
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d)
of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): **May 8, 2019**



INTEL CORPORATION

(Exact name of registrant as specified in its charter)

Delaware
(State or Other Jurisdiction
of Incorporation)

000-06217
(Commission
File Number)

94-1672743
(IRS Employer
Identification No.)

2200 Mission College Blvd., Santa Clara, California
(Address of principal executive offices)

95054-1549
(Zip Code)

Registrant's telephone number, including area code: **(408) 765-8080**

Not Applicable
(Former name or former address, if changed since last report.)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common stock, \$0.001 par value	INTC	The Nasdaq Global Select Market

Item 7.01 Regulation FD Disclosure.

On May 8, 2019, Intel Corporation ("Intel") held a publicly available webcast meeting for investors and the general public (the "Investor Meeting"). At the Investor Meeting, presentations discussing Intel's strategy, financial performance, and product roadmap, among other topics, were given by (1) Robert H. Swan, Chief Executive Officer; (2) Venkata S.M. ("Murthy") Renduchintala, Executive Vice President; Group President, Technology, Systems Architecture and Client Group, and Chief Engineering Officer; (3) Navin Shenoy, Executive Vice President; General Manager, Data Center Group; (4) Gregory M. Bryant, Senior Vice President; General Manager, Client Computing Group; and (5) George S. Davis, Executive Vice President; Chief Financial Officer. These presentations are attached as exhibits to this report.

These presentations and a recording of the webcast may also be found on Intel's Investor Relations website, www.intc.com.

The presentations contain forward-looking statements relating to Intel's financial plan as well as other statements that refer to future plans and expectations, including with respect to Intel's future technologies and the expected benefits of such technologies. Such statements involve a number of risks and uncertainties. Words such as "anticipates," "expects," "intends," "goals," "plans," "believes," "seeks," "estimates," "continues," "may," "will," "would," "should," "could," and variations of such words and similar expressions are intended to identify forward-looking statements. Statements that refer to or are based on estimates, forecasts, projections, uncertain events or assumptions, including statements relating to total addressable market (TAM) or market opportunity, future products and the expected availability and benefits of such products, and anticipated trends in our businesses or the markets relevant to them, also identify forward-looking statements. Such statements are based on current expectations and involve many risks and uncertainties that could cause actual results to differ materially from those expressed or implied in these forward-looking statements. Important factors that could cause actual results to differ materially from the company's expectations are set forth in Intel's most recent earnings release dated April 25, 2019, which is included as an exhibit to Intel's Form 8-K furnished to the Securities and Exchange Commission ("SEC") on such date. Additional information regarding these and other factors that could affect Intel's results is included in Intel's Annual Report on Form 10-K for the year ended December 29, 2018, filed with the SEC on February 1, 2019.

The information in Item 7.01 of this report is furnished and shall not be treated as filed for purposes of the Securities Exchange Act of 1934, as amended.

Item 9.01 Financial Statements and Exhibits.**(d) Exhibits.**

The following exhibits are furnished as part of this report:

<u>Exhibit Number</u>	<u>Description</u>
99.1	Investor Meeting Presentation on May 8, 2019 by Robert H. Swan
99.2	Investor Meeting Presentation on May 8, 2019 by Venkata S.M. ("Murthy") Renduchintala
99.3	Investor Meeting Presentation on May 8, 2019 by Navin Shenoy
99.4	Investor Meeting Presentation on May 8, 2019 by Gregory M. Bryant
99.5	Investor Meeting Presentation on May 8, 2019 by George S. Davis

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Date: May 9, 2019

INTEL CORPORATION
(Registrant)

/s/ Steven R. Rodgers

Steven R. Rodgers
Executive Vice President and General Counsel



2019 INVESTOR MEETING

DELIVER ON THE PRESENT, CREATE THE FUTURE

BOB SWAN

CHIEF EXECUTIVE OFFICER

DISCLOSURES

This presentation contains non-GAAP financial measures. You can find the reconciliation of these measures to the most directly comparable GAAP financial measure in the Appendix at the end of this presentation. The non-GAAP financial measures disclosed by Intel should not be considered a substitute for, or superior to, the financial measures prepared in accordance with GAAP. Please refer to "Explanation of Non-GAAP Measures" in Intel's quarterly earnings release for a detailed explanation of the adjustments made to the comparable GAAP measures, the ways management uses the non-GAAP measures and the reasons why management believes the non-GAAP measures provide investors with useful supplemental information.

Statements in this presentation that refer to business outlook, future plans and expectations are forward-looking statements that involve a number of risks and uncertainties. Words such as "anticipates," "expects," "intends," "goals," "plans," "believes," "seeks," "estimates," "continues," "may," "will," "would," "should," "could," and variations of such words and similar expressions are intended to identify such forward-looking statements. Statements that refer to or are based on estimates, forecasts, projections, uncertain events or assumptions, including statements relating to total addressable market (TAM) or market opportunity, future products and the expected availability and benefits of such products, and anticipated trends in our businesses or the markets relevant to them, also identify forward-looking statements. Such statements are based on management's expectations as of May 8, 2019, unless an earlier date is indicated, and involve many risks and uncertainties that could cause actual results to differ materially from those expressed or implied in these forward-looking statements. Important factors that could cause actual results to differ materially from the company's expectations are set forth in Intel's earnings release dated April 25, 2019, which is included as an exhibit to Intel's Form 8-K furnished to the SEC on such date. Additional information regarding these and other factors that could affect Intel's results is included in Intel's SEC filings, including the company's most recent reports on Forms 10-K and 10-Q. Copies of Intel's Form 10-K, 10-Q and 8-K reports may be obtained by visiting our Investor Relations website at www.intc.com or the SEC's website at www.sec.gov.

All information in this presentation reflects management's views as of May 8, 2019, unless an earlier date is indicated. Intel does not undertake, and expressly disclaims any duty, to update any statement made in this presentation, whether as a result of new information, new developments or otherwise, except to the extent that disclosure may be required by law.

EXECUTIVE SUMMARY

WE'VE EXPANDED OUR TAM...

ACCELERATING TRANSFORMATION TO A DATA-CENTRIC COMPANY

EXTEND PRODUCT LEADERSHIP ADVANTAGE...

FROM CPU TO XPU

IMPROVE EXECUTION... ACCELERATE INNOVATION... EVOLVE CULTURE

DISCIPLINED INVESTMENT... PROFITABLE GROWTH... ATTRACTIVE CAPITAL RETURNS



2019 INVESTOR MEETING

OUR RECENT CHANGE IN GUIDE...

WE EXCEEDED Q1 EXPECTATIONS... BUT LOWERED OUTLOOK

REVENUE

DOWN

\$2.5B

OPERATING MARGIN¹

DOWN

2PTS

EPS¹

DOWN

\$0.25



2019 INVESTOR MEETING

¹Non-GAAP. Refer to the Appendix for a reconciliation of these non-GAAP measures.

WHAT WE SAID IN 2017...

TOP PRIORITIES FOR 2017

**GROWTH IN DATA
CENTER & ADJACENCIES**



**STRONG & HEALTHY CLIENT
BUSINESS**



**GROWTH
IN IOT & DEVICES**



**FLAWLESSLY EXECUTE IN
MEMORY & FPGAS**



WHAT WE SAID IN 2017...

...WHAT WE EXPECT¹

TOP PRIORITIES FOR 2017

- GROWTH IN DATA CENTER & ADJACENCIES**
- STRONG & HEALTHY CLIENT BUSINESS**
- GROWTH IN IOT & DEVICES**
- FLAWLESS EXECUTION IN MEMORY & PSGS**

intel INVESTOR MEETING FEBRUARY 2017 | 29

DATA-CENTRIC

Increased revenue by \$9B since '16

PC-CENTRIC

Record profitability in declining market
Significant FCF

VS 3-YR GUIDE

Beat revenue by \$6.7B and EPS by \$1.27

**OVER THE 3 YEARS... ADDED ~\$12B IN REVENUE...
ON LOWER SPENDING... WITH ~64% INCREASE IN EPS**

¹ Data-centric businesses include DCG, IOTG, Mobileye, NSG, PSG and All Other. Growth from 2016 to 2019 outlook excludes \$2.5B of revenue from McAfee and Wind River which have been divested in 2017 and 2018, respectively. EPS is non-GAAP

WE HAVE AN OPPORTUNITY TO LEAD ONE OF THE MOST
SUCCESSFUL **TRANSFORMATIONS** IN CORPORATE HISTORY

...BUT IT WON'T BE EASY

intel 2019 INVESTOR MEETING

OUR STRATEGY

MAKE THE WORLD'S BEST SEMICONDUCTORS

LEAD THE AI, 5G, AND AUTONOMOUS REVOLUTION

BE THE LEADING END TO END PLATFORM PROVIDER FOR THE NEW DATA WORLD

RELENTLESS FOCUS ON OPERATIONAL EXCELLENCE & EFFICIENCY

CONTINUE TO HIRE, DEVELOP AND RETAIN THE BEST, MOST DIVERSE & INCLUSIVE TALENT



2019 INVESTOR MEETING

OUR AMBITIONS...

**WE ARE IN THE
MIDDLE OF A JOURNEY**

● **2013**
A **PC-Centric**
Company

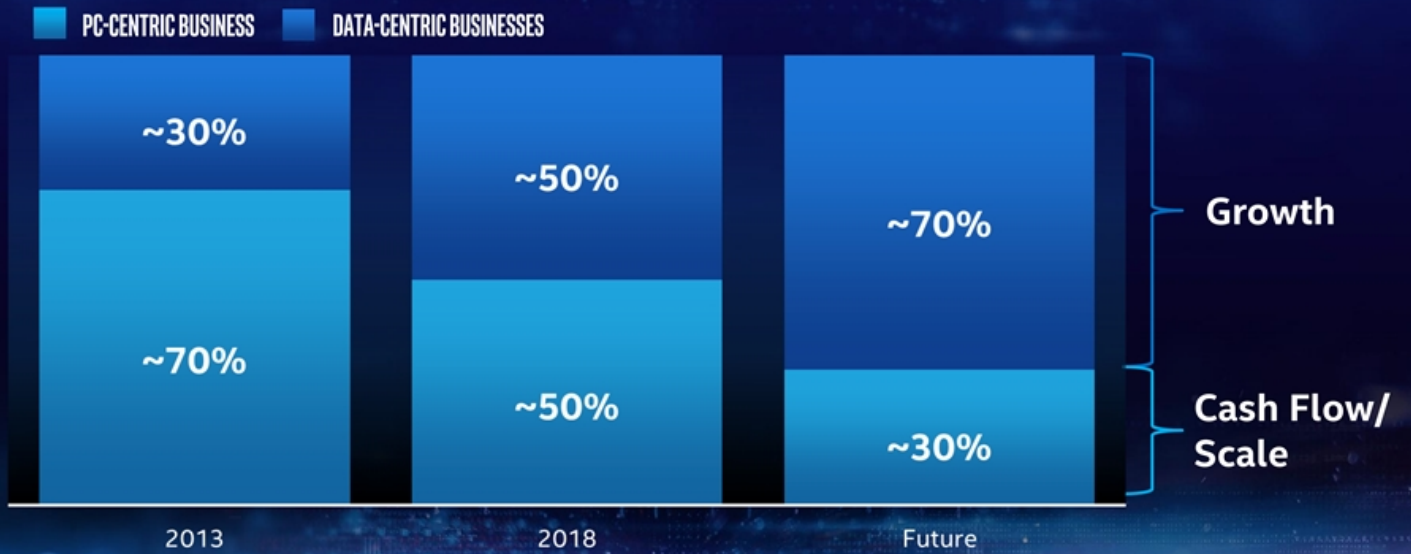
● **2017-2021**
Data-Centric

● **2021 & BEYOND**
Intel Powers
the **World**



2019 INVESTOR MEETING

...OVER TIME



AT THE CORE OF OUR STRATEGY DATA IS GROWING EXPONENTIALLY

GLOBAL DIGITAL DATA CREATED



INVESTOR MEETING

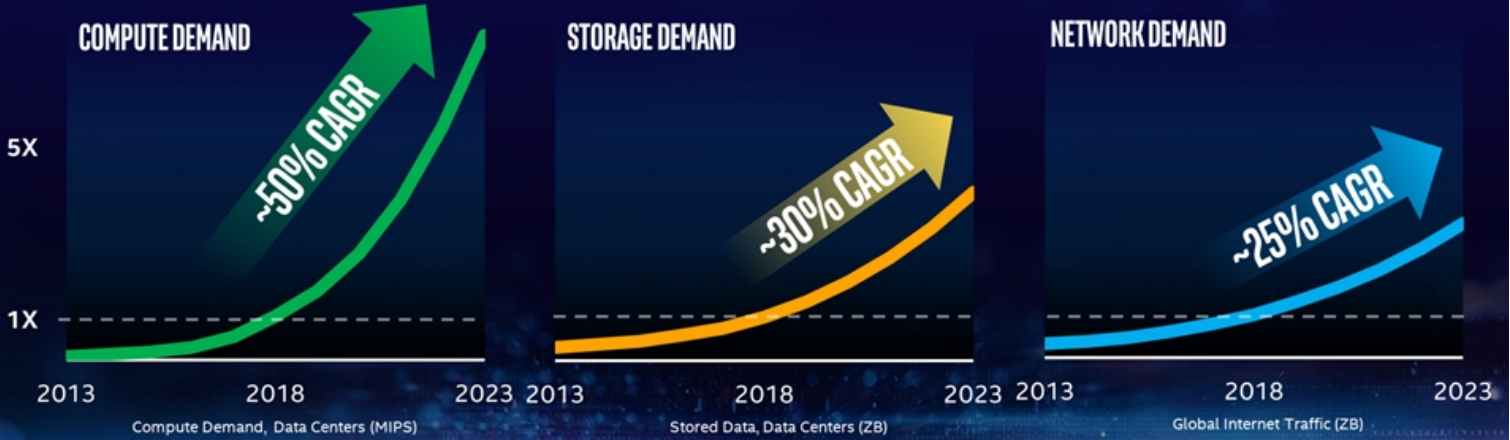
Source: IDC Data Age 2025 (2018)

DATA GROWTH DRIVES COMPUTE, STORAGE, NETWORK DEMAND

PROCESS EVERYTHING

STORE MORE

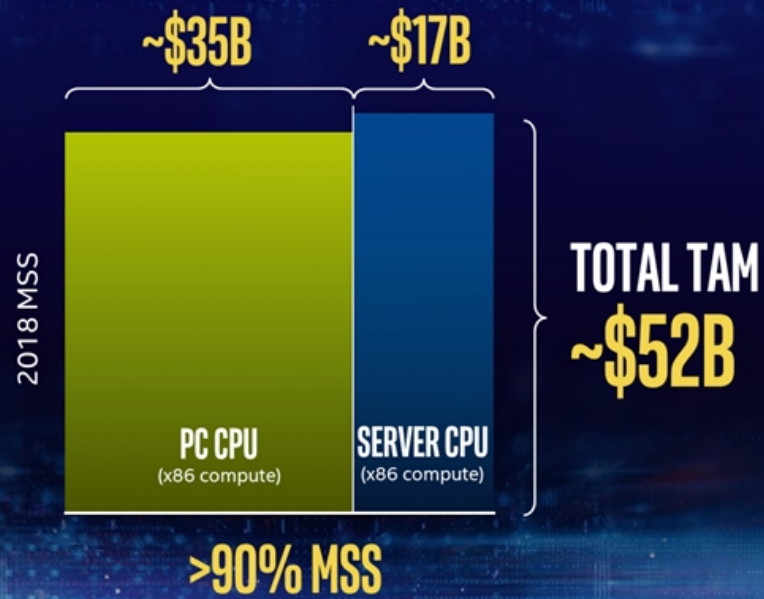
MOVE FASTER



2019 INVESTOR MEETING

Sources: Global Internet Traffic, Cisco VNI Forecasts (2016, 2017, 2018); Stored Data, IDC Data Age 2025 (2018); Compute demand, Intel analysis

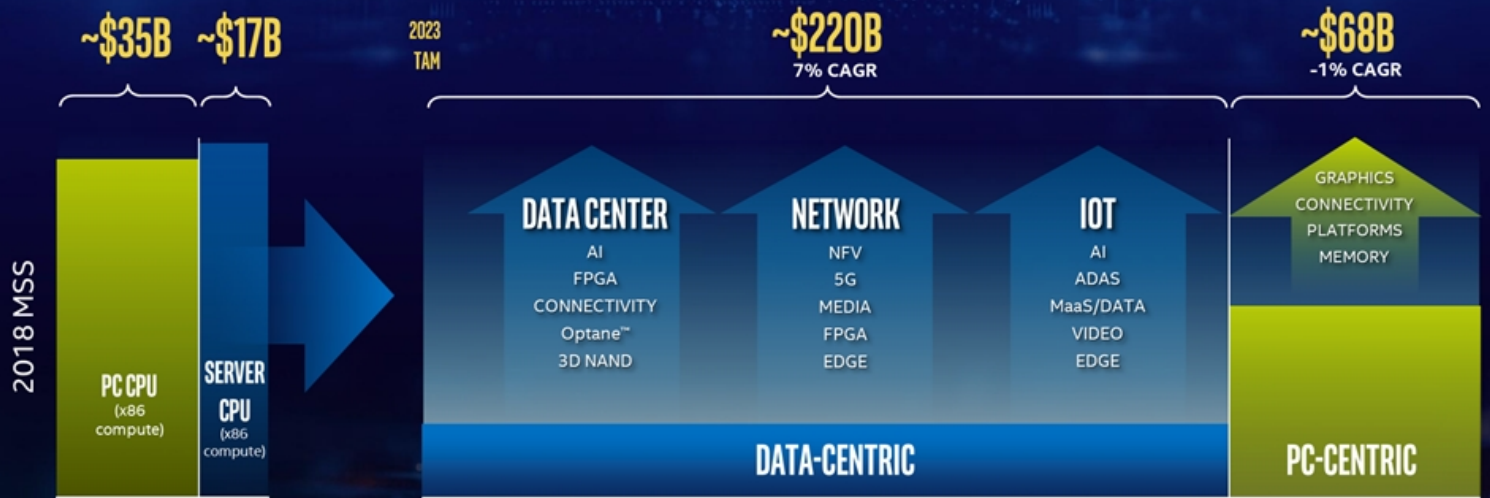
OUR HISTORICAL TAM... LIMITED GROWTH OPPORTUNITIES



INVESTOR MEETING

Source: 2018 Intel Revenue is based on Intel financials. 2018 SI TAM is based on amalgamation of analyst data and Intel analysis.
PC and Server include CPU and Chipsets revenue.

OUR OPPORTUNITY... EXPANDED TAM



FROM DEFENDING MSS...

...TO GROWING MSS



INVESTOR MEETING

2023F TAM is based on an amalgamation of analyst data and Intel analysis, based upon current expectations and available information and is subject to change without notice. PC-Centric includes CPU & Chipsets, Connectivity (including modems other than 5G smartphone), Gateways, Gaming Consoles, Memory and Discrete Graphics. Data-Centric includes Data Center and Networking Compute, Memory, Storage and Connectivity, and IOT addressable Logic ASIC/ASSP, MPU, MCU, DSP for Industrial, Transportation, Automated Driving, Retail, Video Surveillance, Healthcare, Public Sector, Office Automation, Gaming and Smart Home. IOT also includes MaaS and intelligent transportation enabled data opportunities.

OUR PLAN OF ATTACK

- Lead technology inflections
- Extend product leadership... redefine Intel Inside
- Make big bets... with attractive returns
- Focus on execution
- Evolve our culture
- Lead CSR and D&I

OUR GAME PLAN... LEADING TECHNOLOGY INFLECTIONS

ARTIFICIAL INTELLIGENCE

AI unlocks value from data, enables new business models and experiences

5G

5G transforms the network, increases consumption of data-rich experiences

AUTONOMOUS SYSTEMS

Autonomous systems require real-time analysis of data flows, drive new compute, network architectures

...AND PLAYING A LARGER ROLE IN OUR CUSTOMERS' SUCCESS



2019 INVESTOR MEETING

OUR GAME PLAN... EXTENDING PRODUCT LEADERSHIP

WORKLOAD-OPTIMIZED PLATFORMS,
EFFORTLESS CUSTOMER &
DEVELOPER INNOVATION

SOFTWARE

SECURITY

INTERCONNECT

MEMORY

XPU ARCHITECTURES

PROCESS AND PACKAGING

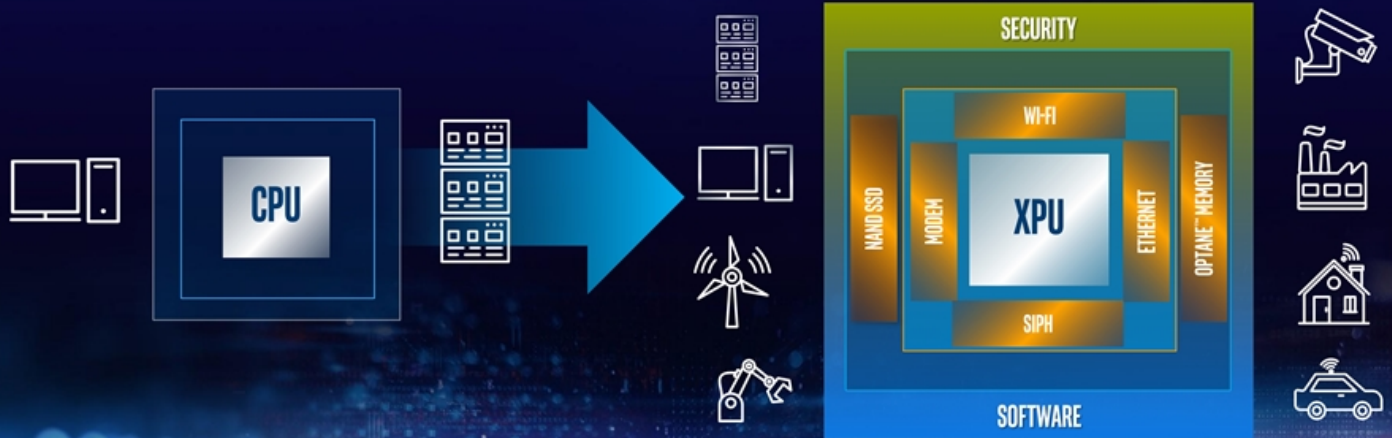


2019 INVESTOR MEETING

OUR GAME PLAN... REDEFINING INTEL INSIDE

**INTEL INSIDE =
CPU INSIDE A PC AND SERVER**

**INTEL INSIDE =
XPU PLATFORMS INSIDE EVERYTHING**



OUR GAME PLAN... INVESTING IN PROCESS LEADERSHIP

EXTEND 14NM

Build Capacity
to Support
Customer Growth

vs. TSMC 10NM

RAMP 10NM

Client Systems on
Shelf for 2019
Holiday Season
Server in 1H'20

vs. TSMC 7NM

ACCELERATE TO 7NM

Production and
Launch in 2021

vs. TSMC 5NM

WORLD CLASS PACKAGING TECHNOLOGY COMPLEMENTS PROCESS LEADERSHIP



2019 INVESTOR MEETING

OUR GAME PLAN... MAKING BIG BETS OUR INVESTMENTS MUST...

