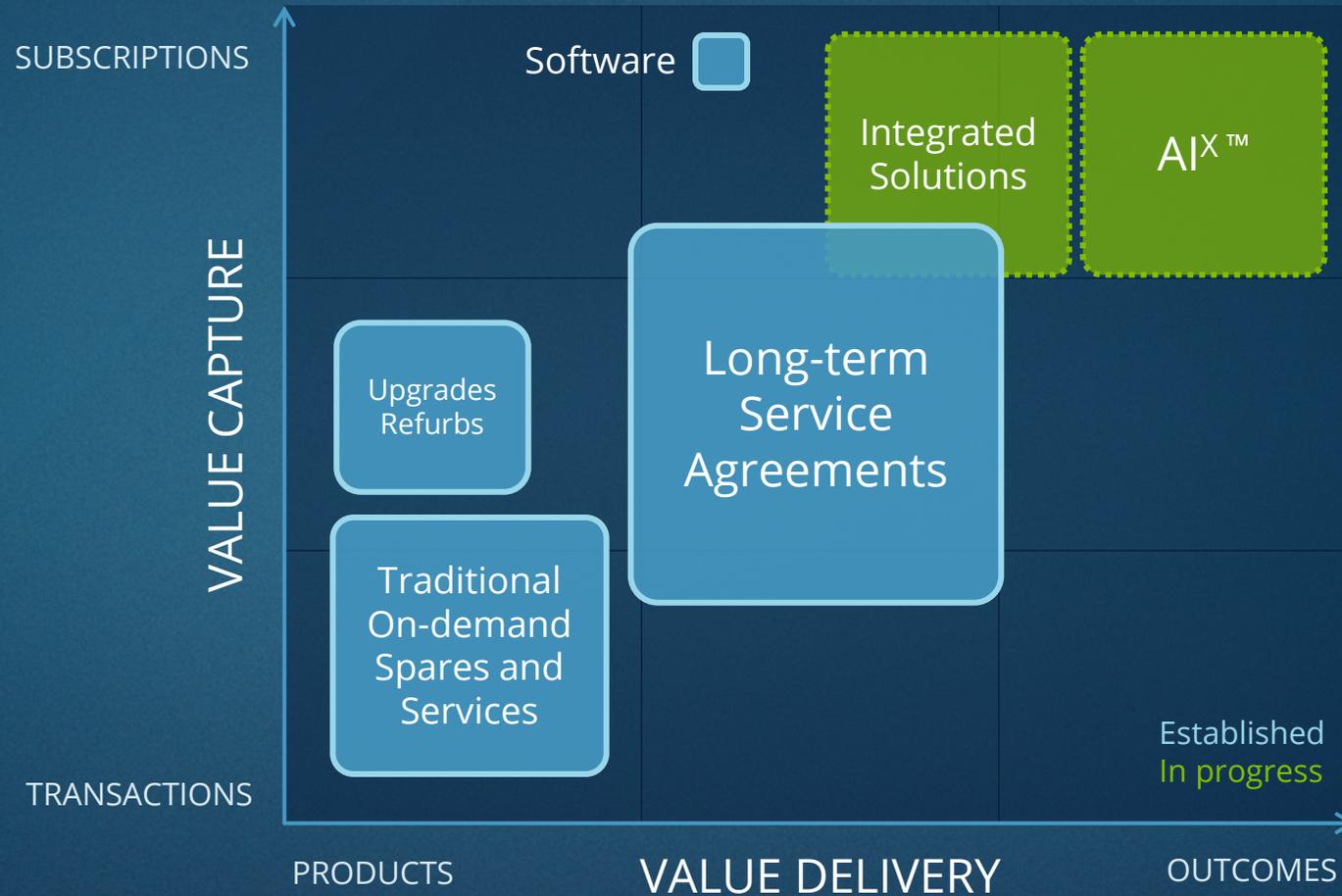
Grow subscriptions to  
~70% of recurring revenue

Grow revenue per tool  
by another 20%

**LARGEST INSTALLED BASE, 90% RECURRING REVENUE**  
**UNIQUE DIGITAL SERVICES + GLOBAL NETWORK OF FAB EXPERTISE**

\*Non-GAAP adjusted operating margin and operating profit. For reconciliation of GAAP to non-GAAP measures, see appendix of this presentation.

# SUBSCRIPTION STYLE Revenue



	Service (\$B)	Service Rank	Systems (\$B)	Systems Rank
<b>APPLIED MATERIALS</b>	<b>3.82</b>	<b>1</b>	<b>12.54</b>	<b>1</b>
COMPANY A	3.60	2	11.76	2
COMPANY B	2.50	3	8.37	4
COMPANY C	2.20	4	9.72	3
COMPANY D	1.20	5	4.20	5

## #1 IN SYSTEMS AND SERVICES REVENUE

Source: VLSI 2020 Total Service & Support Revenues

Applied Materials External Use





CHAPTER 4

# Synergistic FCF Business

Market Outlook = Innovation and Secular Growth

**Applied = PPACt Enablement Company**

Unit process leadership and broadest portfolio

+

Unique combinations of technologies

+

Actionable insight / time to market acceleration

+

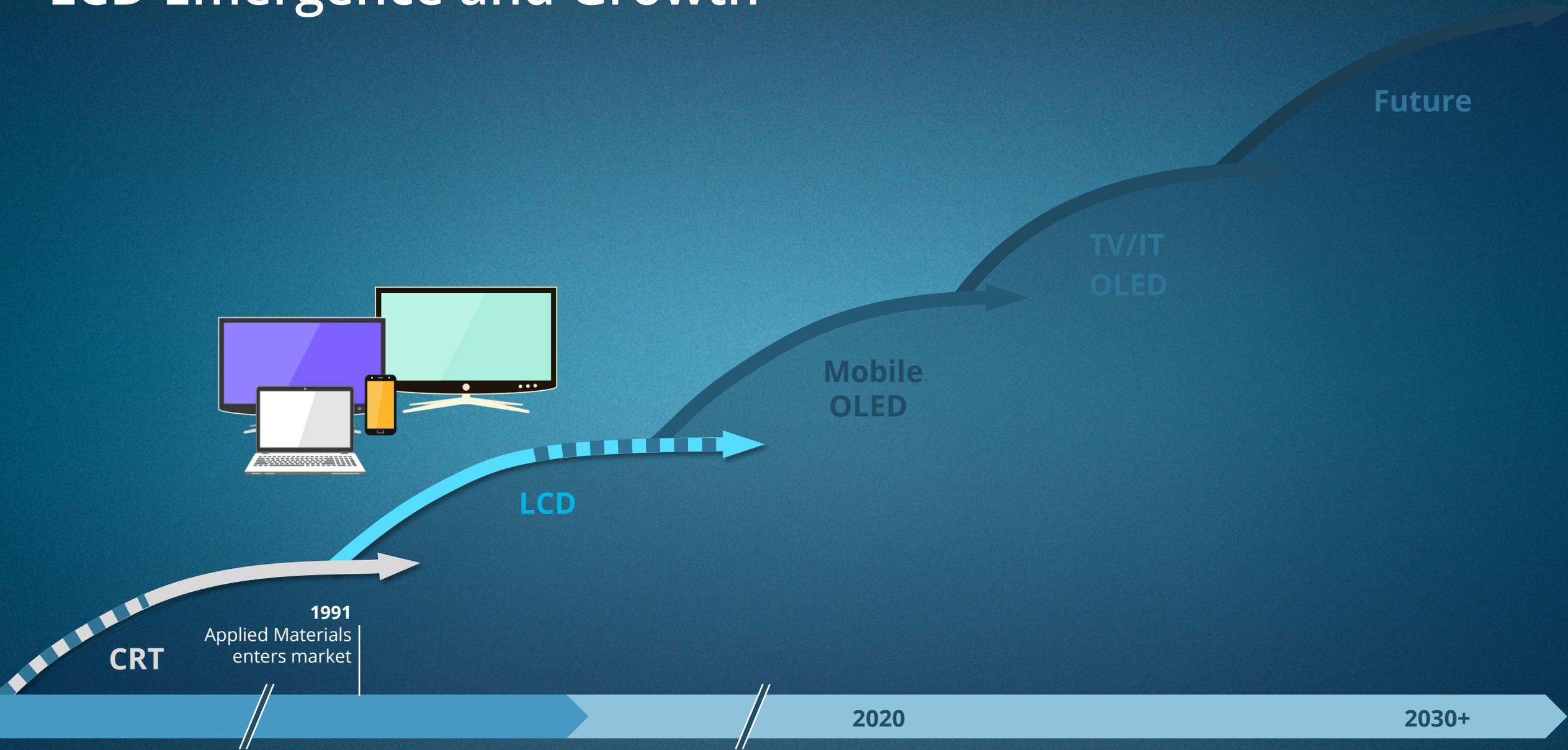
Subscription style revenue growth

+

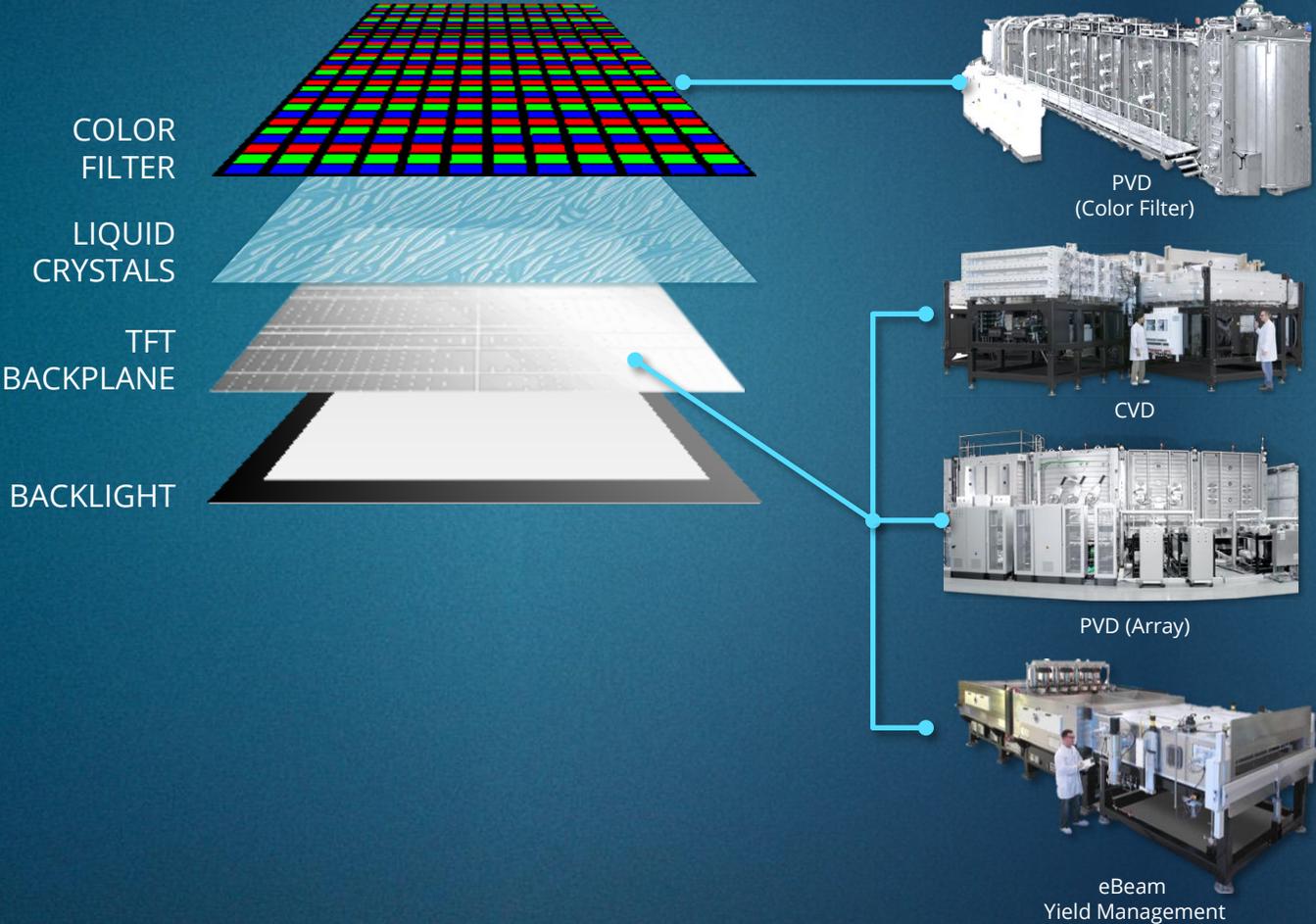
Synergistic materials engineering business with high FCF

