

Onto Innovation December 2020 Update

Investor Presentation

DECEMBER 2020

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onto

Safe Harbor

- The information presented herein contains forward-looking statements that relate to anticipated future operating results and performance. These statements are only predictions based on management's current expectations and assumptions, including market size and forecasted growth, Total Available Market (or "TAM"), Served Available Market (or "SAM") and revenue estimates, and necessarily involve risks and uncertainties. We do not assume any obligation to update the information provided. Actual events or results may differ materially from those projected, including as a result of changing industry and market trends, reduced demand for our products, the timely development of our new products and their adoption by the market, increased competition in the industry, price reductions and other subsequent developments and business conditions. Additional information and considerations regarding the risks faced by Onto Innovation are available in our Form 10-K reports for the year ended December 2019 and other filings with the Securities and Exchange Commission.
- This presentation includes non-GAAP financial measures which are not intended to be considered in isolation or as a substitute for the financial information prepared and presented in accordance with GAAP. Management uses both GAAP and non-GAAP measures when evaluating the business internally and therefore believes it is important to make these non-GAAP measures available to the financial community. Reconciliations of non-GAAP measures to the most relevant GAAP amounts are included in the Company press releases.
- As the forward-looking statements are based on Onto Innovation's current expectations, the company cannot guarantee any related future results, levels of activity, performance or achievements. Onto Innovation does not assume any obligation to update the forward-looking information contained in this presentation.

Onto Innovation Snapshot

High tech capital equipment company specializing in process solutions for semiconductor and related markets

COMPANY

NYSE **(ONTO)**
YTD

FREE CASH FLOW

>$340 Million Cash;
No Debt

YTD REVENUE

$401.3 Million

YTD GROSS MARGIN[1]

53%

YTD EPS

$1.21

YTD R&D SPEND[2]