...ADDRESS THE LEADING EDGE OF A **TECHNOLOGY INFLECTION**...

...ALLOW US TO PLAY A LARGER ROLE IN THE **SUCCESS OF OUR CUSTOMERS**...

...OFFER A CLEAR PATH TO **PROFITABILITY/ATTRACTIVE RETURNS**...

...**WITH REGULAR EVALUATION**



2019 INVESTOR MEETING

MAKING BIG BETS... MODEM

INFLECTIONS



Influencing and shaping 5G standards
World class 5G modem IP ready for 2020 industry ramp

CUSTOMER IMPACT



Built momentum and won share at 4G/LTE
High customer concentration

PROFIT AND RETURN



Unprofitable despite share and scale
Evaluating options to maintain modem capabilities for PC/IOT
Significant outside interest in our modem team, technology, and IP



2019 INVESTOR MEETING

MAKING BIG BETS... MEMORY & STORAGE

MEMORY

STORAGE

INFLECTIONS



Optane™ offers ~performance of DRAM, persistence of NAND



High-density 3D NAND for storage transition to NVM
Industry leading density

CUSTOMER IMPACT



Optane™ + Xeon® = breakthrough platform-level innovation



#2 DC SSD provider 3+ years
Challenging tech transitions impacted execution

PROFIT AND RETURN



Significant potential for Optane™
Systems challenges slow ramp



Aggressive capacity build +
market conditions slowed progress & limited returns



2019 INVESTOR MEETING

MAKING BIG BETS... AUTONOMOUS SYSTEMS... MOBILEYE

INFLECTIONS



ADAS penetration rising globally, growing from 30% to 70% by '23¹
L4/5 AV designs on track for 2021, enabling a MaaS opportunity
Data services such as REM present new adjacent opportunities

CUSTOMER IMPACT



>60% global ADAS market segment share
L2+ designs w OEMs representing >50% of global vehicle production
Real-time crowdsourced map tech, customers launching new data svcs

PROFIT AND RETURN



Revenue up ~2x in 2 yrs²; positive OM contribution, in line w/deal thesis



2019 INVESTOR MEETING

¹Internal analysis

²2017 revenue compared to 2019 revenue; 2017 revenue includes revenue prior to acquisition in Aug'17.

OUR GAME PLAN... IMPROVING OUR EXECUTION DELIVERING IN 2019

MEET CUSTOMER DEMAND



Investing to ensure we don't constrain growth

RECOUP PROCESS LEADERSHIP



On track to full-year 10nm shipment goals

DELIVER WITH PREDICTABILITY

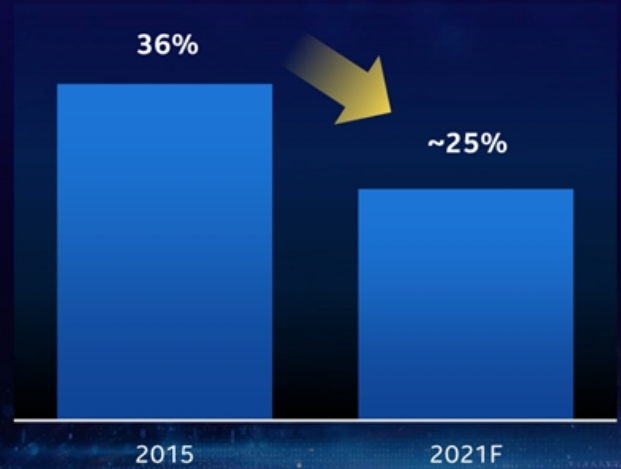


Ice Lake and Lakefield for client Cascade Lake, AgileX™, Teton Glacier for data-centric

OUR GAME PLAN... IMPROVING OUR EXECUTION

**RELENTLESS FOCUS
ON THINGS THAT
MATTER MOST**

Spending % of Revenue



OUR GAME PLAN... EVOLVING OUR CULTURE

FROM

TO

Build the best products... customers will come

Listen to customers & enable their growth

\$52B TAM... MSS >90%... protect & defend

Nearly \$300B TAM... Low MSS... growth mode

Competition has <10% MSS... compete internally

Very capable competition has high MSS

IDM advantage/process lead trumps all

Product leadership trumps all

AN INCREDIBLE 50 YEARS

AN INCREDIBLE OPPORTUNITY



2019 INVESTOR MEETING

OUR GAME PLAN... EVOLVING OUR CULTURE



OUR GAME PLAN... LEADING IN CORPORATE RESPONSIBILITY

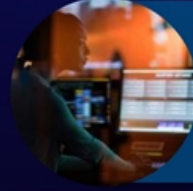
We are a recognized leader in corporate responsibility and take action to advance progress in environmental sustainability, supply chain responsibility, and social impact.



4B KWH ENERGY SAVED
SINCE 2012, RESULTING IN
>\$500M IN COST SAVINGS



#1 SCORES
FOR OUR ENVIRONMENTAL &
SOCIAL DISCLOSURE QUALITY BY
ISS ETHIX



>20 YEARS
OF TRANSPARENCY & PROACTIVE
ENGAGEMENT WITH INVESTORS ON ESG
ISSUES



90% RECYCLE RATE
FOR NON-HAZARDOUS WASTE IN
OUR GLOBAL OPERATIONS



17.4M SQUARE FEET
OF LEED CERTIFIED SPACE IN
SUPPORT OF OUR GREEN
BUILDINGS GOAL



+500 SUPPLIER AUDITS
COMPLETED SINCE 2014 AS PART OF
OUR SUPPLY CHAIN RESPONSIBILITY
PROGRAMS

www.intel.com/responsibility

intel **2019** INVESTOR MEETING

OUR GAME PLAN... ENABLING A DIVERSE & INCLUSIVE ENVIRONMENT

INNOVATIVE & INCLUSIVE TALENT



2 YEARS EARLY

MET OUR 2020 U.S. WORKFORCE DIVERSITY GOAL

INNOVATIVE SUPPLY CHAIN



\$1B ANNUALLY

GLOBAL INITIATIVE TO SPEND WITH DIVERSE-OWNED BUSINESSES BY 2020 TO GENERATE AN INCLUSIVE SUPPLY CHAIN

COMPREHENSIVE WORKFORCE PAY



EQUITY FOR GLOBAL GENDER PAY

CLOSED THE GAP OF AVERAGE PAY BETWEEN EMPLOYEES OF DIFFERENT GENDERS IN SIMILAR ROLES CREATING INCLUSIVE WORKPLACE

www.intel.com/diversity



2019 INVESTOR MEETING

OVER THE NEXT 3 YEARS...

REVENUE GROWTH

Low-single digit growth,
\$76B-\$78B

Data-Centric businesses
high-single digit growth

PC-Centric business
~flat to slightly down

OPERATING EFFICIENCY

Operating Margin ~32%

Gross Margins declines
offset by spending
leverage and 5G
smartphone modem exit

EARNINGS/FCF

EPS growth in line
with revenue

FCF growing faster
than earnings

CLOSING FCF/EARNINGS GAP (>80%)... ATTRACTIVE CAPITAL RETURNS



INVESTOR MEETING

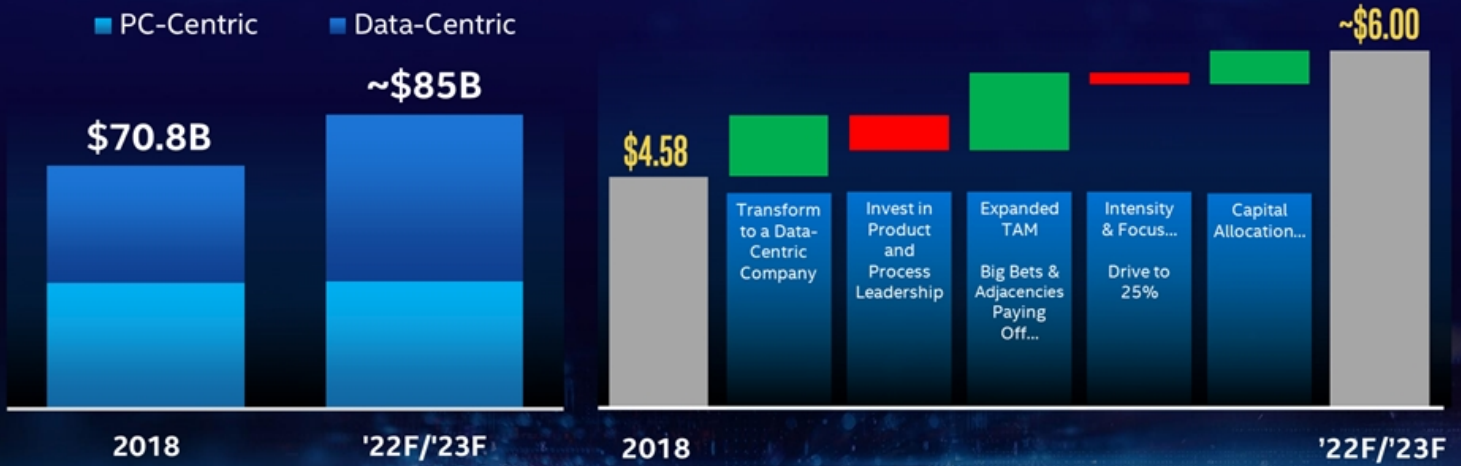
Operating margin, gross margin, EPS, and FCF are non-GAAP.

Forecasts are Intel estimates, based upon current expectations and available information and are subject to change without notice.

BEYOND YEAR 3... SIGNIFICANT OPPORTUNITY

~\$85B REVENUE

~\$6.00 EARNINGS PER SHARE



INVESTOR MEETING

EPS presented on a non-GAAP basis. Refer to the Appendix for a reconciliation of this non-GAAP measure. Forecasts are Intel estimates, based upon current expectations and available information and are subject to change without notice.

AGENDA

SPEAKER	TOPIC
Murthy Renduchintala <i>Walk-on: Raja Koduri</i>	Product Leadership
Navin Shenoy <i>Walk-On: Sandra Rivera</i>	The Data-Centric Opportunity
Gregory Bryant	The Transformation of the PC Sector
George Davis	A Focus on Performance



APPENDIX

intel 2019 INVESTOR MEETING

RECONCILIATION OF NON-GAAP

	2018	Full-year 2019 Outlook Approximately
GAAP OPERATING MARGIN	33%	30%
Amortization of acquisition-related intangible assets	2%	2%
NON-GAAP OPERATING MARGIN	35%	32%
GAAP EARNINGS PER SHARE	\$4.48	\$4.14
Inventory valuation adjustments	—	—
Amortization of acquisition-related intangible assets	0.28	0.29
Other acquisition-related charges	—	—
Restructuring and other charges	(0.02)	—
(Gains) losses from divestitures	(0.11)	—
Ongoing mark-to-market on marketable equity securities	0.03	(0.06)
Tax reform	(0.06)	—
Income tax effect	(0.02)	(0.02)
NON-GAAP EARNINGS PER SHARE	4.58	\$4.35

Forward-looking non-GAAP measures relating to fiscal years 2020 and beyond represent targets and are based on internal forecasts subject to significant uncertainty. We are unable to provide a full reconciliation of such measures to GAAP measures without unreasonable efforts as we cannot predict the amount or timing of certain elements that are included in reported GAAP results and that may significantly affect GAAP results, including acquisition-related adjustments, ongoing mark-to-market adjustments on marketable equity securities, and other non-recurring events or transactions. In addition, certain comparable GAAP measures such as net cash provided by operating activities are difficult to accurately estimate for such time frames and are dependent on future events. We believe such a reconciliation would also imply a degree of precision that could be confusing or inappropriate for these forward-looking measures.



2019 INVESTOR MEETING

PRODUCT LEADERSHIP

DR. MURTHY RENDUCHINTALA

Chief Engineering Officer, Intel
Group President, TSCG

DISCLOSURES

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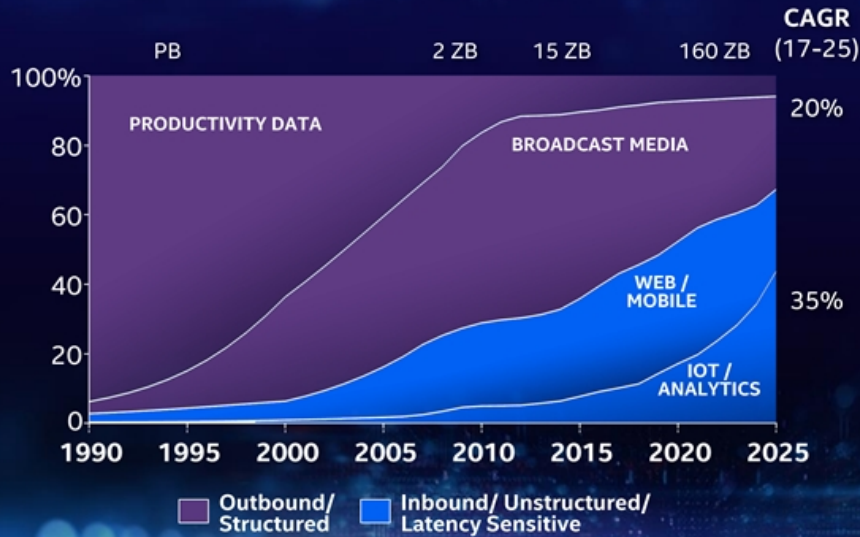
DATA GROWTH AND OPPORTUNITY

DATA-CENTRIC PRODUCT LEADERSHIP

PRODUCT HIGHLIGHTS

DRIVING FORCE OF DATA-CENTRIC TRANSFORMATION

DIGITAL DATA GENERATED



DATA-CENTRIC TRANSITIONS

COMPUTE DIVERSITY

Scalar, vector, spatial - AI, graphics, media, analytics

NETWORK CLOUDIFICATION

Compute & storage distributed across core, access, and edge networks

INTELLIGENT AGENTS

Proliferation of autonomous / AI-enabled devices, things, and edge gateways



INVESTOR MEETING

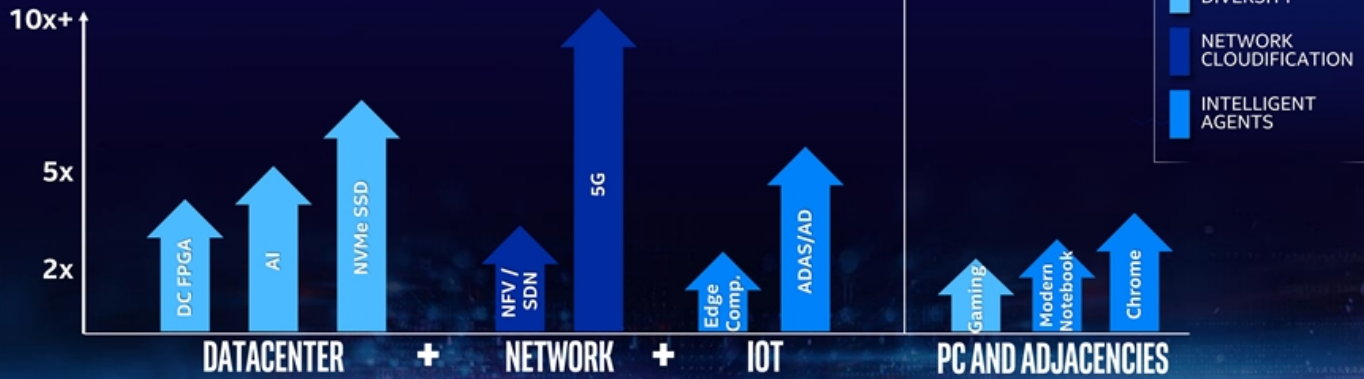
DATA-CENTRIC TRANSITIONS DRIVE GROWTH

DATA CENTRIC: ~\$220B

PC CENTRIC: ~\$68B

HIGH GROWTH SEGMENTS

2018-23 growth relative to aggregate TAM



Source: Intel calculated 2023 TAM and growth rates derived from analyst forecasts and Intel TAM model

PRODUCT LEADERSHIP EVOLUTION: SIX PILLARS OF INNOVATION



SIX CONCURRENT PILLARS OF INNOVATION
ACCELERATING PRODUCT ROADMAP REFRESH

DATA-CENTRIC PRODUCT LEADERSHIP

SW portability, reusability and performance grows in value with compute diversity

SOFTWARE

Confidentiality, integrity and resiliency become increasingly critical

SECURITY

Increased data movement makes interconnects critical to the platform

INTERCONNECT

Memory bandwidth/latency/cost critical to handle data

MEMORY

Data-centric workloads require scalar, vector, matrix and spatial compute: xPUs

XPU ARCHITECTURES

Compute diversity benefits from process and packaging diversity

PROCESS & PACKAGING



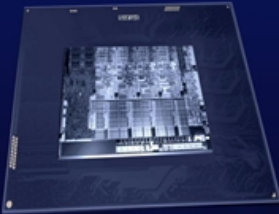
DATA-CENTRIC ERA
WORKLOAD-OPTIMIZED PLATFORMS,
EFFORTLESS CUSTOMER & DEVELOPER INNOVATION



PROCESS TECHNOLOGY & PACKAGING

PC-CENTRIC

TRANSISTOR SCALING & MONOLITHIC INTEGRATION



One process design point for all products
Monolithic integration
Product restricted by reticle

DATA-CENTRIC

HETEROGENEOUS PROCESSES & INTEGRATION



Multiple processes optimized for individual IPs
Multi-chip integration with advanced packaging
Product unconstrained by reticle



2019 INVESTOR MEETING



PROCESS TECHNOLOGY - 2013 PLAN

Transistor efficiency
(Perf / W)



Most ambitious scaling in history

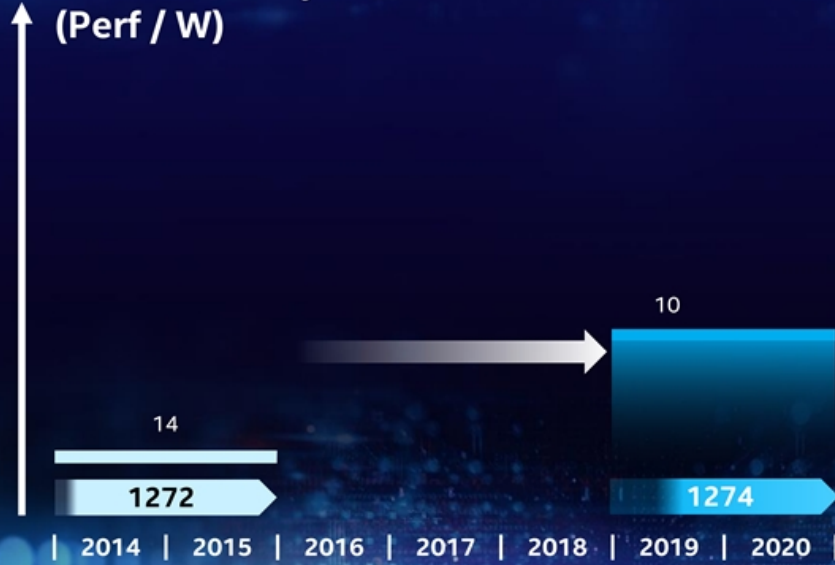
- ▶ 2.7x density scaling
- ▶ Self-aligned Quad-patterning
- ▶ Contact Over Active Gate
- ▶ Cobalt Interconnect (M0, M1)
- ▶ 1st Gen Foveros 3D Stacking
- ▶ 2nd Gen EMIB

| 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |



10NM REALITY

Transistor efficiency
(Perf / W)

