

## 2018 Analyst & Investor Event NY

#### Safe Harbor Statement

During the course of this meeting, we may make projections or other forwardlooking statements regarding future events or the future financial performance of the Company and the industry. We wish to caution you that such statements are predictions and that actual events or results may differ materially. We refer you to the documents the Company files from time to time with the Securities and Exchange Commission, specifically the Company's most recent Form 10-K and Form 10-Q. These documents contain and identify important factors that could cause the actual results for the Company to differ materially from those contained in our projections or forward-looking statements. These certain factors can be found at http://www.micron.com/certainfactors. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements. We are under no duty to update any of the forward-looking statements after the date of the presentation to conform these statements to actual results.



2018
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## The New Micron Strong, and Getting Stronger

Sanjay Mehrotra
President and CEO



### Transformation

#### **Markets**

Data-hungry applications driving secular growth in memory and storage

**Most Memory Intensive Ever** 

#### Industry

Structural changes contributing to sustained positive industry dynamics

**Healthy Fundamentals** 

#### Micron

Strategy, execution, culture poised to deliver significant value

**Best Positioned Ever** 



\$38B PC / Internet Era 2000-2007

## PC/Internet Era

250 billion GB created annually



\$38B PC / Internet Era

\$62B Mobile Era 2008-2016

### Mobile Era

7,000 billion GB created annually





- Interconnecting Billions of Things
- Delivering Real-Time Intelligence
- Creating Value Across Industries



\$38B PC / Internet Era

\$62B Mobile Era

\$128B Data Economy 2017

## Data Economy 22,000 billion GB created in 2017



\$38B PC / Internet Era

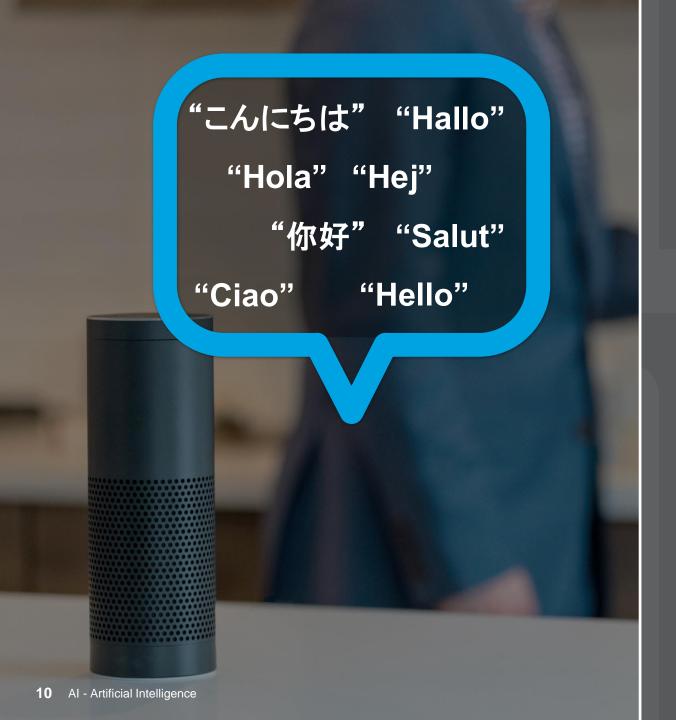
\$62B Mobile Era

\$128B Data Economy 2017

**Future Opportunity** 

## Data Economy 62,000 billion GB to be created in 2021





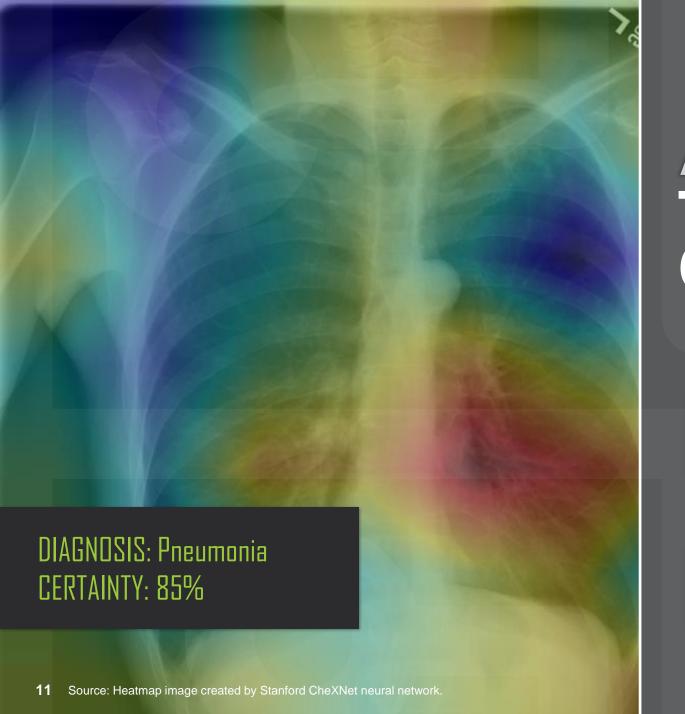
## Alis a Game Changer

Harvesting Big Data to Create Immense Value



Natural Language Processing Mainstream & Growing





# A The Next Frontier: Computer Vision

MORE Video Data Value

MORE Compute Memory Storage





#### Vehicles: Developing Faster-Than-Human Response

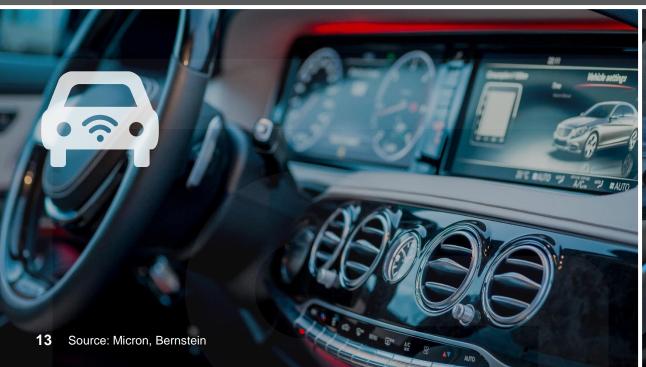
Rich Experiences + Full Environment Awareness = More Memory & Storage

#### In the Cockpit Tomorrow

HD Maps, 4K screens, voice & gesture infotainment control

#### **Autonomous Future**

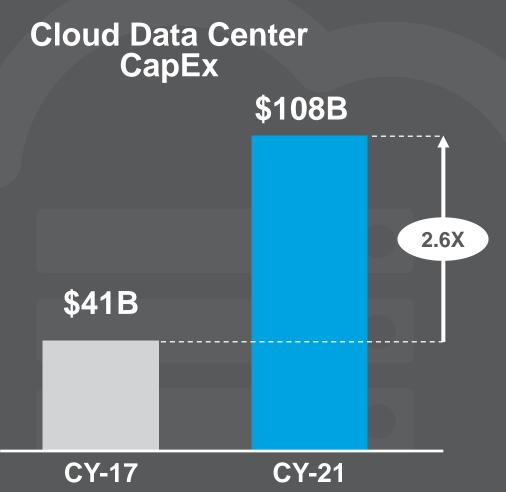
- Full autonomy will require 40+ sensors in 2021
- 26M L3+ vehicles by 2025





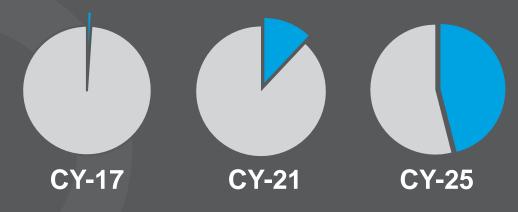
#### Cloud Data Centers: Investing for Speed

Al Requirements Will Drive Staggering Memory & Storage Demand



#### Al Training Workloads Require:





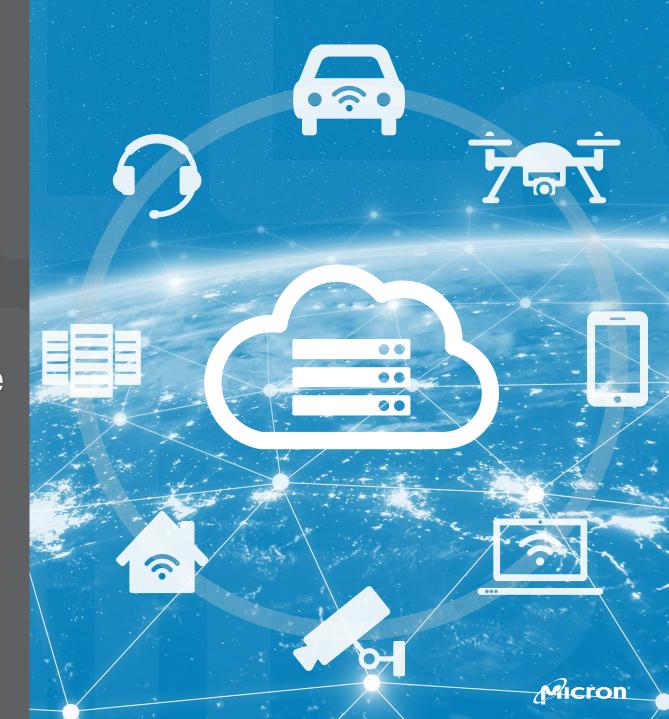
**Al-Capable Server % of All Server Shipments** 



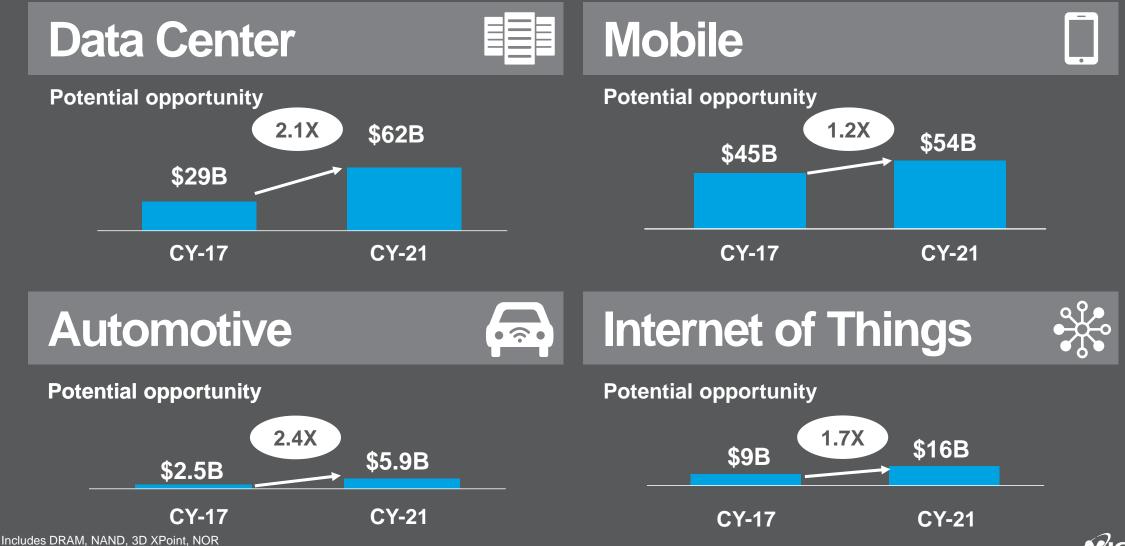
### Virtuous Cycle

Driven by Increasing Data Value

- Creates continuous need to capture, process, move & store data
- Generates ever-increasing demand for memory & fast storage



#### **Key Markets Driving Micron Growth**





## Transformation

#### Markets

Data-hungry applications driving secular growth in memory and storage

**Most Memory Intensive Ever** 

#### Industry

Structural changes contributing to sustained positive industry dynamics

**Healthy Fundamentals** 

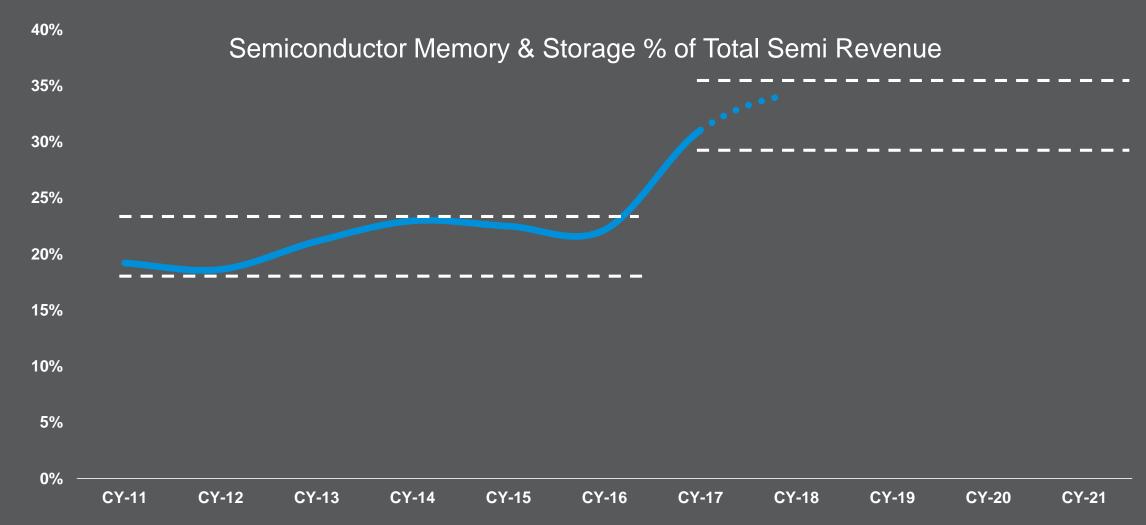
#### Micron

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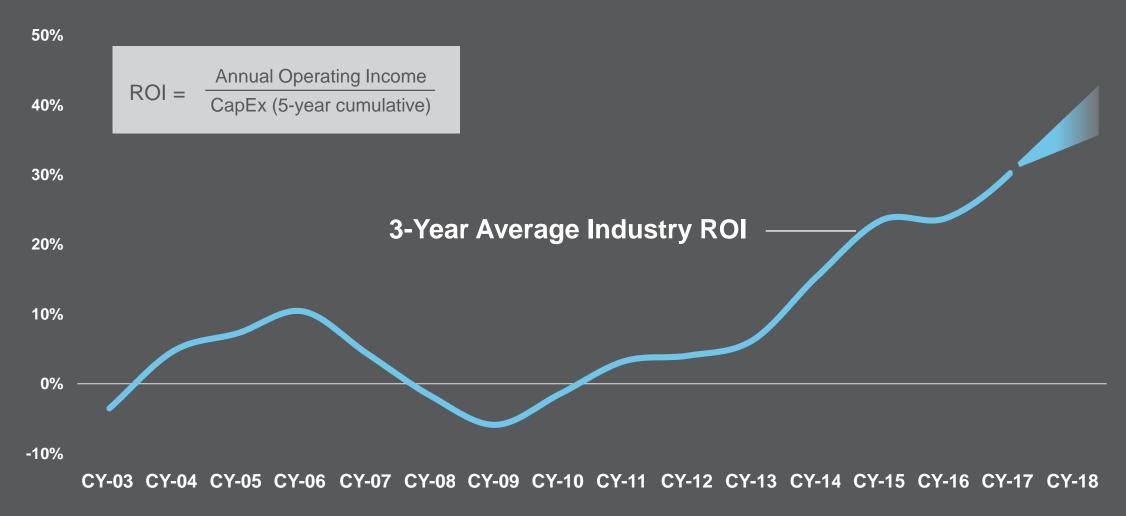
#### Elevated Value of Memory & Storage in the Data Economy