20% of Revenue

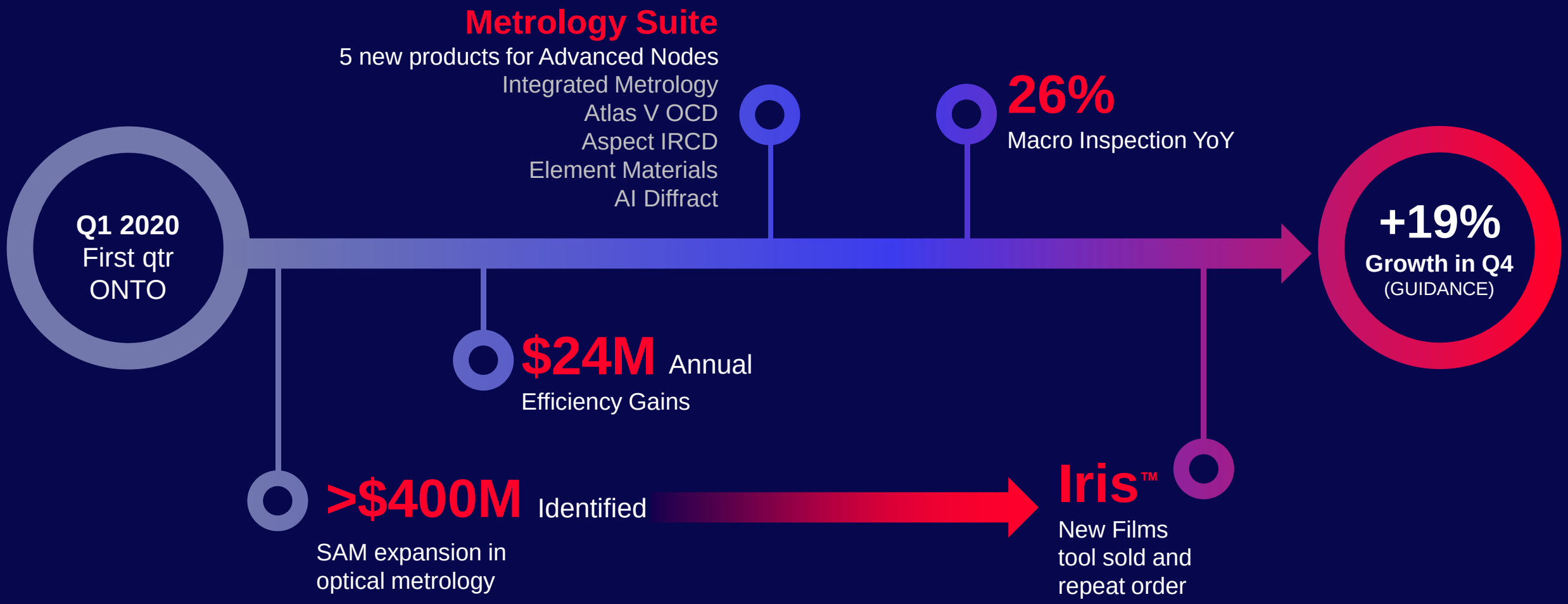


Note 1- Non-GAAP Gross Margin for combined Q1, Q2, Q3 results
Note 2- YTD R&D Spend includes R&D and Advanced Applications Engineers

Onto Innovation in 2020

New company, COVID-19, and Pace of Innovation!

Strengthening business foundation for sustainable growth



We Support the Entire Semiconductor Value Chain

Onto Innovation serves high-growth advanced markets from silicon manufacturing to advanced packaging

ADVANCED NODES
37% of revenue

Growth: '20-'21

17% Memory Customers' CapEx

Flat Logic/Foundry Customers' CapEx

SAMSUNG, intel, tsmc, YMTC, SK hynix, Micron, KIOXIA, SMIC

SPECIALTY DEVICES & ADVANCED PACKAGING
39% of revenue

36% Adv. Packages (FO/WLP) Customers' CapEx

21% Specialty Device Customers' CapEx

NXP, ASE GROUP, tsmc, SUMCO, Infineon, JCET, PTI Powertech Technology Inc., Shin-Etsu

SOFTWARE & SERVICES
24% of revenue

7% Service Growth

Direct in all markets

**VLSI Research CapEX Forecast, Sept. 2020*
***TechSearch Advanced Packaging Report, August 2020*
****ONTO Management '21 Service Forecast*

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5G Contributes to Virtuous Cycle

Driving Multiple Onto Innovation Markets

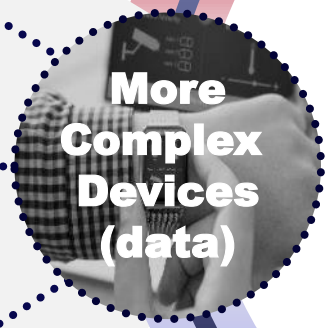
5G

Growth Beyond Mobile

Mobile:
Smartphones, Tablets, Wearables

Massive IOT:
1M Devices per Km^2

Infrastructure:
cities, vehicles, medical, etc.