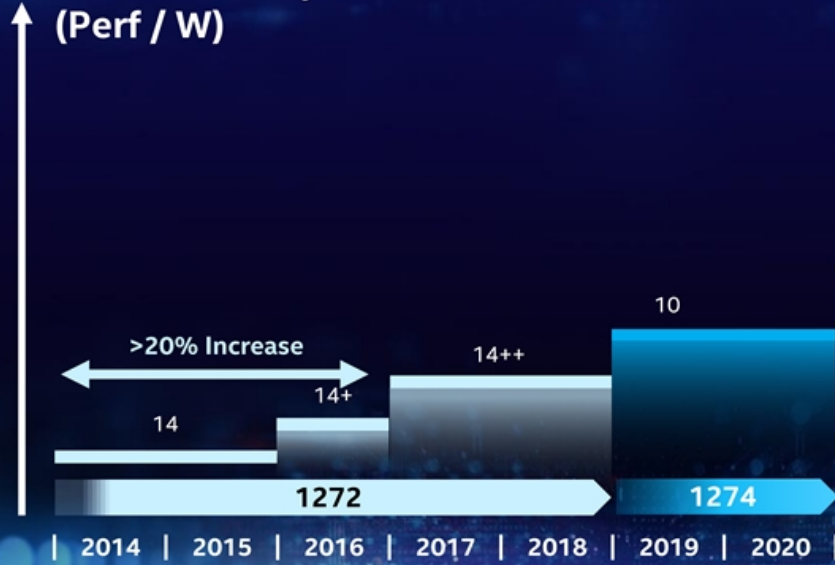


LEARNINGS
Balance between schedule,
performance, power, cost



14NM INTRA-NODE ENHANCEMENTS

Transistor efficiency
(Perf / W)



LEARNINGS

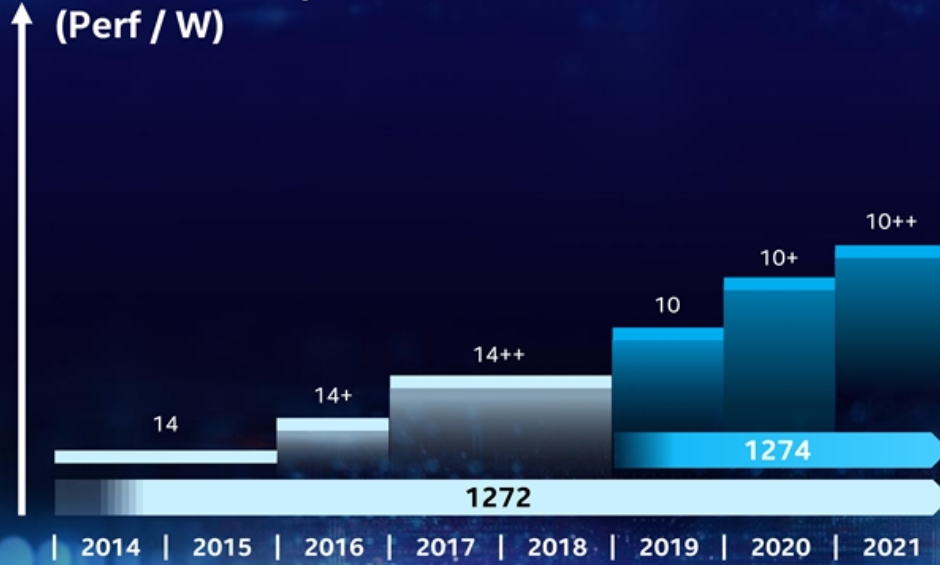
Balance between schedule, performance, power, cost

Significant opportunity for intra-node advancement



MULTIPLE-WAVES OF 10NM PLANNED

Transistor efficiency
(Perf / W)



LEARNINGS

Balance between schedule, performance, power, cost

Significant opportunity for intra-node advancement

Value in maintaining mix of nodes

Ease-of-design accelerates innovation



INVESTOR MEETING



RELENTLESS INNOVATION CONTINUES

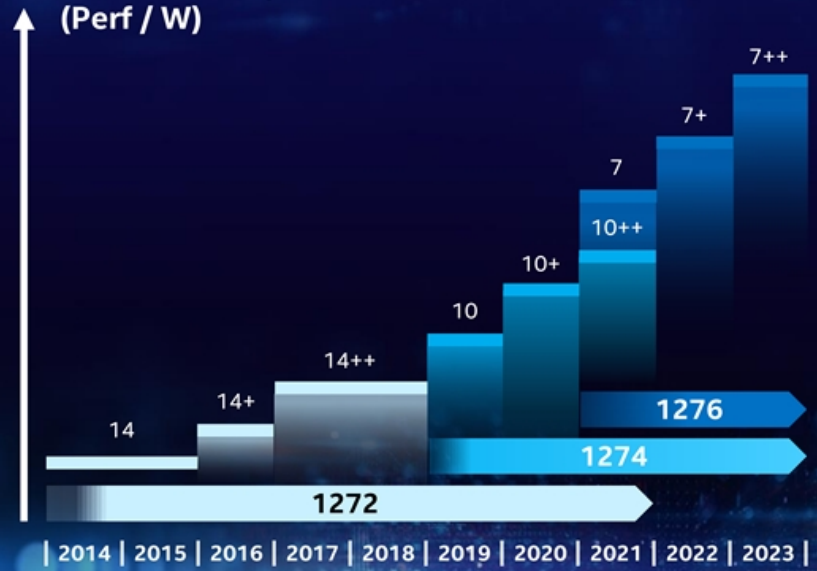
Transistor efficiency
(Perf / W)





RELENTLESS INNOVATION CONTINUES

Transistor efficiency
(Perf / W)



One ML of scaling & performance start of node + one ML performance intra-node

Multi-chip SoC construction for non-compromise performance

Radical design simplification accelerates innovation

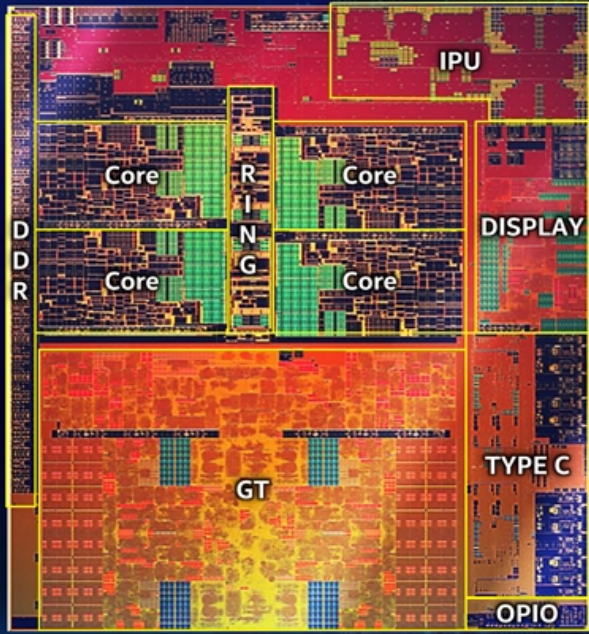
10nm shipping in June, multiple products through 2019 and 2020

7nm progressing to plan
Lead product launch in 2021

| 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |



INVESTOR MEETING



10NM ICE LAKE CLIENT

Shipping in June

APPROX.

2X Graphics Performance

2.5X-3X AI Performance

2X Video Encode

3X Wireless Speeds

Disclaimer: Results are approximate and have been estimated or simulated as of April 2019 using Intel internal analysis or architecture simulation or modeling
 Graphics and video – Next Gen Graphics Iris Plus Experience
 Wireless – Intel's Wi-Fi 6 (GIG+) vs typical competitive 11AC design
 AI – AIXPRT Community 2 Preview, OpenVINO 2018.R5, Max Throughput 15W WHL to 15W ICL projection

For more complete information about performance and benchmark results, visit www.intel.com/benchmarks. Performance results are based on testing as of date specified and may not reflect all publicly available security updates. See configuration disclosure for details. No product or component can be absolutely secure.

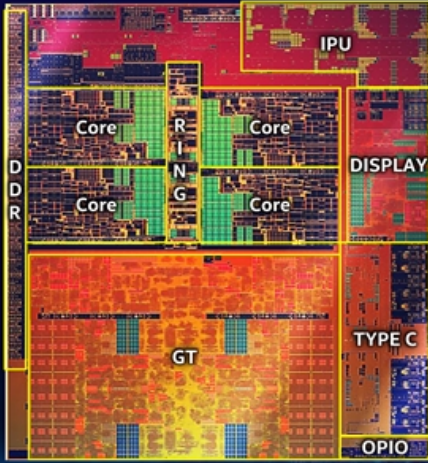


INVESTOR MEETING



10NM ICE LAKE CLIENT

Shipping in June



Multiple Product Launches

Across Entire Portfolio Through 2019 and 2020

Xeon CPU | GP-GPU | AI Inference

FPGA | 5G/Networking ...

7NM LEAD PRODUCT



**X^e Architecture-Based GP-GPU
using Foveros for Datacenter AI & HPC**



Launch in 2021



2021 INVESTOR MEETING

SOFTWARE LEADERSHIP

SOFTWARE

SECURITY

*For every order of magnitude performance
from new hardware, there is >2 orders of
magnitude unlocked by software*

Raja Koduri

Chief Architect, SVP
Intel Architecture, Graphics and Software

PROCESS EVOLVING



INVESTOR MEETING

INTEL SOFTWARE MAGNITUDE

Example 1: Java runtime optimizations

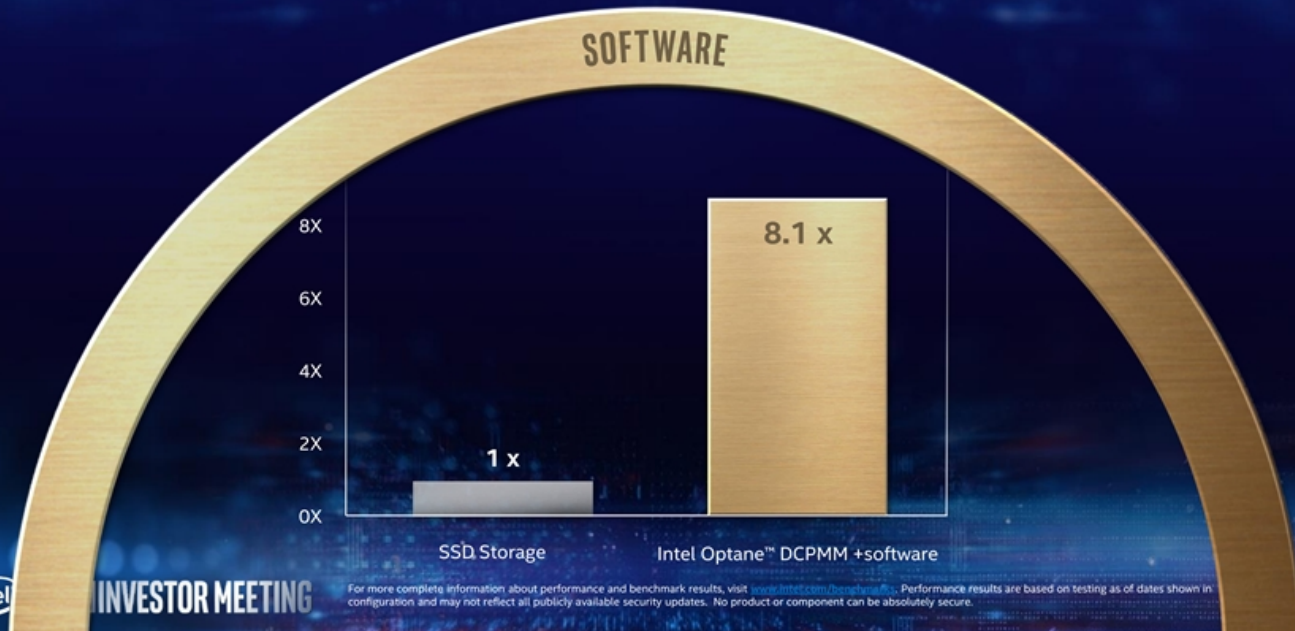


INVESTOR MEETING

For more complete information about performance and benchmark results, visit www.intel.com/benchmark. Performance results are based on testing as of dates shown in configuration and may not reflect all publicly available security updates. No product or component can be absolutely secure.

INTEL SOFTWARE MAGNITUDE

Example 2: Persistent memory complete stack optimizations

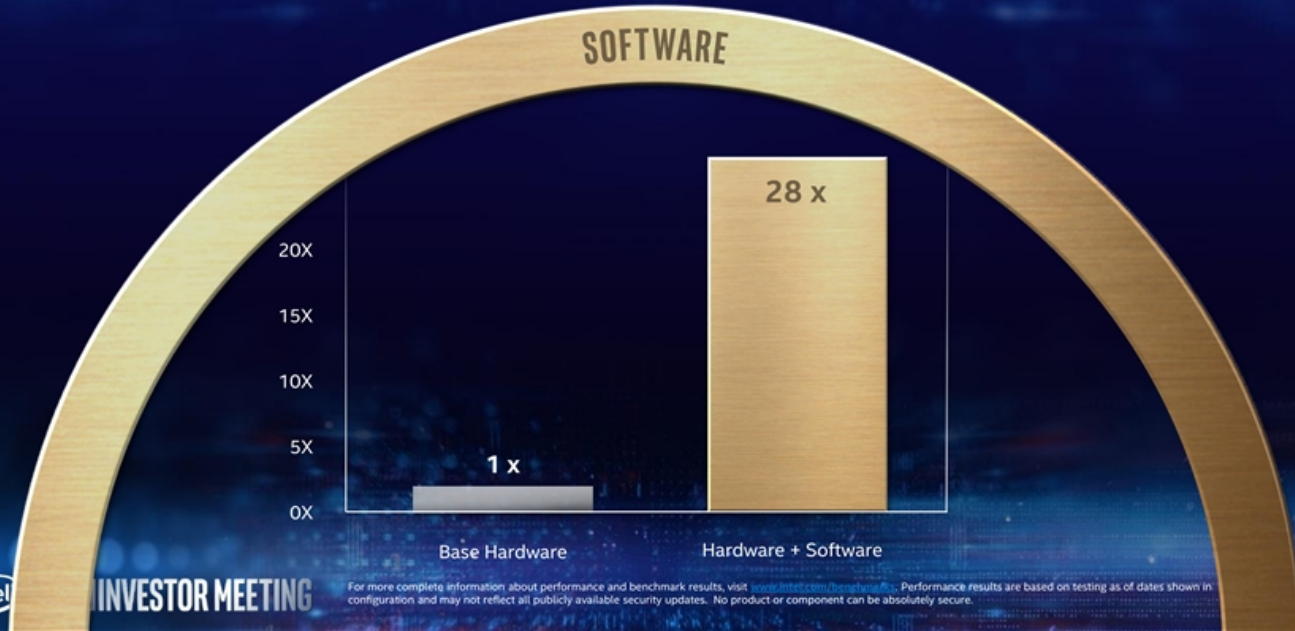


INVESTOR MEETING

For more complete information about performance and benchmark results, visit www.intel.com/benchmark. Performance results are based on testing as of dates shown in configuration and may not reflect all publicly available security updates. No product or component can be absolutely secure.

INTEL SOFTWARE MAGNITUDE

Example 3: Deep Learning Boost

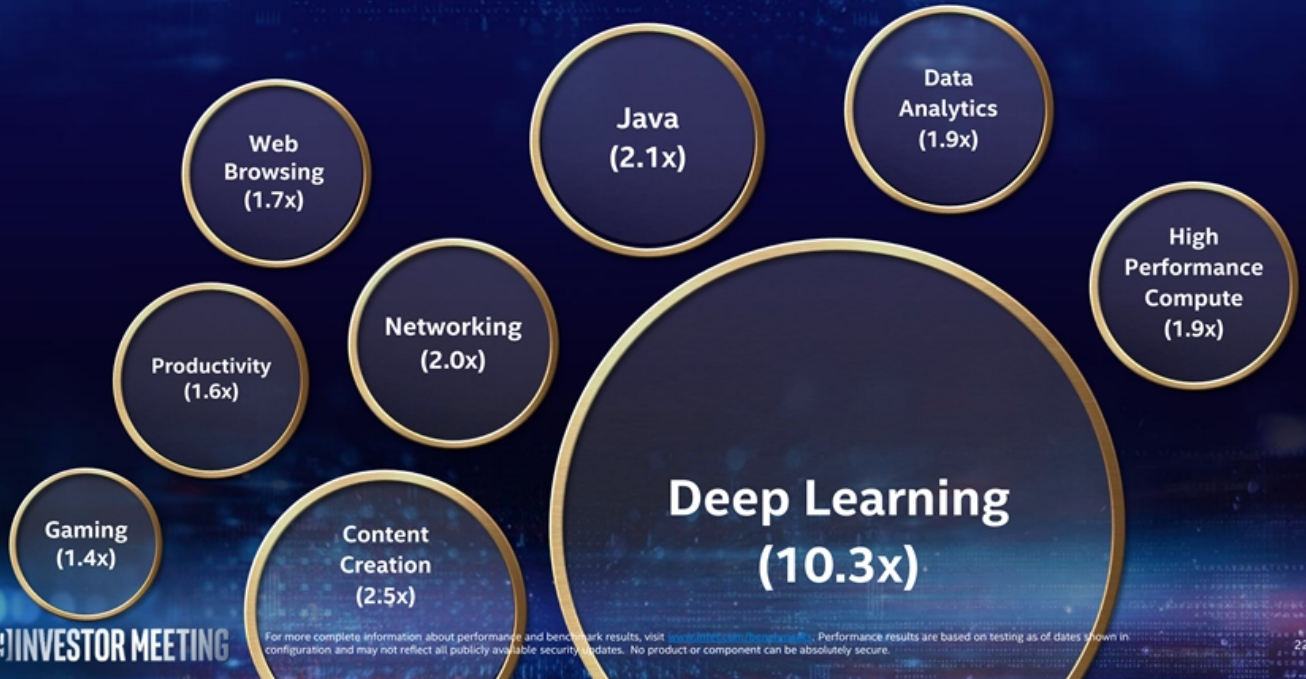


INVESTOR MEETING

For more complete information about performance and benchmark results, visit www.intel.com/benchmark. Performance results are based on testing as of dates shown in configuration and may not reflect all publicly available security updates. No product or component can be absolutely secure.

SOFTWARE - COMPETITIVE DIFFERENTIATOR

Per core performance advantage



INVESTOR MEETING

For more complete information about performance and benchmark results, visit [intel.com/performance](#). Performance results are based on testing as of dates shown in configuration and may not reflect all publicly available security updates. No product or component can be absolutely secure.

SOFTWARE LEADERSHIP

SOFTWARE

>15,000 software engineers

#1 contributor to Linux kernel;
>1/2 million lines of code modified each year

> 100 operating systems optimized

top three contributors to Chromium OS

>10,000 high touch customer deployments

top 10 contributor to Openstack

>12 million developers

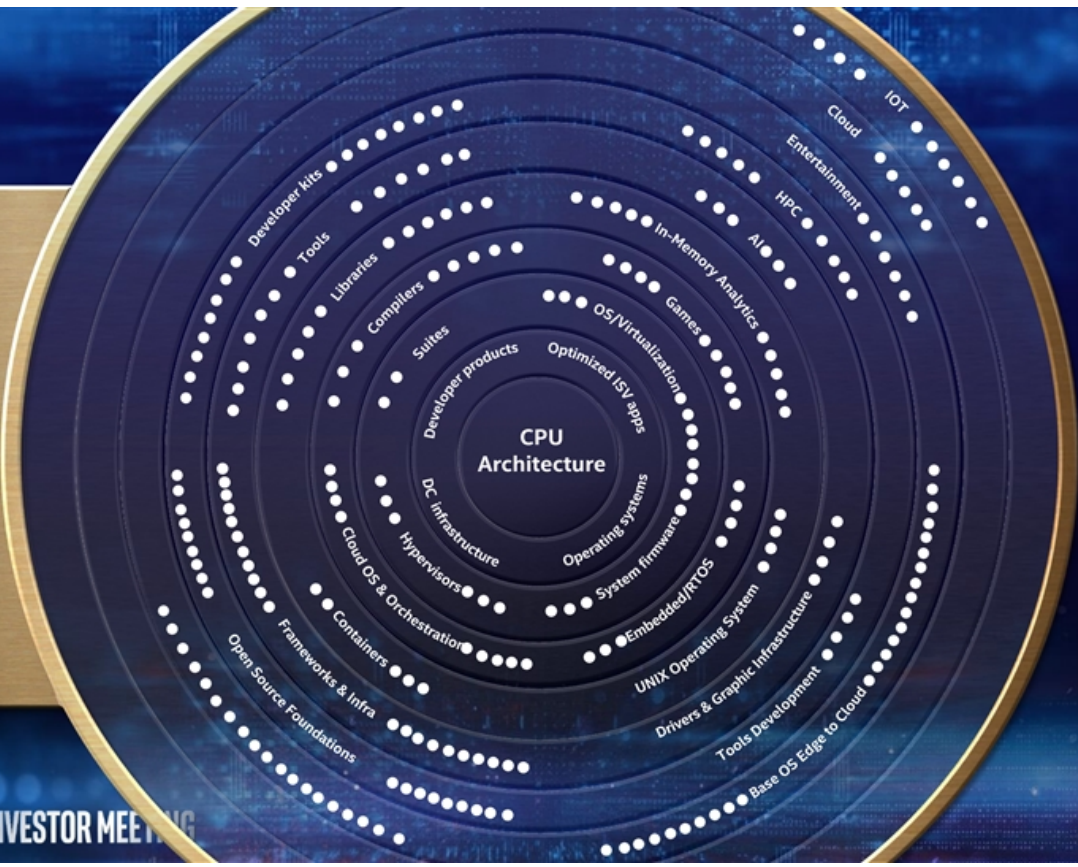


2019 INVESTOR MEETING

For more complete information about performance and benchmark results, visit [intel.com/performance](#). Performance results are based on testing as of dates shown in configuration and may not reflect all publicly available security updates. No product or component can be absolutely secure.