#### Improving Industry Return on Investments

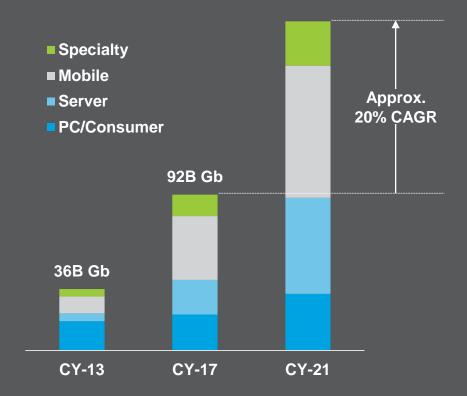
Structural Change in Industry Demand & Stable Supply Growth



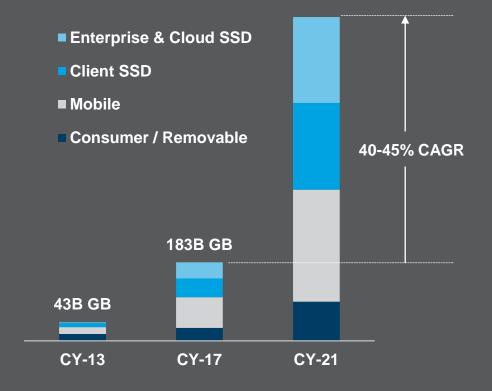


#### Demand Driven by Growth Across Diverse End Markets

#### **DRAM Bit Demand**



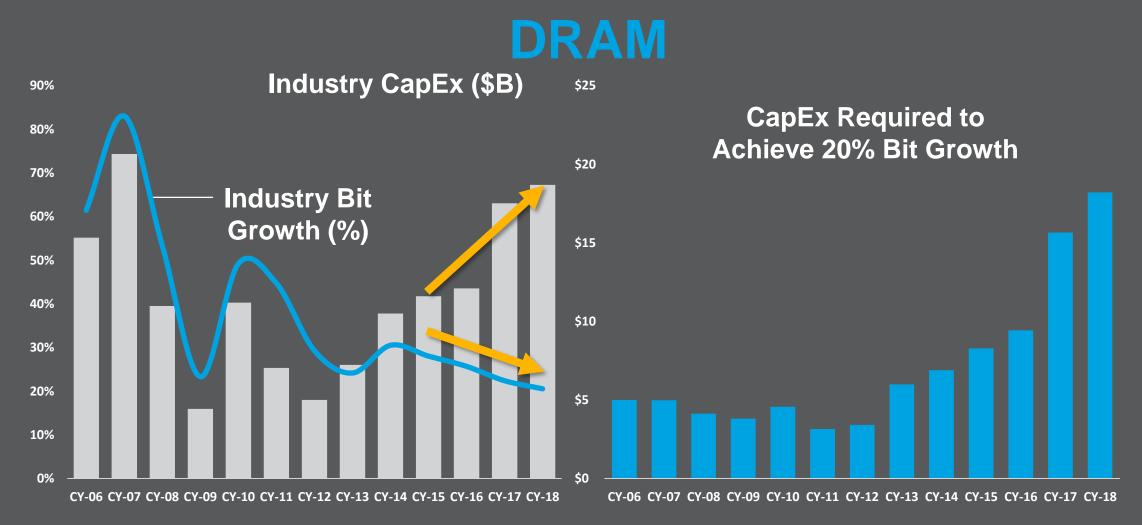
#### **NAND Bit Demand**





#### DRAM Bit Supply Growth is Moderating

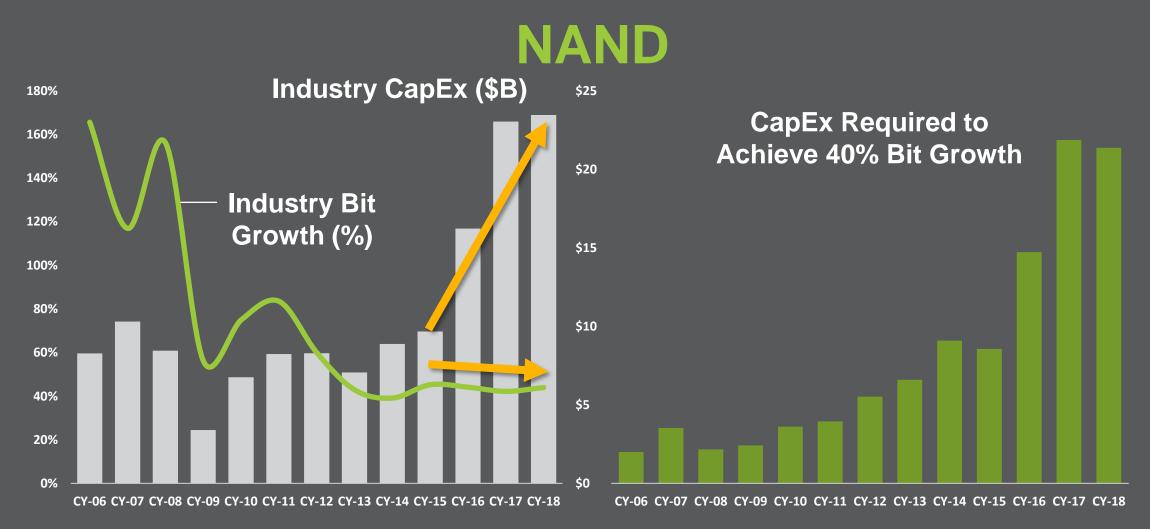
New Process Nodes Require Greater Capital Intensity & Provide Reduced % Bit Gain





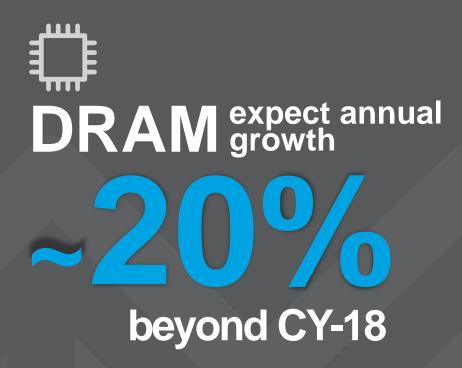
#### NAND Bit Supply Growth is Also Moderating

3D NAND Requires More Clean Room Space & Greater Capital Intensity





#### Industry Supply Outlook Supports Long-Term Stability







## Structural Changes Creating Healthy Industry Dynamics

Growing, Diversified Demand

**Greater Value** 

**Stable Supply** 

Memory & Storage Are Essential to the Data Economy



## Transformation

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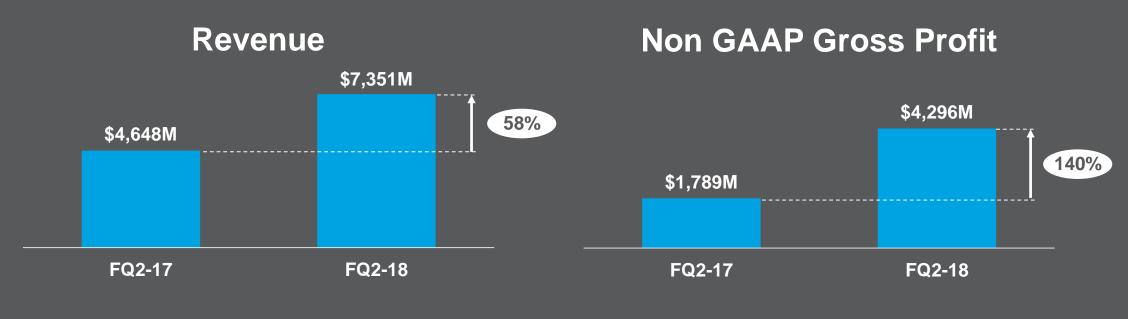
Leading Technology Innovation

**Expanding Trusted Partnerships** 

Scaling Manufacturing & Global Footprint

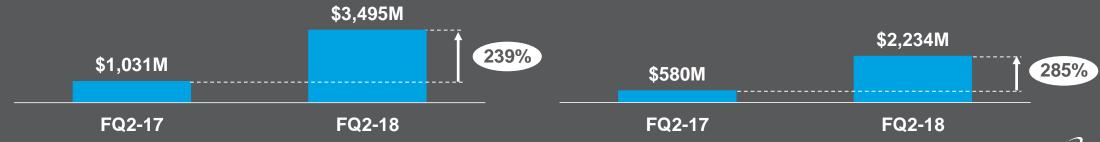


#### **Delivering Record Financial Performance**





Free Cash Flow







#### Investment Approach

Managing Portfolio for Profitable Growth & ROI

**OpEx** 

#### **Technology**

- Extending existing NAND, DRAM roadmap
- Advancing 3D XPoint™ memory
- Developing new emerging memories

#### Product Development

- High-value solutions
  - High performance memory (HBM & Graphics)
  - Managed NAND, SSD, 3D XPoint products

#### CapEx

#### Manufacturing

- Technology transitions to meet customer demand
- Cost competitiveness
- Flexible supply chain



### Technology Leadership

DRAM 3D NAND NOR 3D XPoint<sup>TM</sup> Emerging Technologies

Industry's Most Comprehensive Technology Portfolio



#### 3D XPoint Memory Products Coming in 2019

Unique Features Create Compelling Value for Data-Driven Applications

**Machine** Learning



Big Data



**Artificial** Intelligence



**In-Memory** Compute



**Higher Memory** Capacity per System

**Persistent Memory** 

**Attractive TCO Better IOPS/\$** 

**Denser than DRAM** 

**Endurance of NAND** 

**Faster than NAND** 



## Winning Strategy



**Cost Competitiveness** 



**Execution Excellence** 



High-Value Solutions



Customer Focus



Talent and Culture













#### **Cost Competitiveness**

Driving to Best-In-Class

Outpacing Industry Cost Reductions

DRAM costs reduced at

the industry rate

NAND costs reduced at

the industry rate













#### **Execution Excellence**

Relentless Focus on Results, Accelerating Time to Market



Record Time to Mature Yield

>25% improvement 1Xnm DRAM



Qualification Time Improvement

>20% 1Xnm DRAM >30% 64L 3D NAND



TLC Mix Increased

80% FQ2-18 vs. 55% FQ2-17









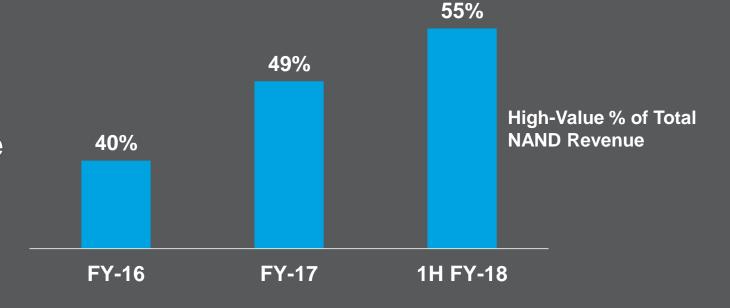




#### High-Value Solutions

Revenue Share to Outperform Bit Share

- Building SSD portfolio
- Growing managed NAND share















#### **Customer Focus**

Faster Enablement Through Trusted Partnerships



**Growing Cloud Revenue** 



#1 or #2 Customer Quality Rankings at an All-Time High



#### Our Strong Execution Delivering Structural Operating Profit Gains

**FY-16 to FY-18** 

Realized competitive operating improvements — \$6B — \$3B — planned through FY-21 since FY-16

FY-19 to FY-21

**\$9B** Operating profit improvement by end of FY-21 compared to FY-16 performance













#### **Talent and Culture**

Attract, Develop & Retain the Industry's Best Talent

#### **Talent**

30% of new hires (1,200+) have advanced degrees

#### **Equality**

At 99% gender pay equity today; targeting full representation

#### **Team**

Culture of innovation, tenacity, urgency & accountability

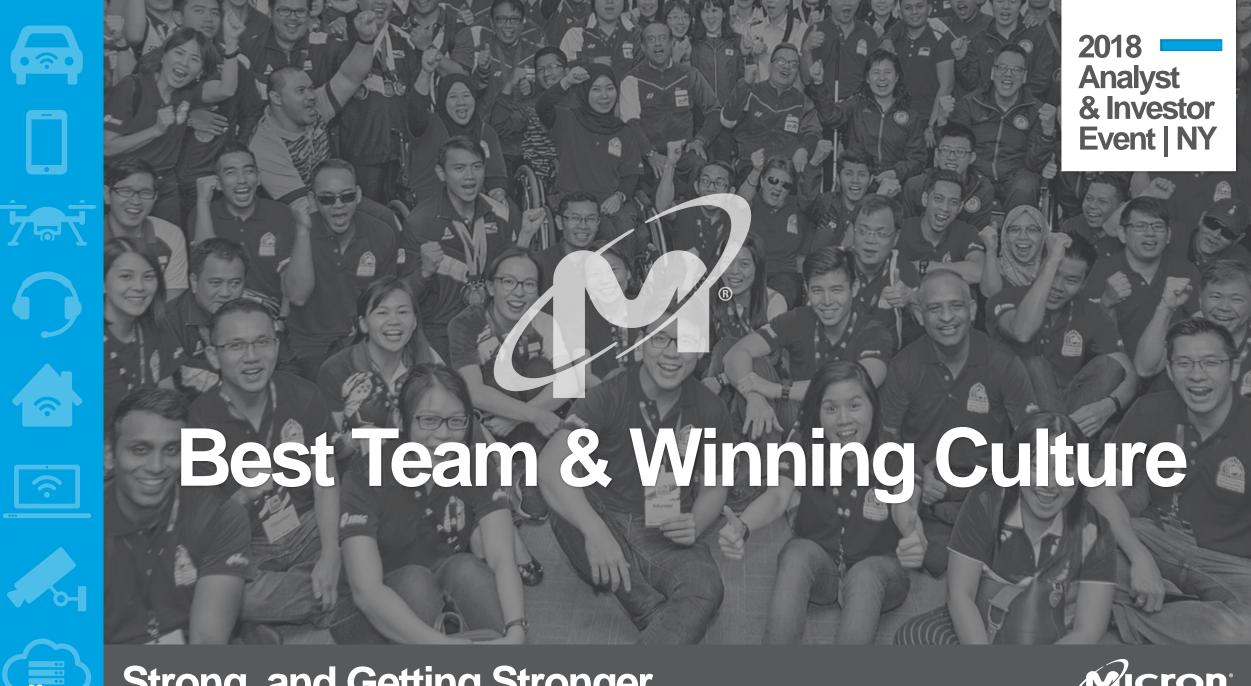


# 2018 Analyst & Investor Event | NY

## My Focus Areas

- Executing Our Strategy
- ROI-Based Investments
- Profitable Growth & Greater Shareholder Value