*HPC: High-Performance Computing
Memory includes DRAM & V-NAND

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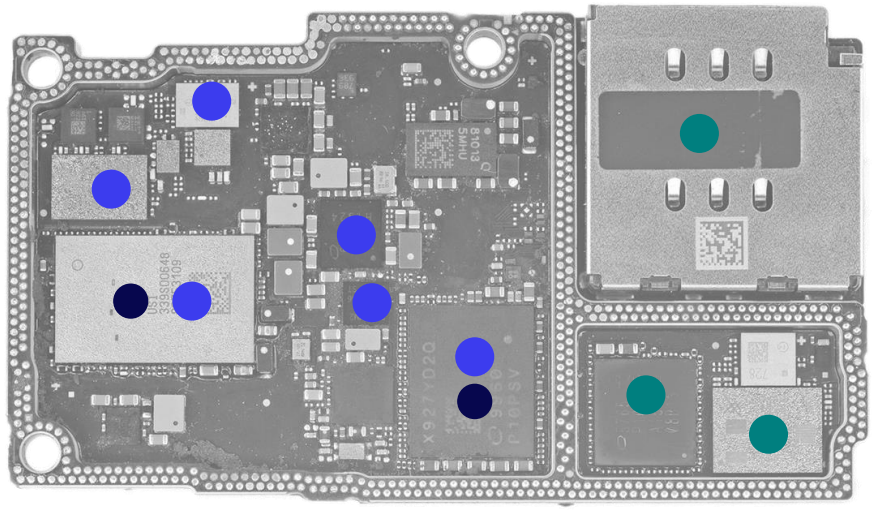
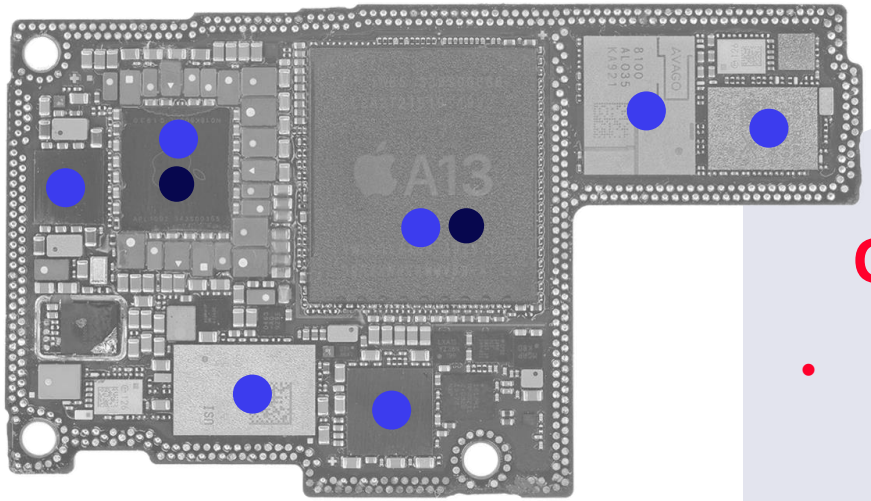
Mobile Devices Drive ONTO Growth

~90% of devices measured / inspected by Onto Innovation





Advanced Nodes

Atlas, IMPUSE, Aspect

- Processors
- DRAM
- 3D-NAND

Advanced Packaging

Dragonfly, Firefly, JetStep

- Processors
- System-in-Package (Chiplets)
- 3D Packages

Specialty Devices

Dragonfly, MetaPULSE

- RF Modules
- Cameras
- Sensors

Onto Growth Drivers

- **5G Mobile Drives 35%-40% of Revenue**
- Unit Volume Growth of Phones, Tablets, Wearables
  - 5G Transition
  - 2X Memory
  - 2X RF Modules

Source: 2020 TechSearch International, iPhone 11 Pro Max Teardown

“Data Era” Driving Multiple Secular Growth Industries

High-Performance Computing Drives 30% of Revenue



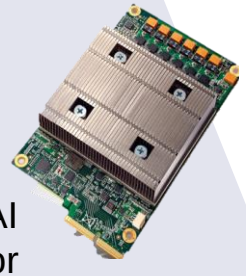
Smart City



Environment



Health



Google AI processor



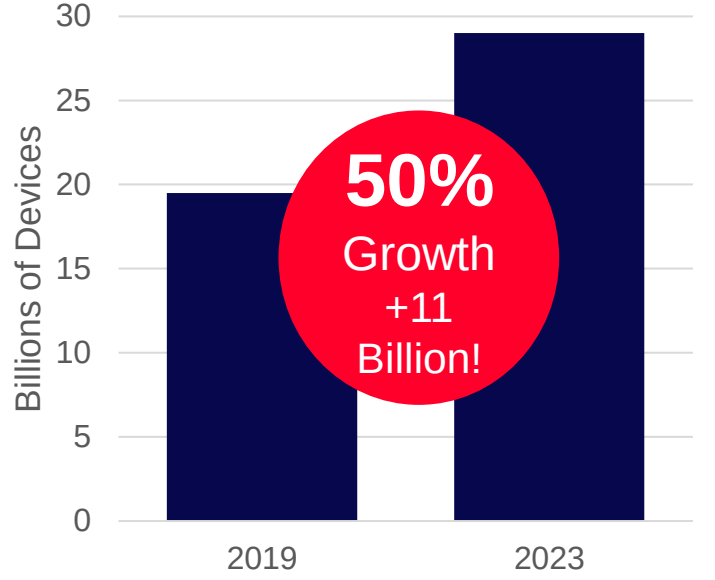
Mobile



Smart Home



Data Center



Global avg devices/connections per person grows from 2.4 to 3.6 in 2023
US Devices/Connections per person grows from 8.2 to 13.4 in 2023

