Investor Presentation

June 2021

Safe Harbor

This presentation contains forward-looking statements concerning Atomera Incorporated (““Atomera,” the “Company,” “we,” “us,” and “our”). The words “believe,” “may,” “will,” “potentially,” “estimate,” “continue,” “anticipate,” “intend,” “could,” “would,” “project,” “plan,” “expect” and similar expressions that convey uncertainty of future events or outcomes are intended to identify forward-looking statements. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those disclosed in the section "Risk Factors" included in our Annual Report on Form 10-K filed with the SEC on February 19, 2021. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this presentation may not occur and actual results could differ materially and adversely from those anticipated or implied in our forward-looking statements. You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in our forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances described in the forward-looking statements will be achieved or occur.

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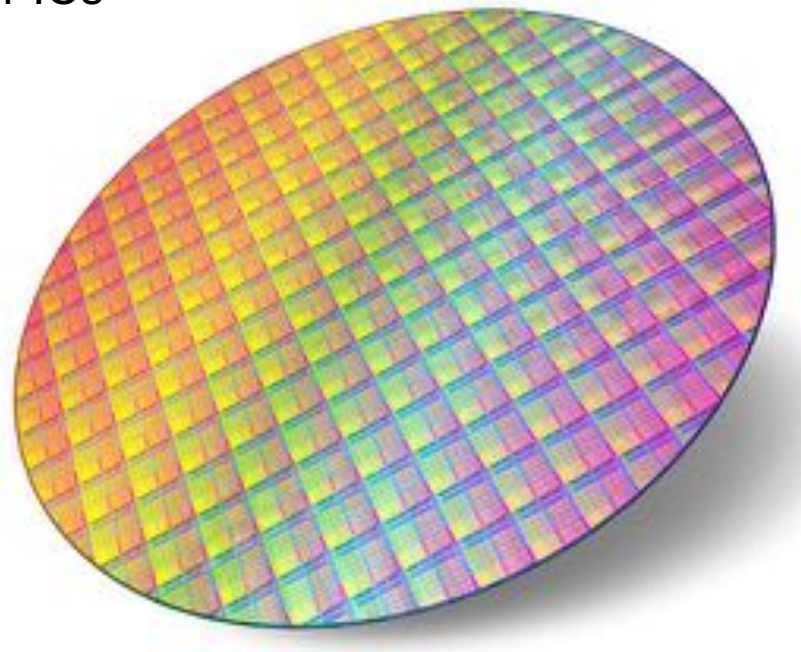
Investment Overview

- **Mears Silicon Technology (MST®) is a thin film used to enhance semiconductors**
  - Results in higher performance, lower power, and lower costs for ICs
- **Capital-light IP and technology licensing business**
  - Robust and growing patent portfolio
- **Engaged with 50% of world's top semiconductor makers**
- **Licenses with four companies including recent JDA**
- **Strong team to commercialize technology**