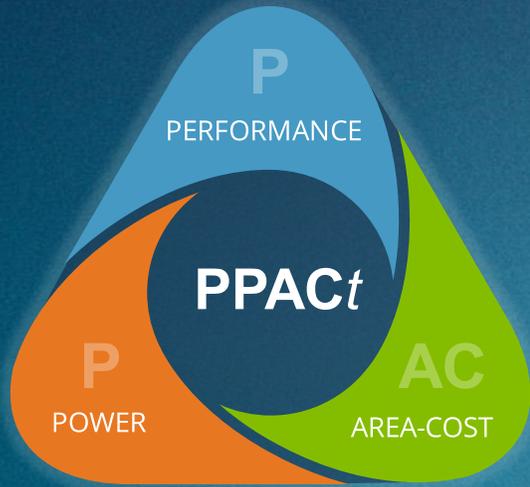
High ROI Financial Model + Attractive Shareholder Returns

# LCD Emergence and Growth



# LCD

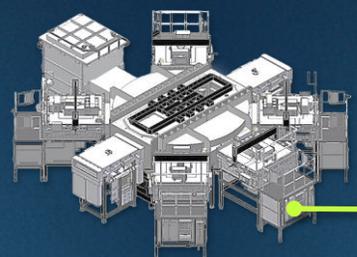
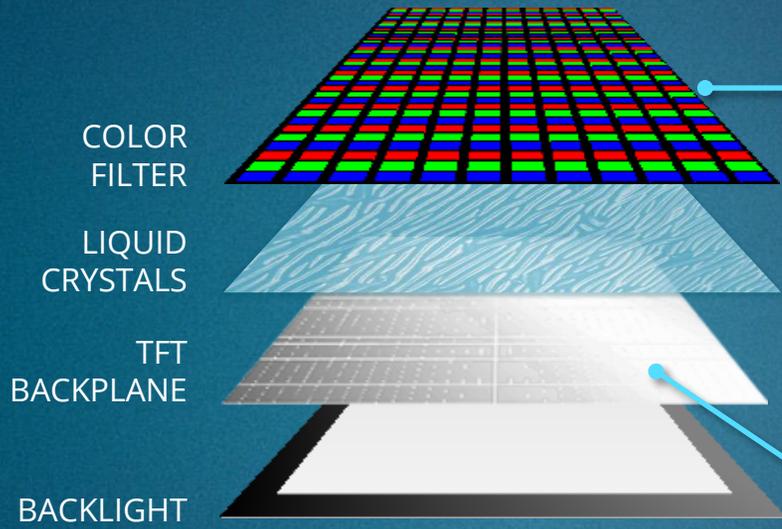




# PPAct ... ... in Displays

PPAct	In Displays
POWER	 Power efficiency
PERFORMANCE	 Front-of-screen experience
	 Lifetime
	 Form factor
AREA-COST	 Screen size
	 Cost
TIME-TO-MARKET	 Time-to-market

# LCD



Thin Film Encapsulation (CVD)



PVD (Color Filter)



CVD

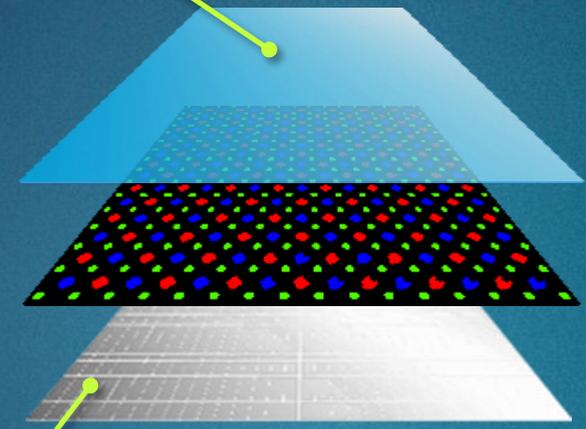


PVD (Array)

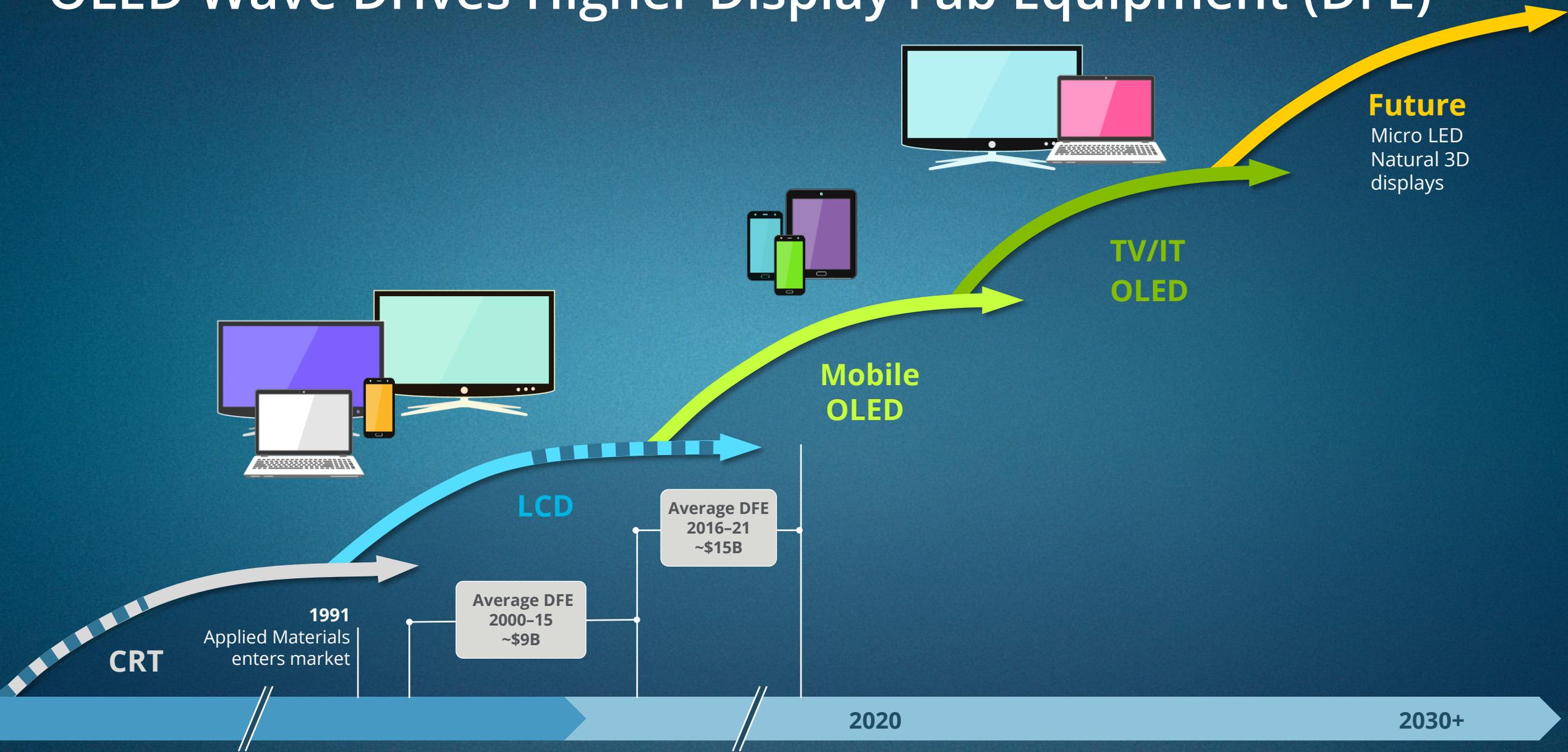


eBeam Yield Management

# OLED

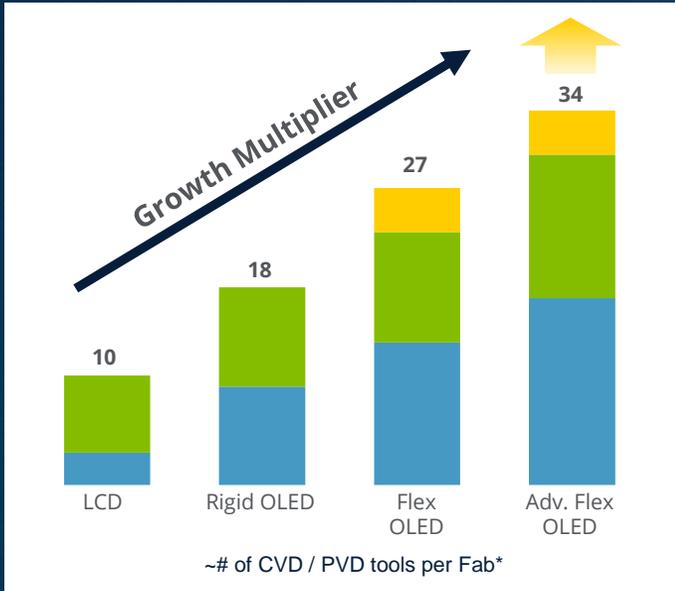


# OLED Wave Drives Higher Display Fab Equipment (DFE)



# Applied SAM Increases with New Technologies

## Applied SAM\*: Mobility



OLED ADOPTION  
(SOURCE: DSCC)