Strong, and Getting Stronger



# Analyst & Investor Event | NY

## The New Micron The Pursuit of Excellence

**Sumit Sadana**EVP and Chief Business Officer



## Transformation

#### **Broad Demand**

Secular, diversified growth drivers

#### **Driving Value**

Portfolio transformation: high-value solutions

#### Winning Strategy

Product excellence creates true customer value



#### Secular Growth Drivers for Memory & Storage



**Automotive** 

**Client Compute** 







Mobile

**Data Center** 

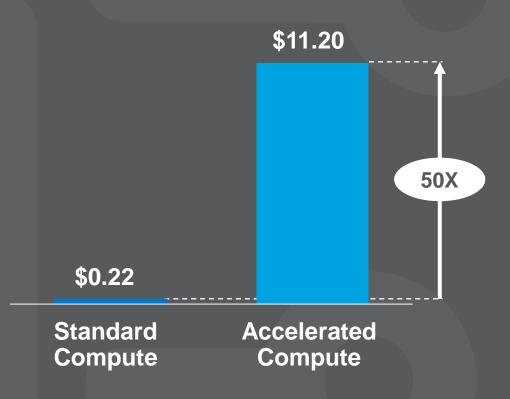


**○** Internet of Things

# Data Center Growth Drivers Source: Average price offering of comparable services from Google, AWS, and Microsoft

#### Al Services Drive Premium Offerings

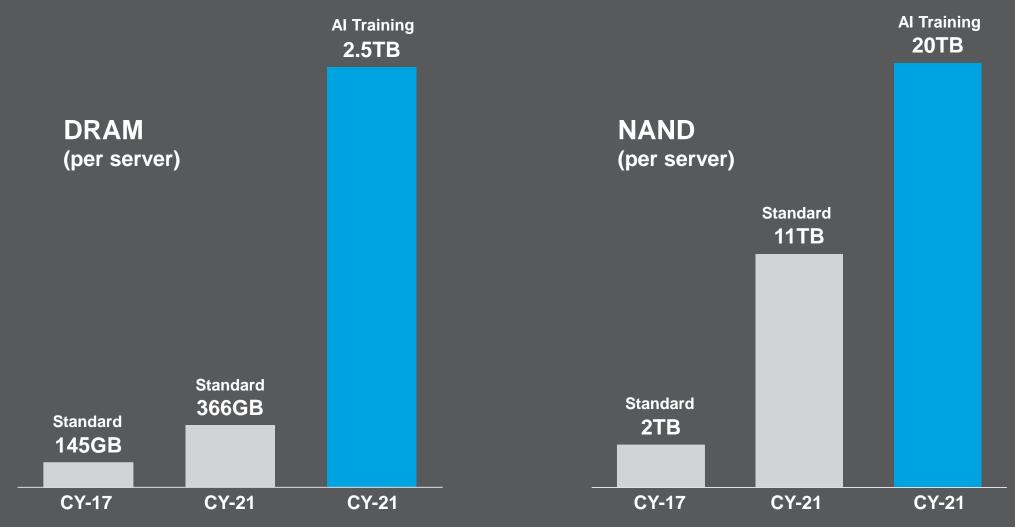






#### Al Workloads Unleash the Need For More Memory & Storage

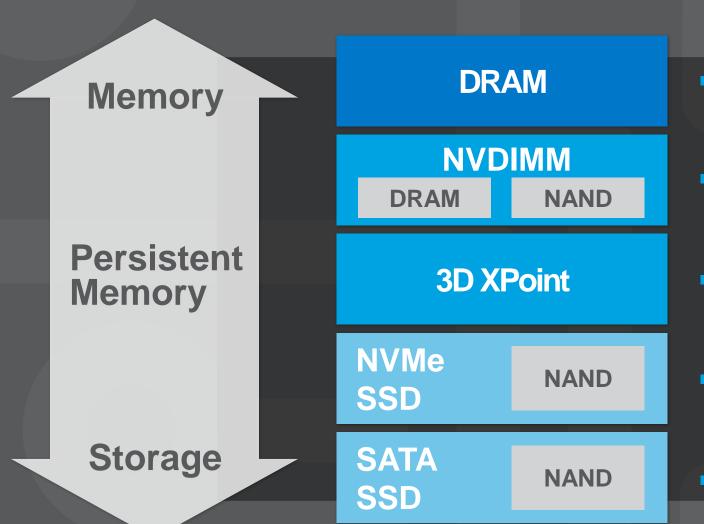
Significant Growth Across Private, Public & Hybrid Cloud





#### Micron: The Only Portfolio Spanning the Data Center Hierarchy

Compelling Mix of Memory, Storage & Persistent Memory Solutions

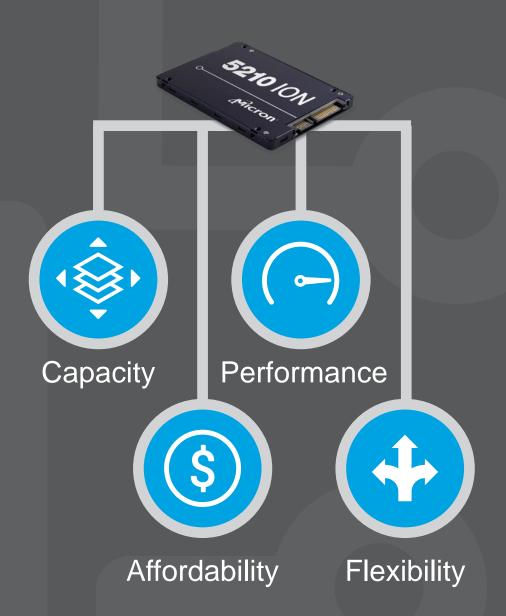


- Lower Latency
- Higher Bandwidth
- Higher Capacity
- High Performance Storage
- Lowest TCO



# Now Shipping the Industry's First QLC SSD

Read-Intensive Enterprise Workloads at 7X lower TCO

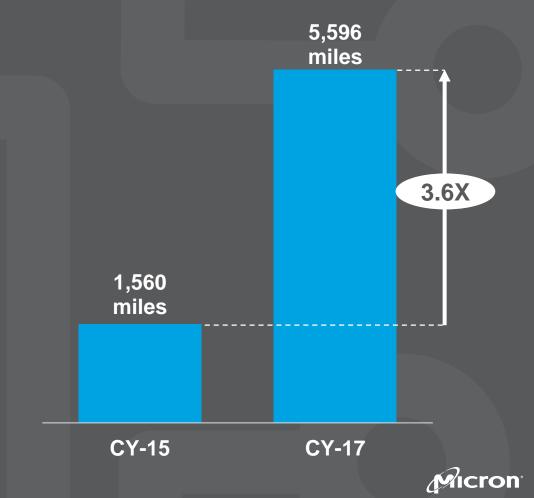




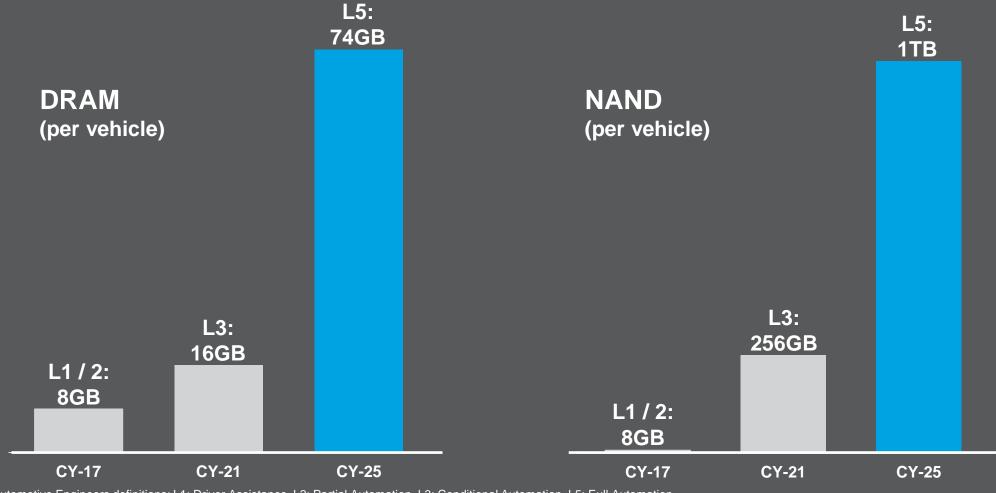
# Automotive Growth Drivers Average number of miles driven per vehicle in a fully autonomous mode without the system being disengaged and the test driver taking immediate manual control of the vehicle. Source: Waymo, California DMV

### Dramatic Improvements in Software Capability

Continuous Miles Driven in Autonomy



#### Autonomous Vehicles: Resetting the Bar for Memory & Storage Consumption





#### **Driving Automotive Leadership & Innovation**



#### Leading Solutions

- Highest Speed Low Power DDR4
- First to market with Auto Grade GDDR6
- 4<sup>th</sup> generation of Auto Grade storage for infotainment & dashboard

#### Support & Services

- >25 Years of Auto Expertise & Leadership
- Global Customer Engineering Labs
- Product & Manufacturing Longevity
- Automotive Electronics Council (AEC)-Q100
   Qualification / IATF 16949 QMS



# Mobile Growth Drivers Source: CNET

#### A Network Quantum Leap



10Gbps

**5G** 

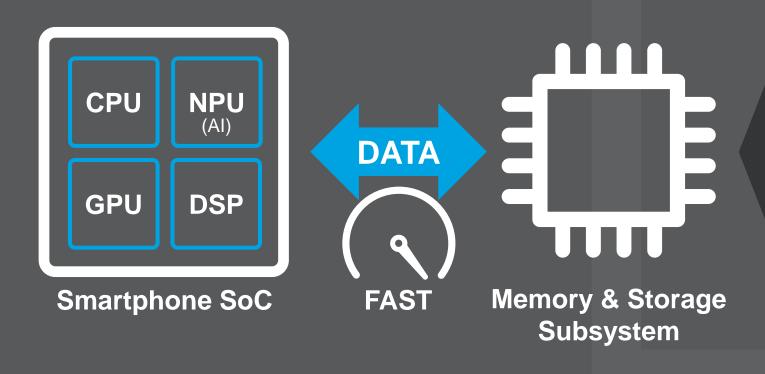
100Mbps

4G/LTE

Micron

100X

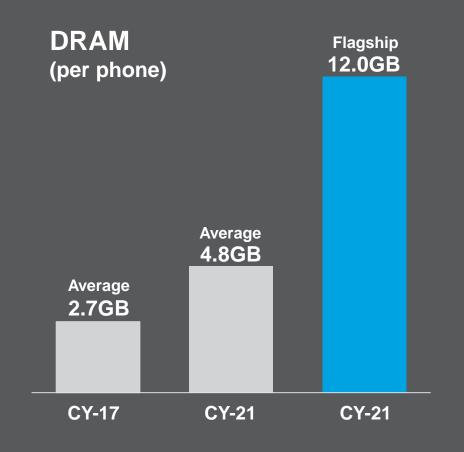
### Next Generation User Experiences Require Larger & Faster Memory Subsystems

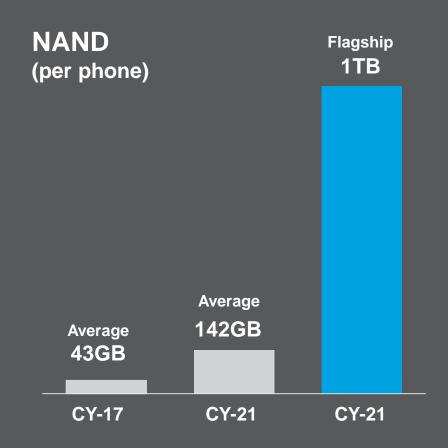


- 5G proliferation
- Higher resolution images, videos & screens
- On-device Al engines & applications
- Advanced user authentication
- Augmented reality



#### Rich Mobile Applications Drive Increased Memory & Storage









#### Market Leadership in Mobile

#### Product Accomplishments

- Industry's smallest 512Gb TLC 3D NAND die
- Lowest power in LPDDR4X
- First-to-market with 12Gb LP die

### **Customer Engagement**

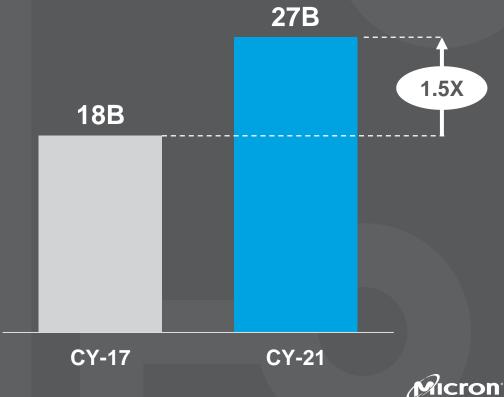
- Engaged with all top 10 handset OEMs
- #1 quality ranking at multiple customers
- Deep engagement across all mobile Chipset Vendors
- Gaining share in managed NAND



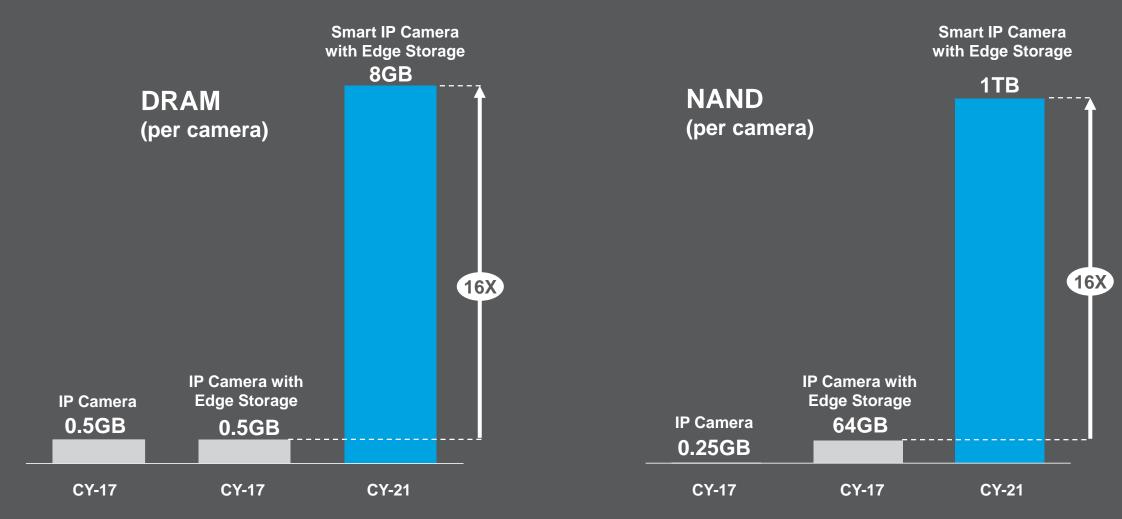
# Internet of Things Growth Drivers Source: Cisco Visual Networking Index, June 2017