Performance results are based on testing as of dates shown in

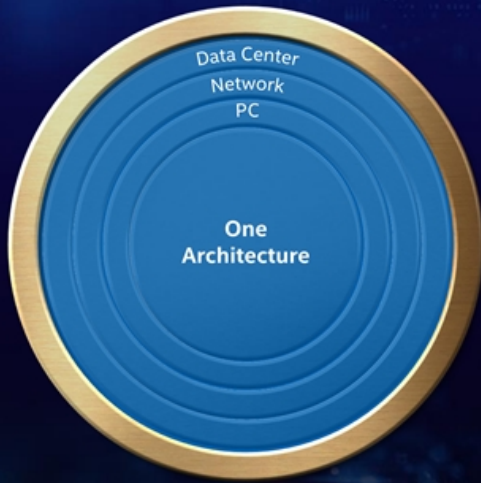
INTEL SOFTWARE SCALE





12 million developers

DATA CENTRIC DEVELOPER GROWTH



12 million developers



8 million
developers

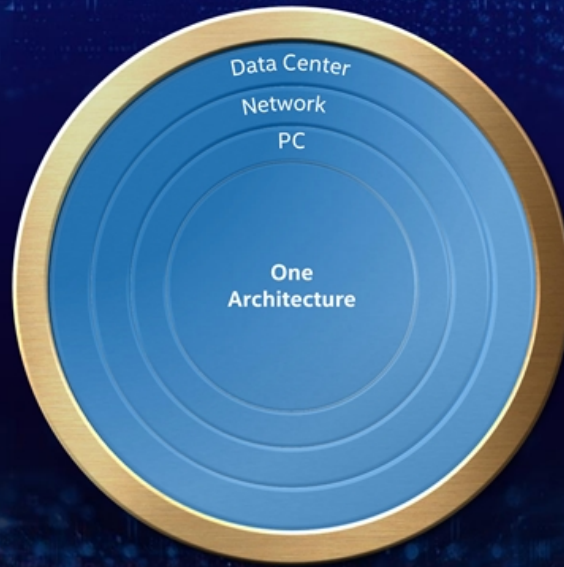


1 million
developers

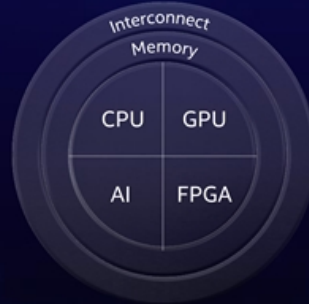


100K
developers

DATA CENTRIC DEVELOPER GROWTH



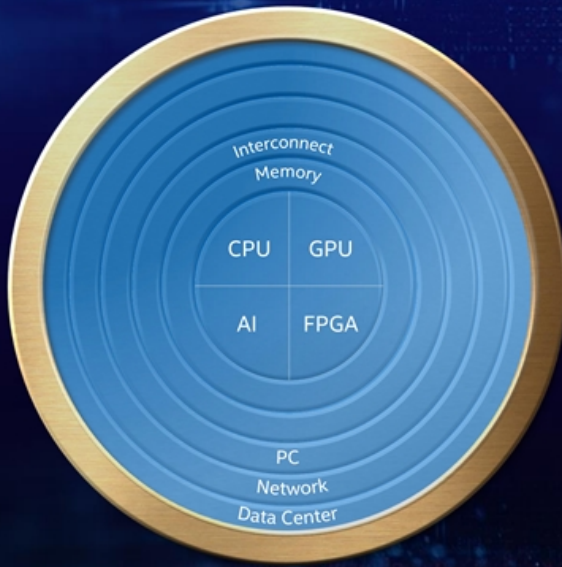
INTEL ARCHITECTURE VISION



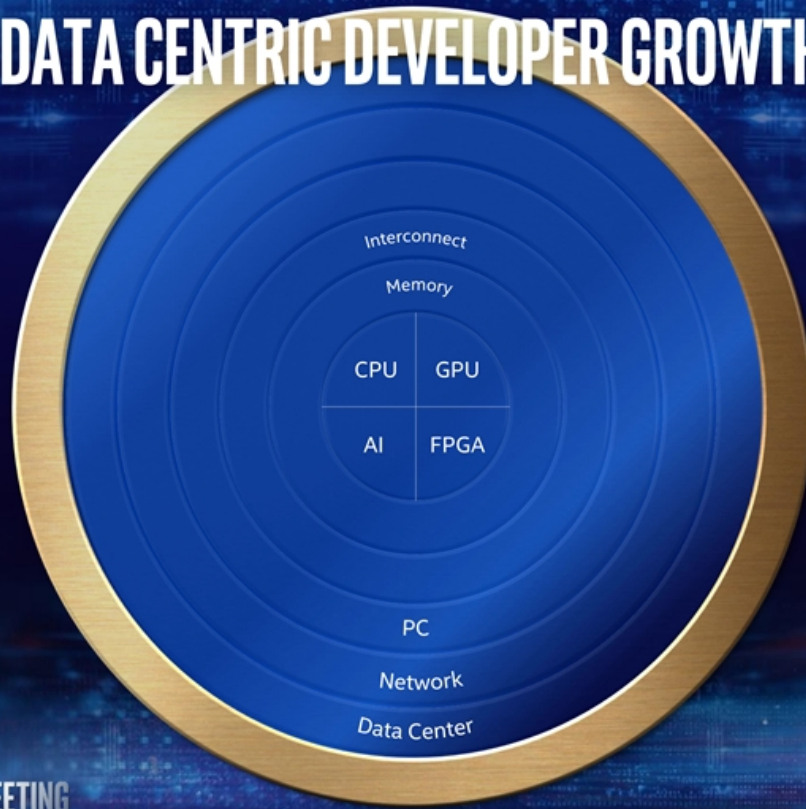
"The future is a diverse mix of Scalar, Vector, Matrix and Spatial architectures deployed in CPU, GPU, FPGA and Accelerator sockets..."

Intel Arch day, Dec '2018

DATA CENTRIC DEVELOPER GROWTH



DATA CENTRIC DEVELOPER GROWTH

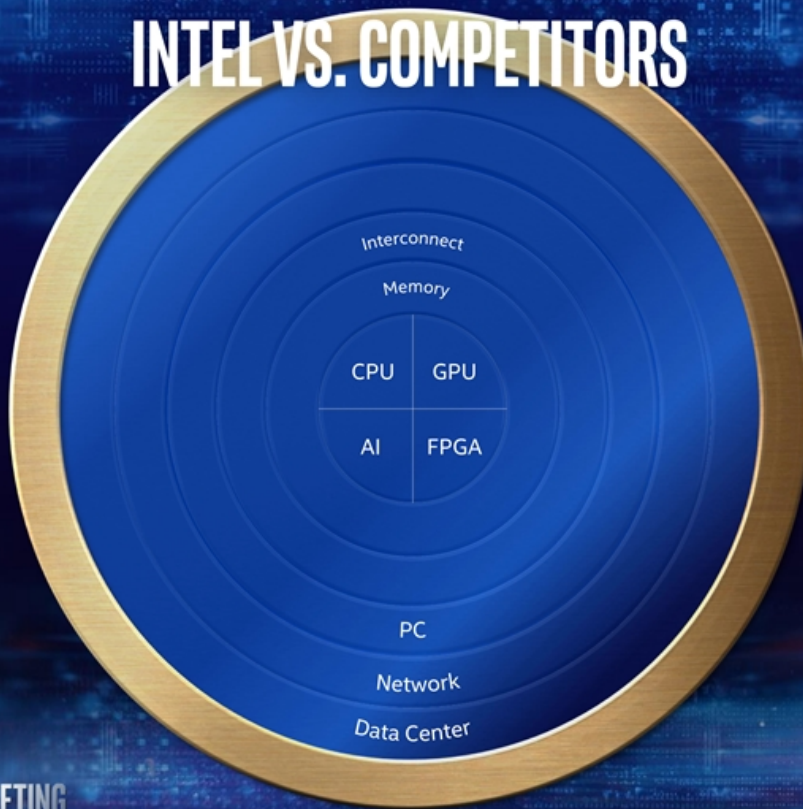


INVESTOR MEETING

INTEL VS. COMPETITORS



Competitor 1



Competitor 2

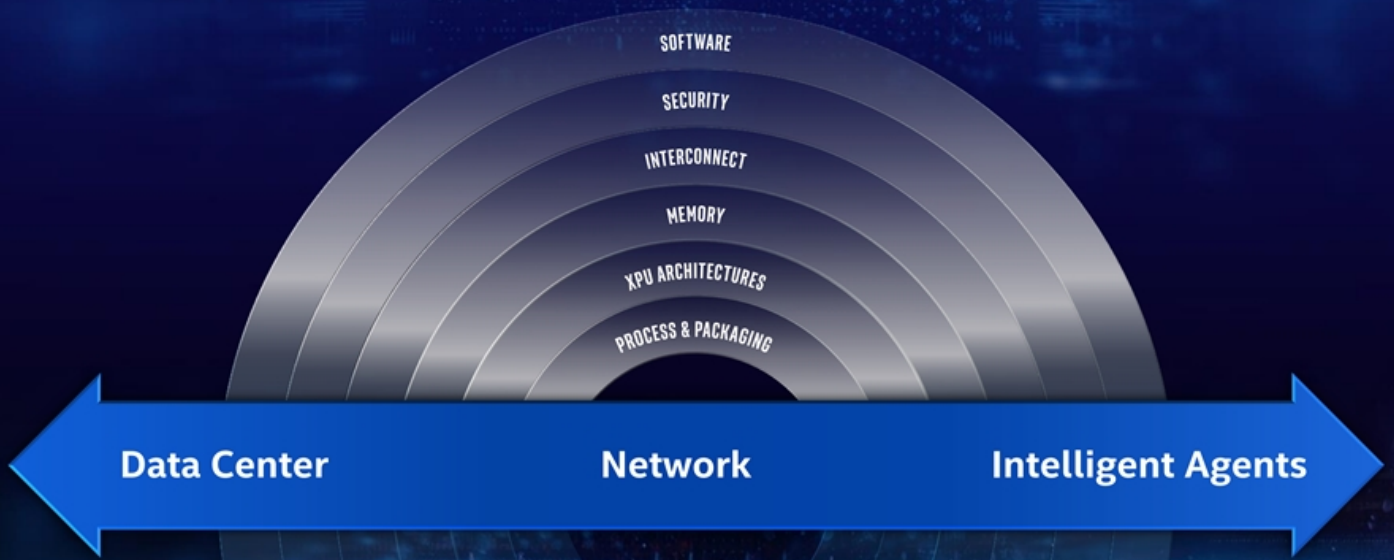
INTEL SOFTWARE MISSION

simple and scalable
open
one developer experience

oneAPI

Coming soon to a developer
near you in Q4 2019

PRODUCT LEADERSHIP ACROSS WIDE DESIGN SPECTRUM

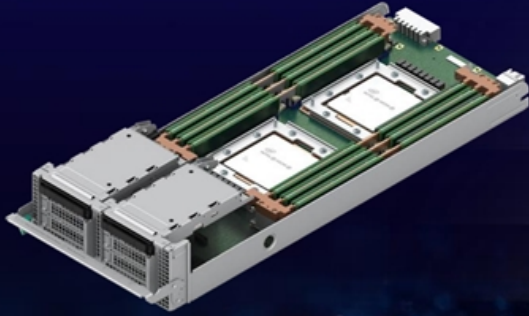


COMPUTE DIVERSITY

2ND GEN INTEL® XEON SCALABLE PROCESSORS



**WORLD RECORD + REAL WORKLOAD
PERFORMANCE LEADERSHIP**



SOFTWARE

Intel® MKL-DNN (AI)	OpenVINO (AI)	SPDK (Storage) DDPK (Network)	Intel® Security Libraries - DC
---------------------	---------------	-------------------------------	--------------------------------

SECURITY

Intel® OPTANE DC Persistent Memory Encryption	Intel® Threat Detection Tech	Intel® SGX Card	Intel® select solution LOCKED MARTIN
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INTERCONNECT

Ultra Path Interconnect

MEMORY

Intel® OPTANE DC Persistent Memory	Highest Native DDR Bandwidth
------------------------------------	------------------------------

XPU ARCHITECTURES

Intel® AVX-512	Intel® Speed Select	Intel® DL Boost	Workload Optimized SKUs
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PROCESS & PACKAGING

14nm Scaling	56C MCP
--------------	---------

Up to 28X AI performance
Up to 56 core per socket, 112 core in two socket
200GB/s bandwidth per socket
Up to 36TB addressable memory



INVESTOR MEETING

AI Performance: In AP configuration
 Memory bandwidth: 1-pod, 2x Intel® Xeon® Platinum 9282 cpu on Walker Pass with 768 GB (24x 32GB 2933) total memory, scode 0x400000A on RHEL7.6, 3.10.0-957.el7.x86_64, IC19u1, AVX512, HT off, Turbo on, Stream Triad
 score=407 GB/s, test by intel on 2/16/2019
 For more complete information about performance and benchmark results, visit www.intel.com/benchmarks. Performance results are based on testing as of date specified and may not reflect all publicly available security updates. See configuration disclosure for details. No product or component can be absolutely secure.

INTELLIGENT AGENTS LAKEFIELD



SOFTWARE

SECURITY

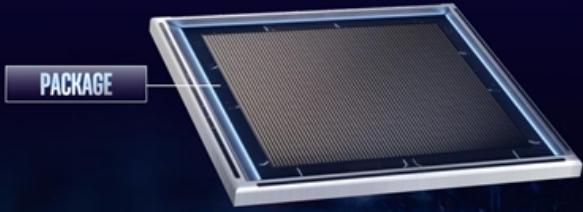
INTERCONNECT

MEMORY

XPU ARCHITECTURES

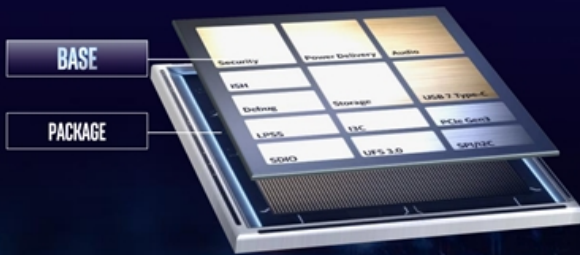
PROCESS & PACKAGING

INTELLIGENT AGENTS LAKEFIELD



PACKAGE
PC in Mobile form factor – 12x12x1

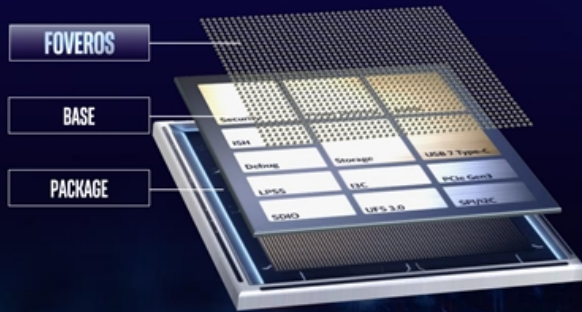
INTELLIGENT AGENTS LAKEFIELD



BASE

- Chipset
- Power Delivery
- Ultra low power logic - P1222

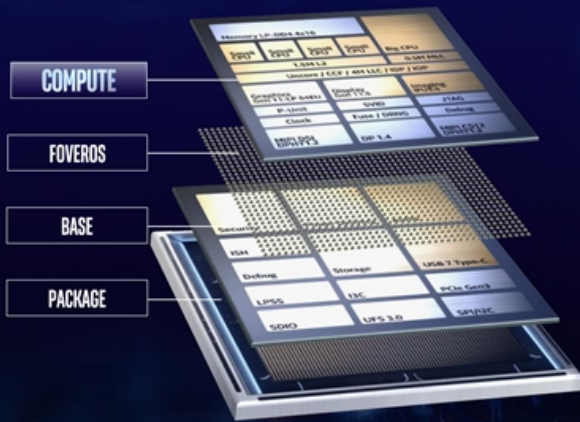
INTELLIGENT AGENTS LAKEFIELD



FOVEROS

Scalable 3D silicon interconnect
Ultra low-power: 0.15 pico Joules / bit
High bandwidth: 2-3X 2.5D interposer
Scalable power delivery: 3W-1KW
High yield process for die stacking

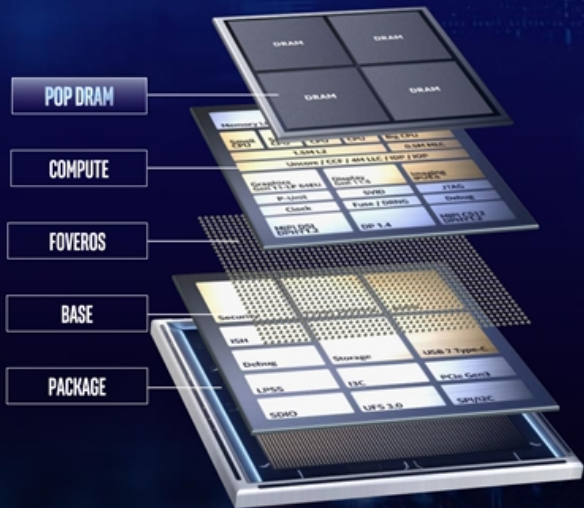
INTELLIGENT AGENTS LAKEFIELD



COMPUTE

10 nm process compute
Hybrid architecture: Core + Atom
Thermal solution to enable 3D stacking

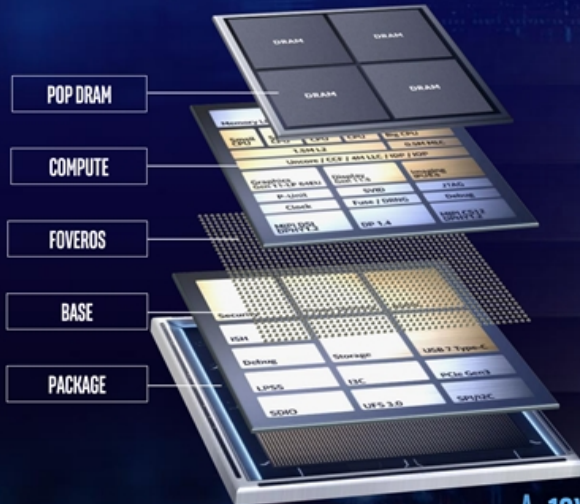
INTELLIGENT AGENTS LAKEFIELD



POP DRAM

POP DRAM integration with 1 mm Z-height

INTELLIGENT AGENTS LAKEFIELD



SOFTWARE	OpenVINO		
SECURITY	UFS Inline Encryption	Boot from UFS	VBS
INTERCONNECT	UFS 3.0	USB 3.0	MIPI CSI2
MEMORY	POP DRAM		
XPU ARCHITECTURES	HYBRID ARCHITECTURE		GEN11 Graphics
	Sunny Cove CPU	Tremont CPU	
PROCESS & PACKAGING	Foveros 3D Integration 10nm Compute Die, Low Power Base Die		

Results have been estimated or simulated as of April, 2019 using internal Intel analysis or architecture simulation or modeling vs. AML product
 Disclaimer: Results are approximate and have been estimated or simulated as of April 2019 using Intel internal analysis or architecture simulation or modeling.
 For more complete information about performance and benchmark results, visit www.intel.com/benchmarks. Performance results are based on testing as of date specified and may not reflect all publicly available security updates. See configuration disclosure for details.
 No product or component can be absolutely secure.



- A P P R O X**
- 10X Standby SOC Power Improvement
 - 1.5-2X Active SOC Power Improvement
 - 2X Graphics Performance
 - 2X PCB Area Reduction

SUMMARY

Data drives extraordinary opportunities for growth

Intel products & methods targeted to win data-centric growth with six pillar innovation model

You will see this in our product leadership



CONFIGURATION DISCLOSURE

Performance results are based on testing as of dates shown in configuration and may not reflect all publicly available security updates. See configuration disclosure for details. No product or component can be absolutely secure. Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products. For more complete information visit www.intel.com/benchmarks.

Approx. 3x Ice Lake Wireless Speeds: 802.11ax 2x2 160MHz enables 2402Mbps maximum theoretical data rates, ~3X (2.8X) faster than standard 802.11ac 2x2 80MHz (867Mbps) as documented in IEEE 802.11 wireless standard specifications, and require the use of similarly configured 802.11ax wireless network routers.

Approx. 2x Ice Lake Video Encode: Based on 4k HEVC to 4k HEVC transcode (8bit). Intel preproduction system, ICL 15w compared to WHL 15w. Measured by Intel as of April 2019.

Approx. 2x Ice Lake Graphics Performance: Workload: 3DMark11 v 1.0.132. Intel PreProduction ICL U4+2 15W Configuration (Assumptions); Processor: Intel® Core™ i7 (ICL-U 4+2) PL1=15W TDP, 4C/8T, Memory: 2x8GB LPDDR4-3733 2Rx8, Storage: Intel® 760p m.2 PCIe NVMe SSD with AHCI Microsoft driver, Display Resolution: 3840x2160 eDP Panel 12.5", OS: Windows® 10 RS5-17763.316, Graphics driver: PROD-H-RELEASES_ICL-PV-2019-04-09-1006832. Vs config – Intel PreProduction WHL U4+2 15W Configuration (Measured), Processor: Intel® Core™ i7-8565U (WHL-U4+2) PL1=15W TDP, 4C/8T, Turbo up to 4.6Ghz, Memory: 2x8GB DDR4-2400 2Rx8, Storage: Intel® 760p m.2 PCIe NVMe SSD with AHCI Microsoft driver, Display Resolution: 3840x2160 eDP Panel 12.5", OS: Windows® 10 RS4-17134.112. Graphics driver: 100.6195. Measured by Intel as of April 2019.