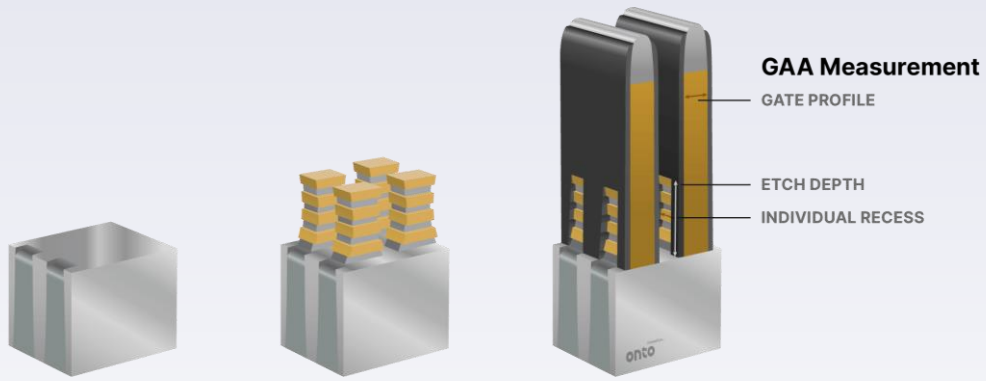
Enabling Technology: New materials and 3D structures for logic and memory

** Source: Cisco Annual Internet Report, 2020*

New Products Measure the Most Challenging Dimensions

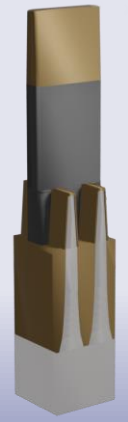
Advanced Logic and Memory driven by High-Performance Computing, AI, IoT, Autonomous Driving

3nm GAA FET



GAA FET: Gate All Around Field Effect Transistor

FinFET

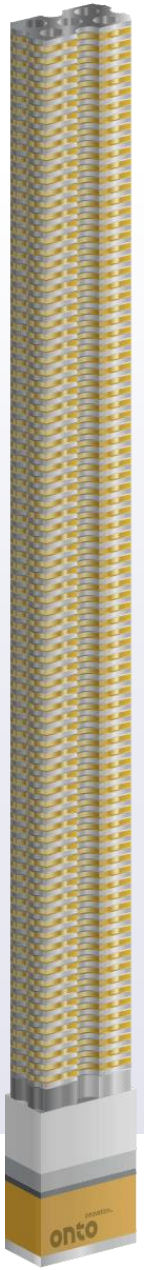


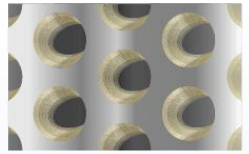
ADVANCED NODES PRODUCT SUITE

- Atlas® Metrology
- Aspect® Metrology
- IMPULSE® Integrated Metrology
- Element™ FTIR

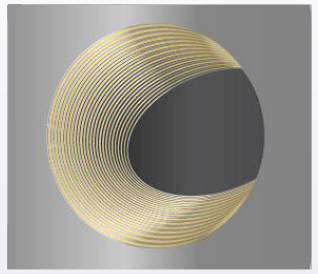
Our value in advanced nodes (actual AI-Diffract models shown)