**~52%**  
in '24 vs. 39% in '21

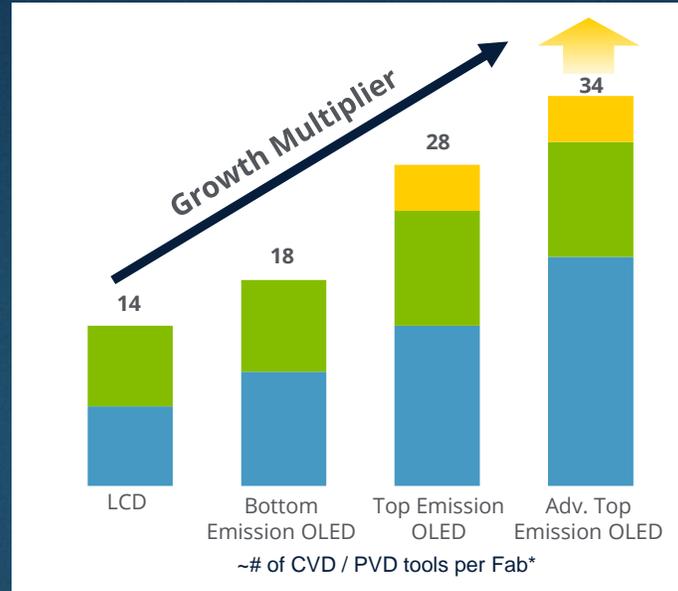
NEW FACTORIES  
(2021-2024)

**~13**  
G6 30K/m equivalent

FY24 EXPECTED  
REVENUE

**~\$1B**

## Applied SAM\*: TV



AREA GROWTH  
(2021-2024)

**~6%**  
CAGR

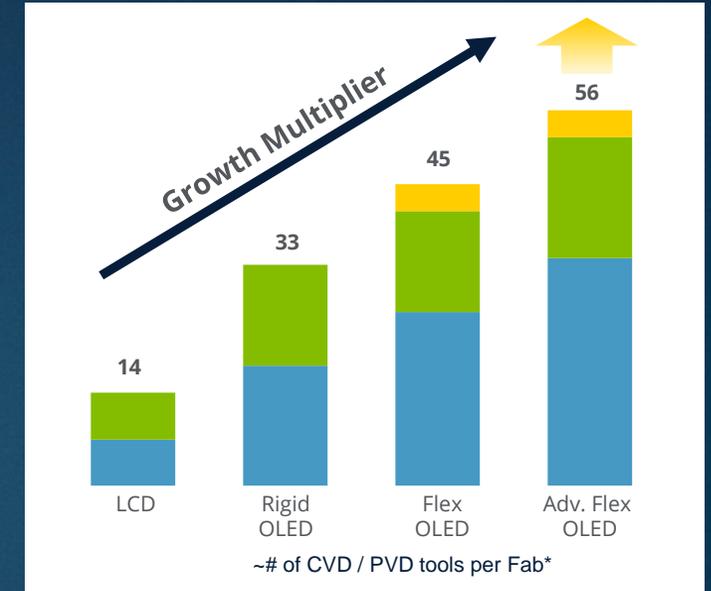
NEW FACTORIES  
(2021-2024)

**~12**  
G10.5 60K/m equivalent

FY24 EXPECTED  
REVENUE

**~\$1B**

## Applied SAM\*: IT



OLED AREA GROWTH  
(2021-2024)

**~62%**  
CAGR

NEW FACTORIES\*  
(2021-2024)

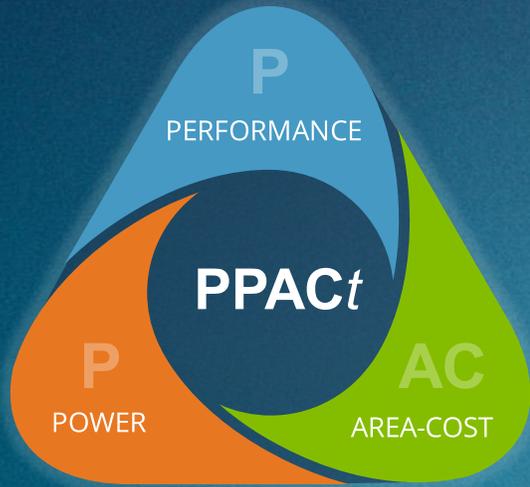
**~1.5**  
G8.5 60K/m equivalent

FY24 EXPECTED  
REVENUE

**>\$200M**

Encapsulation PVD CVD

\* Deposition products only; Mobility fab size is 30K/month, TV and IT fab size is 60K/month



# PPAct ... ... in Displays

PPAct	In Displays	EXAMPLES OF Our IMS Solutions
POWER	Power efficiency	← LTPO IMS
PERFORMANCE	Front-of-screen experience	← OLED high-perf. backplane
	Lifetime	← TFE
	Form factor	← ALD, HDP
AREA-COST	Screen size	← Gen 10, MoX IMS
	Cost	← Substrate scaling
TIME-TO-MARKET	Time-to-market	← Yield management

# Operating Margin Growth

4-year Average Operating Profit and Margin\*



Display has contributed increasing operating margin  
**EXPECT CONTINUED GROWTH**

\* Non-GAAP adjusted operating profit and margin. For reconciliation of GAAP to non-GAAP measures, see appendix of this presentation.

CHAPTER 5

# High ROI Financial Model

# Market Outlook = Innovation and Secular Growth

## Applied = PPACt Enablement Company

Unit process leadership and broadest portfolio

+

Unique combinations of technologies

+

Actionable insight / time to market acceleration

+

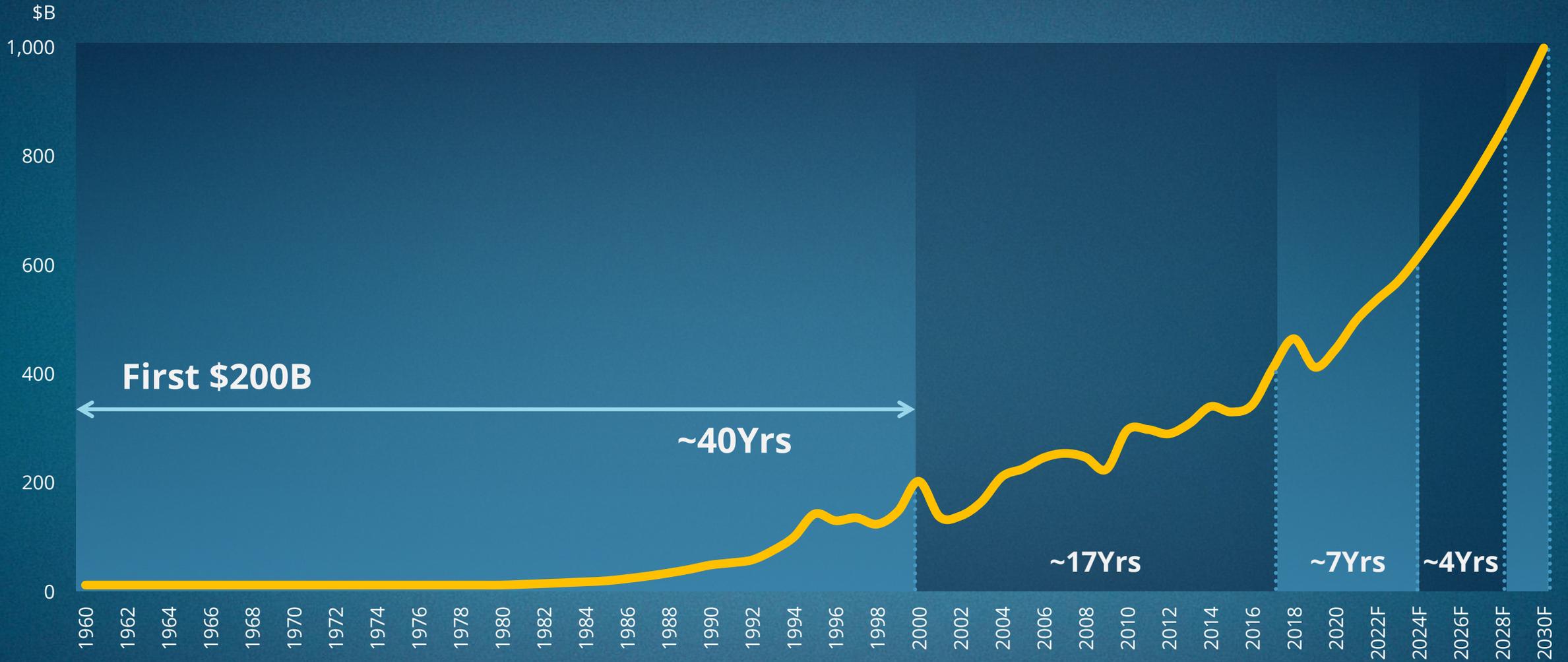
Subscription style revenue growth

+

Synergistic materials engineering business with high FCF

High ROI Financial Model + Attractive Shareholder Returns

# Semiconductor Industry Revenues



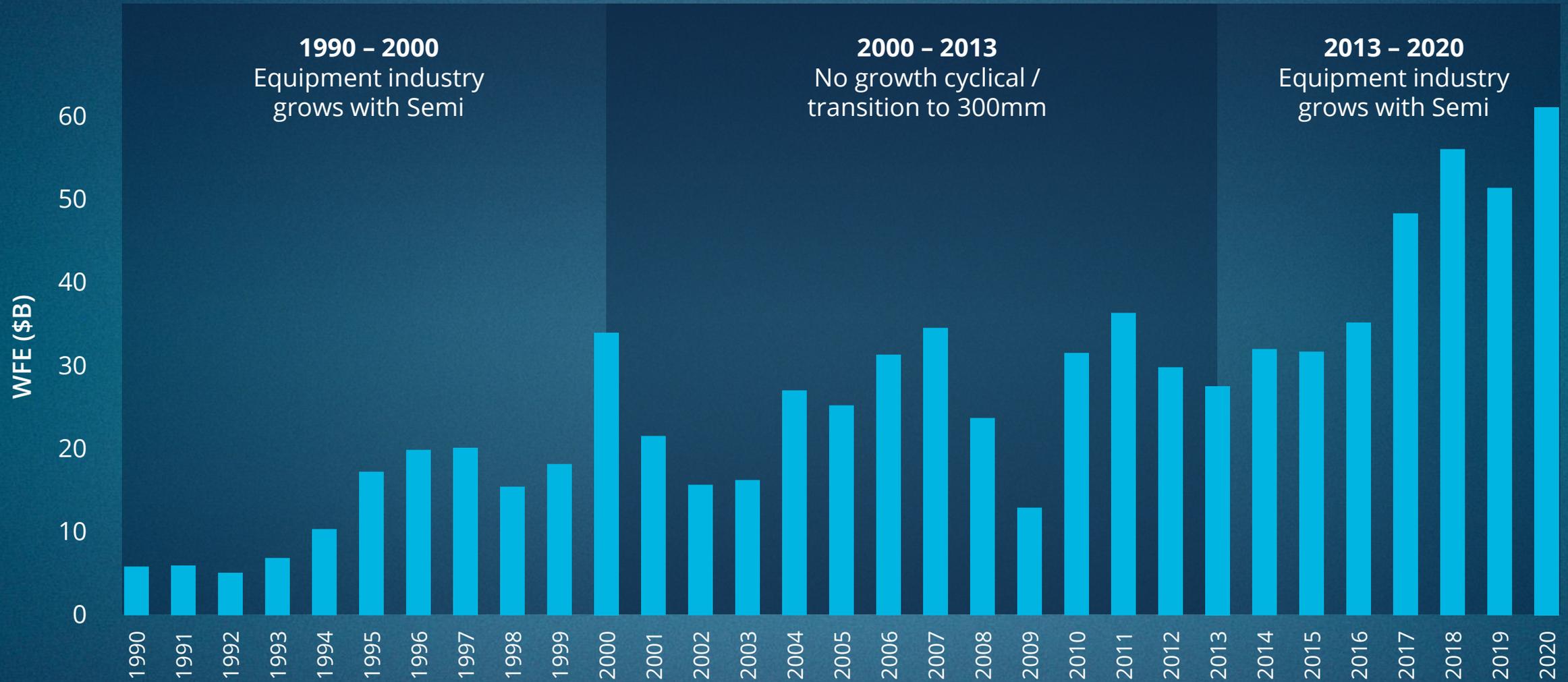
**ACCELERATING TREND OVER TIME**

Source: SEMI, VLSI, Applied Materials

Applied Materials External Use



# Historical WFE



Source: Gartner, VLSI, Applied Materials

Applied Materials External Use

# Historical WFE Intensity

## WFE / Semi Revenue



### 2000-2013:

- 300mm productivity
- Greater automation
- Customer consolidation
- Foundry model