Approx. 2.5x-3x Ice Lake AI Performance: Workload: images per second using AIXPRT Community Preview 2 with Int8 precision on ResNet-50 and SSD-Mobilenet-v1 models. Intel preproduction system, ICL-U, PL1 15w, 4C/8T, Turbo TBD, Intel Gen11 Graphics, GFX driver preproduction, Memory 8GB LPDDR4X-3733, Storage Intel SSD Pro 760P 256GB, OS Microsoft Windows 10, RS5 Build 475, preprod bios. Vs. Config – HP spectre x360 13t 13-ap0038nr, Intel® Core™ i7-8565U, PL1 20w, 4C/8T, Turbo up to 4.6Ghz, Intel UHD Graphics 620, Gfx driver 26.20.100.6709, Memory 16GB DDR4-2400, Storage Intel SSD 760p 512GB, OS – Microsoft Windows 10 RS5 Build 475 Bios F.26. Measured by Intel as of April 2019.

CONFIGURATION DISCLOSURE

2nd Gen Intel® Xeon Scalable Processors up to 28X AI Performance: Based on Intel internal testing: 28x performance improvement based on Intel® Optimization for Café ResNet-50 inference throughput performance on Intel® Xeon® Scalable Processor.

28x inference throughput improvement on Intel® Xeon® Platinum 9282 processor with Intel® DL Boost: Tested by Intel as of 2/26/2019. Platform: Dragon rock 2 socket Intel® Xeon® Platinum 9282(56 cores per socket), HT ON, turbo ON, Total Memory 768 GB (24 slots/ 32 GB/ 2933 MHz), BIOS:SE5C620.86B.0D.01.0241.112020180249, Centos 7 Kernel 3.10.0-957.5.1.el7.x86_64, Deep Learning Framework: Intel® Optimization for Caffe version: <https://github.com/intel/caffe> d554cbf1, ICC 2019.2.187, MKL DNN version: v0.17 (commit hash: 830a10059a018cd2634d94195140cf2d8790a75a), model: https://github.com/intel/caffe/blob/master/models/intel_optimized_models/int8/resnet50_int8_full_conv.prototxt, BS=64, No datalayer syntheticData:3x224x224, 56 instance/2 socket, Datatype: INT8 vs. Tested by Intel as of July 11th 2017: 2S Intel® Xeon® Platinum 8180 CPU @ 2.50GHz (28 cores), HT disabled, turbo disabled, scaling governor set to "performance" via intel_pstate driver, 384GB DDR4-2666 ECC RAM, CentOS Linux release 7.3.1611 (Core), Linux kernel 3.10.0-514.10.2.el7.x86_64, SSD: Intel® SSD DC S3700 Series (800GB, 2.5in SATA 6Gb/s, 25nm, MLC). Performance measured with: Environment variables: KMP_AFFINITY='granularity=fine, compact', OMP_NUM_THREADS=56, CPU Freq set with cpupower frequency-set -d 2.5G -u 3.8G -g performance. Caffe: (<http://github.com/intel/caffe/>), revision f96b759f71b2281835f690af267158b82b150b5c. Inference measured with "caffe time --forward_only" command, training measured with "caffe time" command. For "ConvNet" topologies, synthetic dataset was used. For other topologies, data was stored on local storage and cached in memory before training. Topology specs from https://github.com/intel/caffe/tree/master/models/intel_optimized_models (ResNet-50). Intel C++ compiler ver. 17.0.2 20170213, Intel MKL small libraries version 2018.0.20

Performance results are based on testing as of 2/26/2019 (28x) and may not reflect all publically available security updates. No product can be absolutely secure. See configuration disclosure for details.

CONFIGURATION DISCLOSURE

Approx. 10x Lakefield Standby SoC Power Improvement: Estimated or simulated as of April 2019 using Intel internal analysis or architecture simulation or modeling. Vs. Amber Lake.

Approx. 1.5x-2x Lakefield Active SoC Power Improvement: Estimated or simulated as of April 2019 using Intel internal analysis or architecture simulation or modeling. Workload: 1080p video playback. Vs. Amber Lake next-gen product.

Approx. 2x Lakefield Graphics Performance: Estimated or simulated as of April 2019 using Intel internal analysis or architecture simulation or modeling. Workload: GfxBENCH. LKF 5W & 7W Configuration (Assumptions): Processor: LKF PL1=5W & 7W TDP, 5C5T, Memory: 2X4GB LPDDR4x - 4267MHz, Storage: Intel® 760p m.2 PCIe NVMe SSD; LKF Optimized Power configuration uses UFS, Display Resolution: 1920x1080 for Performance; 25x14 eDP 13.3" and 19x12 MIPI 8.0" for Power, OS: Windows® 10 RS5. Power policy set to AC/Balanced mode for all benchmarks except SYSmark 2014 SE which is measured in AC/BAPCo mode for Performance. Power policy set to DC/Balanced mode for power. All benchmarks run in Admin mode., Graphics driver: X.X Vs. Configuration Data: Intel® Core™ AML Y2+2.5W measurements: Processor: Intel® Core™ i7-8500Y processor, PL1=5.0W TDP, 2C4T, Turbo up to 4.2GHz/3.6GHz, Memory: 2x4GB LPDDR3-1866MHz, Storage: Intel® 760p m.2 PCIe NVMe SSD, Display Resolution: 1920x1080 for Performance; 25x14 eDP 13.3" for Power, OS: Windows 10 Build RS3 17134.112. SYSmark 2014 SE is measured in BAPCo power plan. Power policy set to DC/Balanced mode for power. All benchmarks run in Admin mode, Graphics driver: driver:whl.1006167-v2.

DISCLAIMERS

Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products. For more information go to www.intel.com/benchmarks.

Performance results are based on testing as of date specified in the Configuration Disclosure and may not reflect all publicly available security updates. See configuration disclosure for details. No product or component can be absolutely secure.

Optimization Notice: Intel's compilers may or may not optimize to the same degree for non-Intel microprocessors for optimizations that are not unique to Intel microprocessors. These optimizations include SSE2, SSE3, and SSSE3 instruction sets and other optimizations. Intel does not guarantee the availability, functionality, or effectiveness of any optimization on microprocessors not manufactured by Intel. Microprocessor-dependent optimizations in this product are intended for use with Intel microprocessors. Certain optimizations not specific to Intel microarchitecture are reserved for Intel microprocessors. Please refer to the applicable product User and Reference Guides for more information regarding the specific instruction sets covered by this notice.

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INVESTOR MEETING



2019 INVESTOR MEETING

NAVIN SHENOY

EXECUTIVE VICE PRESIDENT & GENERAL MANAGER
DATA CENTER GROUP

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Statements in this presentation that refer to business outlook, future plans and expectations are forward-looking statements that involve a number of risks and uncertainties. Words such as "anticipates," "expects," "intends," "goals," "plans," "believes," "seeks," "estimates," "continues," "may," "will," "would," "should," "could," and variations of such words and similar expressions are intended to identify such forward-looking statements. Statements that refer to or are based on estimates, forecasts, projections, uncertain events or assumptions, including statements relating to total addressable market (TAM) or market opportunity, future products and the expected availability and benefits of such products, and anticipated trends in our businesses or the markets relevant to them, also identify forward-looking statements. Such statements are based on management's expectations as of May 8, 2019, unless an earlier date is indicated, and involve many risks and uncertainties that could cause actual results to differ materially from those expressed or implied in these forward-looking statements. Important factors that could cause actual results to differ materially from the company's expectations are set forth in Intel's earnings release dated April 25, 2019, which is included as an exhibit to Intel's Form 8-K furnished to the SEC on such date. Additional information regarding these and other factors that could affect Intel's results is included in Intel's SEC filings, including the company's most recent reports on Forms 10-K and 10-Q. Copies of Intel's Form 10-K, 10-Q and 8-K reports may be obtained by visiting our Investor Relations website at www.intc.com or the SEC's website at www.sec.gov.

All information in this presentation reflects management's views as of May 8, 2019, unless an earlier date is indicated. Intel does not undertake, and expressly disclaims any duty, to update any statement made in this presentation, whether as a result of new information, new developments or otherwise, except to the extent that disclosure may be required by law.

KEY MESSAGES

THE DATA-CENTRIC OPPORTUNITY IS MASSIVE

LARGEST OPPORTUNITY IN INTEL'S HISTORY, OVER \$200B TAM BY 2023

INDUSTRY MEGA-TRENDS LEVERAGE OUR STRENGTHS

ARTIFICIAL INTELLIGENCE, CLOUD, CLOUDIFICATION OF NETWORK | EDGE

INTEL HAS AN UNPARALLELED ARRAY OF ASSETS TO FUEL GROWTH

PORTFOLIO OF LEADERSHIP PRODUCTS TO MOVE, STORE AND PROCESS DATA



2019 INVESTOR MEETING

INDUSTRY MEGA-TRENDS

GROWTH OF
ARTIFICIAL INTELLIGENCE



PROLIFERATION OF
CLOUD COMPUTING



CLOUDIFICATION OF THE
NETWORK & EDGE



intel **2019 INVESTOR MEETING**

EXPLOSION IN DEMAND FOR COMPUTE

**INCREASING COMPUTE DEMAND
DIVERSIFYING WORKLOAD NEEDS**

COMPUTE DEMAND (MIPS)
~60% CAGR

2014 2015 2016 2017 2018 2019 2020 2021 2022 2023

- AI
- ANALYTICS
- HPC
- MULTI-CLOUD & ORCHESTRATION
- NETWORK
- IN-MEMORY DATABASE
- VIRTUALIZATION
- SECURITY



2023 INVESTOR MEETING

Source: Amalgamation of analyst data and Intel analysis.

LARGEST DATA-CENTRIC OPPORTUNITY IN INTEL HISTORY

DATA-CENTRIC TAM FORECAST
7% CAGR

>\$200B

>\$150B

21%
MSS



- IOT + AD
- FPGA
- NON-VOLATILE MEMORY
- DATA CENTER MEMORY
- SILICON PHOTONICS
- ETHERNET + FABRIC
- NETWORK LOGIC SILICON
- STORAGE LOGIC SILICON
- SERVER + SERVER-BASED STORAGE LOGIC SILICON

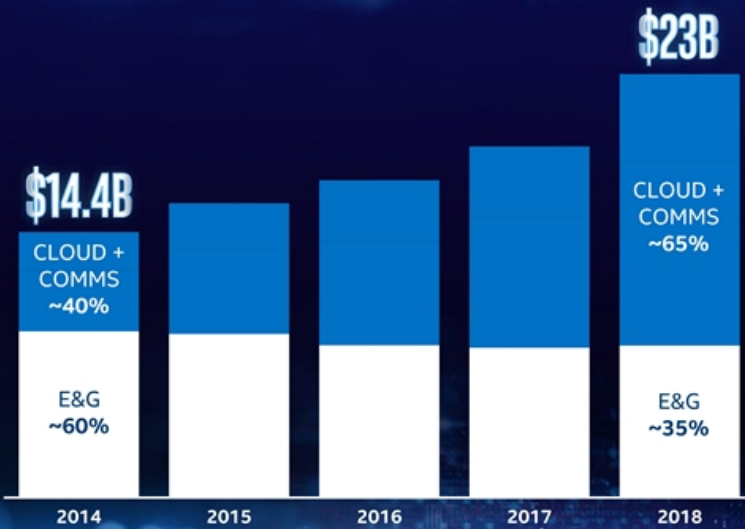
GOAL
GROW REVENUE
FASTER THAN TAM

intel **2023 INVESTOR MEETING**

Source: 2018 MSS is based on Intel financials. 2023F SI TAM is based on amalgamation of analyst data and Intel analysis, based upon current expectations and available information and are subject to change without notice. Data Center includes Server, Storage, & Network computing, Ethernet/OPA, Silicon Photonics and Memory. Non-Volatile Memory includes NAND and Optane™ technology. IOT includes addressable Logic ASIC/ASSP, MPU, MCU, DSP for Industrial, Transportation, Automated Driving, Retail, Video Surveillance, Healthcare, Public Sector, Office Automation, Gaming and Smart Home. Forecast is soft estimate subject to significant change and revisions.

DATA CENTER GROUP BUSINESS

INTEL DATA CENTER GROUP REVENUE
12% CAGR



- ◇ Cloud SP + Comms SP approaching 70% of DCG revenue
- ◇ 2019 revenue forecast down mid-single digits YOY
 - ◇ Inventory and capacity absorption off of a record 21% growth year
 - ◇ Continued China weakness



2019 INVESTOR MEETING

Source: Intel Financials. Forecast is soft estimate subject to significant change and revisions

PUBLIC CLOUD SP GROWTH & DIVERSIFICATION

INTEL PUBLIC CLOUD SP REVENUE
>30% CAGR



INVESTING TO ENABLE NEXT WAVE CSPTS
NEXT WAVE GROWTH OF 33% IN 2018

DEEPEN PARTNERSHIPS WITH CSPTS
CUSTOM CPUS >55% OF VOLUME IN 2018

PUBLIC CLOUD BUSINESS IS TAM EXPANSIVE
2/3 OF REV IS TAM EXPANSIVE, AND GROWING
(CONSUMER AND NEW CLOUD SERVICES)



2019 INVESTOR MEETING

Source: Intel

PROLIFERATION OF CLOUD COMPUTING ENTERPRISE AND COMMS SERVICE PROVIDERS

DIGITAL TRANSFORMATION CONTINUES



CLOUD SPS INVESTING IN HYBRID CLOUD SOLUTIONS



ARCHITECTING THE DATA-CENTRIC FUTURE

MOVE FASTER

intel ETHERNET

intel SILICON PHOTONICS

intel OMNI-PATH FABRIC

STORE MORE

intel OPTANE DC  PERSISTENT MEMORY

intel OPTANE DC  SOLID STATE DRIVE

PROCESS EVERYTHING



SOFTWARE & SYSTEM-LEVEL OPTIMIZED

APRIL 2ND LAUNCH

DATA-CENTRIC PORTFOLIO

MOVE FASTER

INTEL®
ETHERNET
800 SERIES ADAPTER



STORE MORE

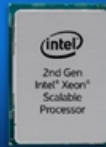
INTEL®
SSDs



INTEL®
OPTANE™ DC
PERSISTENT MEMORY



2ND GENERATION
INTEL®
XEON® SCALABLE



PROCESS EVERYTHING

INTEL®
XEON® D-1600



INTEL®
AGILEX™



intel select
solution

"Only one company can introduce technologies across such a broad set of areas – this is unparalleled."

Mario Morales, IDC

intel 2019 INVESTOR MEETING

2ND GENERATION INTEL[®] XEON[®] SCALABLE PROCESSOR

>50
STANDARD SKUS

DOZENS
CUSTOM SKUS

8 TO 56
CORES PER SOCKET

1 TO 8
SOCKETS

4.5TB
MEMORY PER SOCKET

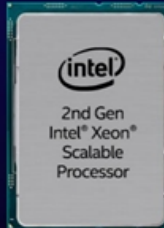
UP TO 1.33X
AVG. MAINSTREAM
PERF GEN ON GEN

HUAWEI
CLOUD MANAGEMENT
1.42X MORE
VMS
8260+OPTANE PM VS DRAM
CLOUD ORCHESTRATION

Tencent Cloud
CLOUD VIDEO ANALYSIS
3.26X
8260 DLBOOST VS FP32
AI

**宝信软件
BAOSIGHT**
INDUSTRIAL BIG DATA
1.39X
8280+OPTANE PM VS DRAM
ANALYTICS

NOKIA
vNETWORK GATEWAY
2.0X
5218N+QAT VS 5118
NETWORK



redis
IMDB
UP TO **8X** MORE
VM INSTANCES
8280+OPTANE PM VS DRAM
VIRTUALIZATION

FORTINET
VIRTUAL NG FIREWALL
3.0X
6230N+QAT VS 6230N
SECURITY

LS-DYNA
PHYSICS SIMULATION
2.01X
9242 VS 8160
HPC

GBASE[®]
IMDB
1.35X
8260+OPTANE PM VS DRAM
IN-MEMORY DATABASE



2019 INVESTOR MEETING

Performance results are based on testing as of dates shown in configuration and may not reflect all publicly available security updates. See configuration disclosure for details. No product can be absolutely secure. For more complete information about performance and benchmark results, visit www.intel.com/benchmarks. Intel's compilers may or may not optimize to the same degree for non-Intel microprocessors for optimizations that are not unique to Intel microprocessors. These optimizations include SSE2, SSE3, and SSSE3 instruction sets and other optimizations. Intel does not guarantee the availability, functionality, or effectiveness of any optimization on microprocessors not manufactured by Intel. Microprocessor-dependent optimizations in this product are intended for use with Intel microprocessors. Certain optimizations not specific to Intel microarchitecture are reserved for Intel microprocessors. Please refer to the applicable product User and Reference Guides for more information regarding the specific instruction sets covered by this notice.

INTEL® OPTANE™ DC PERSISTENT MEMORY

A PLATFORM APPROACH



INTEL® OPTANE™ DC PERSISTENT MEMORY SAM (2023)

\$10B

>50% CAGR ('18-'23)



IN-MEMORY
DATABASE



VMS, CONTAINERS,
APP DENSITY



CONTENT
DELIVERY



REAL-TIME
ANALYTICS



STORAGE
DATA REPLICATION



HIGH PERFORMANCE
COMPUTING

CUSTOMER PROOF-OF-CONCEPT TRACTION SINCE LAUNCH

>100

FORTUNE 500

5

SUPER 7

>30

NEXT WAVE CSPs

>10

COMMS SPs



2019 INVESTOR MEETING

Source: Amalgamation of analyst data and Intel analysis.

ICE LAKE ON TRACK

2014

2015

2016

2017

2018

2019

2020

2021

2022

INTEL® XEON®
PROCESSOR E5 V3
HASWELL

INTEL® XEON®
PROCESSOR E5 V4
BROADWELL

INTEL® XEON®
SCALABLE PROCESSOR
SKYLAKE

2ND GEN INTEL® XEON®
SCALABLE PROCESSOR
CASCADE LAKE

COOPER LAKE
&
ICE LAKE

ICE LAKE

PRODUCTION SHIPMENTS 1H'20
SAMPLES SHIPPING NOW
POWERED ON AT MULTIPLE CUSTOMERS



2019 INVESTOR MEETING

INCREASING THE PACE OF INNOVATION

2014

2015

2016

2017

2018

2019

2020

2021

2022

INTEL® XEON®
PROCESSOR E5 V3
HASWELL

INTEL® XEON®
PROCESSOR E5 V4
BROADWELL

INTEL® XEON®
SCALABLE PROCESSOR
SKYLAKE

2ND GEN INTEL® XEON®
SCALABLE PROCESSOR
CASCADE LAKE

COOPER LAKE
&
ICE LAKE

SAPPHIRE
RAPIDS

NEXT
GEN

DRIVING LEADERSHIP WORKLOAD PERFORMANCE

5 TO 7
QUARTER CADENCE

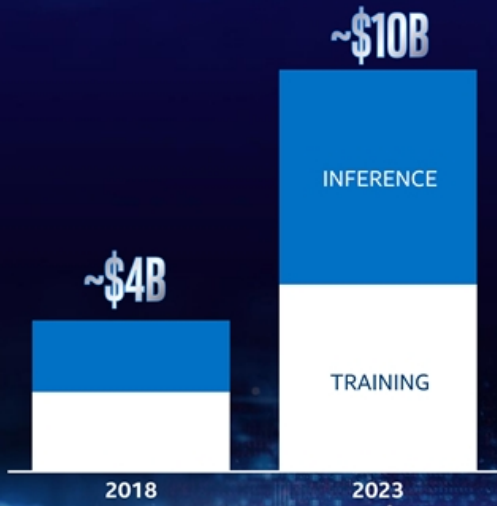
MOVING
TO

4 TO 5
QUARTER CADENCE

intel 2019 INVESTOR MEETING

AI OPPORTUNITY

AI DATA CENTER SI TAM
>20% CAGR



'18 INTEL
DATA CENTER
AI REV

>\$1.7B



2019 INVESTOR MEETING

Source: Amalgamation of analyst data and Intel analysis. Intel AI revenue based on Intel financials and analysis for data center processors and FPGAs

DELIVERING AI COMPUTE FROM EDGE TO CLOUD

FROM CPU TO XPU - ONE SIZE DOES NOT FIT ALL



SCALAR



Intel® Xeon®
Scalable Processor Family



VECTOR



Intel®
Discrete Graphics



SPATIAL



Intel®
FPGA



MATRIX



Intel® Nervana™ NNP
Intel® Movidius™ Myriad™
Intel® Mobileye® EyeQ®

ONEAPI UNIFIED DEVELOPER FRAMEWORK



2019 INVESTOR MEETING

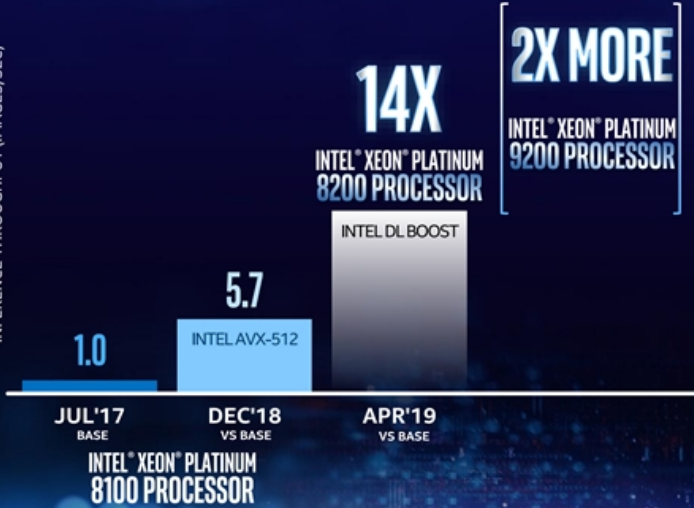


INTEL® DEEP LEARNING BOOST

ONLY CPU WITH BUILT-IN INFERENCE ACCELERATION

INTEL OPTIMIZATION FOR CAFFE RESNET-50

INFERENCING THROUGHPUT (IMAGES/SEC)

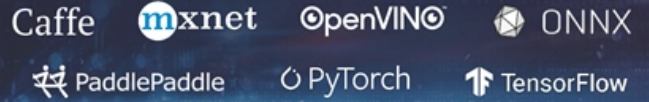


Yann LeCun
@ylecun

PyTorch acceleration baked into the latest generation of Intel Xeons. That will help speed up the 200 trillion predictions and 6 billion translations Facebook does every day.
[facebook.com/yann.lecun/pos ...](https://facebook.com/yann.lecun/pos...)