#### A World of Intelligent Devices





#### Intelligent Surveillance Consuming More Memory & Storage





#### Micron Leads in Enabling Intelligence at the Edge



Industrial-grade storage for professional IP surveillance & IoT applications



Superior endurance compared to retail surveillance cards



Authenta™ Technology for IoT security

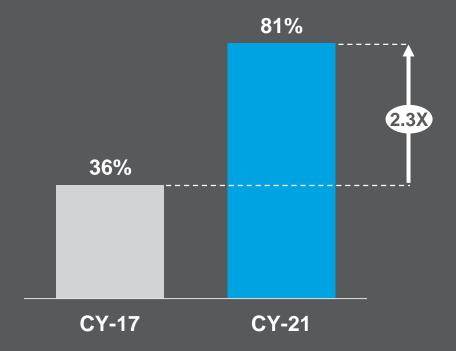


Multi Chip Package: 2x performance in 90% of footprint

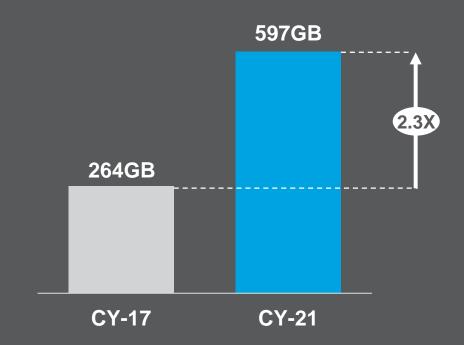


#### Client SSD: Compelling Value Drives Adoption, Average Capacity

#### Market Adoption SSD Penetration %

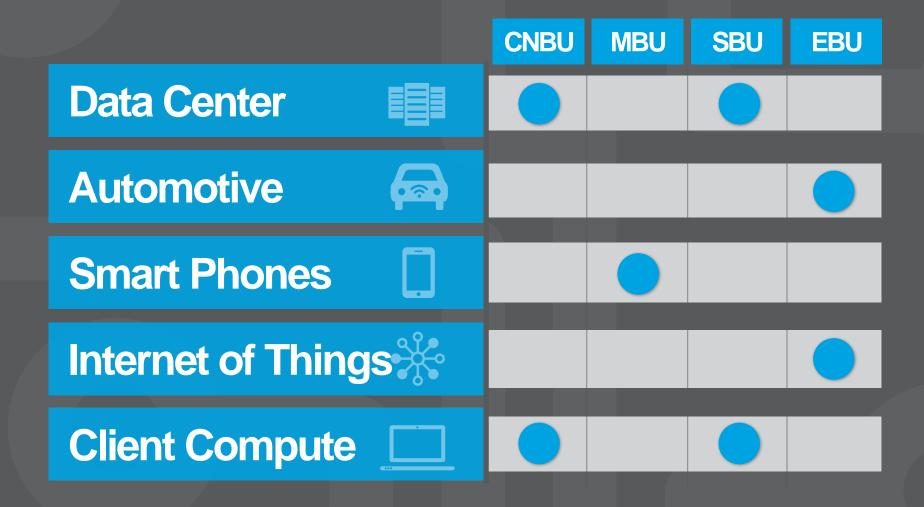


#### Average Capacity per unit



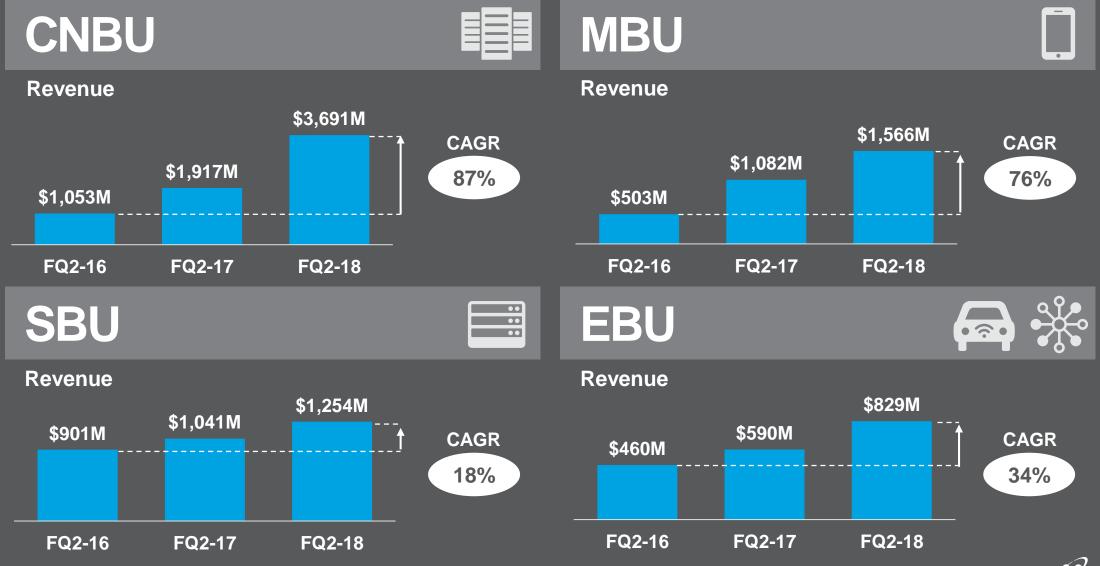


#### **Growth Drivers & Business Units**





#### Improving Execution Drives Record Financial Results



# Executing a Winning Strategy



**Cost Competitiveness** 



**Execution Excellence** 



High-Value Solutions



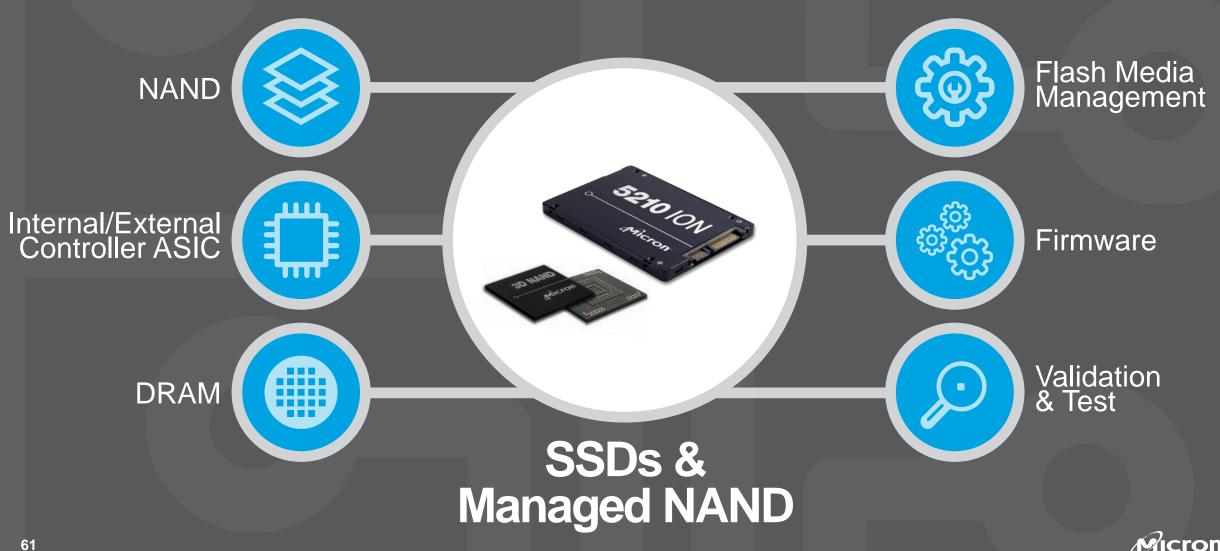
Customer Focus



Talent and Culture



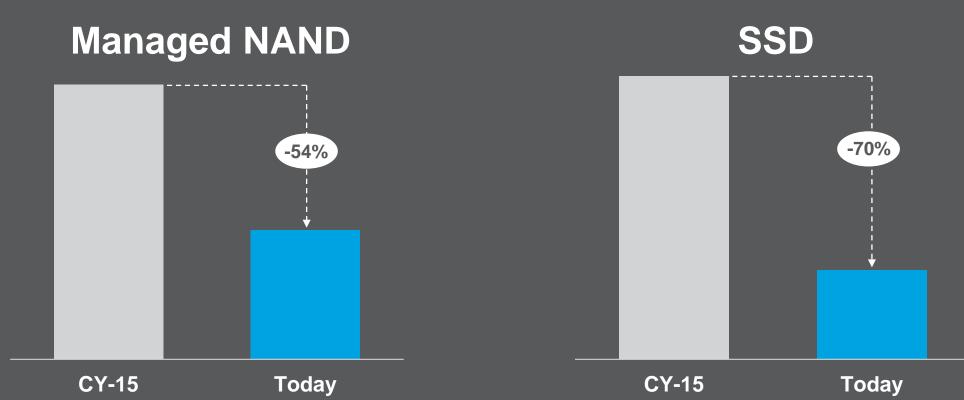
#### **Product Excellence: Silicon to System Solutions**



#### **Accelerating Time to Market**

Improving Our Engineering Capabilities to Deliver Leadership in High-Value Solutions

#### Time from Component to High-Value Solution Availability





# Executing a Winning Strategy



Cost Competitiveness



**Execution** Excellence



Solutions



Customer **Focus** 



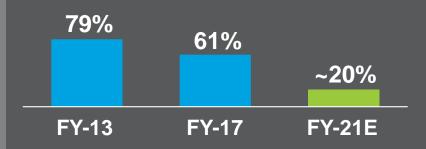
**Talent and** Culture



#### NAND Leadership

Growing Solution Sales

### Average Component Bits as % of Trade NAND

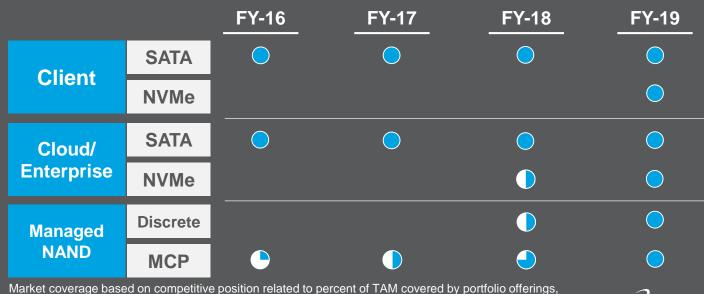


- Fewer discrete component sales
- Increased SSD, Managed NAND share
- QLC innovation



High-Value Solutions

NAND Market Coverage



Market coverage based on competitive position related to percent of TAM covered by portfolio offering product maturity and competitiveness; Source: Micron



# DRAM & Emerging Memory Leadership

#### High Performance

- Leading graphics (GDDR) performance
- Extending GDDR to Automotive, Networking, Al
- High Bandwidth Memory (HBM) in development

## Long Life Cycle Markets

- Automotive #1 share
- Networking #1 share



High-Value Solutions

#### Mobile

- LPDDR4X: lowest power in industry
- First to market with 12Gb die

#### Cloud

- 8X growth in Cloud DRAM revenue (FQ2-16 to FQ2-18)
- Leading transition to Persistent Memory with NV-DIMM-N

Future: 3D XPoint & Emerging Memory Solutions



# Executing a Winning Strategy



**Cost Competitiveness** 



**Execution Excellence** 



High-Value Solutions



Customer Focus



Talent and Culture



#### Unique Technology Advantages

#### **Industry Leading Excellence**

1 of 6 major NAND companies

1 of 3 major DRAM companies

1 of 2 3D XPoint companies

THE ONLY company in the world with all three technologies





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## The New Micron

Secular Growth Drivers

Portfolio Transformation **Execution Excellence** 

World Class Talent Financial Performance





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## The New Micron Technology Leadership

Scott DeBoer
EVP Technology Development



## Technology Leadership

#### Innovation

Building on 40 years of industry technology firsts

#### **Execution**

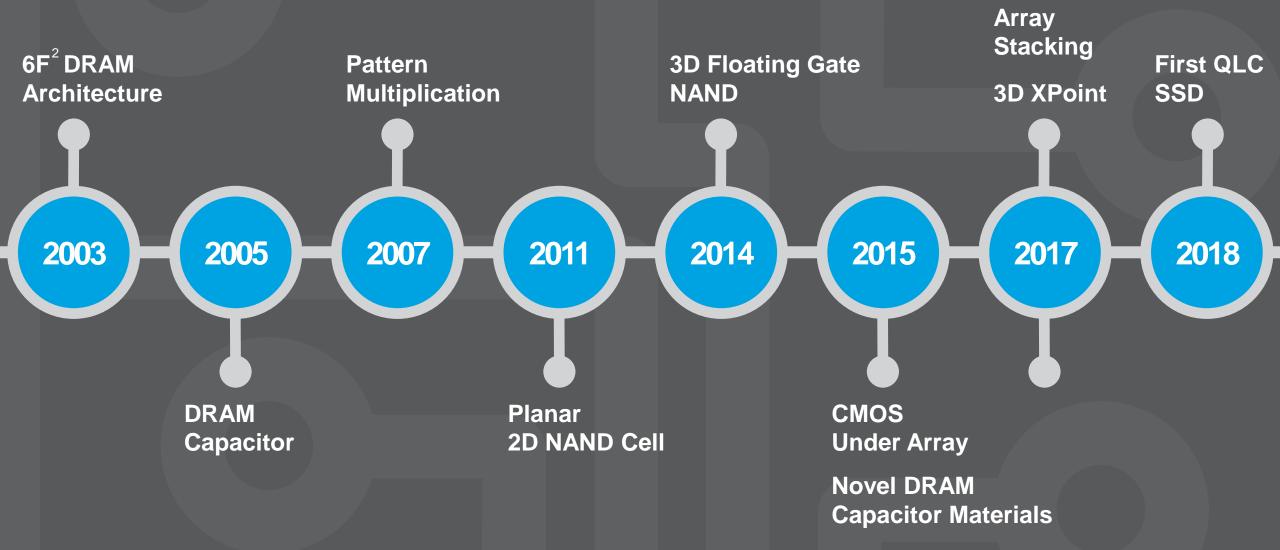
Technology delivery supporting market requirements

#### Acceleration

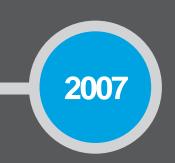
Driving leading edge technologies to market



#### A Legacy of Industry Firsts

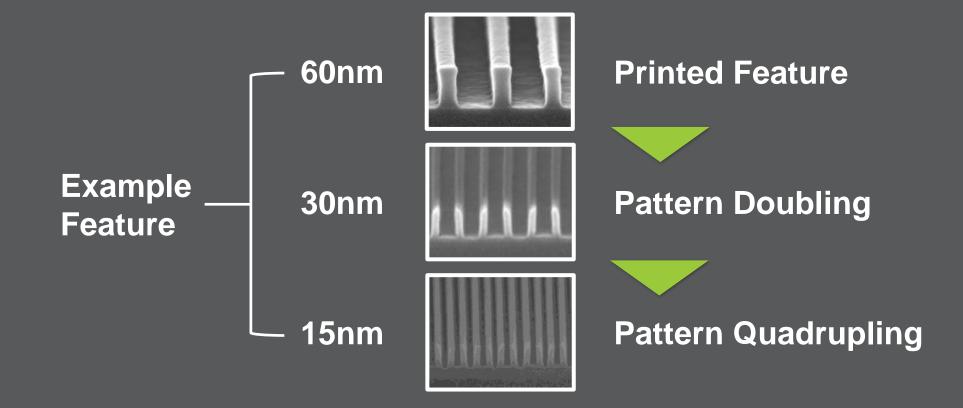






#### Pattern Multiplication

#### Revolutionized Industry's Ability to Scale Below 40nm







# CMOS Under Array (CUA) Took 3D Technology to Next Level

#### **NAND** with CUA

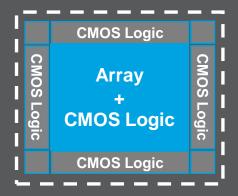
Metal

Array Structure

**CMOS Circuits** 



# Top Down View CMOS under Array







# CMOS Under Array (CUA) Took 3D Technology to Next Level

#### **NAND** with CUA

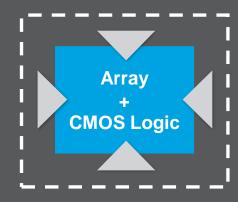
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# Top Down View CMOS under Array

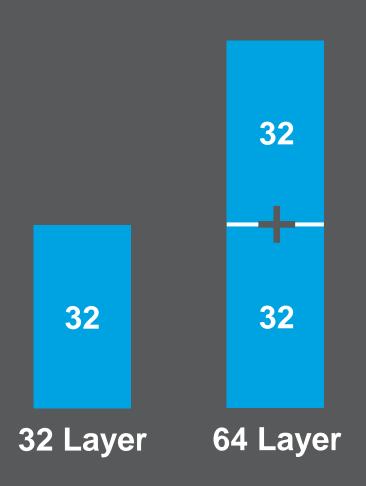


Enabled Cost Reduction & Performance Improvements





# Array Stacking Paved the Way for 3D NAND Scaling



- Stacked two high yielding arrays
- Relaxed technology & equipment requirements
- Accelerated NAND technology roadmap

### **CY-17: Outstanding Technology Progress**

**CY-16 CY-17 DRAM Improved Competitive Position 20nm** 1Xnm **NAND** Achieved Technology Leadership

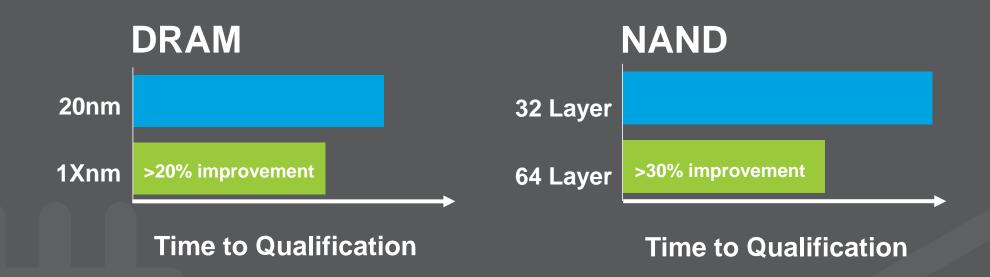
32 Layer

64 Layer



### **CY-17: Outstanding Technology Progress**

#### **Accelerated Time to Qualification**





## Global Technology Model Drives Strong Results

#### **Expanded Capability to Accelerate Disruptive Innovation**



Core R&D Idaho, U.S.