V-NAND





Channel Hole Etch



Deposition repeating layer thickness

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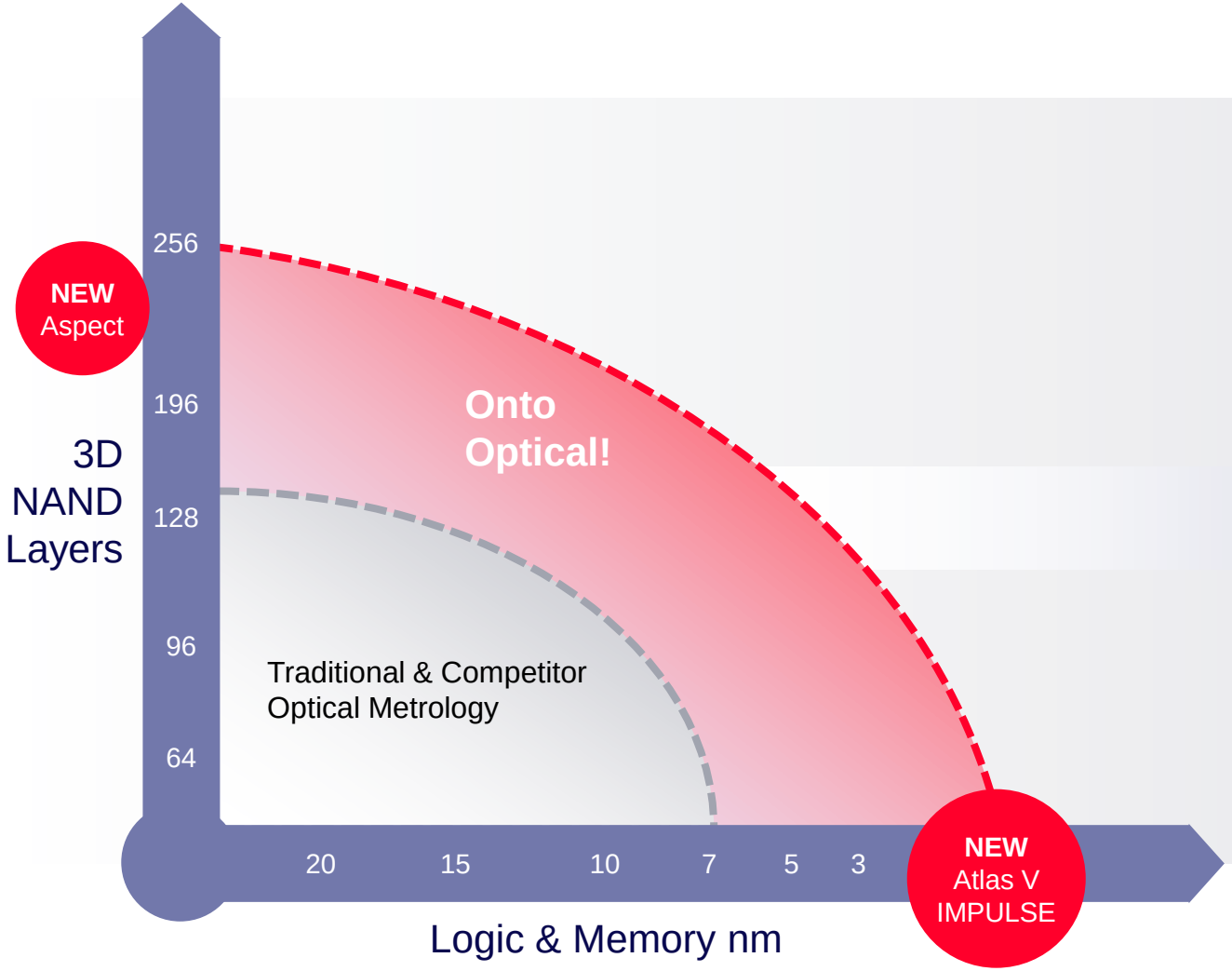
Our Advantage? We Take Optical Metrology Beyond our Peers!