### 2014-2020:

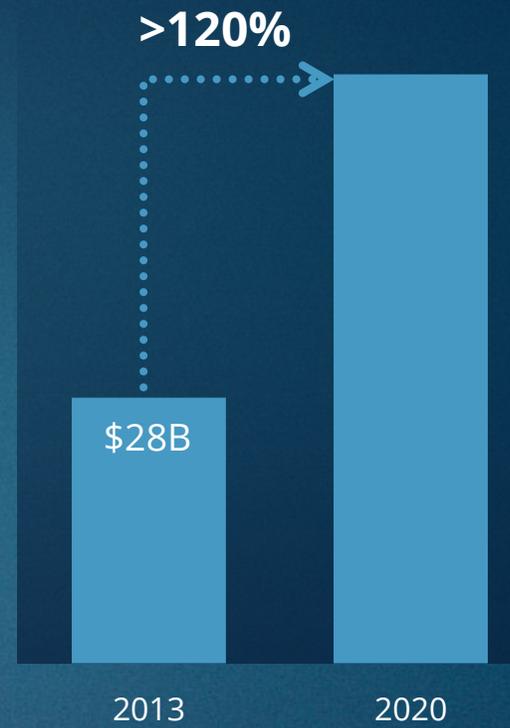
- More demand drivers
- Increasing complexity
- Slowing of 2D scaling
- No 450mm wafer

# Strong Secular Growth

## 2 Year Combined WFE



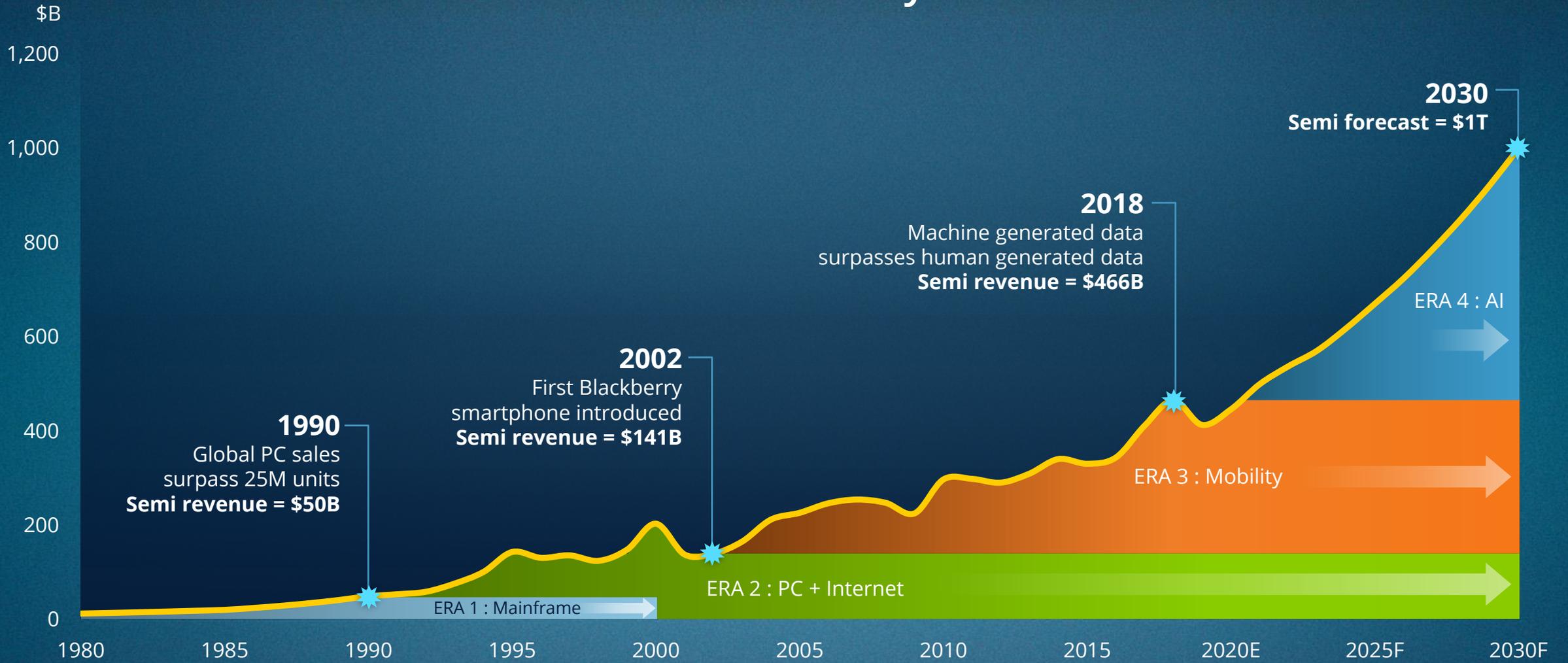
## Annual WFE



## HIGHER HIGHS AND HIGHER LOWS

Source: Gartner, VLSI, Applied Materials

# Semiconductor Industry Revenue



**AI ERA WILL BE BIGGEST AGE OF COMPUTING**

Source: SEMI, VLSI, Applied Materials

# Market Evolution

## Layers of Demand Drivers

PRESENTED IN  
2017 Analyst Day

Entering a  
**NEW ERA**  
of growth

Mobile +  
Social Media Era

A.I. +  
Big Data Era

"A.I. related growth will boost global GDP by \$16T by 2030"  
- The Economist / PwC

"Data is to this century what oil was to the last one: a driver of growth and change"  
- The Economist

PC +  
Internet Era

2000

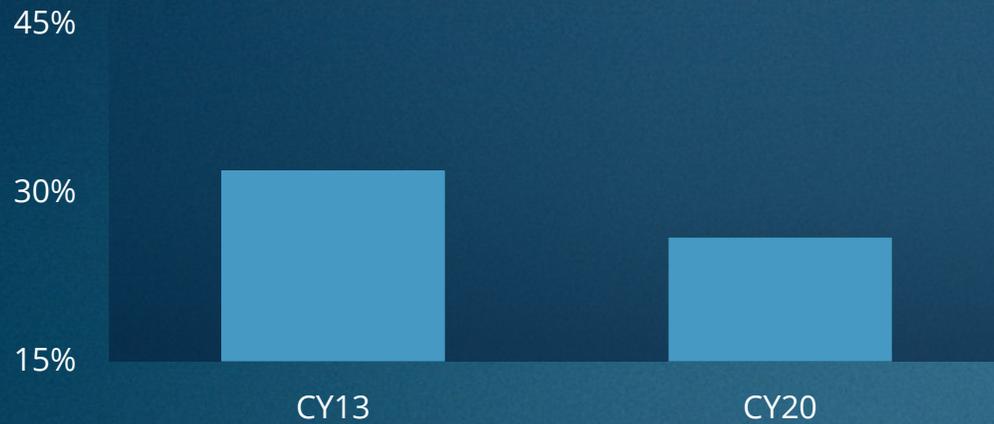
2010

2017

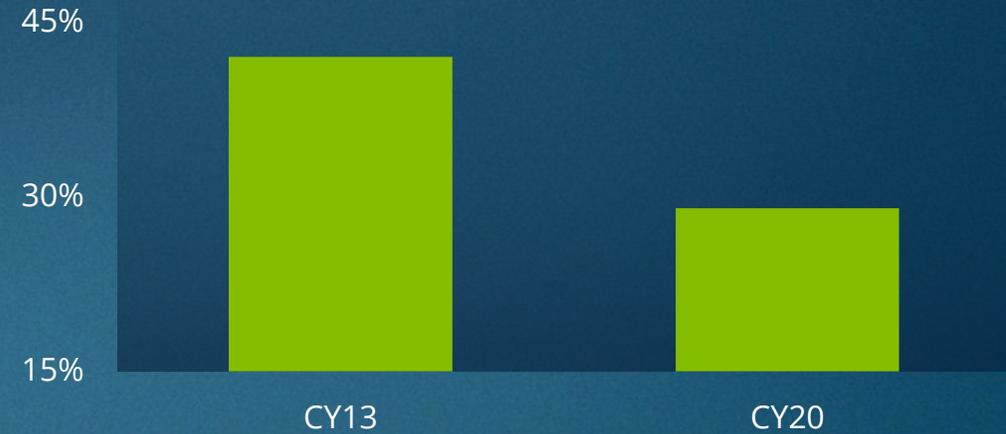
2020

## WFE as % of Top 3 Customers' EBITDA

### Foundry & Logic



### Memory



**CUSTOMER PROFITABILITY  
GROWING EVEN FASTER  
THAN INVESTMENTS**

- Healthy markets
- Diversification of demand
- Rational investments
- Sustainable profitability outlook

Device % splits are Applied Materials estimates  
Top 3 Customers include Intel, Samsung and TSMC for Foundry & Logic; Hynix, Micron and Samsung for Memory