#### **Strengthened Development Capability at Manufacturing Locations**









**DRAM**Japan



3D XPoint Utah, U.S.



#### A Portfolio of Feature Rich Technologies

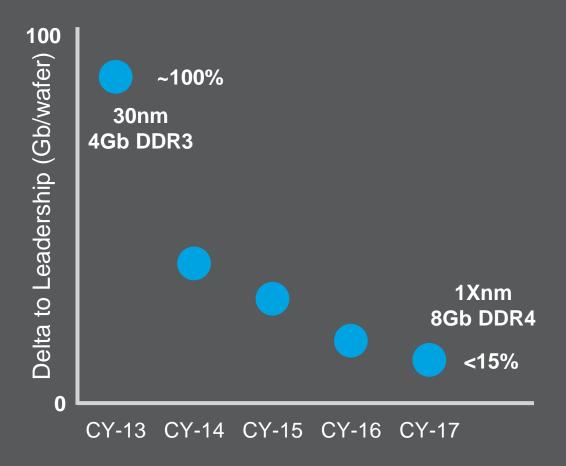
**DRAM NAND** Internet of **Data Center Automotive** Mobile Things & Client 3D XPoint



#### DRAM: Closing the Competitive Gap

- Relentless focus on execution
- Validating development model
- Gaining future DRAM momentum
- Leading in quality & performance

#### DRAM Technology Capability Delta

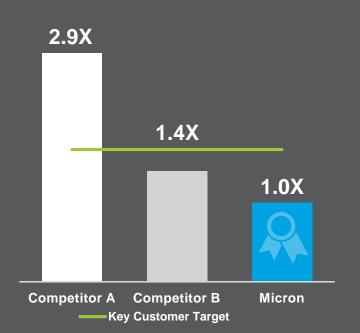




#### **DRAM: Delivering What Customers Want**

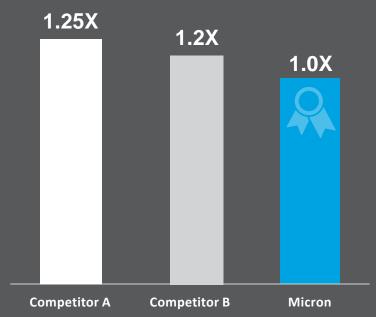
# **Quality Leadership**

**Defects per Million** 

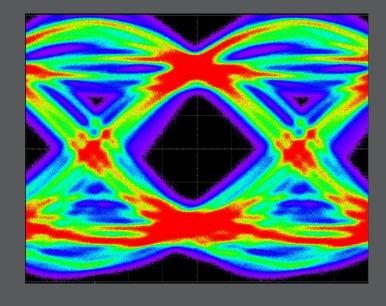


# Low Power Leadership

**In-Use Power Consumption** 



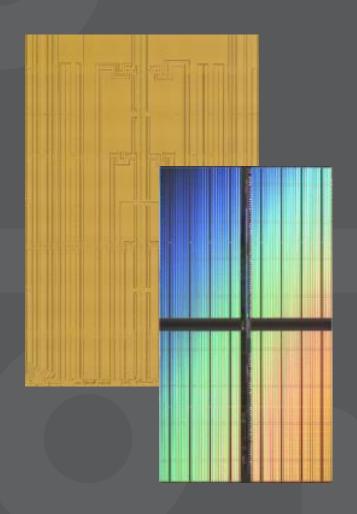
#### Bandwidth Leadership



Fastest Graphics bandwidth (20 Gbps/pin) demonstrated at DesignCon 2018



### 1Ynm DRAM: On Schedule & On Target



# 1Ynm

- Rapid progress on 1Ynm yield ramp
- 1Ynm output in 2H CY-18
- Strengthening competitive position across multiple markets



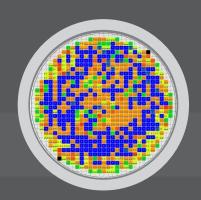
#### DRAM: Confidence in Future Scaling

Customer 1 Z Process

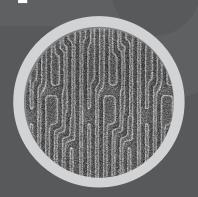
Qualification

1 α Technology Integration







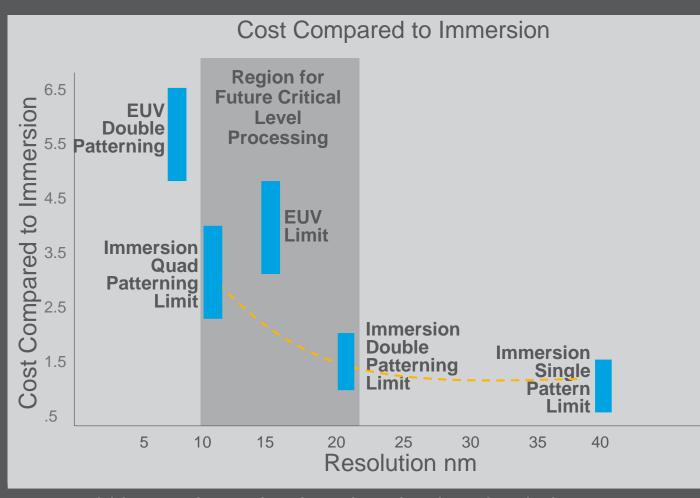


- Clear & confident technology roadmap
- Parallel progress on multiple nodes
- Strengthening competitive position with 1Z, 1a and 1B
- Extreme Ultra Violet Lithography (EUV) not required for scaling



## DRAM: Lithography Optimizing Process Capability & Cost

- Competitive lithography strength
- DRAM technology roadmap ideally enabled with pattern multiplication
- Beyond  $1\beta$  node, EUV potentially beneficial



Lithography technology breakpoints & relative costs



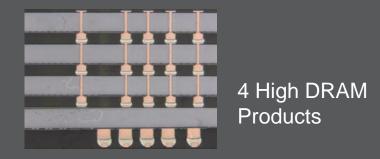
### DRAM: Continued Advancement in Stacking Technologies

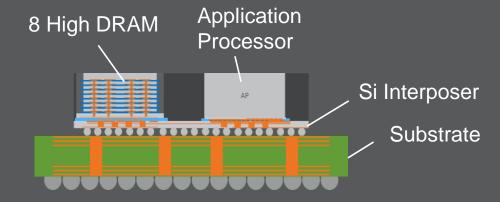
#### DDR4/5 High Performance

- Enterprise & cloud server, networking & automotive applications
- Through Silicon Via (TSV) enabled technology
- DDR4 products customer qualified

#### High Bandwidth Memory (HBM)

- Al, machine learning, networking & graphics applications
- TSV enabled technology
- HBM products under development

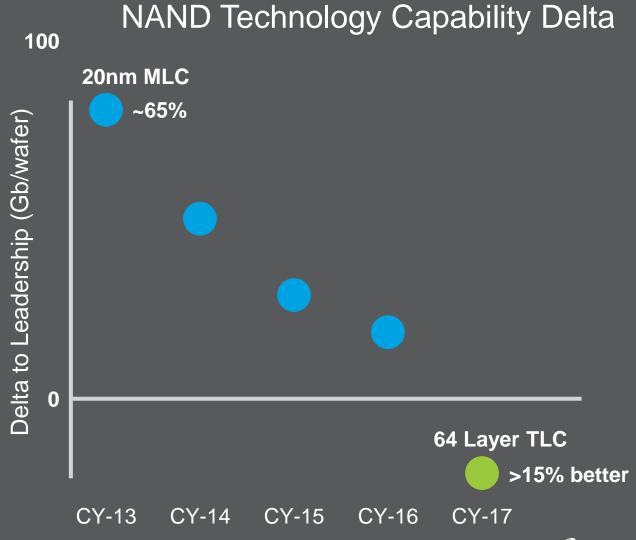






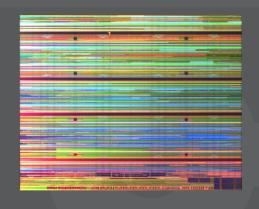
#### NAND: Leading the Industry in Technology Transitions

- Rapid progress through 3D NAND conversion
- Successful TLC transition
- Innovation enables leadership

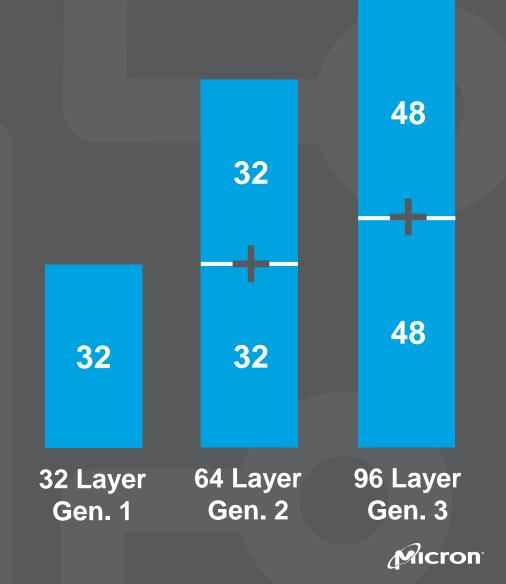


## 3D NAND: 96 Layer Creates Competitive Advantage

- 50% increase in layers
- Sets write bandwidth benchmarks
- Array stacking for the 2nd time
- Uses CMOS under array for the 3rd time



World's smallest 512Gb die













# 4th Gen 3D NAND: Optimized for Performance & Scaling

#### Micron Developed

Micron's solely developing Replacement Gate (RG) technology

#### **Uniquely Designed**

Incorporates unique combination of CMOS under array with novel charge trap cell technology

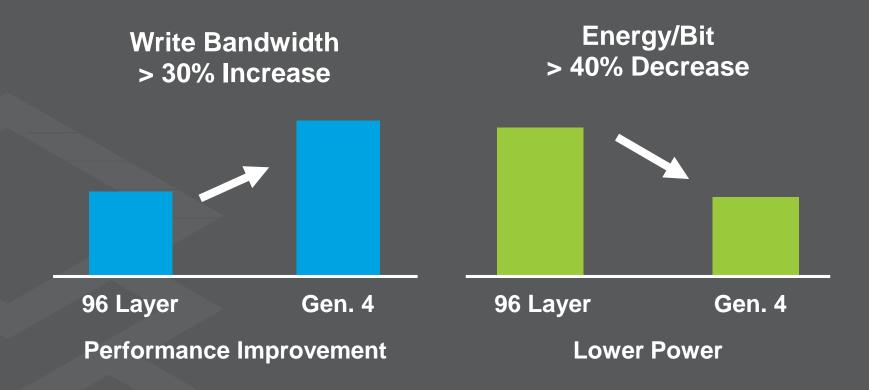
#### **Industry Leading**

Targets industry-leading die size & performance



## 4<sup>th</sup> Gen 3D NAND: Optimized for Performance & Scaling

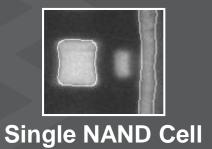
# Significant Improvements Optimized To Meet Future Needs Of Multiple End Markets

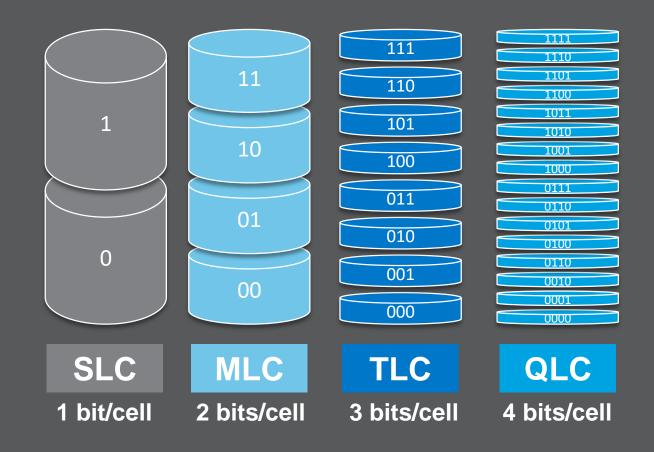




## NAND: Leading the Industry in 4 Bits per Cell (QLC)

- First 64 Layer QLC (4 bits/cell)SSD solution
- Industry's first 1Tb die
- Achieves 33% density increase over TLC

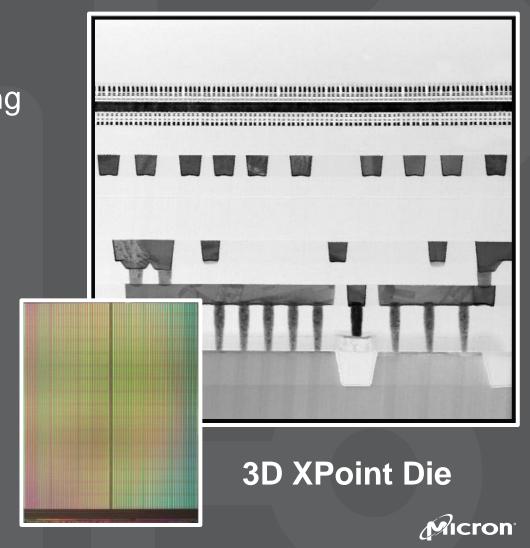




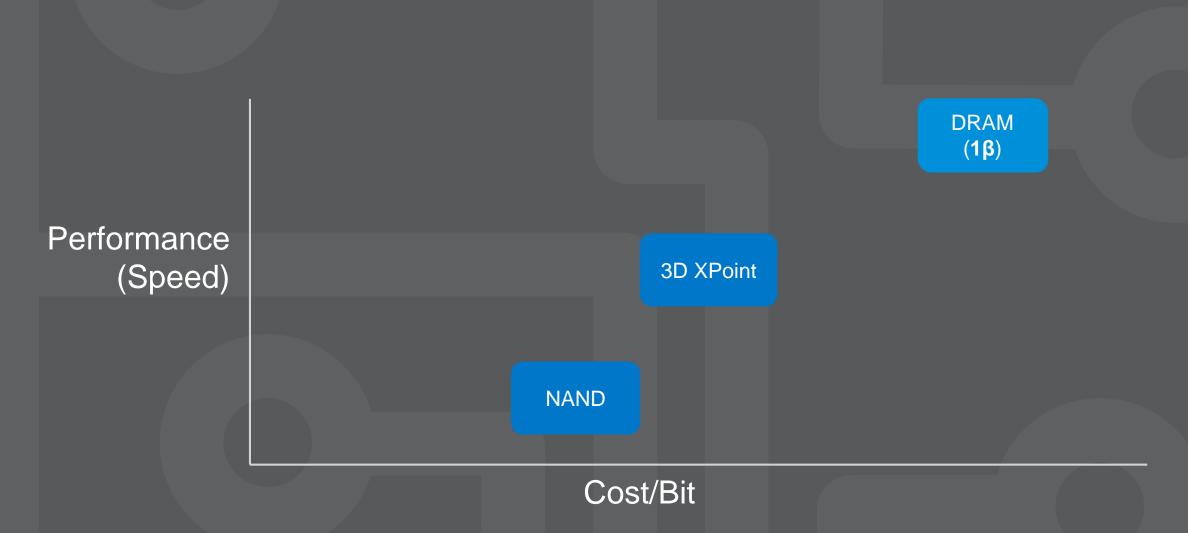


#### 3D XPoint Memory: First Commercial Storage Class Memory

- Second generation introduced to manufacturing
- Combines high performance, high density, & non-volatility
- CMOS under Array technology
- Breakthroughs will continue to enable broader market segments