A Better Way for Industry R&D

Industry Consortia

Little Control

Expensive & Inefficient

Equipment OEMs

No Longer Available

Tied to Equipment Sales

In House R&D

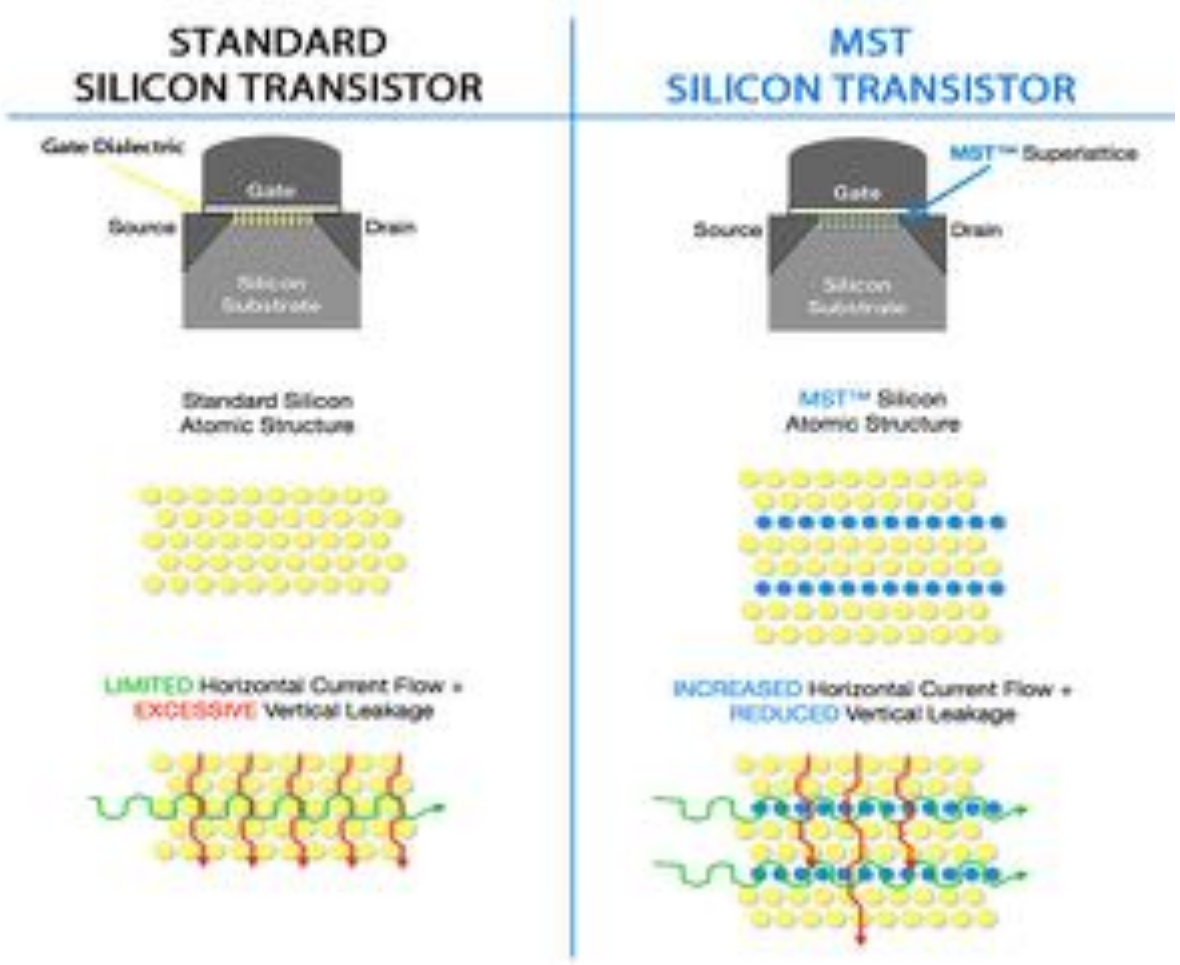
Large Scale, Long Term Investment

atomera

Targeted Innovation

Inexpensive & Low Risk

MST Technology

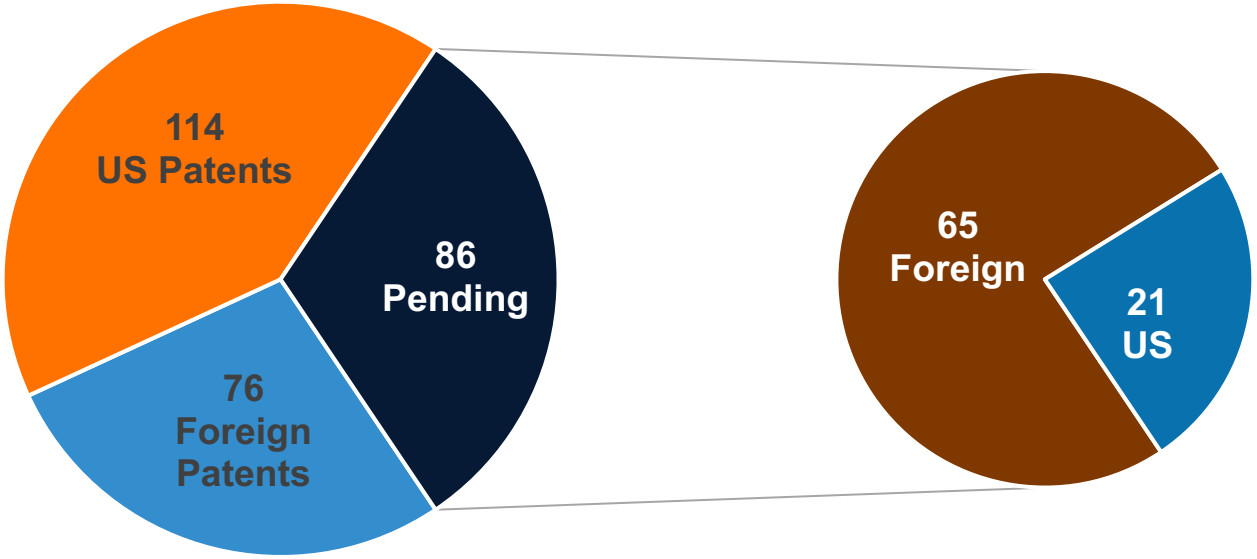


Potential Benefits

- **Improved Efficiency**
  - Higher transistor performance
  - Lower power consumption
  - Better reliability
- **Lower cost**
  - Reduced die size
  - Improved yield
  - Higher throughput
- **Same benefits as a node shrink**