# Market Outlook = Innovation and Secular Growth

## Applied = PPACt Enablement Company

Unit process leadership and broadest portfolio

+

Unique combinations of technologies

+

Actionable insight / time to market acceleration

+

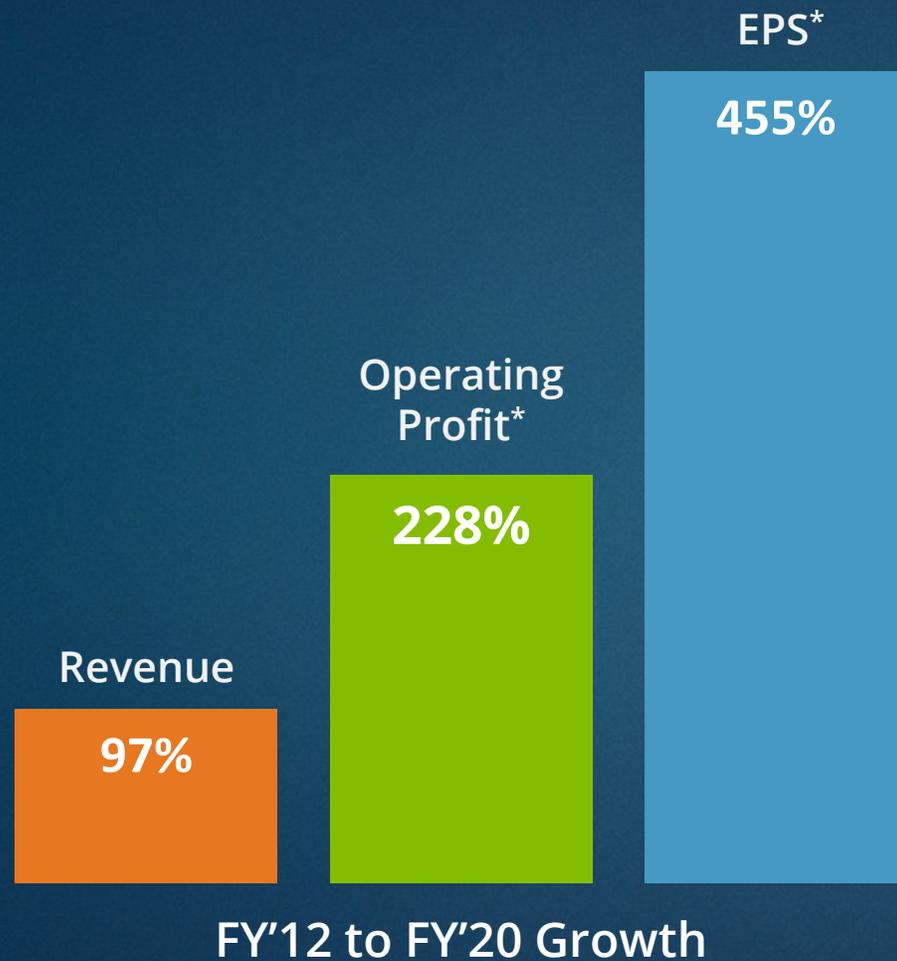
Subscription style revenue growth

+

Synergistic materials engineering business with high FCF

High ROI Financial Model + Attractive Shareholder Returns

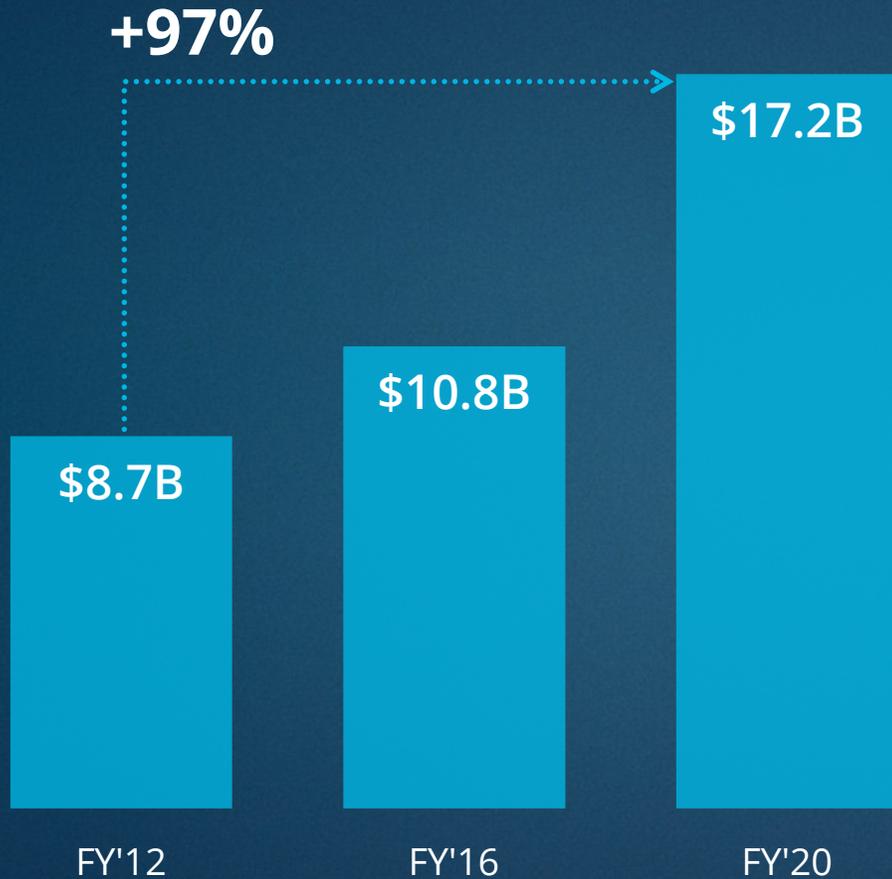
# Creating Significant Shareholder Value



- Growing profitability significantly faster than revenue
- While investing to drive future growth

\*Non-GAAP adjusted operating profit and EPS. For reconciliation of GAAP to non-GAAP measures, see appendix of this presentation.

# Accelerating Revenue Growth



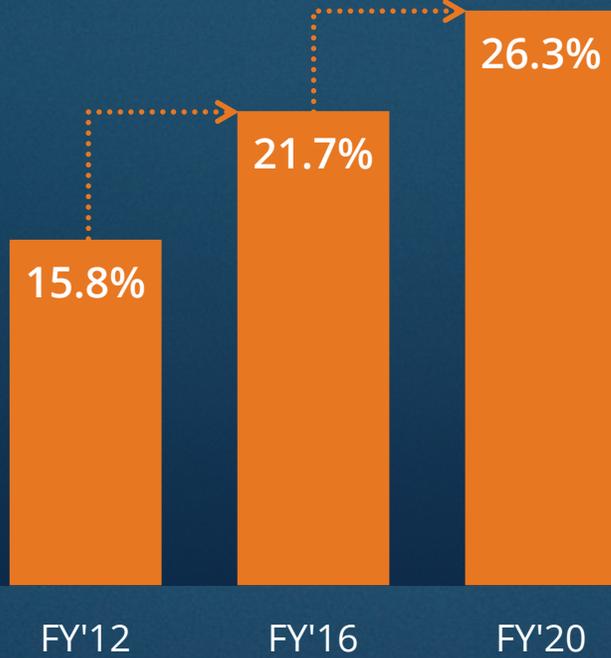
- Outperforming the market
- Driving product momentum
- Increasing recurring revenue
- Delivering strong execution

# Expanding Margins

Gross Margin\*



Operating Margin\*

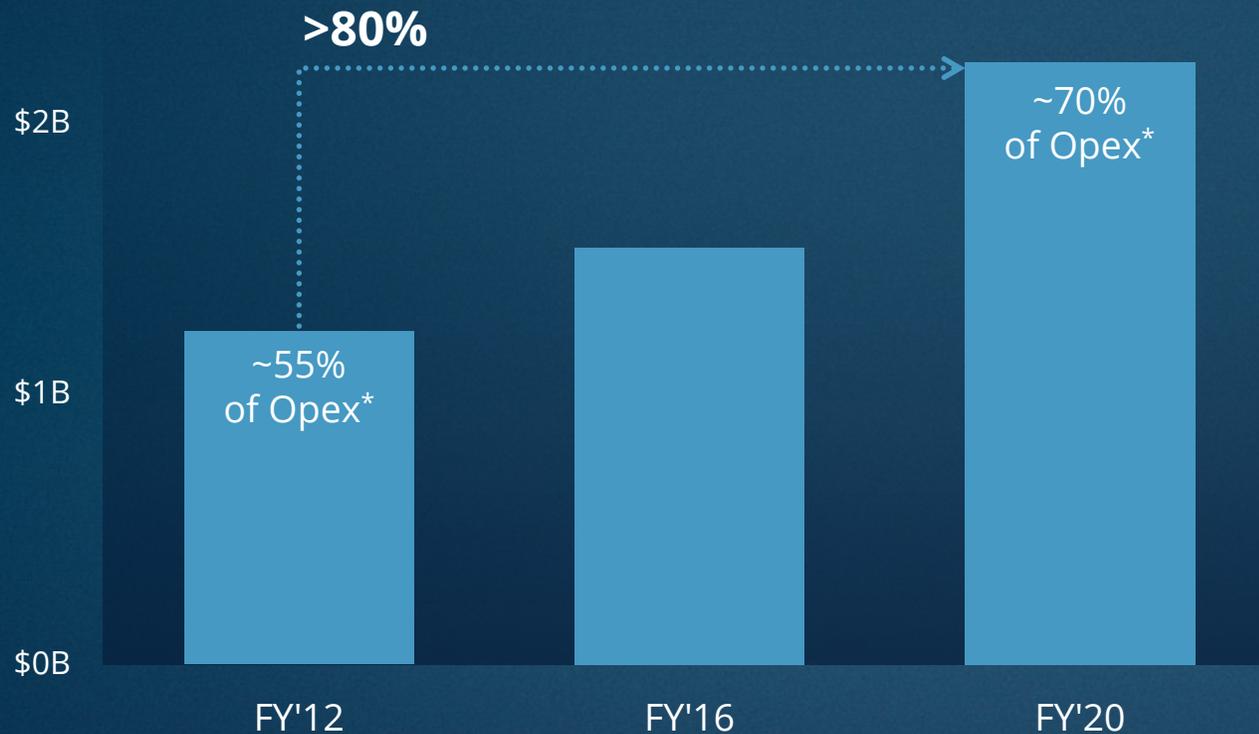


- Innovative solutions
- Differentiated products
- Optimized portfolio
- Flexible operating footprint
- Disciplined execution

\*Non-GAAP adjusted gross margin and operating margin. For reconciliation of GAAP to non-GAAP measures, see appendix of this presentation.

# Investing for Growth

## R&D Expenses\*



- Enable PPACt playbook
- Develop differentiated products
- Accelerate customer roadmaps

\*Non-GAAP adjusted R&D and operating expenses (Opex). For reconciliation of GAAP to non-GAAP measures, see appendix of this presentation.