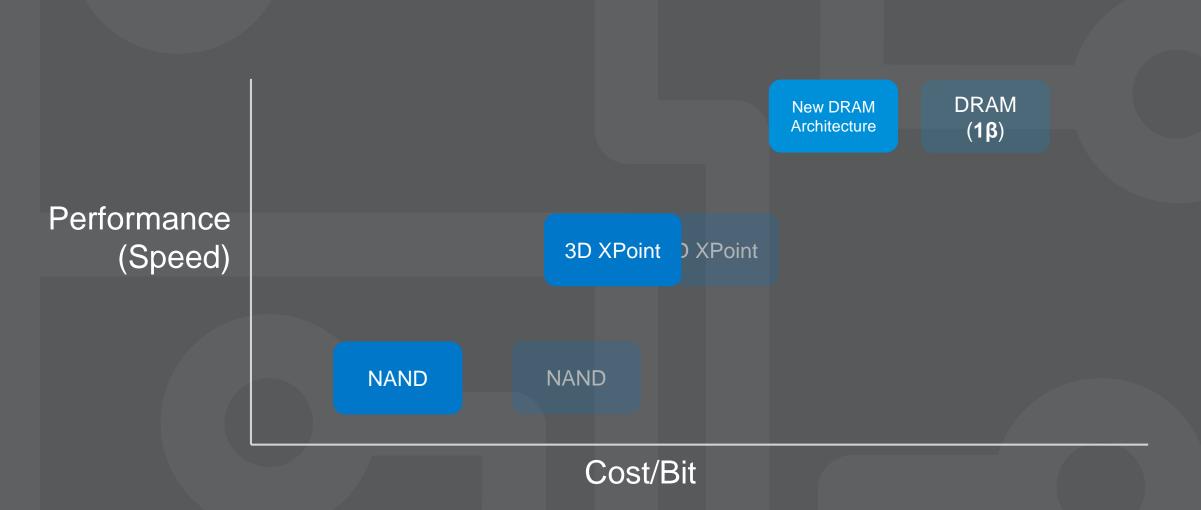


## **Technology Scaling Continues Despite Complexity**



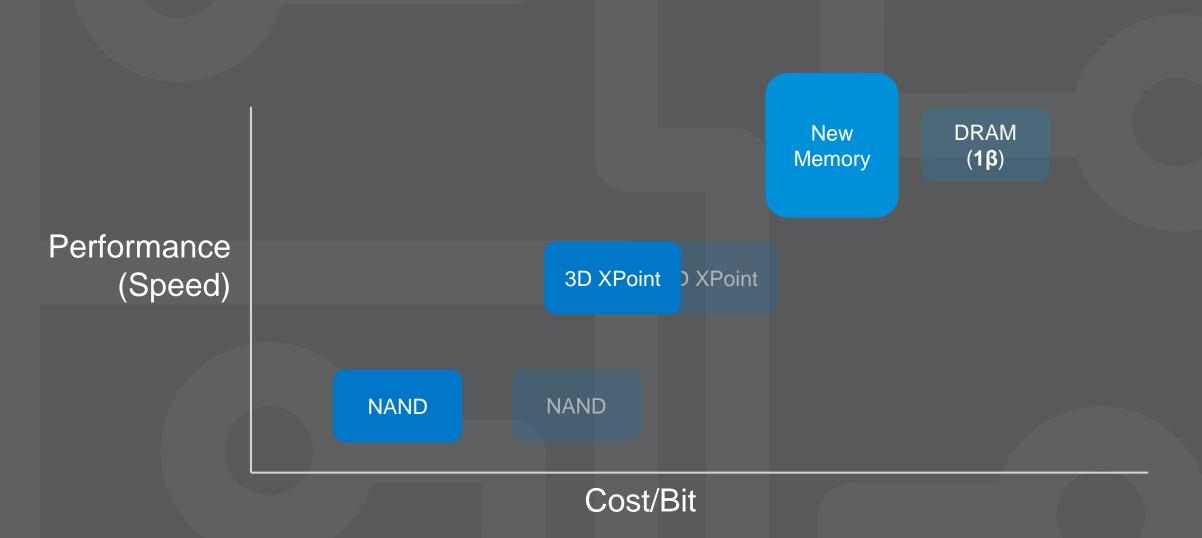


## Technology Scaling Continues Despite Complexity





## Technology Scaling Continues Despite Complexity









# The New Micron

#### **Innovation**

Building on a 40-year history

#### **Core Strength**

Competitive progress & optimized model

#### **Acceleration**

Sense of urgency for future execution

#### **Future**

Driving new memory technology leadership





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# The New Micron Operational Excellence

Manish Bhatia EVP Global Operations







# Centers of Excellence

Innovation Deployed at Scale



#### DRAM Centers of Excellence

Efficiently Deploying Advanced Technology at Scale







# Japan

Technology development Pilot line Wafer manufacturing

## **Taiwan**

Wafer manufacturing
Component assembly & test
Advanced packaging development

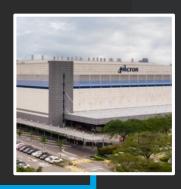
## China

Component assembly & test Module manufacturing



#### NAND Centers of Excellence

Vertical Integration From Wafer to SSD





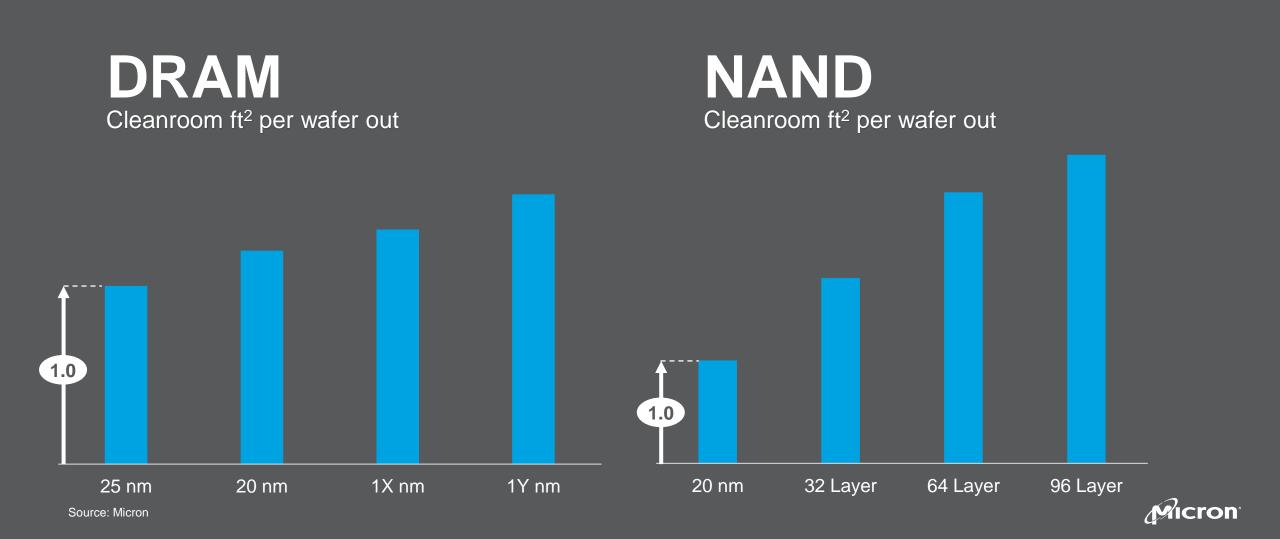
# Singapore & Malaysia

Technology development
Pilot line
Wafer manufacturing
Component assembly & test
SSD manufacturing



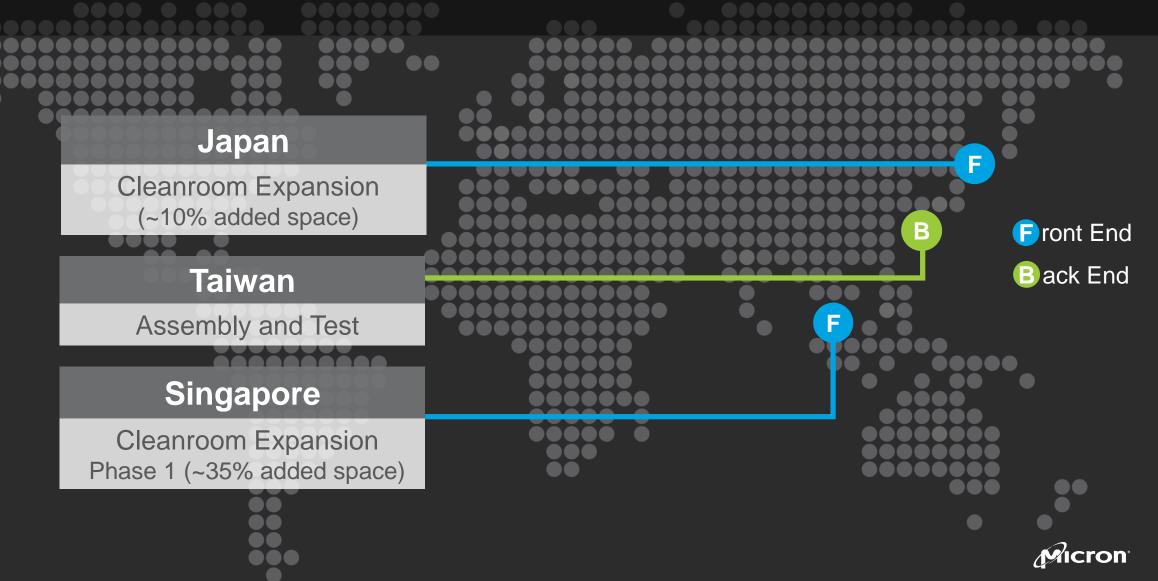
### Advanced Technology Nodes Require More Space

More Cleanroom Space is Needed for Each Technology Node to Maintain Wafer Output



#### **Current Site Expansions**

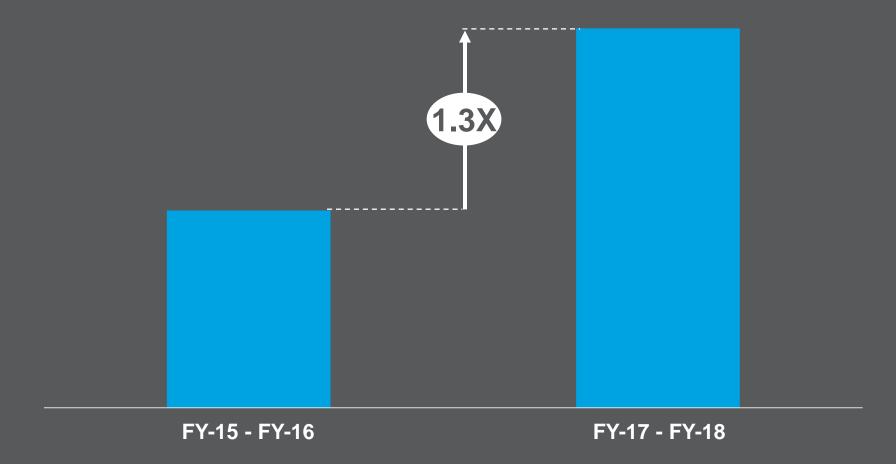
Continued Scale Up of Existing Sites to Maintain Wafer Capacity & Improve Cost Competitiveness



## **Growing Capital Requirements Beyond Fab**

Need for Capital Expenditures Outside Wafer Fab Equipment Have Grown

Assembly & Test, Technology Development, IT, Other CapEx Spending



# Supply Growth Projections

Industry & Micron Supply Growth in a Healthy Range

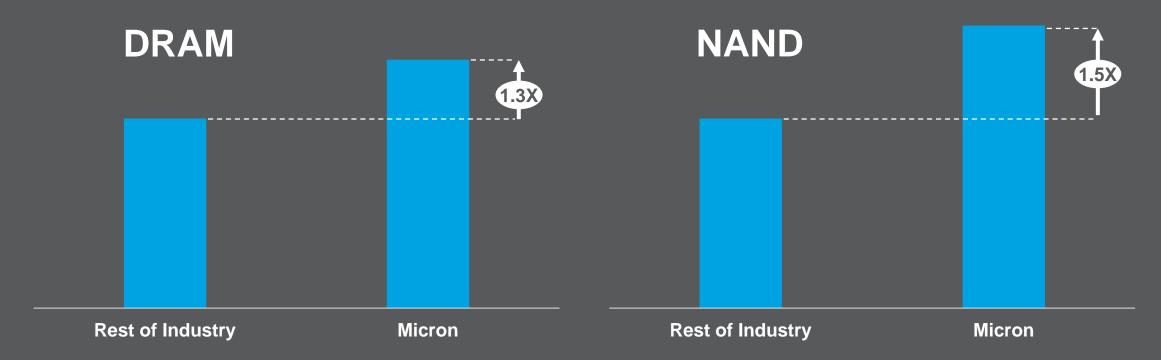
DRAM		NAND	
	CY-18		CY-18
Industry	Approximately 20%	Industry	40 – 45%
Micron	In-line with industry  On track for 1X bit output cross-over by end of CY-18	Micron	Somewhat above industry  Achieved 64 layer bit output  cross-over in FQ3-18