IP – 25% increase in issued patents YoY

276 Patents Granted and Pending



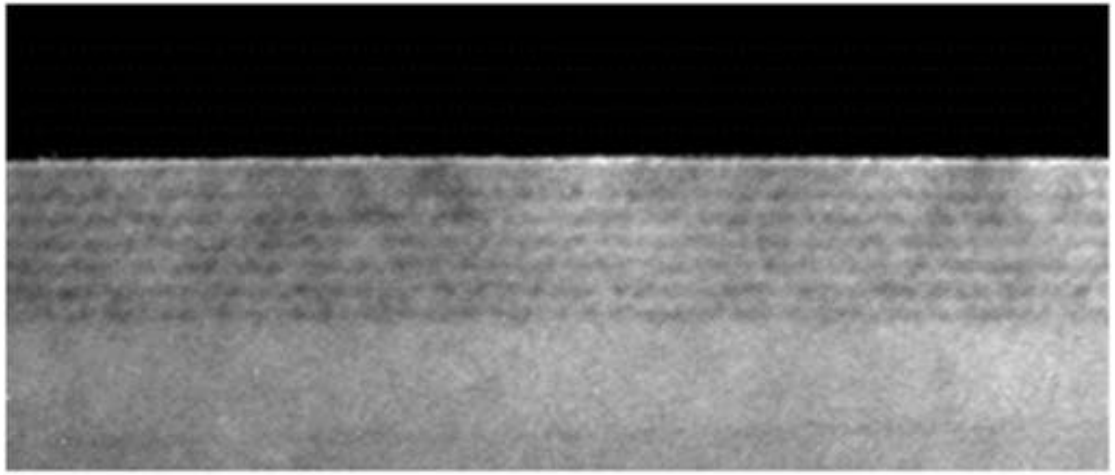
Core MST Method and Device

MST Enabled Devices/Architecture

Next-Gen Architectures using MST

Discoverable

These distinctive layers are visible on products using MST



Extensive know-how

Extends life and value of patents

Target Customers & Partners

Integrated Device Manufacturers

SAMSUNG · Micron · TOSHIBA · intel

Texas Instruments · ST · Infineon · ON

RENESAS · NXP · AsahiKASEI · SK hynix

Foundry

tsmc · GLOBAL FOUNDRIES · UMC · SMIC

HHGrace · DB HiTek · TOWERJAZZ · MagnaChip

Fabless

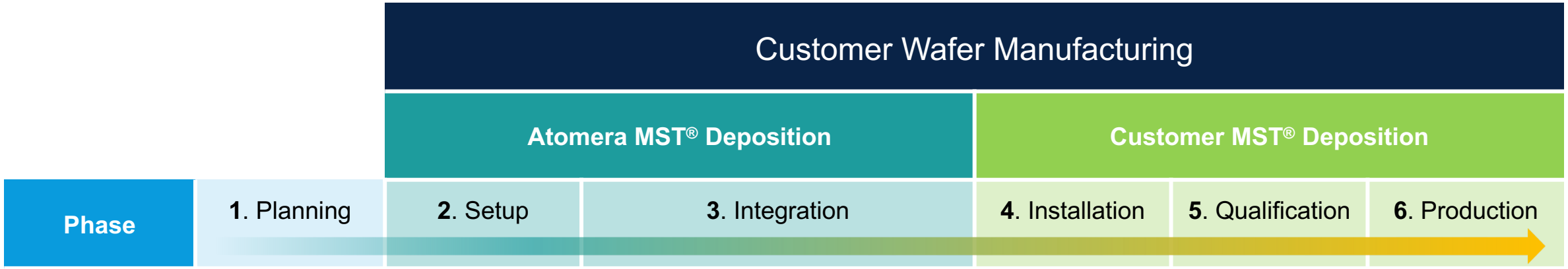
BROADCOM · MARVELL · maxim integrated · MICROCHIP

SKYWORKS · QUALCOMM · XILINX · qorvo

Tool Suppliers (Partners)

ASM · APPLIED MATERIALS · KOKUSAI SEMICONDUCTOR EQUIPMENT CORPORATION · SYNOPSYS

Customer Engagement & Revenue Model



Engineering Service Fees

- MST deposition on customer wafers
- Integration consulting

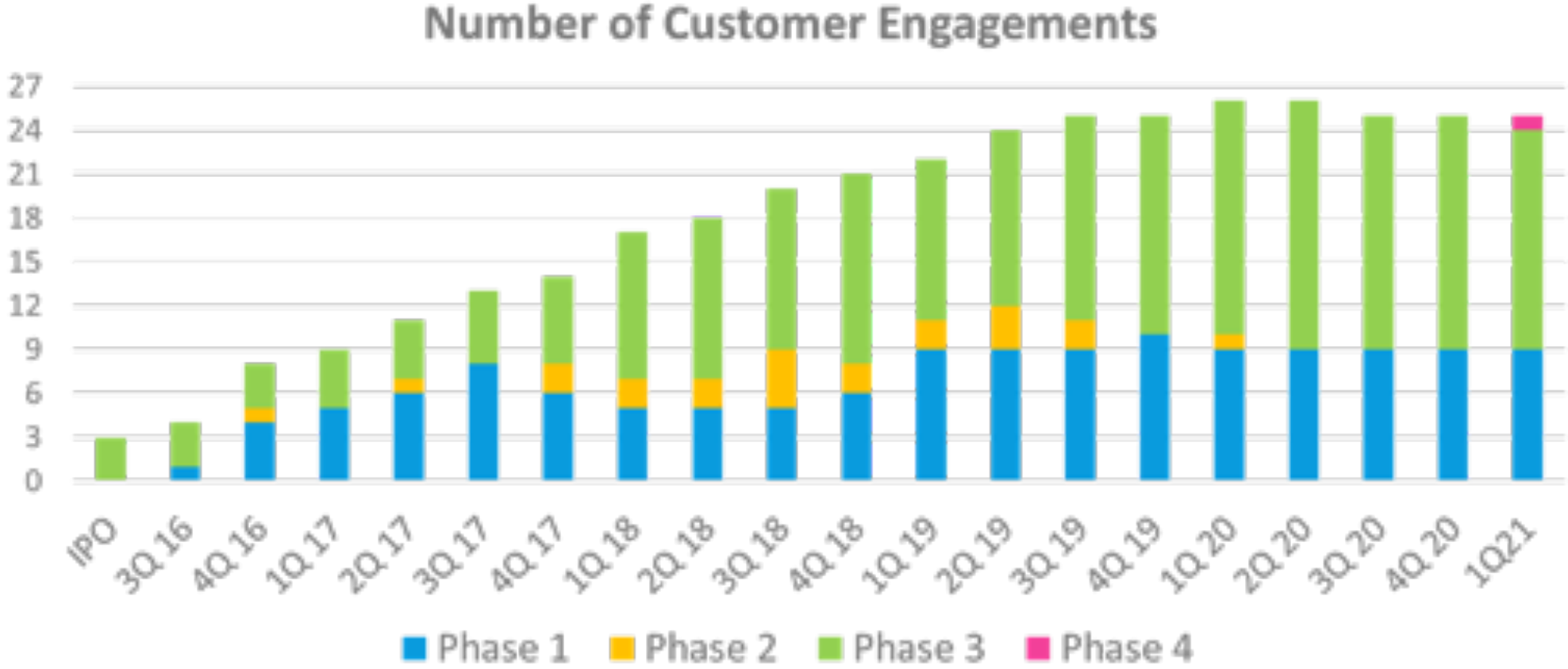
License Fees

- Integration licenses
- Manufacturing licenses
- Distribution licenses

Joint Development Agreements

Royalties

Customer Pipeline



- 19 customers, 25 engagements
- Working with 50% of the world's top semiconductor makers*