3:18 PM - 9 Apr 2019

SUPPORTED IN ALL MAJOR FRAMEWORKS



INVESTOR MEETING

Performance results are based on testing as of dates shown in configuration and may not reflect all publicly available security updates. See configuration disclosure for details. No product or component can be absolutely secure. For more complete information about performance and benchmark results, visit www.intel.com/benchmarks.

INTEL® NERVANA™ NEURAL NETWORK PROCESSOR FOR INFERENCE

INCLUDING
ICE LAKE CORES

SILICON
POWERED-ON



INDUSTRY LEADING DEEP LEARNING
TOPS/W & POWER EFFICIENCY

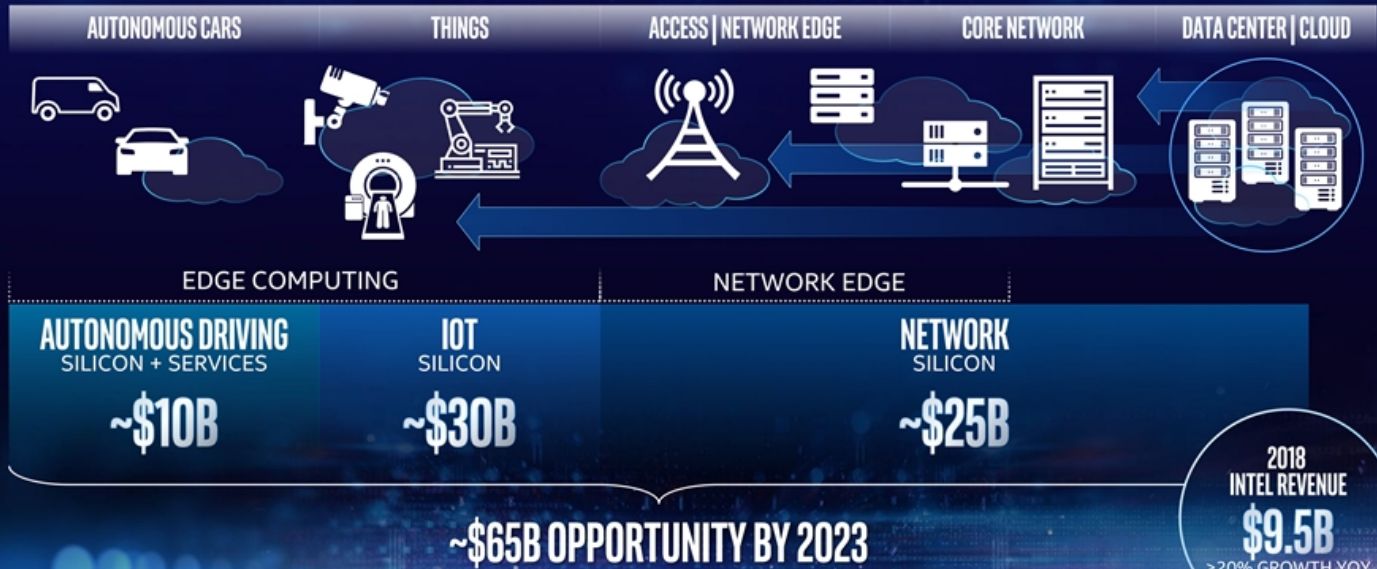
PARTNERING WITH
FACEBOOK



2019 INVESTOR MEETING

Intel® Nervana™ Neural Network Processor for Inference, Tops/W and power efficiency. Results have been estimated or simulated using internal Intel analysis or architecture simulation or modeling, and provided to you for informational purposes. Any differences in your system hardware, software or configuration may affect your actual performance.

NETWORK + EDGE COMPUTING ACCELERATED BY 5G



intel **2019 INVESTOR MEETING**

Source: Amalgamation of analyst data and Intel analysis. 2018 revenue based on a portion of DCG, PSG, IOTG and Mobileye.



2019 INVESTOR MEETING

SANDRA RIVERA

SENIOR VICE PRESIDENT & GENERAL MANAGER
NETWORK PLATFORMS GROUP

CLOUDIFICATION OF THE NETWORK & EDGE



SCALABILITY & FLEXIBILITY FOR NETWORKING WORKLOADS

 MOVE	 STORE	 PROCESS	 SOFTWARE
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2019 INVESTOR MEETING

THE NEXT GENERATION OF NETWORKS IS HERE

2011

NFV
DEFINED

2013

1st NFV
PROOF OF
CONCEPTS

2015

20%
OF COMMS SPS
ADOPT NFV

2017

DPDK
MOVES TO LINUX
FOUNDATION

2018

65%
CORE NW FUNCTIONS
VIRTUALIZED



2019

1st 100%
CLOUD-NATIVE
NETWORK

Rakuten WORLD'S 1ST END TO END CLOUD NATIVE MOBILE NETWORK

100%
ON INTEL ARCHITECTURE

35%
IMPROVED
TCO

4 SKUS
FOR ENTIRE
NETWORK

~1/10TH
OPERATIONS
STAFF

~1 YEAR
FROM CONCEPT TO
DEPLOYMENT

5G READY
NETWORK
ARCHITECTURE

"Our vision is to build a network that innovates at the speed of software and scales at the speed of cloud... leveraging best-in-class technology...to provide a high quality, cost-effective service to our customers."

Tareq Amin, Group CTIO, Rakuten

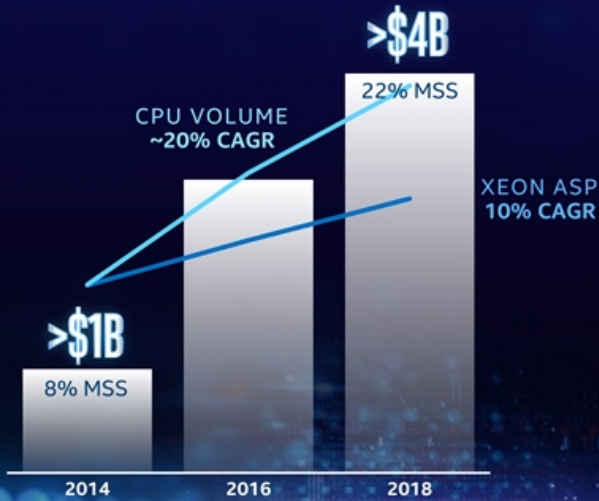


2019 INVESTOR MEETING

NETWORK & EDGE GROWTH

ACCELERATED BY 5G

INTEL NETWORK REVENUE
~40% CAGR



AREAS OF FOCUS

DRIVING TRANSFORMATION TO
CLOUD-BASED PLATFORMS

DELIVERING PORTFOLIO OF PRODUCTS FOR
5G AND EDGE

ON TRACK TO BASESTATION MSS
>40% BY 2022



2019 INVESTOR MEETING

Source: Amalgamation of analyst data and Intel analysis. Based on Intel financials for a portion of DCG and PSG.

INTERNET OF THINGS BUSINESS

INTEL IOTG REVENUE
>10% CAGR

AREAS OF FOCUS

AGGREGATION AT THE EDGE

VIDEO INFERENCE

HIGH PERFORMANCE COMPUTE

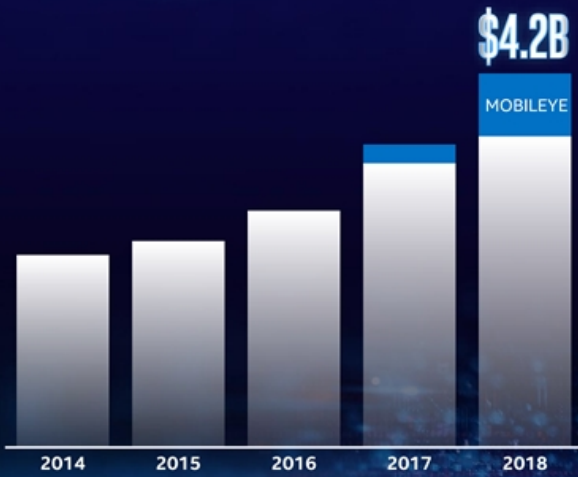


intel 2019 INVESTOR MEETING

Source: Intel financials. MSS based on amalgamation of analyst data and Intel analysis. ASP & product mix based on 2018 CPU revenue.

INTERNET OF THINGS BUSINESS

INTEL IOTG + AD REVENUE
>15% CAGR



EXTENDING INTO AUTONOMOUS DRIVING & DATA SERVICES



intel 2019 INVESTOR MEETING

Source: Intel financials

KEY MESSAGES

THE DATA-CENTRIC OPPORTUNITY IS MASSIVE

LARGEST OPPORTUNITY IN INTEL'S HISTORY, OVER \$200B TAM BY 2023

INDUSTRY MEGA-TRENDS LEVERAGE OUR STRENGTHS

ARTIFICIAL INTELLIGENCE, CLOUD, CLOUDIFICATION OF NETWORK | EDGE

INTEL HAS AN UNPARALLELED ARRAY OF ASSETS TO FUEL GROWTH

PORTFOLIO OF LEADERSHIP PRODUCTS TO MOVE, STORE AND PROCESS DATA



2019 INVESTOR MEETING



CONFIGURATION DISCLOSURE

Performance results are based on testing as of dates shown in configuration and may not reflect all publicly available security updates. See configuration disclosure for details. No product or component can be absolutely secure. Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products. For more complete information visit www.intel.com/benchmarks.

Up to 1.33x average generational gains on mainstream Gold SKU: Geomean of est SPECrate2017_int_base, est SPECrate2017_fp_base, Stream Triad, Intel Distribution of Linpack, server side Java. Gold 5218 vs Gold 5118: 1-node, 2x Intel® Xeon® Gold 5218 cpu on Wolf Pass with 384 GB (12 X 32GB 2933 (2666)) total memory, ucode 0x4000013 on RHEL7.6, 3.10.0-957.el7.x86_64, IC18u2, AVX2, HT on all (off Stream, Linpack), Turbo on, result: est int throughput=162, est fp throughput=172, Stream Triad=185, Linpack=1088, server side java=98333, test by Intel on 12/7/2018. 1-node, 2x Intel® Xeon® Gold 5118 cpu on Wolf Pass with 384 GB (12 X 32GB 2666 (2400)) total memory, ucode 0x200004D on RHEL7.6, 3.10.0-957.el7.x86_64, IC18u2, AVX2, HT on all (off Stream, Linpack), Turbo on, result: est int throughput=119, est fp throughput=134, Stream Triad=148.6, Linpack=822, server side java=67434, test by Intel on 11/12/2018.

2.01x LS-Dyna® Explicit, 3car: 1-node, 2x Intel® Xeon® Platinum 8160L cpu on Wolf Pass with 192 GB (12 slots / 16GB / 2666) total memory, ucode 0x200004d on Oracle Linux Server release 7.6, 3.10.0-862.14.4.el7.crt1.x86_64, Intel SSD5C2BA80, LS-Dyna 9.3-Explicit AVX2 binary, 3car, HT on, Turbo on, test by Intel on 2/26/2019. 1-node, 2x Intel® Xeon® Platinum 9242 cpu on Intel reference platform with 384 GB (24 slots / 16GB / 2933) total memory, ucode 0x4000017 on CentOS 7.6, 3.10.0-957.5.1.el7.x86_64, Intel SSD5C2BA80, LS-Dyna 9.3-Explicit AVX2 binary, 3car, HT on, Turbo on, test by Intel on 3/18/2019.

1.39x BAOSIGHT® xlnsight®: 1-node, 2x Intel® Xeon® Platinum 8260L cpu on S2600WFS with 768 DDR GB (24 slots / 32GB / 2666) total memory, ucode 0x400000A on CentOS 7.5, 3.10.0-957.1.3.el7.x86_64, 1x Intel 480GB SSD OS Drive, 1x Intel XC722, xlnsight 2.0 internal workload, HT on, Turbo on, test by Intel/Baosight on 1/8/2019. 1-node, 2x Intel® Xeon® Platinum 8260L cpu on S2600WFS with 192 DDR + 1024 Intel DCPMM GB (12 slots / 16 GB / 2666 DDR + 8 slots / 128 GB / 2666 Intel DCPMM) total memory, ucode 0x400000A on CentOS 7.5, 3.10.0-957.1.3.el7.x86_64, 1x Intel 480GB SSD OS Drive, 1x Intel XC722, xlnsight 2.0 internal workload, HT on, Turbo on, test by Intel/Baosight on 1/9/2018.

1.42x Huawei® FusionSphere®: 1-node, 2x Intel® Xeon® Platinum 8260L cpu on Wolf Pass with 1024 GB (16 slots / 64GB / 2666) total memory, ucode 0x400000A on FusionSphere HyperV, 3.10.0-514.44.5.10_96.x86_64, 1x Intel 800GB SSD OS Drive, 1x Intel 800GB SSD OS Drive, 1x Intel XC722, FusionSphere 6.3.1, mysql-5.7.24, sysbench-1.0.6, HT on, Turbo on, test by Huawei/Intel on 1/11/2018. 1-node, 2x Intel® Xeon® Platinum 8260L cpu on Wolf Pass with 384 DDR + 1536 Intel DCPMM GB (12 slots / 32 GB / 2666 DDR + 12 slots / 128 GB / 2666 Intel DCPMM) total memory, ucode 0x400000A on FusionSphere HyperV, 3.10.0-514.44.5.10_96.x86_64, 3 x P3520 1.8TB Application Data, 3 x P3520 1.8TB Application Data, 1x Intel XC722, FusionSphere 6.3.1, mysql-5.7.24, sysbench-1.0.6, HT on, Turbo on, test by Huawei/Intel on 1/11/2018.

1.35x GBASE: 1-node, 2x Intel® Xeon® Platinum 8260 cpu on S2600WFT with 768 DDR GB (24 slots / 32GB / 2666) total memory, ucode 0x400000A on CentOS 7.5, 3.10.0-957.1.3.el7.x86_64, 1x Intel 400GB SSD OS Drive, 1x Intel XC722, Gbase 8m 6.3.2 OCS Benchmark, HT on, Turbo on, test by GBASE/Intel on 2/19/2019. 1-node, 2x Intel® Xeon® Platinum 8260 cpu on S2600WFT with 192 DDR + 1024 Intel DCPMM GB (12 slots / 16 GB / 2666 DDR + 8 slots / 128 GB / 2666 Intel DCPMM) total memory, ucode 0x400000A on CentOS 7.5, 3.10.0-957.1.3.el7.x86_64, 1x Intel 400GB SSD OS Drive, 1x Intel XC722, Gbase 8m 6.3.2 OCS Benchmark, HT on, Turbo on, test by GBASE/Intel on 2/19/2019.

2x Nokia® SDWAN: Configuration #1 (With Intel® QuickAssist® Technology): 2x Intel® Xeon® Gold 5218N Processor on Neon City Platform with 192 GB total memory (12 slots / 16GB / DDR4 2667MHz), ucode 0x4000019, Bios: PLYXCRB 1.868.0568.D10.1901032132, uCode: 0x4000019 on CentOS 7.5 with Kernel 3.10.0-862, KVM Hypervisor, 1x Intel® QuickAssist Adapter 8970, Cipher: AES-128-SHA-256; Intel® Ethernet Converged Network Adapter X520-SR2; Application: Nokia Nuage SDWAN NSGv 5.3.3U3. Configuration #2: 2x Intel® Xeon® Gold 5118 Processor on Neon City Platform with 192 GB total memory (12 slots / 16GB / DDR4 2667MHz), ucode 0x4000019, Bios: PLYXCRB 1.868.0568.D10.1901032132, uCode: 0x4000019 on CentOS 7.5 with Kernel 3.10.0-862, KVM Hypervisor, Intel® Ethernet Converged Network Adapter X520-SR2; Application: Nokia Nuage SDWAN NSGv 5.3.3U3. Results recorded by Intel on 2/14/2018 in collaborate with Nokia.

3.26x latency reduction for Tencent® Cloud Video Analysis: Tested by Tencent as of 1/14/2019. 2 socket Intel® Xeon® Gold Processor, 24 cores HT On Turbo ON Total Memory 192 GB (12 slots / 16GB / 2666 MHz), CentOS 7.6 3.10.0-957.el7.x86_64, Compiler: gcc 4.8.5, Deep Learning Framework: Intel® Optimizations for Caffe v1.1.3, Topology: modified inception v3, Tencent's private dataset, B5=1. Comparing performance on same system with FP32 vs INT8 w/ Intel® DL Boost

3x Fortinet® FortiGate®: Configuration #1 (With Intel® QuickAssist Technology) 2x Intel® Xeon® Gold E5-6230N Processor on Neon City Platform with 192 GB total memory (12 slots / 16GB / DDR4 2933MHz), ucode 0x4000019, Bios: PLYXCRB 1.868.0568.D10.1901032132, uCode: 0x4000019 on CentOS 7.5 with Kernel 3.10.0-862, KVM Hypervisor, 1x Intel® QuickAssist Adapter 8970, IPsec AES128-SHA256; 1x Dual Port 40GbE Intel® Ethernet Network Adapter XL710, Application: FortiGate VM64-KVM (v.6.2.0 interim build). Configuration #2 (Without Intel® QuickAssist Technology) : 2x Intel® Xeon® Gold E5-6230N Processor on Neon City Platform with 192 GB total memory (12 slots / 16GB / DDR4 2933MHz), ucode 0x4000019, Bios: PLYXCRB 1.868.0568.D10.1901032132, uCode: 0x4000019 on CentOS 7.5 with Kernel 3.10.0-862, KVM Hypervisor; 1x Dual Port 40GbE Intel® Ethernet Network Adapter XL710; Application: FortiGate VM64-KVM (v.6.2.0 interim build). Results recorded by Intel and reviewed by Fortinet on 3/27/2018.

Up to 8X more VMs when running Redis with 8X memory capacity: 1-node, 2x Intel Xeon Platinum 8276 cpu on Intel reference platform with 768 GB (12 slots / 32GB / 2666) total memory, BIOS PLYXCRB1.868.0573.D10.1901300453 on Fedora-27, 4.20.4-200.fc29.x86_64, 2x40G, Redis 4.0.11, member_benchmark-1.2.12 (80/20 read/write); 1K record size, KVM, 1/VM, centos-7.0, Memory mode, HT on, Turbo on, test by Intel on 2/22/2019. 1-node, 2x Intel Xeon Platinum 8276 cpu on Intel reference platform with 192 + 6144 GB (12 slots / 16GB / 2666 DDR + 12 slots / 512GB / 2666 Intel Optance DCPMM) total memory, BIOS PLYXCRB1.868.0573.D10.1901300453 on Fedora-27, 4.20.4-200.fc29.x86_64, 2x40G, Redis 4.0.11, member_benchmark-1.2.12 (80/20 read/write); 1K record size, KVM, 1/VM, centos-7.0, Memory mode, HT on, Turbo on, test by Intel on 2/22/2019.

CONFIGURATION DISCLOSURE

Intel® Deep Learning Boost

1x inference throughput baseline on Intel® Xeon® Platinum 8180 processor (July 2017): Tested by Intel as of July 11th 2017: Platform: 2S Intel® Xeon® Platinum 8180 CPU @ 2.50GHz (28 cores), HT disabled, turbo disabled, scaling governor set to "performance" via intel_pstate driver, 384GB DDR4-2666 ECC RAM, CentOS Linux release 7.3.1611 (Core), Linux kernel 3.10.0-514.10.2.el7.x86_64, SSD: Intel® SSD DC S3700 Series (800GB, 2.5in SATA 6Gb/s, 25nm, MLC). **Performance measured with:** Environment variables: KMP_AFFINITY="granularity=fine, compact", OMP_NUM_THREADS=56, CPU Freq set with cpupower frequency-set -d 2.5G -u 3.8G -g performance, Caffe: (<https://github.com/intel/caffe>), revision f96b759f71b2281835f690af267158b82b150b5c. Inference measured with "caffe time --forward_only" command, training measured with "caffe time" command. For "ConvNet" topologies, synthetic dataset was used. For other topologies, data was stored on local storage and cached in memory before training. Topology specs from https://github.com/intel/caffe/tree/master/models/intel_optimized_models (ResNet-50) and https://github.com/jeanmuller/convnet_benchmarks/tree/master/caffe/imagenet_winners (ConvNet benchmarks; files were updated to use newer Caffe prototxt format but are functionally equivalent). Intel C++ compiler ver. 17.0.2 20170213, Intel MKL small libraries version 2018.0.20170425. Caffe run with "numactl -l".