## **Faster Technology Deployment**

Gains in Bit-per-Wafer Outpacing Competitors

Two Year Blended Bit-per-Wafer Growth Rate for CY-16 to CY-17

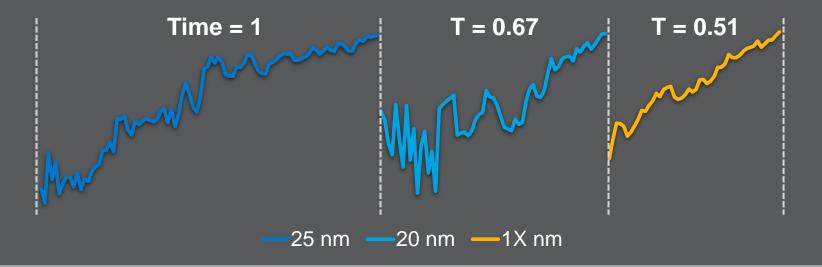




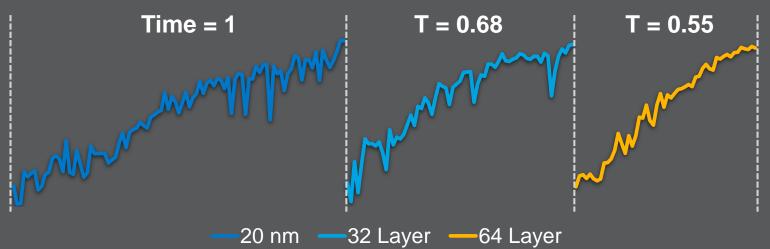
#### **Faster Yield Ramps**

Time to Mature Yield Reduced by Half



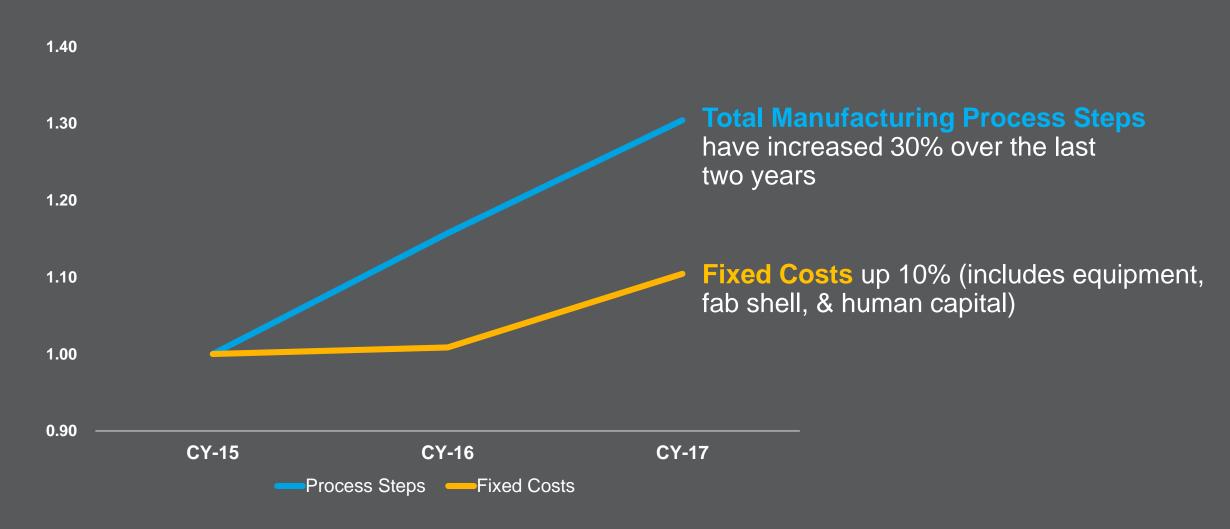


# **NAND**



#### **Greater Economies of Scale**

Fab Productivity Up Across Existing Footprint

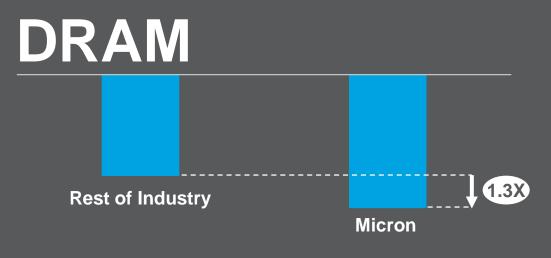


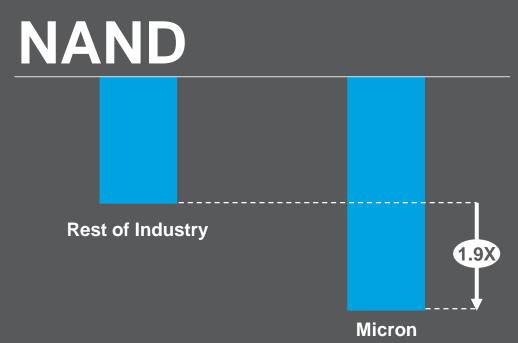


#### Structural Improvement in Cost Competitiveness

Reducing Cost Faster than the Competition

Two Year Blended COGS-Per-Bit Reduction for CY-16 to CY-17





#### **DRAM Drivers**

- Increased volume on advanced nodes
- Higher capital productivity
- Faster yield ramps

#### **NAND Drivers**

- Industry leading 3D NAND technology
- Conversion to majority TLC mix
- Faster yield ramps



#### **Dedicated Facilities for Specialized Products**

**Utah**3D XPoint





#### Virginia

Long Life Cycle Products NAND, NOR, DRAM



#### High-Value Solutions Require High-Quality Memory

Micron Provides Differentiated Value to Our Customers

## Commitment to Quality



1st memory supplier to earn International Automotive Task Force quality certification



Virginia

1st memory
supplier with a
fab dedicated to
legacy products

#### **Business Success**

**Leadership** in the most demanding markets

**Highest** share in automotive memory

**Highest** share in networking memory

#### Recognition

**Customer Quality Rankings** 



2.

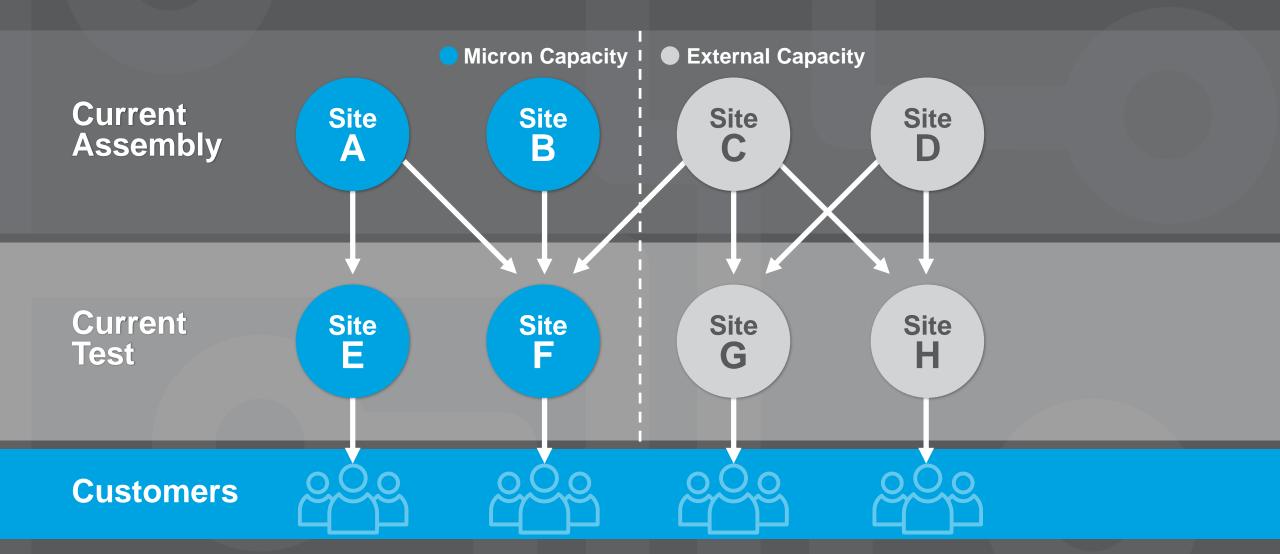
3.

4.

**Two-thirds** of our customers rank us **Number One** in quality

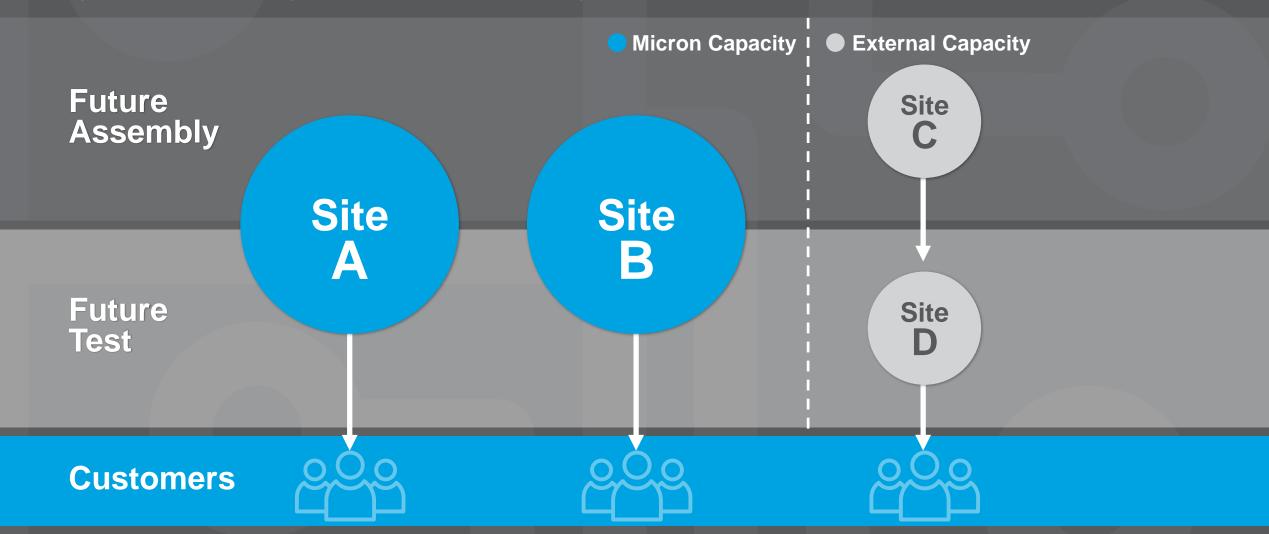


#### Streamlining Assembly & Test Network



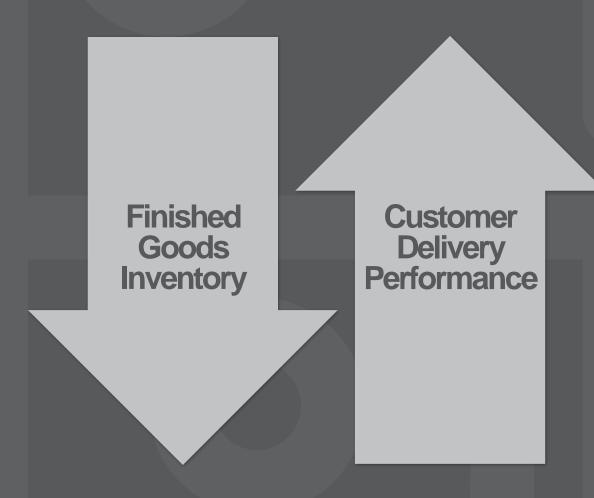
#### Streamlining Assembly & Test Network

Larger, Vertically Integrated Sites Increases Agility & Cost Competitiveness



#### Responsive Supply Chain

Reducing Inventory AND Improving Customer Service



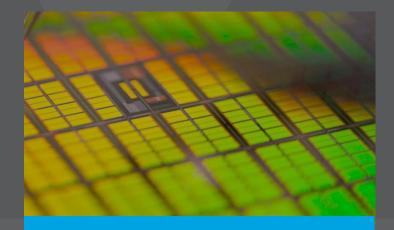
## Transforming our supply chain through:

- Assembly & test agility
- Predictive analytics
- Advanced optimization systems



#### IT Enabling Micron's Transformation

Applying Data Analytics to Improve Performance



#### **Time to Market**

- Device simulation
- Machine learning for defect detection
- Big data for yield improvement



#### **Manufacturing Costs**

- Factory automation
- Smart manufacturing
- Computer vision



### **Business Effectiveness**

- Unified business platforms
- Algorithmic business processes

**Speed** 

Precision

Efficiency

Micron

#### **Operations Transformation**

Focused on Improving Financial Performance

Fab

- Higher capital efficiency
- Faster yield learning

Assembly & Test

- More captive capacity
- Streamlined network

Supply Chain Planning

- Inventory optimization
- Cycle time reduction

Free Cash Flow







## The New Micron

#### Scale

Efficient technology deployment at scale

#### Cost

Cost competitiveness is foundational

#### Quality

High quality enables high value

#### Speed

Industry's most responsive supply chain





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# The New Micron Driving Profitability, Creating Value

**Dave Zinsner**Chief Financial Officer



## Financial Excellence

#### **Transformation**

Diversifying markets & products for greater revenue opportunity

#### **Execution**

Improving profitability & free cash flow through industry cycles

#### **Value Creation**

Driving greater returns & enhanced shareholder value

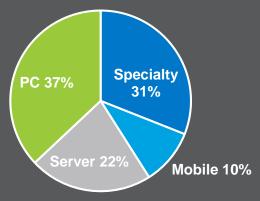


#### **Broad Demand & Portfolio Drives Diversified Revenue**

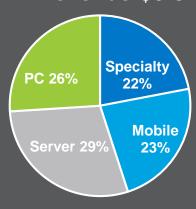
**Driving Greater Revenue Opportunity** 

DRAM

**FY-13** FY Revenue \$4.4B



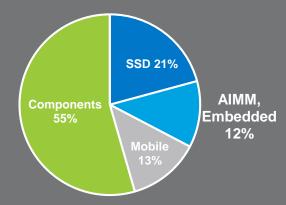
1H FY-18 1H Revenue \$9.8B



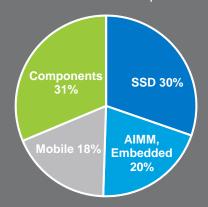
Diversified revenue & exposure across breadth of end markets

**FY-13** FY Revenue \$3.1B





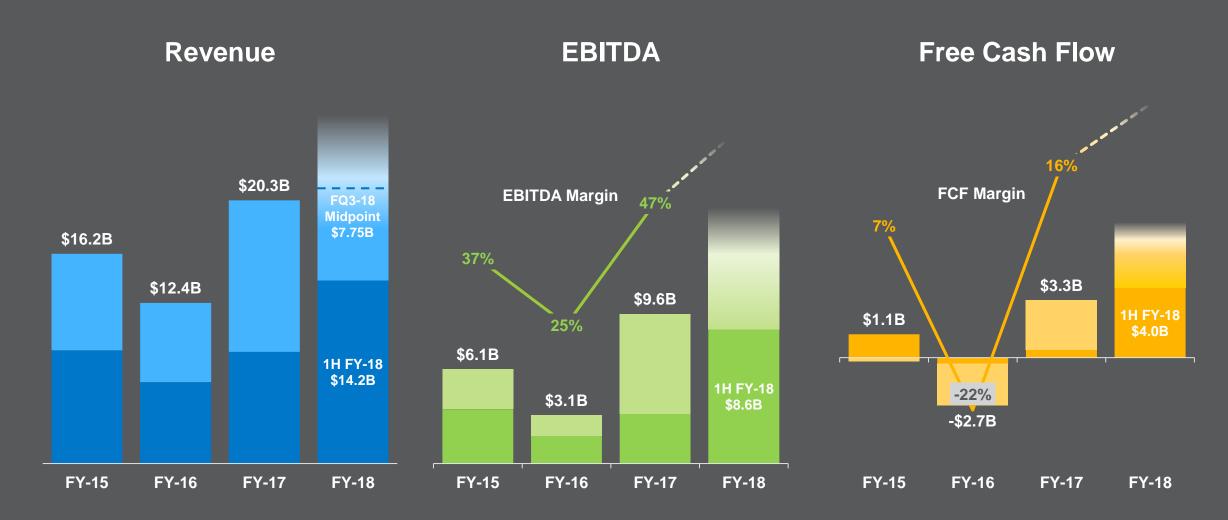
1H FY-18 1H Revenue \$3.7B



**Transitioning sales** toward high value solutions



#### **Execution Driven Financial Improvement**







Source: Micron

#### Our Strong Execution Delivering Structural Operating Profit Gains

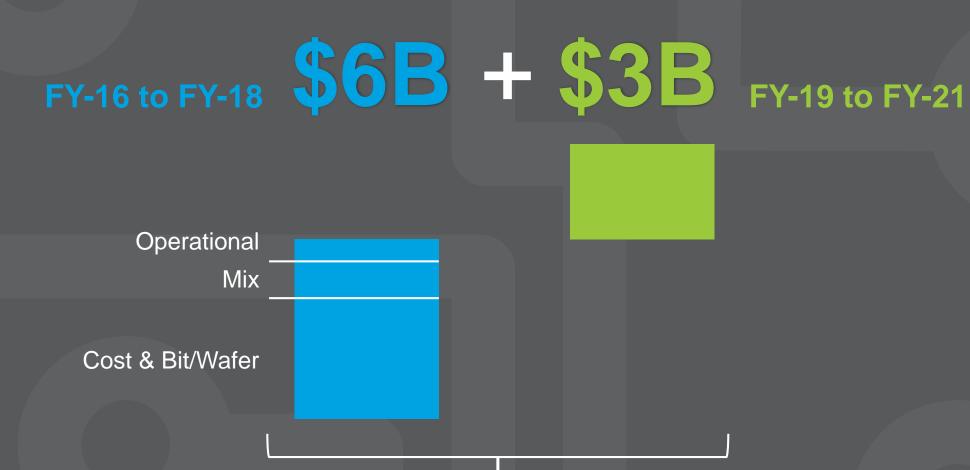
#### **FY-16 to FY-18**

operating improvements → \$6B → \$3B ← planned through FY-21 since FY-16

FY-19 to FY-21



#### **Execution Resulting in Significant Operating Profit Improvement**



- Aggressive & successful node transitions
- Supply chain optimization

- High-value solutions mix increase
- Focus on cost competitiveness

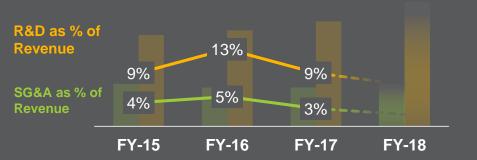


#### Balancing Investments to Fuel Growth & Generate Returns



- Increasing R&D investments in products & solutions, now & in FY-19
- Efficient SG&A spend