* At least 10 of the top 20 (IC Insights, McClean Report 2021)

Royalty Opportunity

- **~370 wafer fabs operating worldwide**
- **Adoption of MST in one fab can make Atomera profitable from royalties alone**
  - 2021 non-GAAP OPEX guidance is $14.00-14.5M

Example 1 | Worldwide Average Fab	
Monthly Fab Capacity[1] *(wafers/month)*	49,000
Industry average wafer ASP - 2018	$1,136
Annual Revenue Potential[2]	**$13M**
Annual Revenue at 50% of ramp[2]	$6.7M

Example 2 | Leading Foundry, 28nm Fab	
Monthly Fab Capacity *(wafers/month)*	80,000
Industry average 28nm wafer ASP	$3,000
Annual Revenue Potential[2]	**$58M**
Annual Revenue at 50% of ramp[2]	$29M

1. Represents wafers starts per month (200mm equiv) – 217.3M starts in 370 fabs
2. Assumes 2% royalty rate

Source: IC Insights Global Wafer Capacity 2019-2023 report, McClean Report 2019

MST Customer Business Opportunity

Standard industry fab wafer pricing, GM, and cost

	Price	GM%	GM$ Increase	MST Royalty	Cost	
28nm HP wafer	$ 3,000	45%	$ -	$ -	$ 1,650	
28nm HP+ wafer	$ 3,150					$150 price increase for +15% performance

Fab gets a 30% performance improvement or 25% shrink via MST

MST processing cost					$ 20	Incremental cost of depositing MST
28nm HP wafer with MST	$ 3,300	47.4%	$ 214	$ 66	$ 1,736	$300 price increase for +30% performance
28nm HP wafer with MST	$ 3,375	48.5%	$ 288	$ 68	$ 1,738	12.5% price increase for 25% size reduction

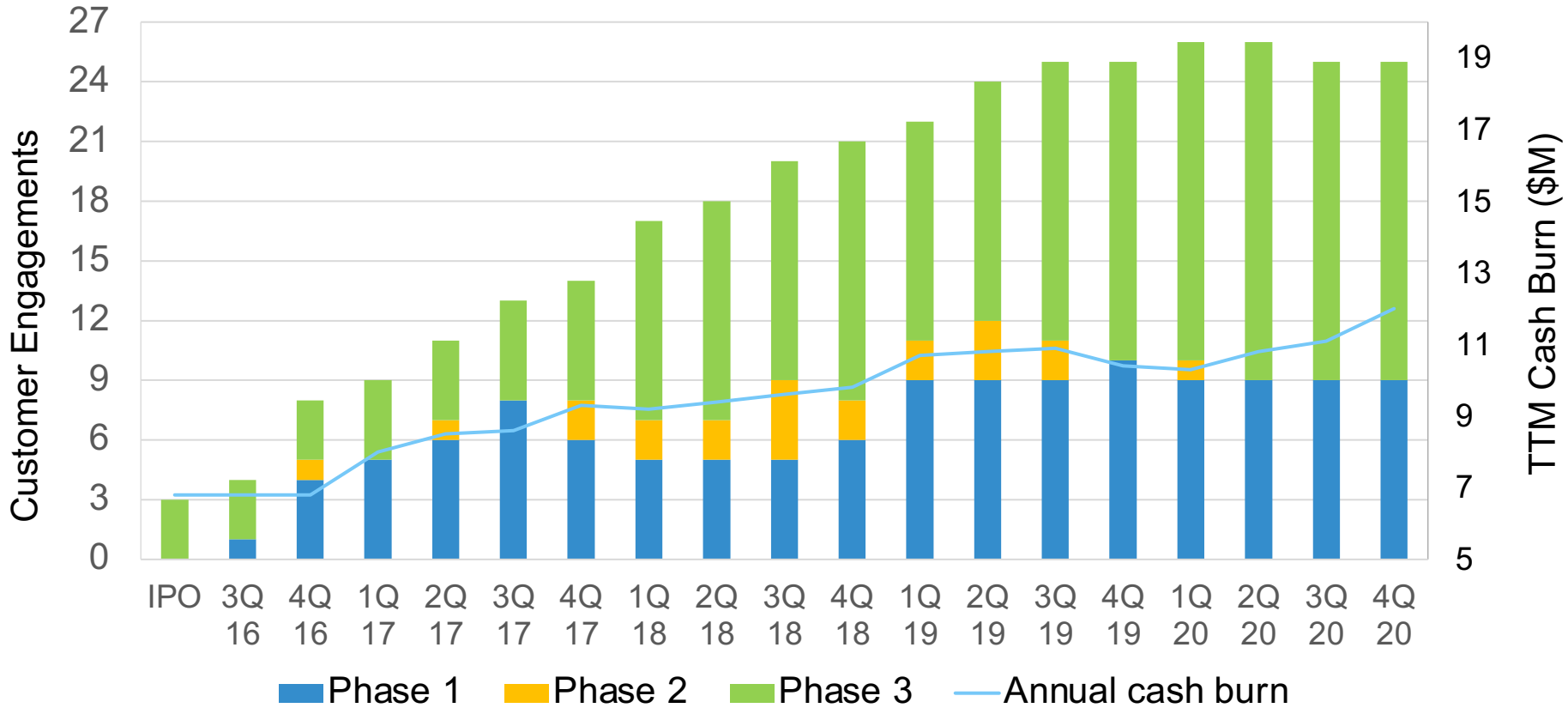
Fabless customer benefit in die shrink case