5.7x inference throughput improvement on Intel® Xeon® Platinum 8180 processor (December 2018) with continued optimizations: Tested by Intel as of November 11th 2018 :2 socket Intel(R) Xeon(R) Platinum 8180 CPU @ 2.50GHz / 28 cores HT ON , Turbo ON Total Memory 376.46GB (12slots / 32 GB / 2666 MHz), CentOS Linux-7.3.1611-Core, kernel: 3.10.0-862.3.3.el7.x86_64, SSD sda RS3WC080 HDD 744.1GB.sdb RS3WC080 HDD 1.5TB.sdc RS3WC080 HDD 5.5TB , Deep Learning Framework: Intel® Optimization for Caffe version: 551a53d63a6183c233abaa1a19458a25b672ad41 Topology: ResNet_50_v1 BIOS:SE5C620.86B.00.01.0014.070920180847 MKLDNN: 4e333787e0d66a1dca1218e99a891d493dbc8ef1 instances: 2 instances socket-2 (Results on Intel® Xeon® Scalable Processor were measured running multiple instances of the framework. Methodology described here: <https://software.intel.com/en-us/articles/boosting-deep-learning-training-inference-performance-on-xeon-and-xeon-pl>.) Synthetic data. Datatype: INT8 Batchsize=64 vs Tested by Intel as of July 11th 2017:2S Intel® Xeon® Platinum 8180 CPU @ 2.50GHz (28 cores), HT disabled, turbo disabled, scaling governor set to "performance" via intel_pstate driver, 384GB DDR4-2666 ECC RAM, CentOS Linux release 7.3.1611 (Core), Linux kernel 3.10.0-514.10.2.el7.x86_64, SSD: Intel® SSD DC S3700 Series (800GB, 2.5in SATA 6Gb/s, 25nm, MLC). **Performance measured with:** Environment variables: KMP_AFFINITY="granularity=fine, compact", OMP_NUM_THREADS=56, CPU Freq set with cpupower frequency-set -d 2.5G -u 3.8G -g performance, Caffe: (<https://github.com/intel/caffe>), revision f96b759f71b2281835f690af267158b82b150b5c. Inference measured with "caffe time --forward_only" command, training measured with "caffe time" command. For "ConvNet" topologies, synthetic dataset was used. For other topologies, data was stored on local storage and cached in memory before training. Topology specs from https://github.com/intel/caffe/tree/master/models/intel_optimized_models (ResNet-50). Intel C++ compiler ver. 17.0.2 20170213, Intel MKL small libraries version 2018.0.20170425. Caffe run with "numactl -l".

14x inference throughput improvement on Intel® Xeon® Platinum 8280 processor with Intel® DL Boost: Tested by Intel as of 2/20/2019. 2 socket Intel® Xeon® Platinum 8280 Processor, 28 cores HT On Turbo ON Total Memory 384 GB (12 slots/ 32GB/ 2933 MHz), BIOS: SE5C620.86B.0D.01.0271.120720180605 (ucode: 0x200004d), Ubuntu 18.04.1 LTS, kernel 4.15.0-45-generic, SSD 1x sda INTEL SSDSC2BA80 SSD 745.2GB, nvme1n1 INTEL SSDPE2KX040T7 SSD 3.7TB, Deep Learning Framework: Intel® Optimization for Caffe version: 1.1.3 (commit hash: 7010334f159da247db3fe3a9d96a3116ca06b09a) , ICC version 18.0.1, MKL DNN version: v0.17 (commit hash: 830a10059a018cd2634d94195140cf2d8790a75a, model: https://github.com/intel/caffe/blob/master/models/intel_optimized_models/int8/resnet50_int8_full_conv_prototxt, BS=64, synthetic Data, 4 instance/2 socket, Datatype: INT8 vs Tested by Intel as of July 11th 2017: 2S Intel® Xeon® Platinum 8180 CPU @ 2.50GHz (28 cores), HT disabled, turbo disabled, scaling governor set to "performance" via intel_pstate driver, 384GB DDR4-2666 ECC RAM, CentOS Linux release 7.3.1611 (Core), Linux kernel 3.10.0-514.10.2.el7.x86_64, SSD: Intel® SSD DC S3700 Series (800GB, 2.5in SATA 6Gb/s, 25nm, MLC). **Performance measured with:** Environment variables: KMP_AFFINITY="granularity=fine, compact", OMP_NUM_THREADS=56, CPU Freq set with cpupower frequency-set -d 2.5G -u 3.8G -g performance, Caffe: (<https://github.com/intel/caffe>), revision f96b759f71b2281835f690af267158b82b150b5c. Inference measured with "caffe time --forward_only" command, training measured with "caffe time" command. For "ConvNet" topologies, synthetic dataset was used. For other topologies, data was stored on local storage and cached in memory before training. Topology specs from https://github.com/intel/caffe/tree/master/models/intel_optimized_models (ResNet-50), Intel C++ compiler ver. 17.0.2 20170213, Intel MKL small libraries version 2018.0.20170425. Caffe run with "numactl -l".

2x More inference throughput improvement on Intel® Xeon® Platinum 9282 processor with Intel® DL Boost: Tested by Intel as of 2/26/2019. Platform: Dragon rock 2 socket Intel® Xeon® Platinum 9282(56 cores per socket), HT ON, turbo ON, Total Memory 768 GB (24 slots/ 32 GB/ 2933 MHz), BIOS:SE5C620.86B.0D.01.0241.112020180249, Centos 7 Kernel 3.10.0-957.5.1.el7.x86_64, Deep Learning Framework: Intel® Optimization for Caffe version: <https://github.com/intel/caffe/d554cbf1>, ICC 2019.2.187, MKL DNN version: v0.17 (commit hash: 830a10059a018cd2634d94195140cf2d8790a75a), model: https://github.com/intel/caffe/blob/master/models/intel_optimized_models/int8/resnet50_int8_full_conv_prototxt, BS=64, No datalayer syntheticData:3x224x224, 56 instance/2 socket, Datatype: INT8 vs Tested by Intel as of July 11th 2017: 2S Intel® Xeon® Platinum 8180 CPU @ 2.50GHz (28 cores), HT disabled, turbo disabled, scaling governor set to "performance" via intel_pstate driver, 384GB DDR4-2666 ECC RAM, CentOS Linux release 7.3.1611 (Core), Linux kernel 3.10.0-514.10.2.el7.x86_64, SSD: Intel® SSD DC S3700 Series (800GB, 2.5in SATA 6Gb/s, 25nm, MLC). **Performance measured with:** Environment variables: KMP_AFFINITY="granularity=fine, compact", OMP_NUM_THREADS=56, CPU Freq set with cpupower frequency-set -d 2.5G -u 3.8G -g performance, Caffe: (<https://github.com/intel/caffe>), revision f96b759f71b2281835f690af267158b82b150b5c. Inference measured with "caffe time --forward_only" command, training measured with "caffe time" command. For "ConvNet" topologies, synthetic dataset was used. For other topologies, data was stored on local storage and cached in memory before training. Topology specs from https://github.com/intel/caffe/tree/master/models/intel_optimized_models (ResNet-50), Intel C++ compiler ver. 17.0.2 20170213, Intel MKL small libraries version 2018.0.20170425. Caffe run with "numactl -l".



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2019 INVESTOR MEETING

THE TRANSFORMATION OF THE PC SECTOR

GREGORY BRYANT

SENIOR VICE PRESIDENT
GENERAL MANAGER, CLIENT COMPUTING GROUP

DISCLOSURES

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KEY MESSAGES

ACCELERATING THE PACE OF INNOVATION

UNMATCHED PORTFOLIO OF LEADERSHIP PRODUCTS

PURSUING EXPANDED TAM OF \$68B

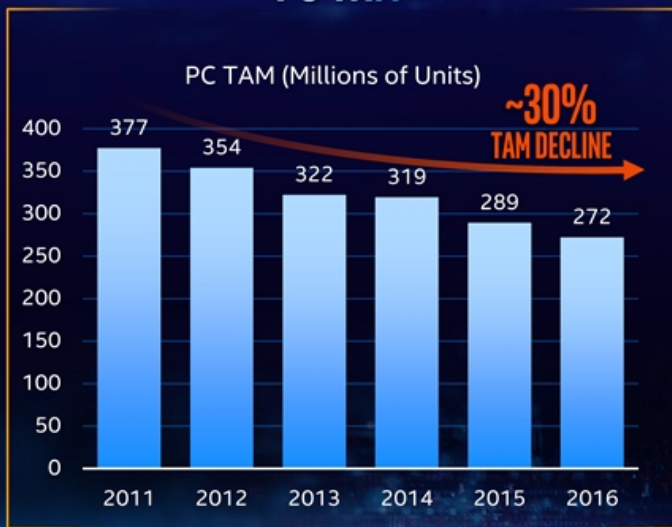
DRIVING THE INTEL ADVANTAGE THROUGH PLATFORMS



2019 INVESTOR MEETING

2016: AN INFLECTION POINT

PC TAM



The Register

**"The PC is dead.
Gartner wishes you luck,
vendors"**

- May 2016



INVESTOR MEETING

Source: MS&F and IDC

EVOLVING PC MARKET

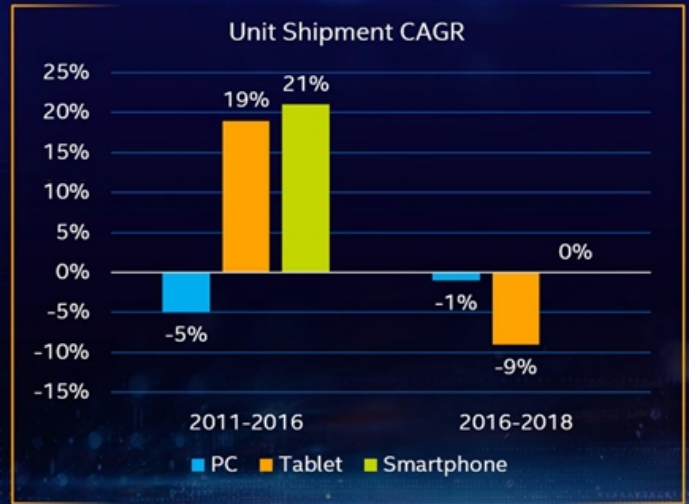
OUR BELIEFS

PC HAS LOYALISTS & CORE USAGES

SHIFT TO PREMIUM FORM FACTORS

INNOVATION REQUIRED

RESULTS



2019 INVESTOR MEETING

Source: Q1'19 IDC Trackers, Q1'19 Gartner Forecasts

OUR RESULTS



MARKET STABILIZING

DELIVERED 3 YEARS
OF TOP & BOTTOM LINE GROWTH

MANUFACTURING AND IP R&D SCALE

2019 PC-CENTRIC REVENUE
DOWN LOW SINGLE DIGITS YOY

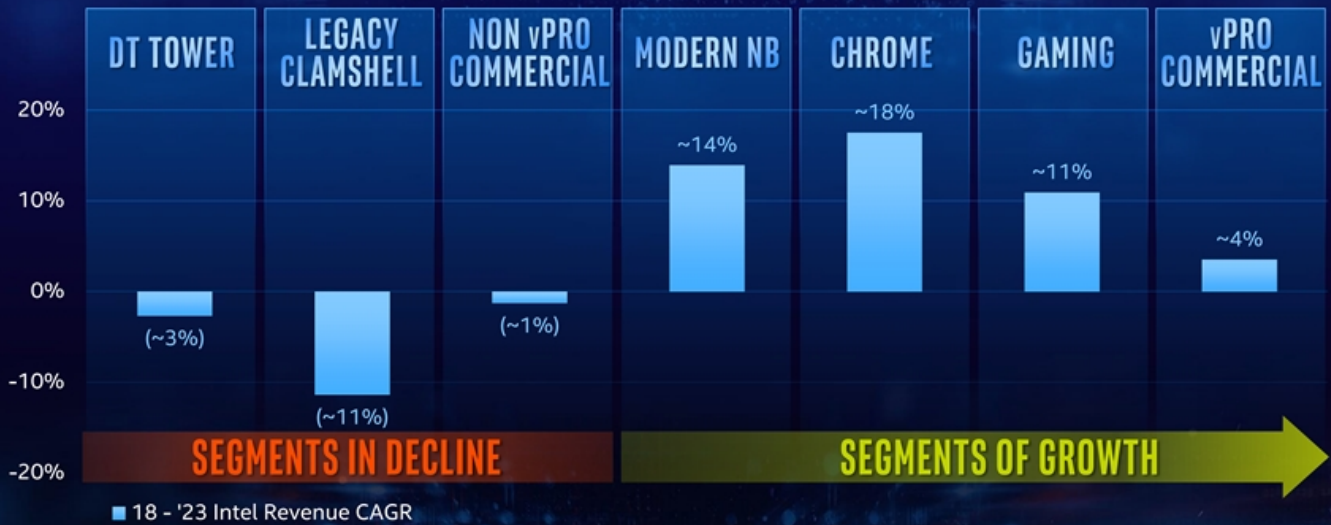
CONSTRAINED SUPPLY
& COMPETITIVE ENVIRONMENT



2019 INVESTOR MEETING

Source: PC TAM MS&F and IDC

WE CHANGED THE GAME



SHIFTED FOCUS: PREMIUM, PURPOSE-BUILT PRODUCTS



2024 INVESTOR MEETING

Source: 2018-23 Intel Revenue CAGR based on Intel Internal forecast

CLIENT COMPUTING GROUP IMPERATIVES

1.

ACCELERATE THE PACE OF INNOVATION

2.

WIN IN AN EXPANDED TAM

3.

INTEL ADVANTAGE THROUGH PLATFORMATION



2019 INVESTOR MEETING

1.

ACCELERATING THE PACE OF INNOVATION

MODERN NB



CHROME



GAMING



COMMERCIAL



UNMATCHED LEADERSHIP PORTFOLIO

1.

ACCELERATING THE PACE OF INNOVATION

2019

ICE LAKE

NEW CPU CORE ARCHITECTURE

NEW GEN 11 GRAPHICS ENGINE

1ST INTEGRATED WIFI6 (11AX) / THUNDERBOLT™ 3

OpenVINO / DL BOOST

A NEW LEVEL OF INTEGRATION

2019

LAKEFIELD

HYBRID CPU ARCHITECTURE

3D FOVEROS PACKAGING

NEW GEN 11 GRAPHICS ENGINE

IMPROVED STANDBY SOC POWER

ENABLING REVOLUTIONARY NEW FORM FACTORS

2020

TIGER LAKE

NEW CPU CORE ARCHITECTURE

NEW X^e GRAPHICS ENGINE

LATEST DISPLAY TECHNOLOGY

NEXT GEN I/O TECHNOLOGY

MOBILITY REDEFINED



2019 INVESTOR MEETING

1.

ACCELERATING THE PACE OF INNOVATION



3X* WIRELESS SPEEDS¹



4X* GRAPHICS PERFORMANCE²



2.5-3X* AI PERFORMANCE³



2X* PRODUCTIVITY IN SLIM FORM FACTORS⁴



4X* ENCODE PERFORMANCE⁵

Disclaimer: Results are approximate and have been estimated or simulated as of April 2019 using Intel internal analysis or architecture simulation or modeling

* Approximate

1) Intel's Wi-Fi 6 (GiG+) vs typical competitive 11AC design

2) 15W WHL to 25W TGL (projections)

3) AIXPRT Community 2 Preview; OpenVINO 2018.R5, Max Throughput 15W WHL to 15W ICL projection

4) 5W AML 2+2 vs 9W TGL 4+2 projections

5) WHL 4K60 to TGL 8K60 projections



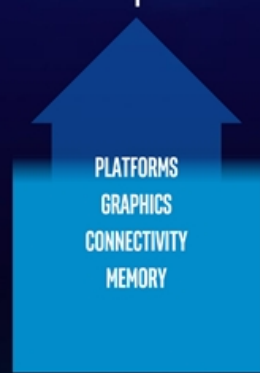
INVESTOR MEETING

For more complete information about performance and benchmark results, visit www.intel.com/benchmarks. Performance results are based on testing as of date specified and may not reflect all publicly available security updates. See configuration disclosure for details. No product or component can be absolutely secure.

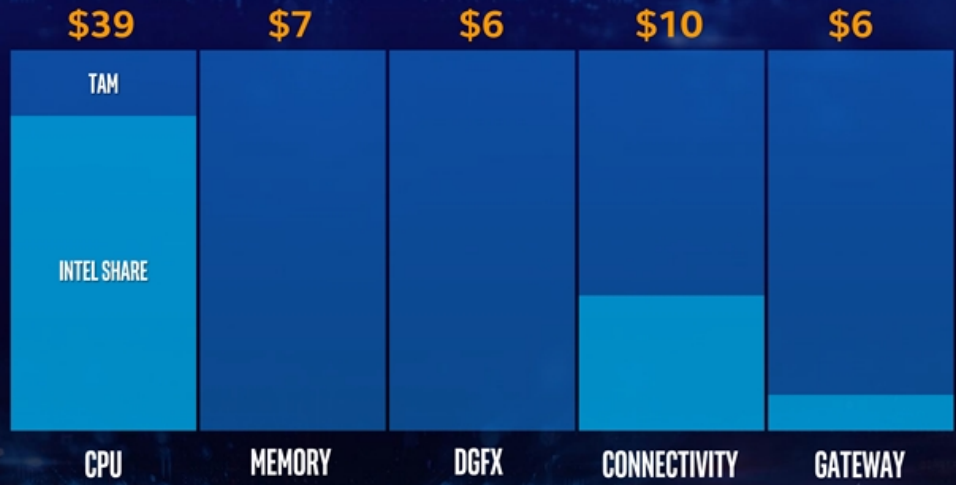
2.

WIN IN AN EXPANDED TAM

2023 TAM ~\$68B



PC & ADJACENCIES



OPPORTUNITY TO GROW BEYOND THE CPU TAM



2019 INVESTOR MEETING

Source: Intel calculated 2023 TAM derived from industry analyst reports/internal estimates and 2018 Intel revenue

2.

WIN IN AN EXPANDED TAM

MEMORY (\$7B TAM)

INTEL® OPTANE™ MEMORY
SHIPPED IN 2018

INTEL® OPTANE™ MEMORY
H10 WITH SOLID-STATE
STORAGE LAUNCHED APRIL

PERSISTENT MEMORY ON
WORKSTATIONS 2H'19

**LAUNCH GAMES
UP TO 60% FASTER¹**

CONNECTIVITY (\$10B TAM)

FIRST TO PC MARKET
WITH WI-FI6
(Discrete & Integrated)

NEW INDUSTRY STANDARD
WITH THUNDERBOLT™ 3

ACPC/LTE MARKET LEADER

**NEARLY 3X
FASTER SPEEDS²**

GRAPHICS (\$6B TAM)

LEADER IN INTEGRATED GFX

GEN 11 LAUNCHING IN 2019

NEW X^e ARCHITECTURE
IN 2020

**ACCELERATING GRAPHICS
PERFORMANCE**



2019 INVESTOR MEETING

1) Optane – based on 8th Gen Intel U with Optane Memory H10

2) Wireless- Intel's Wi-Fi 6 (Gig+) vs. typical 11AC design

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3.

INTEL ADVANTAGE THROUGH PLATFORMATION

PROJECT ATHENA

MOBILE INNOVATION ROOTED IN HUMAN UNDERSTANDING

READY TO GO
BEFORE YOU ARE



WORRY FREE DAY
OF BATTERY LIFE

PERFORMANCE
& RESPONSIVENESS



ALWAYS FAST,
RELIABLY CONNECTED

ARTIFICIAL
INTELLIGENCE



FORM FACTOR
& INTERACTION



2019 INVESTOR MEETING

3.

INTEL ADVANTAGE THROUGH PLATFORMATION

ECOSYSTEM & ENABLEMENT

NEW USAGE MODELS



NEW EXPERIENCES

NEW FORM FACTORS

acer

ASUS

BOE

COMPAL

DELL

EDO

Google

hp

HUAWEI

HQ
HUAQIN

INNOLUX

Lenovo

Microsoft

PEGATRON

Quanta Computer

SHARP

SAMSUNG

wlstron

MI



2019 INVESTOR MEETING

SUMMARY

ACCELERATING THE PACE OF INNOVATION

UNMATCHED PORTFOLIO OF LEADERSHIP PRODUCTS

PURSUING EXPANDED TAM OF \$68B

DRIVING THE INTEL ADVANTAGE THROUGH PLATFORMS



2019 INVESTOR MEETING

CONFIGURATION DISCLOSURE

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Approx. 3x Wireless Speeds: 802.11ax 2x2 160MHz enables 2402Mbps maximum theoretical data rates, ~3X (2.8X) faster than standard 802.11ac 2x2 80MHz (867Mbps) as documented in IEEE 802.11 wireless standard specifications, and require the use of similarly configured 802.11ax wireless network routers.

Approx. 4x Graphics Performance: Estimated by Intel as of April 2019, based on the 3DMark 11 and Firestrike scores of TGL U42 96EU 15W as compared to WHL U42 24EU 15W.

Approx. 2.5x-3x AI Performance: Workload: images per second using AIXPRT Community Preview 2 with Int8 precision on ResNet-50 and SSD-Mobilenet-v1 models. Intel preproduction system, ICL-U, PL1 15w, 4C/8T, Turbo TBD, Intel Gen11 Graphics, GFX driver preproduction, Memory 8GB LPDDR4X-3733, Storage Intel SSD Pro 760P 256GB, OS Microsoft Windows 10, RS5 Build 475, preprod bios. Vs. Config – HP spectre x360 13t 13-ap0038nr, Intel® Core™ i7-8565U, PL1 20w, 4C/8T, Turbo up to 4.6Ghz, Intel UHD Graphics 620, Gfx driver 26.20.100.6709, Memory 16GB DDR4-2400, Storage Intel SSD 760p 512GB, OS – Microsoft Windows 10 RS5 Build 475 Bios F.26. Estimated as of April 2019.

Approx. 2x Productivity in Slim Form Factors: Estimated by Intel as of April 2019, based on SYSmark 2014 (overall score) of AML Y-5W 2+2 SKL 14nm i7-8500Y as compared to TGL Y-9W 4+2 WLC 10nm.

Approx. 4x Encode Performance: Estimated by Intel as of April 2019 between WHL 4K60 and TGL 8K60.