#### **Non GAAP Operating Expenses**





#### Balancing Investments to Fuel Growth & Generate Returns

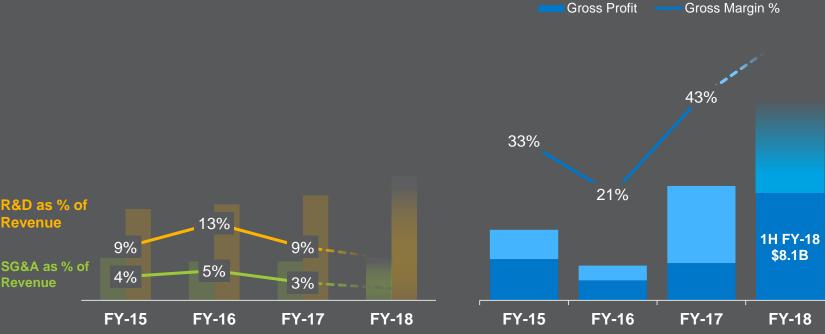
#### Sound Investment Strategy

- Efficient SG&A spend
- Increasing R&D investments in products& solutions, now & in FY-19
- Capital investment in cost competitiveness

- Aggressive & successful node transitions
- Inventory & supply chain optimization
- Focus on high-value solutions

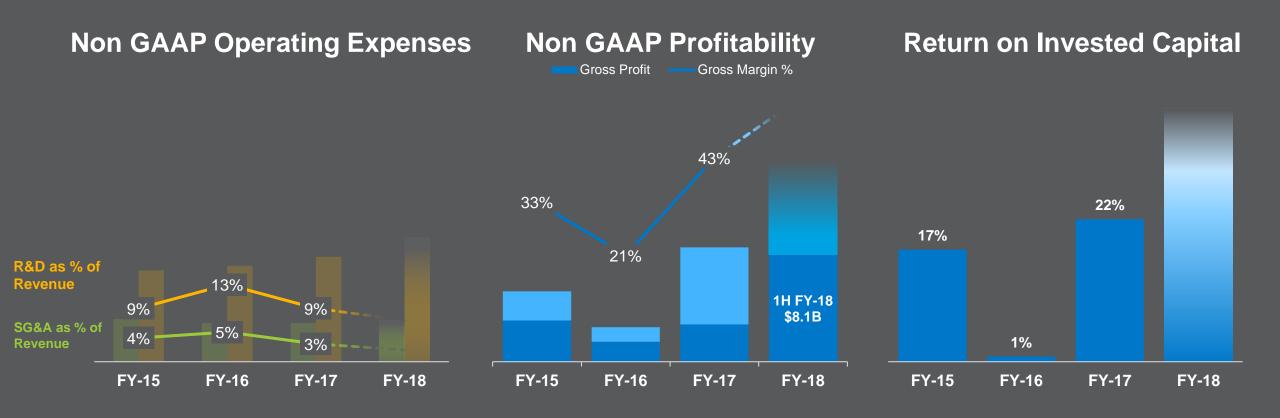
#### Non GAAP Operating Expenses

#### Non GAAP Profitability





#### Balancing Investments to Fuel Growth & Generate Returns





#### Raising FQ3-18 Outlook

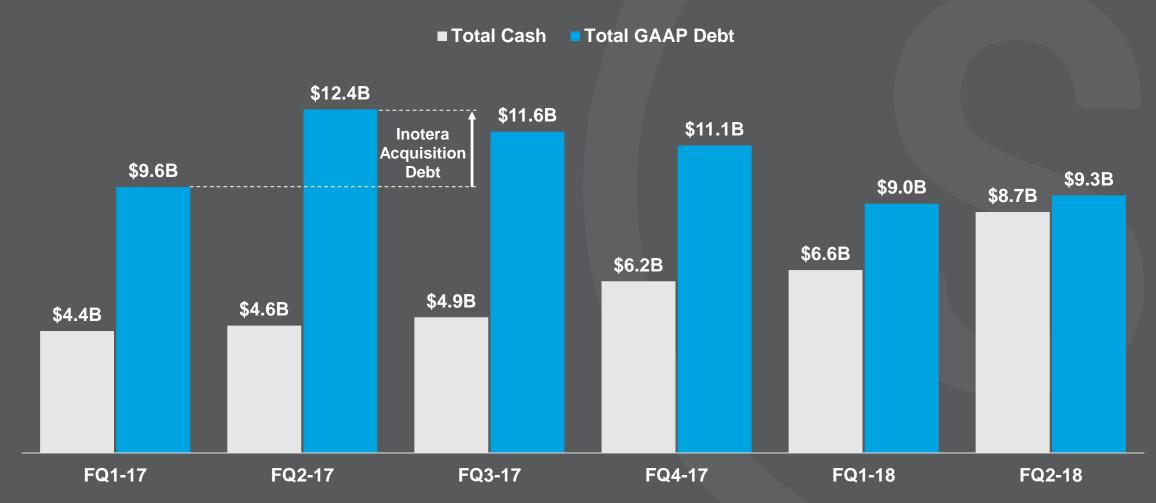
Reflects Consistent Execution & Healthy Industry Environment

	Prior Guidance Range	Revised Guidance Range
Revenue	\$7.2B - \$7.6B	\$7.7B - \$7.8B
Non GAAP EPS	\$2.76 - \$2.90	\$3.12 - \$3.16



#### Successfully Strengthened Our Balance Sheet

Forecast to be Net Cash Positive in 2H FY-18





#### Structurally Improving the Balance Sheet



\$4.7B

~\$1.2B

#### Utilizing >100% of 2H FY-18 FCF:

- Reduces less desirable secured debt
- Deleverages tax efficiently
- Share reduction via convertible debt redemption
- EPS accretive

Debt Reduction Convertible Equity
Cash Settlement

FQ3-18 to date



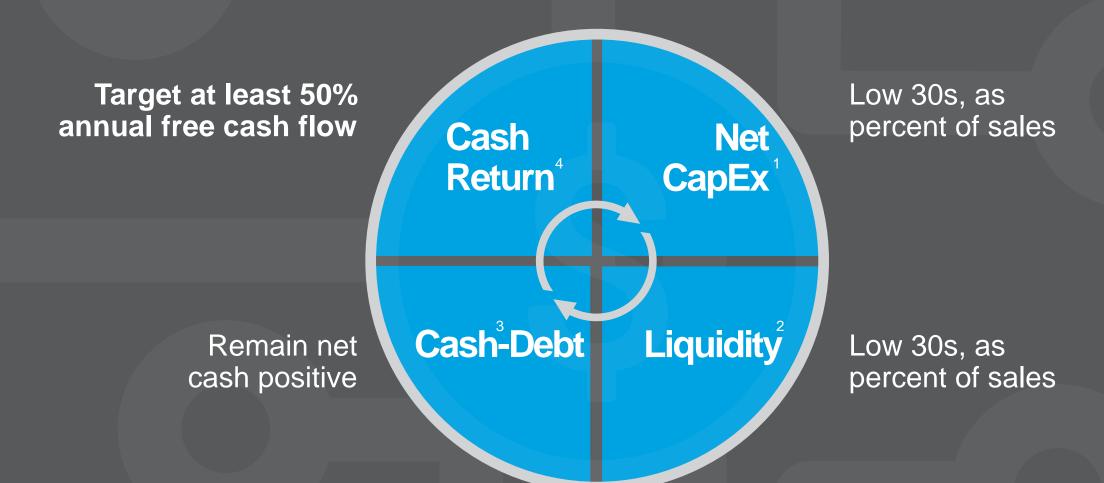
# \$10BIIION share repurchase authorization

### Capital Return Program

- Transitioning from debt reduction to capital returns
- Initiating share repurchase program starting in FY-19
- Targeting at least 50% of annual free cash flow



#### Capital Philosophy to Enhance Shareholder Value



<sup>&</sup>lt;sup>1</sup>CapEx net of partner contributions

<sup>&</sup>lt;sup>3</sup>Cash, short term and long term investments, restricted cash





<sup>&</sup>lt;sup>2</sup>Cash, short term and long term investments, restricted cash and undrawn revolver capacity









Diversifying revenue, high-value solutions, successful cost reductions

### **Execution Driven Performance**

Driving structural improvements for greater earnings power

## Driving Shareholder Value

Shifting capital allocation from de-leveraging to share repurchases





# 2018 Analyst & Investor Event | NY

## Wrap-up

Sanjay Mehrotra
President and CEO



















# Strong Market Demand & Favorable Industry Dynamics

- Data Economy driving secular growth in memory & storage
- Industry supply moderating in a healthy range
- Strongest ever industry fundamentals







## The New Micron

#### Technology Innovation

Executing to deliver performance & cost leadership across the industry's broadest set of technologies

#### Portfolio Transformation

High-value solutions to address demanding customer & market applications

### Operational Excellence

Delivering strong performance to delight customers & enhance financial position











- ROI Focused investments
- Strong execution driving further operating profit improvements
- Introduced \$10B buyback; returning at least 50% of annual free cash flow, starting in FY-19











## The best is yet to come...





2018
Analyst
& Investor
Event | NY

## **Backup Material**



#### Reconciliation of GAAP amounts to Return on Invested Capital

Return on Invested Capital (\$M)	FY 2015	FY 2016	FY 2017	1H FY18 <sup>1</sup> Annualized
Operating Income	2,998	168	5,868	13,328
Equity in net income (loss) of equity method investees	447	25	8	2
Income tax (provision) benefit	-157	-19	-114	-514
Net Operating Profit After-Tax	3,288	174	5,762	12,816
Average Short-Term and Long-Term Debt	6,926	8,626	10,522	10,225
Average Total Equity	12,401	13,084	16,199	23,018
Average Invested Capital	19,327	21,709	26,721	33,243
Return on Invested Capital	17%	1%	22%	39%

<sup>&</sup>lt;sup>1</sup>Annualized ROIC for FY18 based on 1H FY18 net operating profit multiplied by 2 and divided by average capital (FQ2-18 and FQ4-17)



#### **Reconciliation of Non GAAP Measures**

#### Statement of Operations

		FY:	2015			FY 2	016			FY 20	17			1H FY	2018			FQ2 2017				FQ2	2018	
Amounts in \$ millions	GAAP	Adj		Non GAAP	GAAP	Adj		Non GAAP	GAAP	Adj		Non GAAP	GAAP	Adj		Non GAAP	GAAP	Adj		Non GAAP	GAAP	Adj		Non GAAP
Net sales	16,192			16,192	12,399			12,399	20,322			20,322	14,154			14,154	4,648			4,648	7,351			7,351
Cost of goods sold	10,977	-72	A,K	10,905	9,894	-87	A,K	9,807	11,886	-203	A,I,K	11,683	6,137	-48	A,K	6,089	2,944	-85	A,I,K	2,859	3,081	-26	A,K	3,055
Gross margin	5,215	72		5,287	2,505	87		2,592	8,436	203		8,639	8,017	48		8,065	1,704	85		1,789	4,270	26		4,296
Selling, general, and administrative	719	-61	В	658	659	-69	В	590	743	-88	B,K	655	387	-34	В	353	187	-30	B,K	157	196	-16	В	180
Research and development	1,540	-45	C,K	1,495	1,617	-59	C,K	1,558	1,824	-55	C,K	1,769	971	-28	C,K	943	473	-14	С	459	523	-14	С	509
Restructure and asset impairments	3		D		67	-67	D		18	-18	D		13	-13	D		4	-4	D				D	
Other operating (income) expense	-45			-45	-6			-6	-17			-17	-18			-18	-4			-4	-23			-23
Total operating expenses	2,217	-109		2,108	2,337	-195		2,142	2,568	-161		2,407	1,353	-75		1,278	660	-48		612	703	-37		666
Operating income	2,998	181		3,179	168	282		450	5,868	364		6,232	6,664	123		6,787	1,044	133		1,177	3,567	63		3,630
Interest expense, net	-336	138	Е	-198	-395	126	E	-269	-560	125	Е	-435	-162	55	E	-107	-153	31	Е	-122	-61	26	E	-35
Other non-operating income (expense), net	-53	55	F,G,J,K		-54	23	F,G,J	-31	-112	112	F,G,J,K		-257	257	F,G,K		34	-34	G,J,K		-53	53	F,G,K	
	2,609	374		2,983	-281	431		150	5,196	601		5,797	6,245	435		6,680	925	130		1,055	3,453	142		3,595
Income tax (provision) benefit	-157	42	М	-115	-19	85	M	66	-114	-59	М	-173	-257	67	L,M	-190	-38		М	-31	-143	44	L,M	-99
Equity in net income (loss) of equity method investees	447	-39	D,H	408	25	33	D,H	58	8	17	D,H	25												
Net income	2,899	377		3,276	-275	549		274	5,090	559		5,649	5,989	502		6,491	894	137		1,031	3,311	186		3,497
Net income attributable to noncontrolling interests	0				-1				-1															
Net income attributable to Micron	2,899	377		3,276	-276	549		273	5,089	559		5,648	5,987	502		6,489	894	137		1,031	3,309	186		3,495

See the following slide for detail of adjustments



#### **Reconciliation of Non GAAP Measures**

#### Statement of Operations - Continued

	Amounts in \$ millions	FY 2015	FY 2016	FY 2017	1H FY 18	FQ2 2017	FQ2 2018
Α	Stock-based compensation – cost of goods sold	64	76	88	42	23	22
В	Stock-based compensation – sales, general, and administrative	61	66	75	34	18	16
С	Stock-based compensation – research and development	42	49	52	27	14	14
D	Restructure and asset impairments	13	92	34	13	4	7
Ε	Amortization of debt discount and other costs	138	126	125	55	31	26
F	Loss on debt repurchases and conversions	49	4	100	218	0	23
G	(Gain) loss from changes in currency exchange rates	27	24	74	36	28	27
Н	Non-cash taxes from Inotera	-49	8	1	0	0	0
1	Flow-through of inventory step up	0	0	107	0	60	0
J	(Gain) Loss on acquisition	-21	-5	-71	0	-71	0
Κ	Other	11	24	33	10	23	7
L	Impact of U.S. income tax reform	0	0	0	131	0	131
М	Estimated tax effects of above and non-cash changes in net deferred income taxes	42	85	-59	-64	7	-87
	Total	377	549	559	502	137	186



#### **Reconciliation of Non GAAP Measures**

EBITDA (amounts in \$ millions)	FY 2015	FY 2016	FY 2017	1H FY 18
Net income (loss)	2,899	-275	5,090	5,989
Interest expense, net	336	395	560	162
Provision (benefit) for income taxes	157	19	114	257
Depreciation and amortization of property, equipment and				
intangibles	2,667	2,980	3,861	2,241
EBITDA	6,059	3,119	9,625	8,649

Free Cash Flow (amounts in \$ millions)	FY 2015	FY 2016	FY 2017	1H FY 18	FQ2 2017	FQ2 2018
Net cash provided by operating activities	5,208	3,168	8,153	7,984	1,405	4,348
Expenditures for property, plant, and equipment	-4,021	-5,817	-4,734	-4,217	-1,164	-2,261
Payments for equipment purchase contracts	-95	-46	-519	-153	-9	-20
Payments attributed to intercompany balances with Inotera	0	0	361	0	361	0
Net partner contributions	0	0	5	336	-13	167
Free Cash Flow	1,092	-2,695	3,266	3,950	580	2,234