	Chip sales/ wafer*	GM%	GM$ Increase	Product ASP	Die/wafer	
28nm HP wafer	$ 8,400	50.0%	$ -	$ 4.42	2,235	Baseline business for 30mm^2 chip
28nm HP wafer with MST	$ 11,279	62.8%	$ 2,879	$ 4.42	3,001	Improved financials with 25% size reduction

Everyone in the value chain benefits from MST technology

* Yielded

Cash Efficient Growth



Financial Review

	Q1 '20	Q2 '20	Q3 '20	Q4 '20	FY 2020	Q1 '21
GAAP Results						
Revenue	**$0.06M**	$ -	$ -	$ -	**$0.06M**	**$0.4M**
Gross Profit	$0.05M	$ -	$ -	$ -	$0.05M	$0.4M
Operating Expense						
R&D	$2.1M	$2.1M	$2.0M	$2.2M	$8.4M	$2.2M
G&A	$1.4M	$1.5M	$1.3M	$1.4M	$5.6M	$1.5
S&M	$0.2M	$0.2M	$0.2M	$0.3M	$0.9M	$0.3M
Total Operating Expense	**$3.7M**	**$3.8M**	**$3.6M**	**$3.9M**	**$15.0M**	**$4.0M**
Net Loss	($3.6M)	($3.8M)	($3.6M)	($3.9M)	($14.9M)	($3.6M)
Loss Per Share	*($0.22)*	*($0.21)*	*($0.19)*	*($0.19)*	*($0.79)*	*($0.16)*
Reconciliation between GAAP & Non-GAAP						
Net Loss (GAAP)	**($3.6M)**	**($3.8M)**	**($3.6M)**	**($3.9M)**	**($14.9M)**	**($3.6M)**
Stock-Based Compensation	$0.6M	$0.8M	$0.8M	$0.8M	$3.0M	$0.7M
Warrant Modification	$0.1M	-	-	-	$0.1M	-
Other income (expense)	-	-	-	-	$0.1M	-
Adjusted EBITDA (Non-GAAP)*	**($2.9M)**	**($3.0M)**	**($2.7M)**	**($3.0M)**	**($11.7M)**	**($2.9M)**

Balance Sheet	3/31/21
Cash	**$36.7M**
Debt	**-**
Shares Outstanding	**23.1M**

**Adjusted EBITDA is a non-GAAP financial measure. A full reconciliation of GAAP and non-GAAP results is contained in our Q1 press release.*

Summary

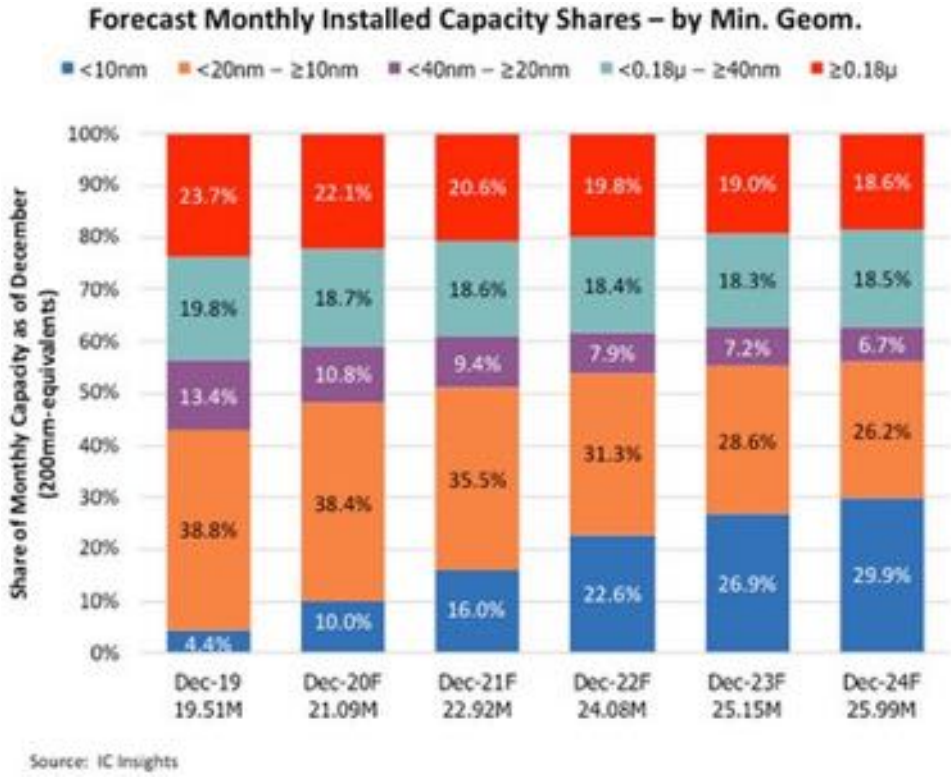
- High margin, recurring revenue financial model
- Strong technology, patent position, and balance sheet
- Traction with many top industry players and growing licensee base
- Ramping commercial license revenues