# Significant Momentum Across Device Types

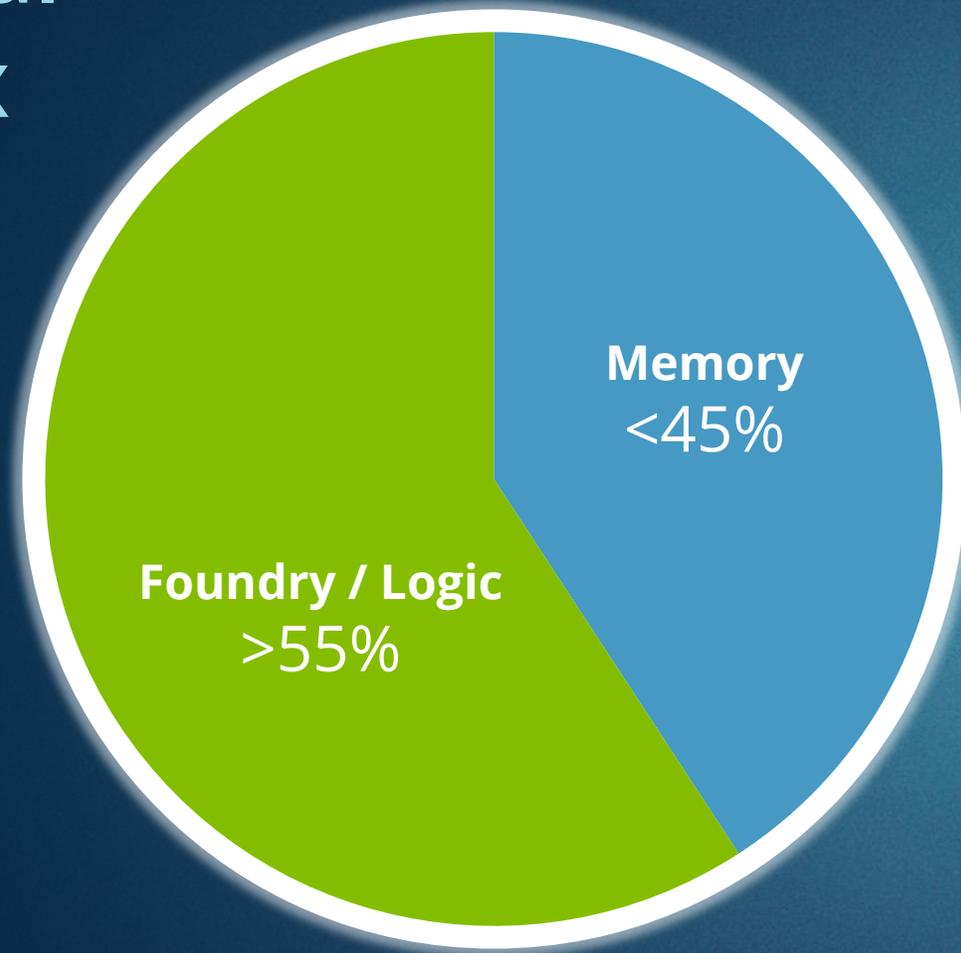


**BALANCED PORTFOLIO = AGNOSTIC TO MIX**

Source: Gartner, VLSI, Applied Materials

Applied Materials External Use

# Historical WFE Mix

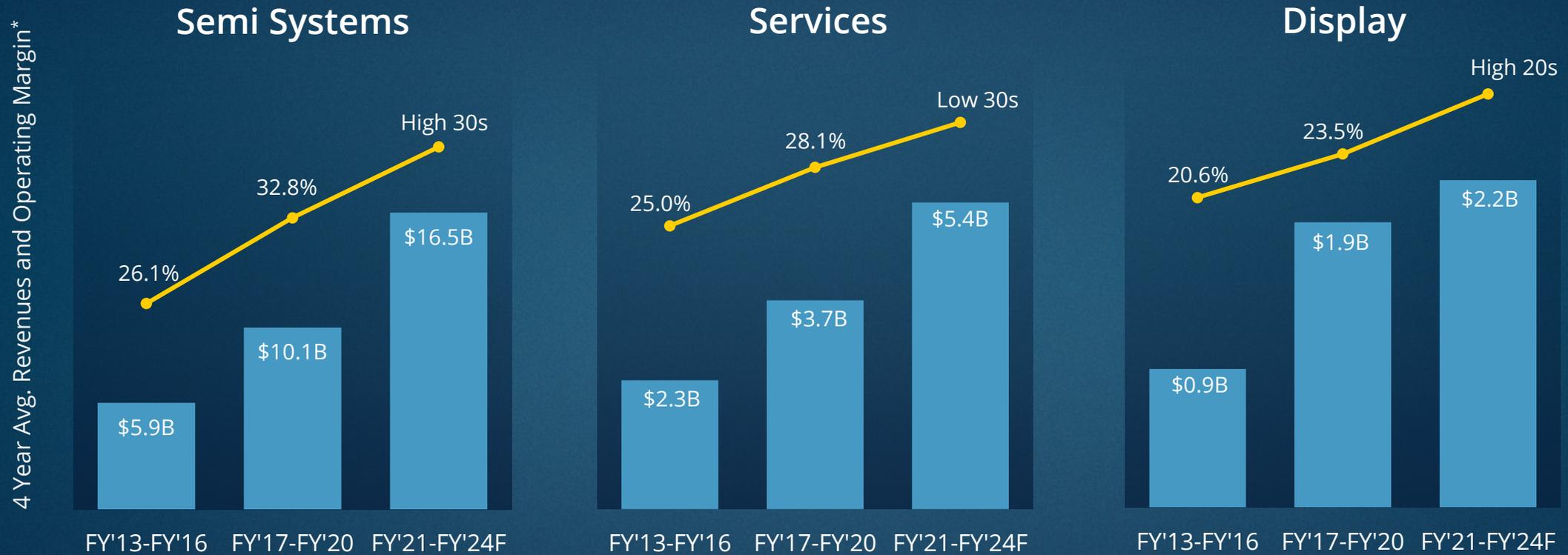


Long-Term Average

Foundry / Logic vs. Memory mix consistent over time

- 10-year and 20-year averages: Foundry / Logic >55%
- Foundry / Logic > Memory in 17 of past 20 years

# All Segments Driving Strong Profitable Growth



\*Non-GAAP adjusted operating margin. For reconciliation of GAAP to non-GAAP measures, see appendix of this presentation.

# 2024 Financial Model

		FY'20	FY'24 MODEL		
			LOW	BASE	HIGH
	<b>Revenue</b>	<b>\$17.2B</b>	<b>\$23.4B</b>	<b>\$26.7B</b>	<b>\$31.0B</b>
	Semi Systems	\$11.4B	\$16.2B	\$18.4B	\$21.7B
	Services	\$4.2B	\$5.6B	\$6.1B	\$6.7B
	Display	\$1.6B	\$1.6B	\$2.2B	\$2.7B
NON-GAAP ADJUSTED*	<b>GM%</b>	<b>45.1%</b>	<b>47.5%</b>	<b>48.5%</b>	<b>48.8%</b>
	<b>OP%</b>	<b>26.3%</b>	<b>30.6%</b>	<b>32.4%</b>	<b>32.7%</b>
	<b>EPS</b>	<b>\$4.17</b>	<b>\$7.00</b>	<b>\$8.50</b>	<b>\$10.00</b>

2024 model assumes non-GAAP adjusted tax rate of 12.0% and weighted average shares of 875M.

\*Assumes non-GAAP adjustments as applicable for future periods. For reconciliation of GAAP to non-GAAP measures, see appendix of this presentation.

# 2024 Financial Model

	FY'20	FY'24 MODEL	
		<b>BASE</b>	
<b>Revenue</b>	<b>\$17.2B</b>	<b>\$26.7B</b>	Applied growth >55%
Semi Systems	\$11.4B	\$18.4B	Semi Systems growth >60%
Services	\$4.2B	\$6.1B	Services growth >45%
Display	\$1.6B	\$2.2B	Display growth >35%
<b>GM%</b>	<b>45.1%</b>	<b>48.5%</b>	Expanding margins, strong operating leverage while investing for growth
<b>OP%</b>	<b>26.3%</b>	<b>32.4%</b>	
<b>EPS</b>	<b>\$4.17</b>	<b>\$8.50</b>	

NON-GAAP  
ADJUSTED\*

2024 model assumes non-GAAP adjusted tax rate of 12.0% and weighted average shares of 875M.

\*Assumes non-GAAP adjustments as applicable for future periods. For reconciliation of GAAP to non-GAAP measures, see appendix of this presentation.

# Earnings Growth Drivers



## FY'20 to FY'24F GROWTH

Revenue	>55%
OP\$	>90%
EPS	>100%

\* Buyback includes minimal contribution from interest & tax

\*\* Non-GAAP adjusted gross margin (GM), operating profit (OP) and EPS. For reconciliation of GAAP to non-GAAP measures, see appendix of this presentation  
Bridge calculation uses forecasted average tax rate and weighted average shares.

# Revenue Growth Drivers



## FY'20 to FY'24F GROWTH

Total AMAT	>55%
Semi	>60%
Services	>45%
Display	>35%

# Semi Revenue Growth Drivers

## Core



## PPAC<sup>t</sup> Enablement



## Growth Drivers

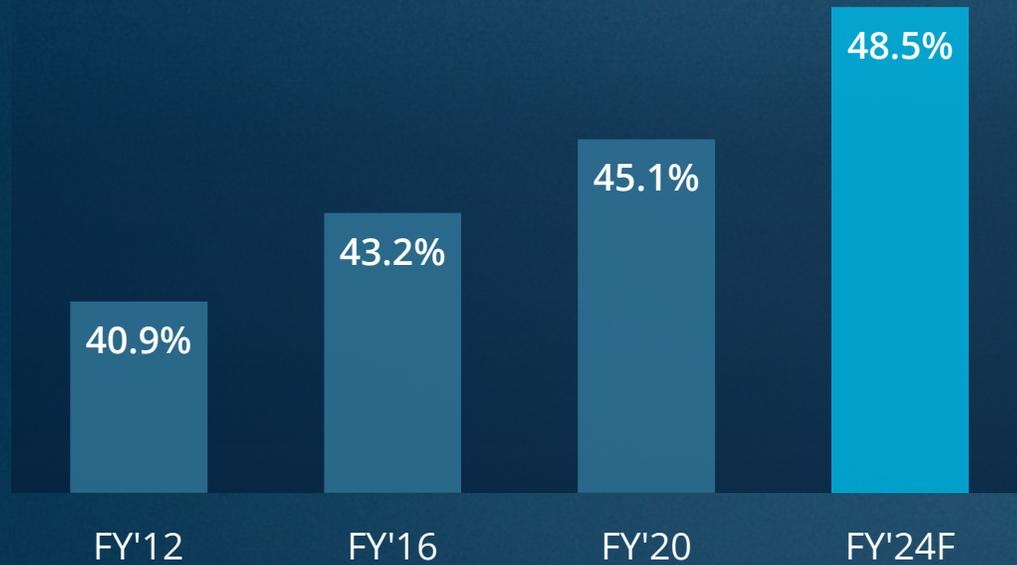
- Enabling new architectures, structures and devices
- DRAM leadership with new materials
- ICAPS\*
- Advanced packaging solutions
- Broadest portfolio including e-beam and on-board metrology

UNIQUE INTEGRATED MATERIALS SOLUTIONS AND  
AI<sup>x</sup>™ – ACTIONABLE INSIGHT ACCELERATOR

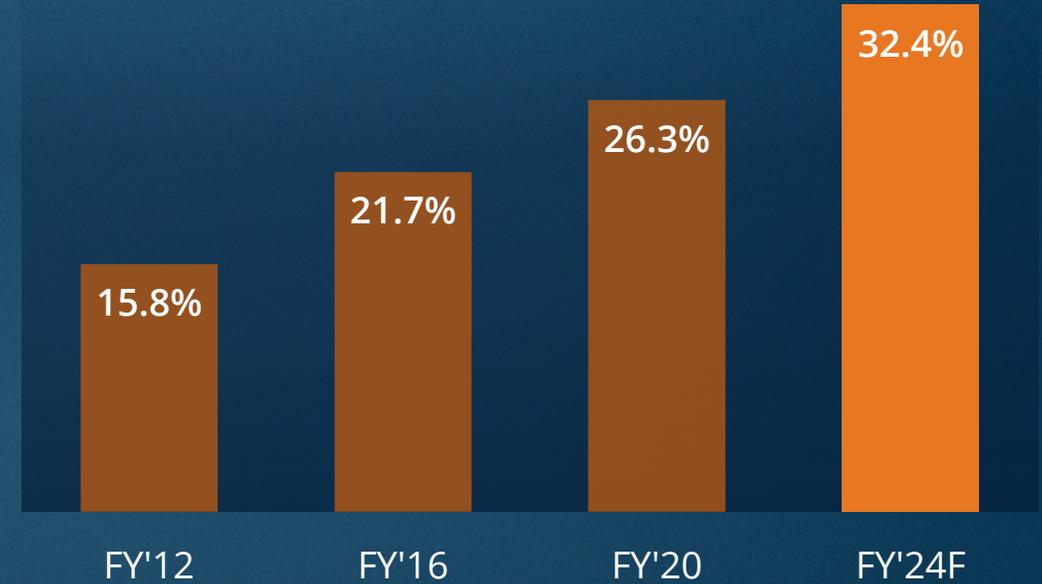
\*Internet of Things, Communications, Automotive, Power, Sensors