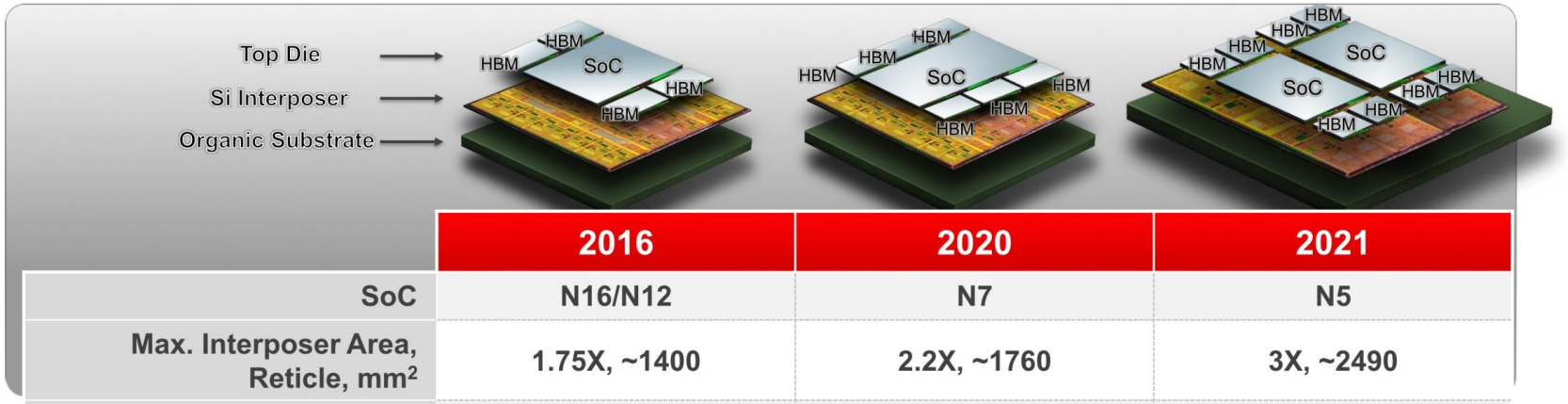
Achieve better results, faster, with optical vs X-ray



10x

Optical Metrology is >10x faster than X-Ray Metrology and the **best** solution for HVM

Advanced Packaging Customers Need High Fidelity Inspection Data for Logic-Memory Integration



	2016	2020	2021
SoC	N16/N12	N7	N5
Max. Interposer Area, Reticle, mm^2	1.75X, ~1400	2.2X, ~1760	3X, ~2490
HBM Type	HBM2 @1.8 Gbps	HBM2E @3.2 Gbps	HBM2E @3.6 Gbps
Max. No. of HBMs/pkg.	4	6	8
Max. Memory Density, GB	32	96	128
Max. Memory BW, TB/s	0.9	2.5	3.7

Source: TSMC

- TSMC expected to introduce CoWoS for up to 8 HBM + 2 logic die in 2021
- Defect inspection and reliability inspection are critical to ensure high yields for very expensive packages!

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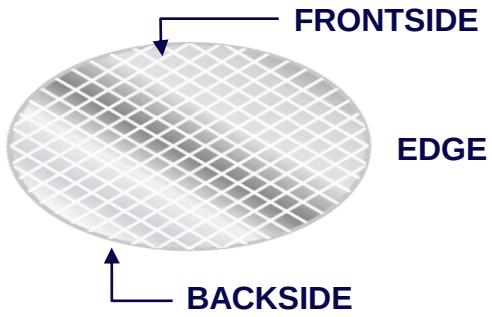
Complete Suite