Thank You

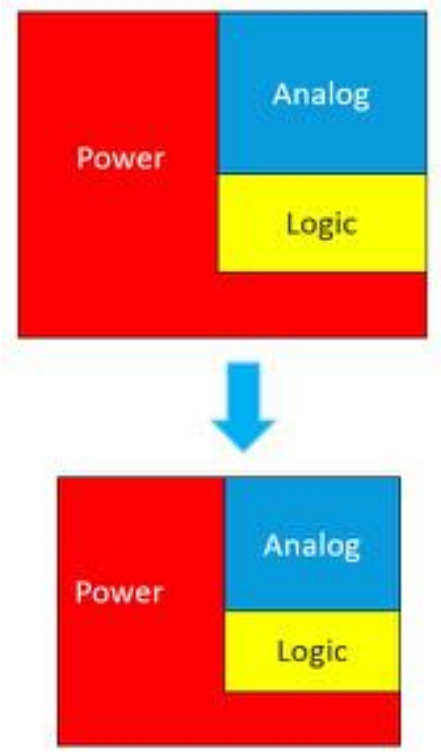
Backup Slides

Capacity challenge and opportunity

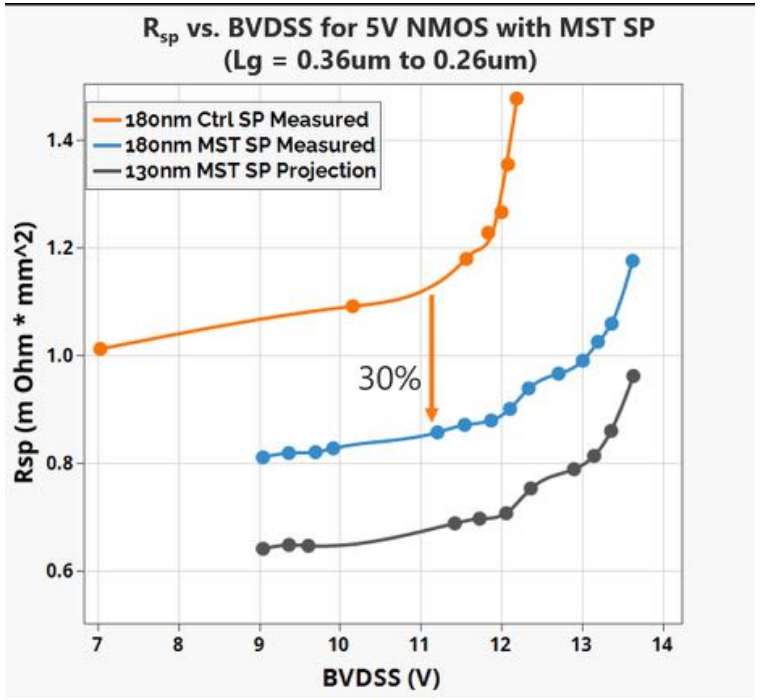
- **Chip shortages create challenge**
  - Shortages focused on legacy nodes
- **Legacy nodes made up 52% of production in 2020**
  - 41% at 40nm and below
  - 22% at 0.18u and below
- **MST provides an option to increase capacity in older production lines**



MST enables legacy capacity expansion

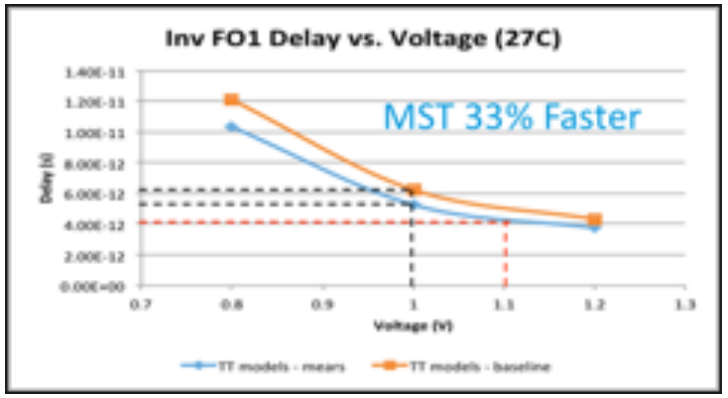


- **MST provides 30% performance advantage**
  - 0.13u analog design
  - MST vs control silicon
- **Enables a die shrink of 15-20%**
- **Smaller die means more manufacturing capacity**
  - Without the cost of building a new fab



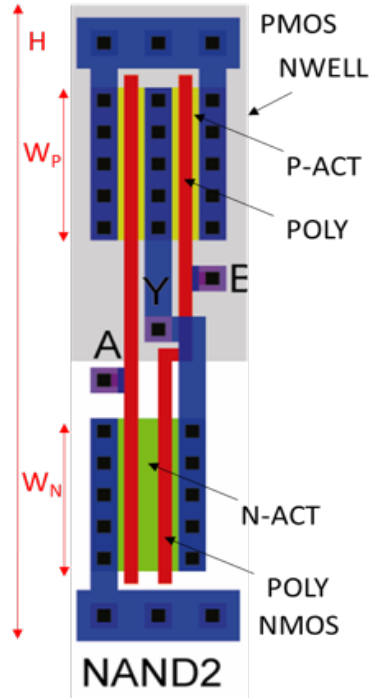
MST 28nm benefits

MST shows 30% higher performance



MST performance improvement due to:
- Higher electron mobility
- Improved gate oxide integrity enabling higher overdrive

- **Performance improvements due to MST can be traded for area reduction**
- **28nm PDK SPICE model used to showcase:**
  - Logic scaling with MST shows 22-25% area reduction
    - Using a NAND2 gate
  - Analog scaling with MST shows up to 21% area reduction
- **Implementation of MST on new 28nm designs can result in >20% more production capacity**
- **Allows excellent economic benefits for the whole value chain**