# Margin Expansion Continues

Gross Margin\*



Operating Margin\*



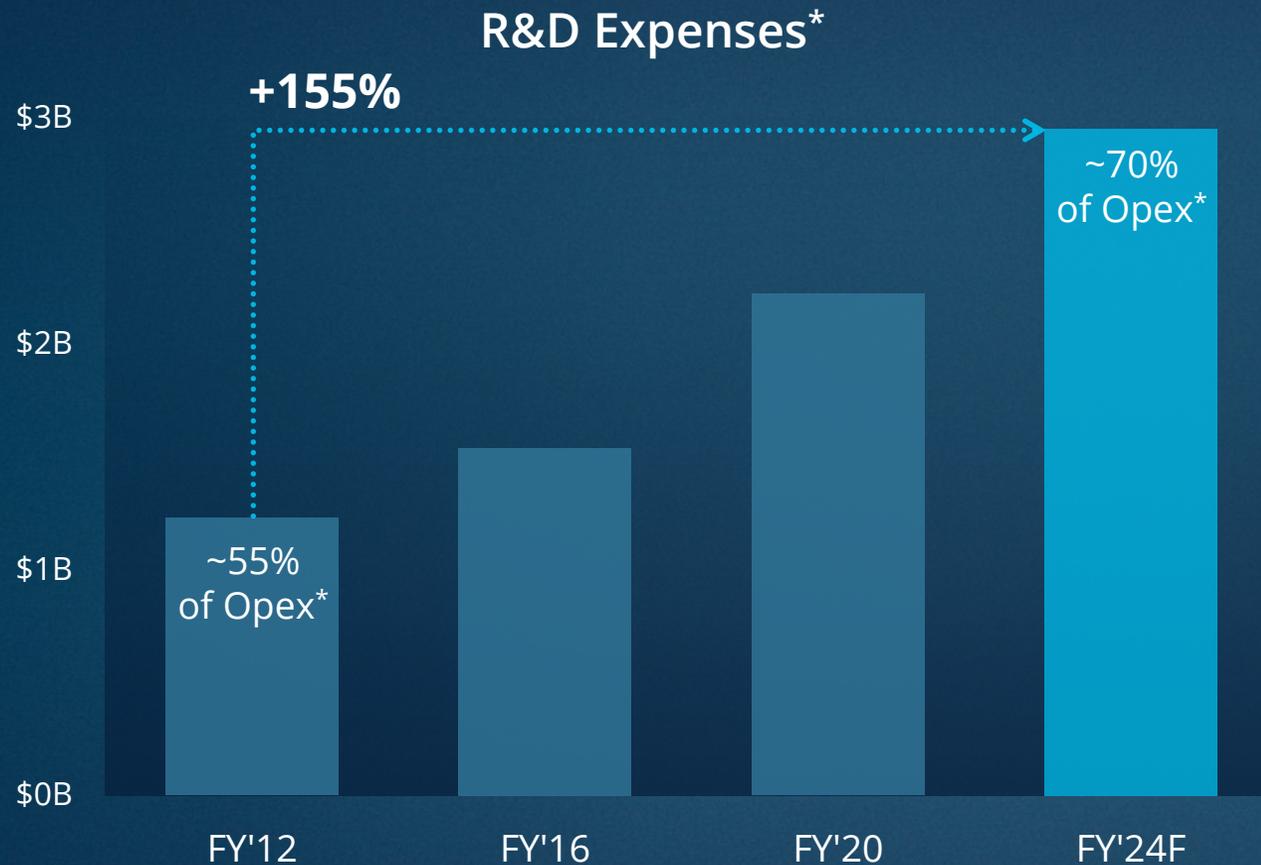
Continue optimized investment and execution



Valuable PPACt innovations  
Fast growing ICAPS and packaging businesses

\*Non-GAAP adjusted gross margin and operating Margin. For reconciliation of GAAP to non-GAAP measures, see appendix of this presentation.

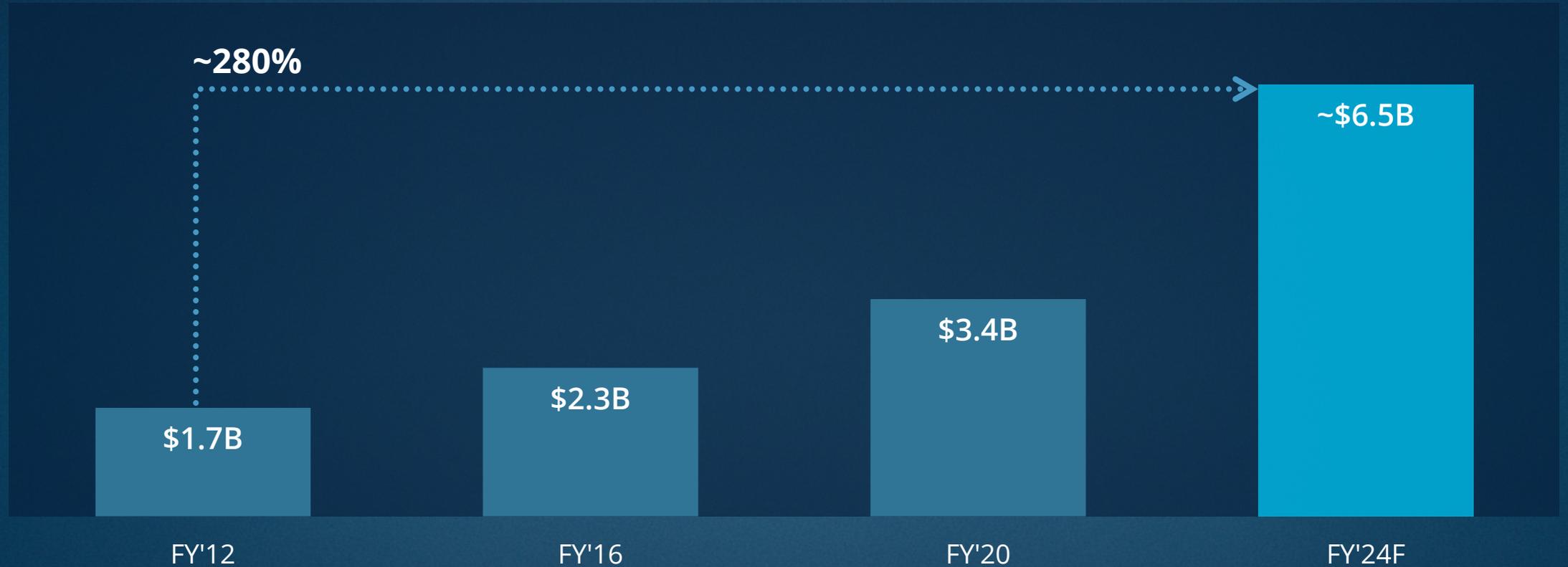
# Fuel for Growth



- Accelerate new PPACt playbook
- Deliver unique solutions
- Solve **higher**-value problems
- Transition from products to outcomes

\*Non-GAAP adjusted R&D and operating expenses (Opex). For reconciliation of GAAP to non-GAAP measures, see appendix of this presentation.

# Strong FCF Performance



**PROFITABLE GROWTH YIELDS STRONG FCF**

# Capital Allocation Priorities

## PRINCIPLES

- 1** Invest in attractive growth opportunities
- 2** Maintain strong and flexible balance sheet
- 3** Distribute excess cash through share repurchases and dividends

## PERFORMANCE (FY'13 to FY'20)

**\$14.0B**  
R&D and M&A

**\$2.7B**  
Capital Expenditures

**\$13.0B**  
Share Repurchase

**\$4.5B**  
Dividends

# Disciplined Capital Allocation

## Dividend Growth



## Share Count Reduction



\$20B of shareholder distributions in past 10 years

Increased dividend by 9% in March 2021

Announced new \$7.5B authorization in March 2021

**COMMITMENT TO RETURN 80% – 100% OF FCF**

# In Summary

- Accelerating markets with increasing technical complexity
- Robust innovation pipeline fueling future growth
- Significantly outperforming markets
- Strong execution driving significant margin expansion, earnings growth and FCF generation
- Disciplined capital allocation

**STRONG SHAREHOLDER VALUE CREATION**

# TAKEAWAY

## Messages

1. 'AI era' = **Secular growth** and accelerated innovation
2. Applied = The **PPACt enablement** company
3. Shifting more business to **subscription-style** revenues and integrated solutions
4. Optimizing portfolio for **growth and free cash flow**
5. Operating model = Grow **EPS\* 1.7x to 2x revenue** and **return 80 to 100% of FCF** to shareholders

\* Non-GAAP adjusted EPS

Applied Materials External Use

# 2024 Financial Model

	FY'12	FY'16	FY'20	FY'24 MODEL
<b>Revenue</b>	<b>\$8.7B</b>	<b>\$10.8B</b>	<b>\$17.2B</b>	<b>\$26.7B</b>
Semi Systems	\$5.5B	\$6.9B	\$11.4B	\$18.4B
Services	\$2.2B	\$2.6B	\$4.2B	\$6.1B
Display	\$0.6B	\$1.2B	\$1.6B	\$2.2B
<b>NON-GAAP ADJUSTED*</b> <b>GM%</b>	<b>40.9%</b>	<b>43.2%</b>	<b>45.1%</b>	<b>48.5%</b>
<b>NON-GAAP ADJUSTED*</b> <b>OP%</b>	<b>15.8%</b>	<b>21.7%</b>	<b>26.3%</b>	<b>32.4%</b>
<b>NON-GAAP ADJUSTED*</b> <b>EPS</b>	<b>\$0.75</b>	<b>\$1.75</b>	<b>\$4.17</b>	<b>\$8.50</b>

2024 model assumes non-GAAP adjusted tax rate of 12.0% and weighted average shares of 875M.

\*Assumes non-GAAP adjustments as applicable for future periods. For reconciliation of GAAP to non-GAAP measures, see appendix of this presentation.

APPENDIX  
**GAAP to Non-GAAP  
Reconciliations**

# Use of Non-GAAP Adjusted Financial Measures

Applied provides investors with certain non-GAAP adjusted financial measures, which are adjusted for the impact of certain costs, expenses, gains and losses, including certain items related to mergers and acquisitions; restructuring and severance charges and any associated adjustments; certain incremental expenses related to COVID-19; impairments of assets; gain or loss on strategic investments; loss on early extinguishment of debt; certain income tax items and other discrete adjustments. Reconciliations of these non-GAAP measures to the most directly comparable financial measures calculated and presented in accordance with GAAP are provided in the appendix to this presentation.