We print, measure, and inspect the most advanced process technologies

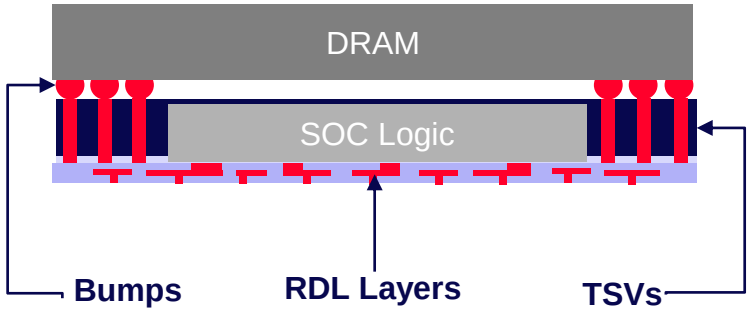
WAFER LEVEL

Bare wafer and patterned defect detection

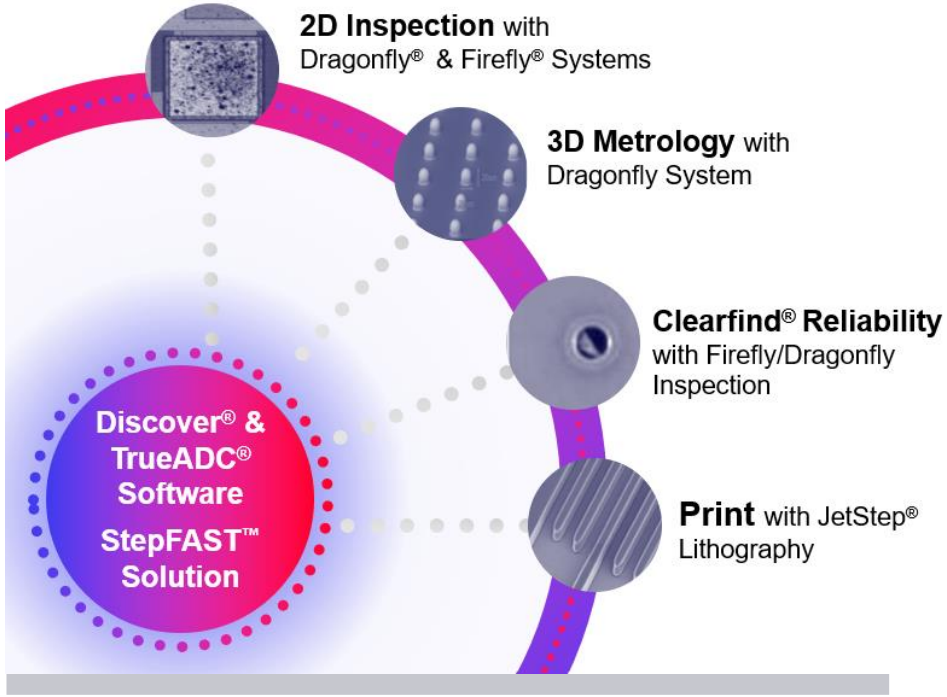


DIE LEVEL

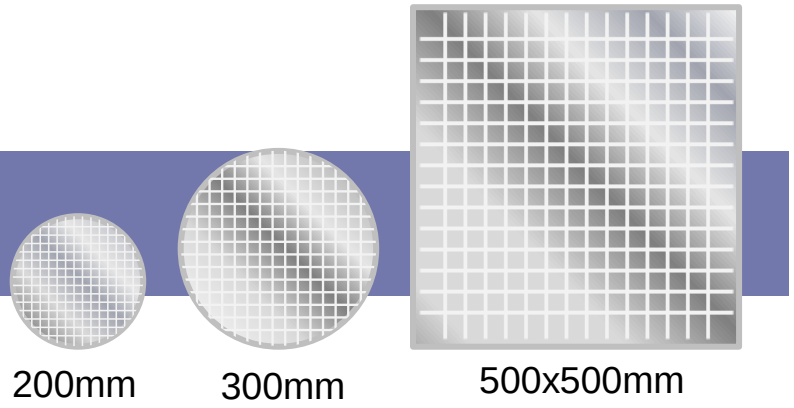
Interconnect reliability



COMPREHENSIVE PROCESS SOLUTIONS FROM ONTO INNOVATION



SERVING A VARIETY OF SUBSTRATES

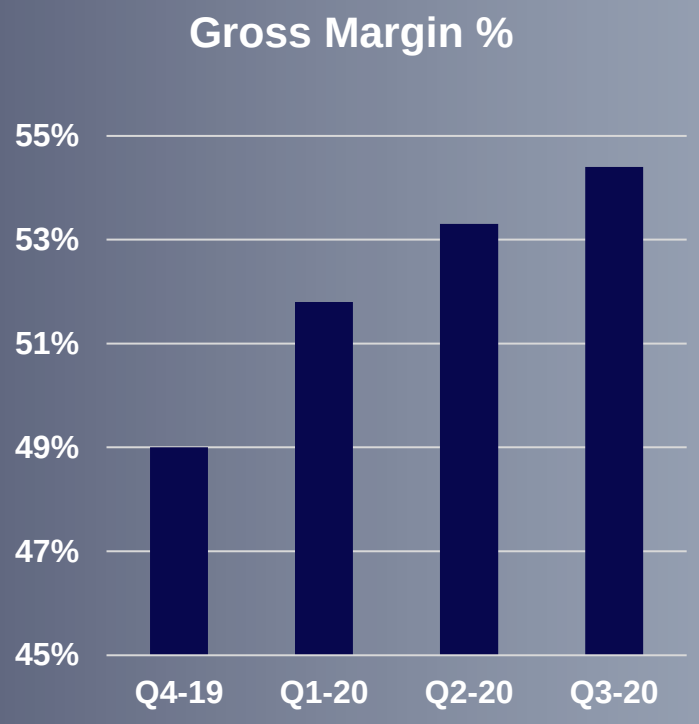


Onto Fundamentals

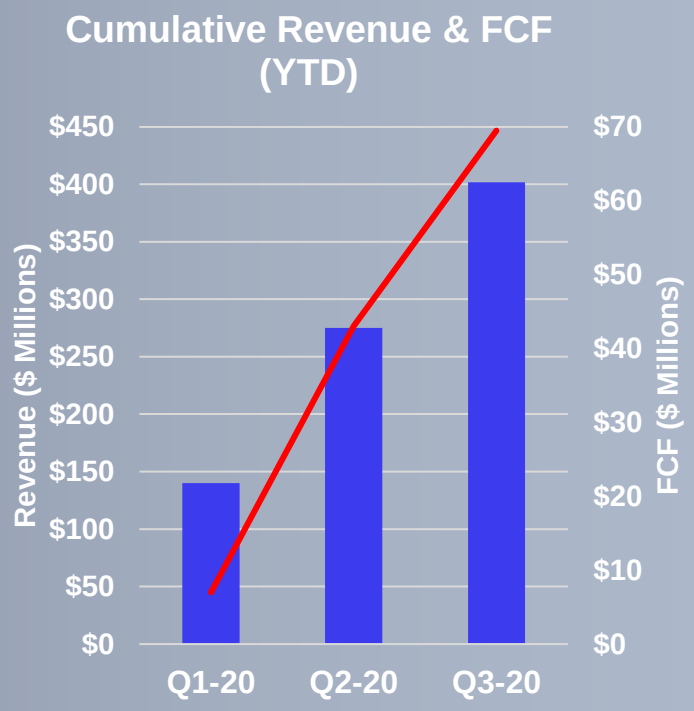
Building a strong financial foundation post merger

- Driving Down Operating Expenses 10% (3 Quarters)





- YTD Free Cash Flow: $69.5 Million



Pro Forma Financial Model*

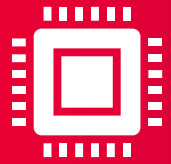
Organic Growth Resulting from Share Gains & Potential to Enter New Addressable Markets

Annual Revenue	$600M Model	$800M Model	$1B Model
Gross Margin	54% - 55%	55% - 56%	56% - 57%
Operating Profit	24% - 25%	29% - 30%	32% - 33%
Earnings per Share	$2.40 - $2.50	$3.85 - $4.00	$5.05 - $5.25

*Non-GAAP Long Term Financial Model: excludes amortization and merger costs; includes stock-based compensation

Why Invest in Onto Innovation?

TECHNOLOGY



>20% Growth in Inspection Outperforming Industry growth
Lithography Backlog Suggests Record Revenue in 2021
New Metrology Suite + Element + Iris Positioned for Growth in 2021

OPERATIONS



Operating Margin Improvement as $24M in Synergies Take Full Effect in 2021
Additional Synergies Expected in 2022

BALANCE SHEET



>$340 Million Cash and Cash Equivalents
Stock Repurchase of $52M in 1H20
No Debt

Thank You

Onto Higher Yields

Onto Higher Margins

Onto Higher Productivity

Onto Innovation

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