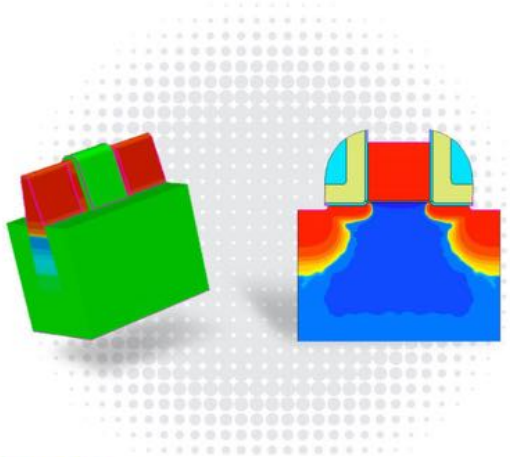


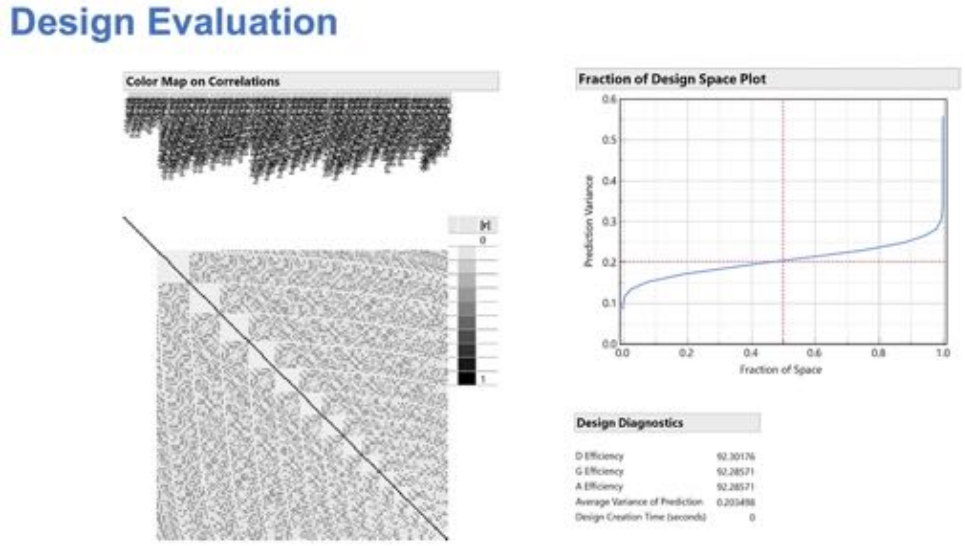
Joint Development Agreements

- Advantages of joint development
  - Atomera and customer engineers aligned on common goal
  - Customer “resident expert” team develops expertise on Atomera technology
  - Resident experts become natural advocates
- First JDA signed with market leading semiconductor company
  - Includes a manufacturing license, putting them in Phase 4
  - Upon completion, MST can more easily be adopted by business units
  - Each business unit is an incremental licensing opportunity

Atomera MSTcad™

- Leading semiconductor companies use TCAD to model manufacturing processes
- MSTcad is an add-on for MST
- MSTcad can optimize complex statistical experiments to assess impact of multiple manufacturing options
- Lowers cost of MST evaluation
- Accelerates time to successful results by customers