Launch Games up to 60% Faster: Testing by Intel as of March 22nd, 2019. As measured by Path of Exile® Game Launch with Background Activity (e.g. 18GB Video File Copy), comparing 8th Gen Intel® Core™ i7-8565U (512GB TLC SSD) vs. 8th Gen Intel® Core™ i7-8565U (32GB+512GB Intel® Optane™ memory H10 with solid state storage)



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2019 INVESTOR MEETING

A FOCUS ON PERFORMANCE

GEORGE DAVIS

CHIEF FINANCIAL OFFICER

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AGENDA

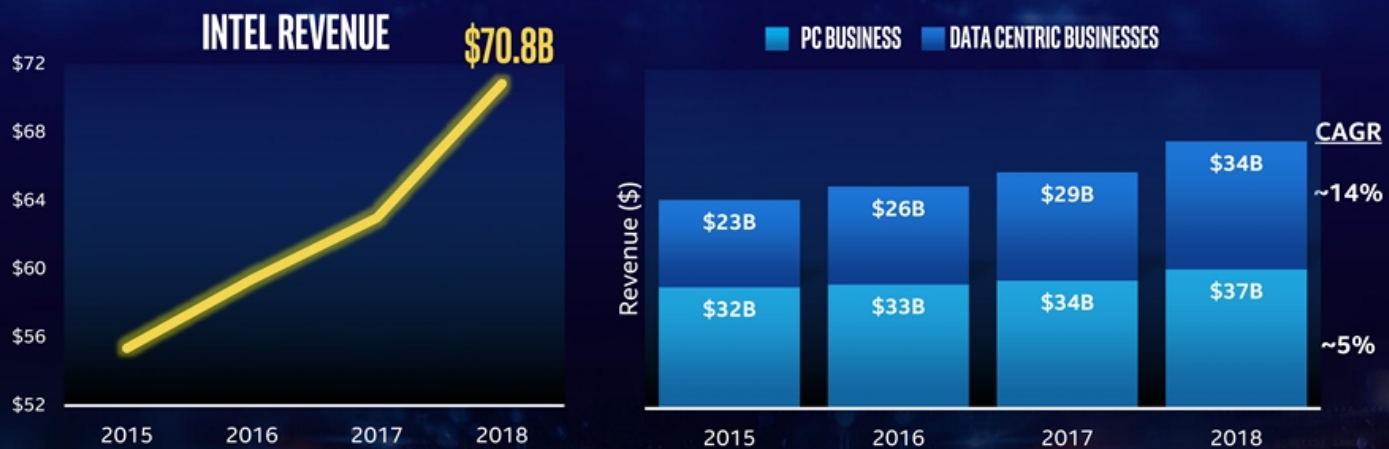
Results and Near-term Expectations

Extending Product Leadership while Investing in Process

Capital Returns & Investment Discipline

Summary of Today's Key Messages

A QUICK LOOK BACK... 3 YEARS OF RECORDS & PROGRESS ON DATA-CENTRIC TRANSFORMATION



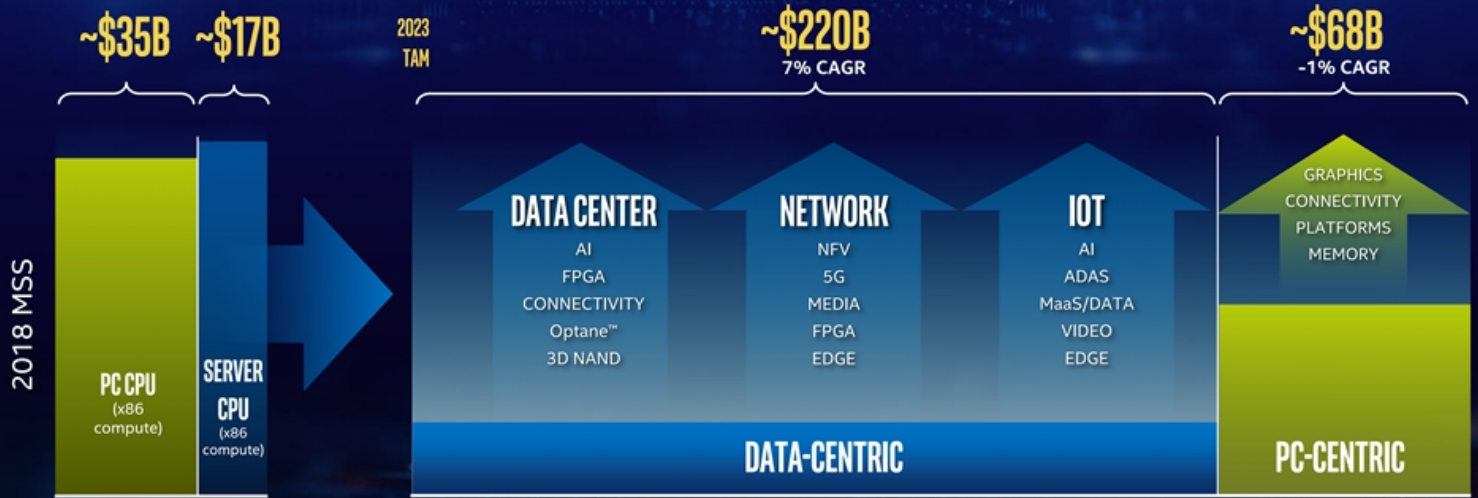
Data-Centric Businesses ~50% of Total Revenue



2019 INVESTOR MEETING

Data-centric businesses include DCG, IOTG, Mobileye, NSG, PSG and All Other.

OUR OPPORTUNITY... EXPANDED TAM



FROM DEFENDING MSS...

...TO GROWING MSS



INVESTOR MEETING

2023F TAM is based on an amalgamation of analyst data and Intel analysis, based upon current expectations and available information and is subject to change without notice. PC-Centric includes CPU & Chipsets, Connectivity (including modems other than 5G smartphone), Gateways, Gaming Consoles, Memory and Discrete Graphics. Data-Centric includes Data Center and Networking, Compute, Memory, Storage and Connectivity, and IOT addressable Logic ASIC/ASSP, MPU, MCU, DSP for Industrial, Transportation, Automated Driving, Retail, Video Surveillance, Healthcare, Public Sector, Office Automation, Gaming and Smart Home. IOT also includes MaaS and intelligent transportation enabled data opportunities.

2019 OUTLOOK (NON-GAAP)

REVENUE

~\$69B

OPERATING MARGIN

~32%

EPS

~\$4.35

Building on a strong platform, investing for earnings leverage in 7nm & beyond



2019 INVESTOR MEETING

Operating margin and EPS are presented on a non-GAAP basis. Refer to the Appendix for a reconciliation of these non-GAAP measures.

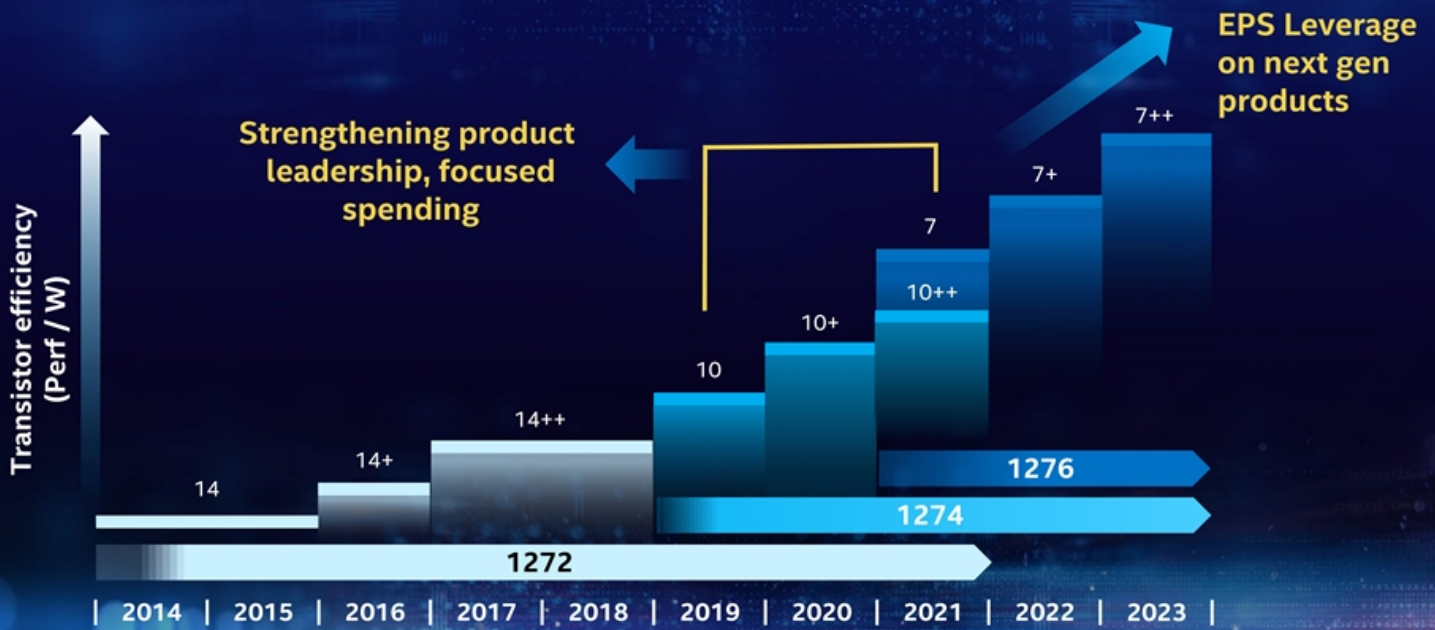
A person wearing a white cleanroom suit, including a hood and gloves, is working in a laboratory or factory setting. The background is a blurred blue-toned environment with digital data patterns. A dark blue horizontal bar is overlaid on the right side of the image, containing the main title text.

FOCUS ON PERFORMANCE & CAPITAL STEWARDSHIP



2019 INVESTOR MEETING

RELENTLESS INNOVATION CONTINUES



3 YEAR ASSUMPTIONS

Data centric grows high single digits,
PC centric flat to down

Macro environment remains stable

Spending to 25% of revenue

GM bottoms in 2021 on confluence of nodes

Capital discipline & selective outsourcing
narrow FCF/Earnings gap



2021 INVESTOR MEETING

OVER THE NEXT 3 YEARS...

REVENUE GROWTH

Low-single digit growth,
\$76B-\$78B

Data-Centric businesses
high-single digit growth

PC-Centric business
~flat to down

OPERATING EFFICIENCY

Operating Margin ~32%

Gross Margins declines
offset by spending
leverage and 5G
smartphone modem exit

EARNINGS/FCF

EPS growth in line
with revenue

FCF growing faster
than earnings

CLOSING FCF/EARNINGS GAP (>80%)... ATTRACTIVE CAPITAL RETURNS



INVESTOR MEETING

Operating margin, gross margin, EPS, and FCF are non-GAAP.

Forecasts are Intel estimates, based upon current expectations and available information and are subject to change without notice.

ANATOMY OF OP MARGIN '18-'21

GROSS MARGIN

GM% BETWEEN 57% AND 60%

Tailwinds

- Demand for performance
- Improving yields

Headwinds

- Transition to 10nm & 7nm startup
- Growth of adjacent businesses
- Intensifying competitive environment

OPEX

SPENDING TO ~25% OF REVENUE

Tailwinds

- 5G smartphone modem exit
- Comprehensive portfolio review
- SG&A productivity gains

Headwinds

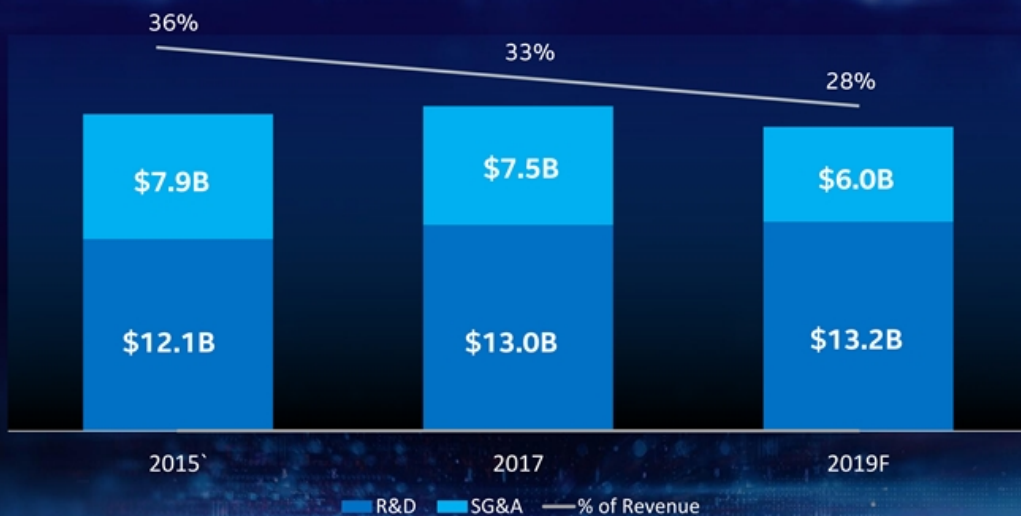
- Growing investment in critical process & product initiatives

Operating Margin at ~32%, GM% decline offset by Opex leverage

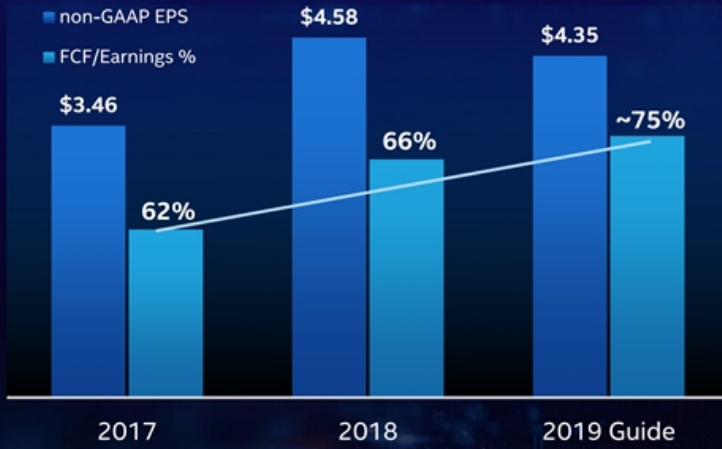


2021 INVESTOR MEETING

PROVEN TRACK-RECORD... DRIVE TO 25



CLOSING THE FCF/EARNINGS GAP



Grow FCF in a Challenging Environment

CAPITAL ALLOCATION... OUR PRIORITIES

ORGANIC INVESTMENTS

Investing in R&D
& Capex for Growth

STRATEGIC M&A

Strategic Acquisitions
to accelerate TAM
expansion & Increase
Shareholder value

SHAREHOLDER RETURNS

Grow Dividends, Offset
Dilution, Opportunistic
Buybacks

...While Maintaining a Strong Credit Rating and Financial Flexibility

FOCUSING R&D ACROSS THE SIX PILLARS OF INNOVATION

>95%
R&D \$

SOFTWARE

SECURITY

INTERCONNECT

MEMORY

XPU ARCHITECTURES

PROCESS & PACKAGING

Data Center

Network

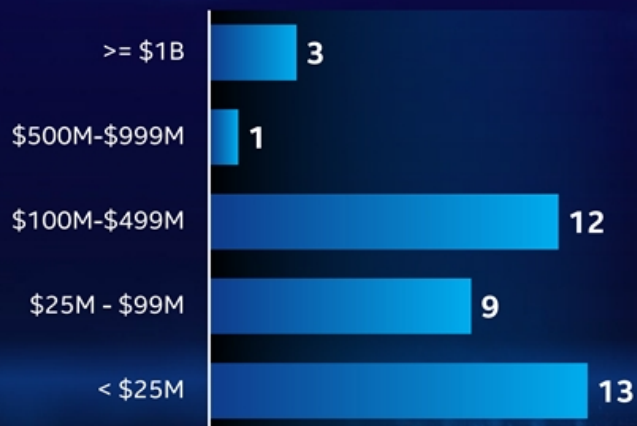
Intelligent Agents



2024 INVESTOR MEETING

MERGERS & ACQUISITIONS... & DIVESTITURES

2015-2018 DEALS



FOCUS

- Tight alignment to TAM expansion
- DCF discipline
- Accelerate critical technologies & scale
- Tuck-ins continue
- Fully-resourced & milestone-driven integration teams on every deal

EXIT

- Non-strategic businesses
- Low NPV opportunities

IMPROVING OUR EXECUTION... M&A INTEGRATIONS

- Thesis ~on-track, process behind
- Meeting tech inflection/customer/profit criteria
- Regular checks against milestones
- Positions for Cloud, AI, & 5G networking leadership



ALTERA

- On-track to exceed value of deal thesis
- Entering new markets, business models
- Providing scale, sharing technical expertise to accelerate growth



MOBILEYE



RETURN OF CAPITAL OUR POLICY

Maintain strong investment grade rating

Grow dividend in line with earnings

Eliminate equity plan dilution as a floor

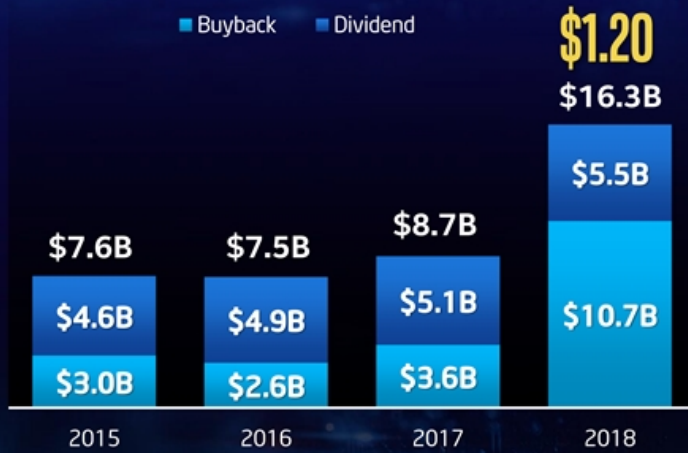
Be opportunistic on buybacks

STRONG FCF & ATTRACTIVE CAPITAL RETURN



2019 INVESTOR MEETING

RETURN OF CAPITAL – OUR PRACTICE



5 & 10 Year Avg
Return of
Capital (% FCF)

~95%

Since 2015 Total Increase:

\$0.24 / 25%

History of Attractive & Consistent Capital Return



2019 INVESTOR MEETING

IN SUMMARY, FOCUSED ON 4 CRITICAL AREAS

1

**HOLD OP MARGIN
DURING
NODE TRANSITION**

2

**SPENDING
DRIVE TO 25**

3

**PORTFOLIO
DISCIPLINE FUNDS
NODE TRANSITION**

4

**STRONG CAPITAL
RETURNS &
DISCIPLINED M&A**

RECAP OF THE KEY MESSAGES

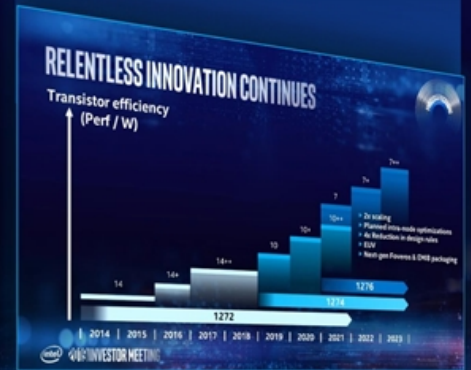
EXPANDED TAM



PRODUCT LEADERSHIP



EXECUTION & CULTURE





APPENDIX

intel 2019 INVESTOR MEETING

RECONCILIATION OF NON-GAAP

	2017	2018	Full-year 2019 Outlook Approximately	
GAAP OPERATING MARGIN			30%	
Amortization of acquisition-related intangible assets			2%	
NON-GAAP OPERATING MARGIN			32%	
GAAP EARNINGS PER SHARE	\$1.99	\$4.48	\$4.14	
Inventory valuation adjustments	0.01	—	—	
Amortization of acquisition-related intangible assets	0.22	0.28	0.29	
Other acquisition-related charges	0.02	—	—	
Restructuring and other charges	0.08	(0.02)	—	
(Gains) losses from divestitures	(0.08)	(0.11)	—	
Ongoing mark-to-market on marketable equity securities	—	0.03	(0.06)	
Tax reform	1.13	(0.06)	—	
Income tax effect	0.09	(0.02)	(0.02)	
NON-GAAP EARNINGS PER SHARE	3.46	4.58	\$4.35	
FREE CASH FLOW	2016	2017	2018	Full-year 2019 Outlook
(In Billions)				
GAAP CASH FROM OPERATIONS	\$21.8	\$22.1	\$29.4	\$30.5
Additions to property, plant and equipment	(9.6)	(11.8)	(15.2)	(15.5)
FREE CASH FLOW	\$12.2	\$10.3	\$14.3	\$15.0
GAAP CASH USED FOR INVESTING ACTIVITIES	\$(25.8)	\$(15.8)	\$(11.2)	—
GAAP CASH USED FOR FINANCING ACTIVITIES	\$(5.7)	\$(8.5)	\$(18.6)	—



INVESTOR MEETING

RECONCILIATION OF NON-GAAP

Forward-looking non-GAAP measures relating to fiscal years 2020 and beyond represent targets and are based on internal forecasts subject to significant uncertainty. We are unable to provide a full reconciliation of such measures to GAAP measures without unreasonable efforts as we cannot predict the amount or timing of certain elements that are included in reported GAAP results and that may significantly affect GAAP results, including acquisition-related adjustments and other non-recurring events or transactions. In addition, certain comparable GAAP measures such as net cash provided by operating activities are difficult to accurately estimate for such time frames and are dependent on future events. We believe such a reconciliation would also imply a degree of precision that could be confusing or inappropriate for these forward-looking measures.