Management uses these non-GAAP adjusted financial measures to evaluate the company's operating and financial performance and for planning purposes, and as performance measures in its executive compensation program. Applied believes these measures enhance an overall understanding of its performance and investors' ability to review the company's business from the same perspective as the company's management and facilitate comparisons of this period's results with prior periods on a consistent basis by excluding items that management does not believe are indicative of Applied's ongoing operating performance. There are limitations in using non-GAAP financial measures because the non-GAAP financial measures are not prepared in accordance with generally accepted accounting principles, may be different from non-GAAP financial measures used by other companies, and may exclude certain items that may have a material impact upon our reported financial results. The presentation of this additional information is not meant to be considered in isolation or as a substitute for the directly comparable financial measures prepared in accordance with GAAP.

# APPLIED MATERIALS, INC.

## UNAUDITED RECONCILIATION OF GAAP TO NON-GAAP ADJUSTED RESULTS

(In millions, except EPS and percentages)

	FY2012	FY2016	FY2020
<b>Non-GAAP Adjusted Gross Profit</b>			
Reported gross profit - GAAP basis	\$ 3,313	\$ 4,511	\$ 7,692
Certain items associated with acquisitions <sup>1</sup>	253	167	37
Certain incremental expenses related to COVID-19 <sup>2</sup>	-	-	23
Restructuring charges and asset impairments	-	(2)	-
Non-GAAP adjusted gross profit	<u>\$ 3,566</u>	<u>\$ 4,676</u>	<u>\$ 7,752</u>
Non-GAAP adjusted gross margin	40.9%	43.2%	45.1%
<b>Non-GAAP Adjusted Operating Income</b>			
Reported operating income - GAAP basis	\$ 411	\$ 2,152	\$ 4,365
Certain items associated with acquisitions <sup>1</sup>	298	188	54
Acquisition integration and deal costs	81	2	80
Certain incremental expenses related to COVID-19 <sup>2</sup>	-	-	30
Impairment of goodwill and intangible assets	421	-	-
Restructuring charges and asset impairments	168	(3)	-
Other gains, losses or charges	-	8	-
Non-GAAP adjusted operating income	<u>\$ 1,379</u>	<u>\$ 2,347</u>	<u>\$ 4,529</u>
Non-GAAP adjusted operating margin	15.8%	21.7%	26.3%
<b>Non-GAAP Adjusted Earnings Per Diluted Share</b>			
Reported earnings per diluted share - GAAP basis	\$ 0.09	\$ 1.54	\$ 3.92
Certain items associated with acquisitions	0.19	0.16	0.05
Acquisition integration and deal costs	0.05	-	0.07
Certain incremental expenses related to COVID-19	-	-	0.03
Impairment of goodwill and intangible assets	0.33	-	-
Restructuring charges and asset impairments	0.10	-	-
Realized loss (gain) on strategic investments, net	0.01	-	-
Unrealized loss (gain) on strategic investments, net	-	-	(0.01)
Loss on early extinguishment of debt	-	-	0.03
Other gains, losses or charges, net	-	0.01	-
Income tax effects related to intra-entity intangible asset transfers	-	-	0.12
Resolution of prior years' income tax filings and other tax items	(0.02)	0.04	(0.04)
Non-GAAP adjusted earnings per diluted share	<u>\$ 0.75</u>	<u>\$ 1.75</u>	<u>\$ 4.17</u>
Weighted average number of diluted shares	1,277	1,116	923

1. These items are incremental charges attributable to completed acquisitions, consisting of amortization of purchased intangible assets.
2. Temporary incremental employee compensation during the COVID-19 pandemic.

## APPLIED MATERIALS, INC. UNAUDITED RECONCILIATION OF GAAP TO NON-GAAP ADJUSTED RESULTS OPERATING EXPENSES

(In millions)

	FY2012	FY2016	FY2020
<b>Reported operating expenses - GAAP basis</b>	\$ 2,902	\$ 2,359	\$ 3,327
Certain items associated with acquisitions <sup>1</sup>	(45)	(21)	(17)
Acquisition integration and deal costs	(81)	(2)	(80)
Certain incremental expenses related to COVID-19 <sup>2</sup>	-	-	(7)
Impairment of goodwill and intangible assets	(421)	-	-
Restructuring charges and asset impairments	(168)	1	-
Other gains, losses or charges	-	(8)	-
<b>Non-GAAP adjusted operating expenses</b>	\$ 2,187	\$ 2,329	\$ 3,223

## APPLIED MATERIALS, INC. UNAUDITED RECONCILIATION OF GAAP TO NON-GAAP ADJUSTED RESULTS RESEARCH, DEVELOPMENT AND ENGINEERING (R&D) EXPENSES

(In millions)

	FY2012	FY2016	FY2020
<b>Reported R&amp;D expenses- GAAP basis</b>	\$ 1,237	\$ 1,540	\$ 2,234
Certain items associated with acquisitions <sup>1</sup>	(4)	-	-
Acquisition integration and deal costs	(3)	-	(3)
Certain incremental expenses related to COVID-19 <sup>2</sup>	-	-	(6)
<b>Non-GAAP adjusted R&amp;D expenses</b>	\$ 1,230	\$ 1,540	\$ 2,225

1. These items are incremental charges attributable to completed acquisitions, consisting of amortization of purchased intangible assets.
2. Temporary incremental employee compensation during the COVID-19 pandemic.

# APPLIED MATERIALS, INC.

## UNAUDITED RECONCILIATION OF GAAP TO NON-GAAP ADJUSTED RESULTS

### SEMICONDUCTOR SYSTEMS OPERATING RESULTS

(In millions, except percentages)

	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
<b>Reported operating income - GAAP basis</b>	\$ 876	\$ 1,391	\$ 1,410	\$ 1,807	\$ 3,177	\$ 3,441	\$ 2,464	\$ 3,714
Certain items associated with acquisitions <sup>1</sup>	175	172	178	184	184	183	43	41
Acquisition integration costs	(2)	2	-	-	-	-	-	3
Certain incremental expenses related to COVID-19 <sup>2</sup>	-	-	-	-	-	-	-	20
Restructuring charges and asset impairments	1	-	-	-	-	-	-	-
<b>Non-GAAP adjusted operating income</b>	<u>\$ 1,050</u>	<u>\$ 1,565</u>	<u>\$ 1,588</u>	<u>\$ 1,991</u>	<u>\$ 3,361</u>	<u>\$ 3,624</u>	<u>\$ 2,507</u>	<u>\$ 3,778</u>
<b>Non-GAAP adjusted operating margin (% of net sales)</b>	22.0%	26.2%	25.9%	29.0%	35.2%	34.3%	27.8%	33.2%

1. These items are incremental charges attributable to completed acquisitions, consisting of amortization of purchased intangible assets.

2. Temporary incremental employee compensation during the COVID-19 pandemic.

Starting in fiscal 2014, Display and Adjacent Markets segment balances included flexible coating systems and display upgrade equipment results. In prior periods, flexible coating systems results were included within the Energy and Environmental Solutions segment and display upgrade equipment results were included within the Applied Global Services segment.

Starting in fiscal 2018, balances reflect accounting under ASC 606 Revenue from Contracts with Customers. Prior periods were accounted for under ASC 605 Revenue Recognition.

Note: The reconciliation of GAAP and non-GAAP adjusted segment results above does not include certain revenues, costs of products sold and operating expenses that are reported within corporate and other and included in consolidated operating income.

# APPLIED MATERIALS, INC.

## UNAUDITED RECONCILIATION OF GAAP TO NON-GAAP ADJUSTED RESULTS

### APPLIED GLOBAL SERVICES OPERATING RESULTS

(In millions, except percentages)

	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
<b>Reported operating income - GAAP basis</b>	\$ 436	\$ 538	\$ 630	\$ 682	\$ 817	\$ 1,102	\$ 1,101	\$ 1,127
Certain items associated with acquisitions <sup>1</sup>	5	3	1	1	1	-	-	-
Acquisition integration costs	-	-	-	-	3	2	-	-
Certain incremental expenses related to COVID-19 <sup>2</sup>	-	-	-	-	-	-	-	8
Restructuring charges and asset impairments	2	-	3	-	-	-	-	-
Other gains, losses or charges	-	-	(1)	-	-	-	-	-
<b>Non-GAAP adjusted operating income</b>	<u>\$ 443</u>	<u>\$ 541</u>	<u>\$ 633</u>	<u>\$ 683</u>	<u>\$ 821</u>	<u>\$ 1,104</u>	<u>\$ 1,101</u>	<u>\$ 1,135</u>
<b>Non-GAAP adjusted operating margin (% of net sales)</b>	21.9%	25.6%	25.9%	26.4%	27.2%	29.4%	28.6%	27.3%

1. These items are incremental charges attributable to completed acquisitions, consisting of amortization of purchased intangible assets.

2. Temporary incremental employee compensation during the COVID-19 pandemic.

Starting in fiscal 2014, Display and Adjacent Markets segment balances included flexible coating systems and display upgrade equipment results. In prior periods, flexible coating systems results were included within the Energy and Environmental Solutions segment and display upgrade equipment results were included within the Applied Global Services segment.

Starting in fiscal 2018, balances reflect accounting under ASC 606 Revenue from Contracts with Customers. Prior periods were accounted for under ASC 605 Revenue Recognition.

Note: The reconciliation of GAAP and non-GAAP adjusted segment results above does not include certain revenues, costs of products sold and operating expenses that are reported within corporate and other and included in consolidated operating income.

# APPLIED MATERIALS, INC.

## UNAUDITED RECONCILIATION OF GAAP TO NON-GAAP ADJUSTED RESULTS DISPLAY AND ADJACENT MARKETS OPERATING RESULTS

(In millions, except percentages)

	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
<b>Reported operating income - GAAP basis</b>	\$ 74	\$ 202	\$ 191	\$ 245	\$ 585	\$ 574	\$ 294	\$ 291
Certain items associated with acquisitions <sup>1</sup>	6	4	3	-	5	14	12	12
Acquisition integration costs	-	-	-	-	-	1	1	-
Certain incremental expenses related to COVID-19 <sup>2</sup>	-	-	-	-	-	-	-	1
<b>Non-GAAP adjusted operating income</b>	<u>\$ 80</u>	<u>\$ 206</u>	<u>\$ 194</u>	<u>\$ 245</u>	<u>\$ 590</u>	<u>\$ 589</u>	<u>\$ 307</u>	<u>\$ 304</u>
<b>Non-GAAP adjusted operating margin (% of net sales)</b>	14.9%	24.3%	20.6%	20.3%	28.9%	25.6%	18.6%	18.9%

1. These items are incremental charges attributable to completed acquisitions, consisting of amortization of purchased intangible assets.

2. Temporary incremental employee compensation during the COVID-19 pandemic.

Starting in fiscal 2014, Display and Adjacent Markets segment balances included flexible coating systems and display upgrade equipment results. In prior periods, flexible coating systems results were included within the Energy and Environmental Solutions segment and display upgrade equipment results were included within the Applied Global Services segment.

Starting in fiscal 2018, balances reflect accounting under ASC 606 Revenue from Contracts with Customers. Prior periods were accounted for under ASC 605 Revenue Recognition.

Note: The reconciliation of GAAP and non-GAAP adjusted segment results above does not include certain revenues, costs of products sold and operating expenses that are reported within corporate and other and included in consolidated operating income.



APPLIED  
MATERIALS®

make possible