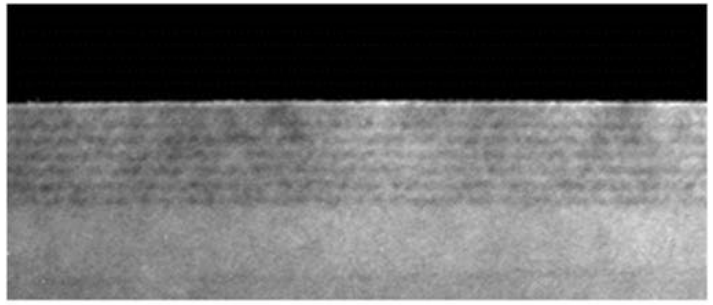


MST: Mears Silicon Technology

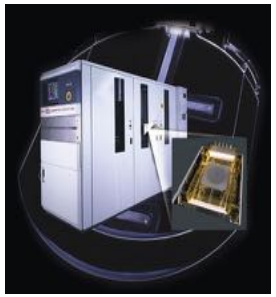
atomera

Quantum Engineered Silicon

Partial Monolayers of Oxygen in Silicon

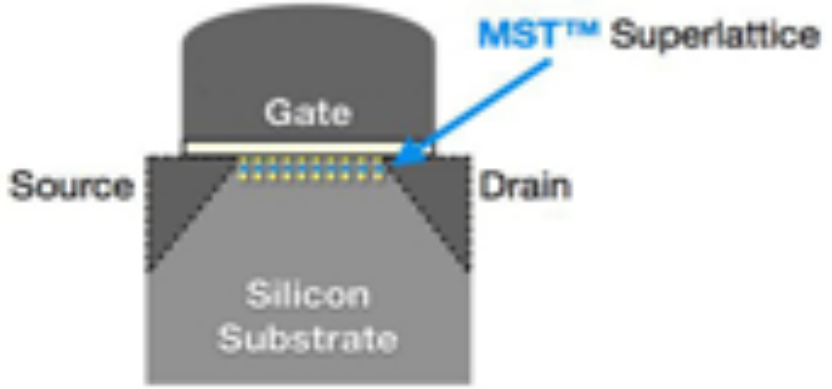


Supported by Major Semiconductor Tool Suppliers

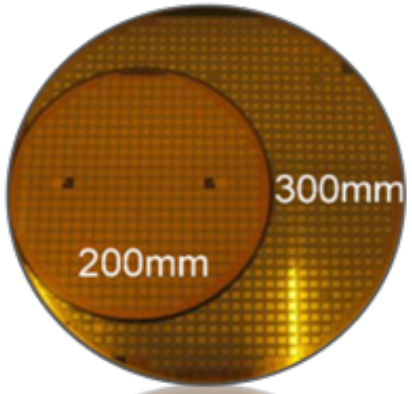


ASM KOKUSAI SEMICONDUCTOR EQUIPMENT CORPORATION APPLIED MATERIALS

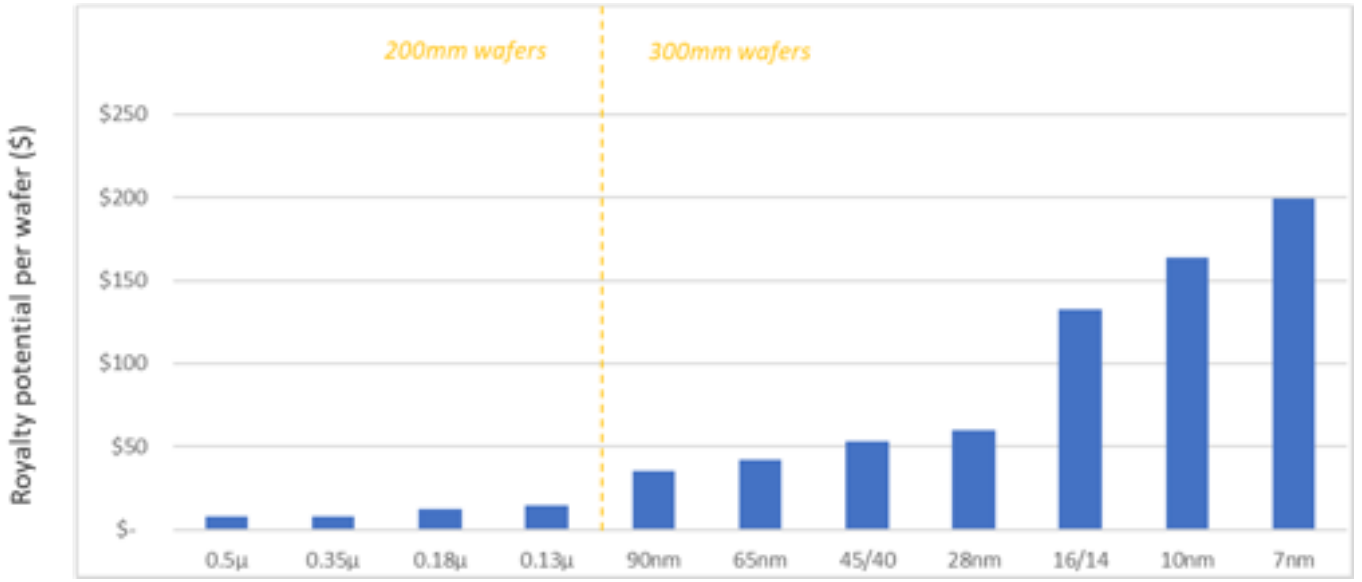
MST Enhanced Transistors



300mm Epi Tool



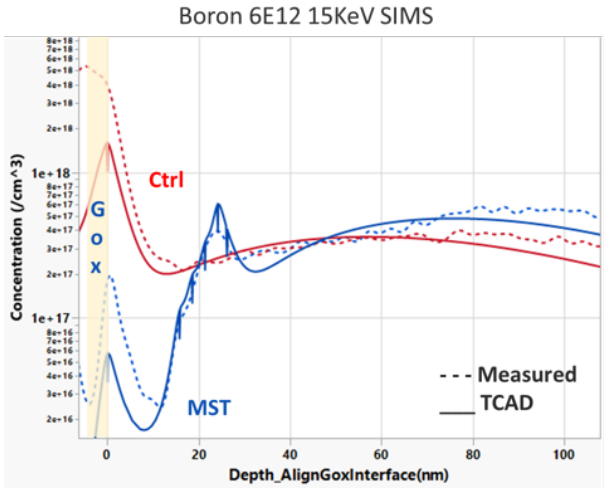
300mm Epi Deposition Tool

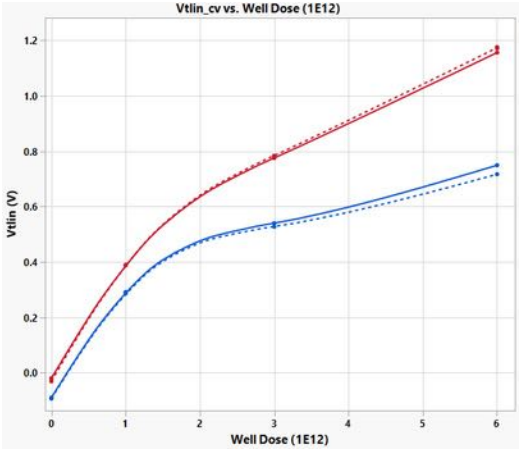


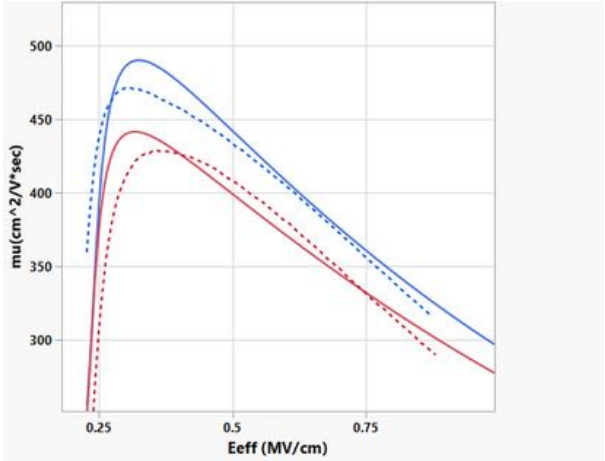
Source: The McClean Report - 2019

Atomera MSTcad™ Progress

- Leading semiconductor companies use TCAD
- MST is modelled with a TCAD add-on called MSTcad
- These plots show silicon verification of MSTcad simulations
- Enables good electrical match-up for 5V NMOS and MST SP
- Should speed time to successful results with customers







Atomera Licensees

AsahiKASEI

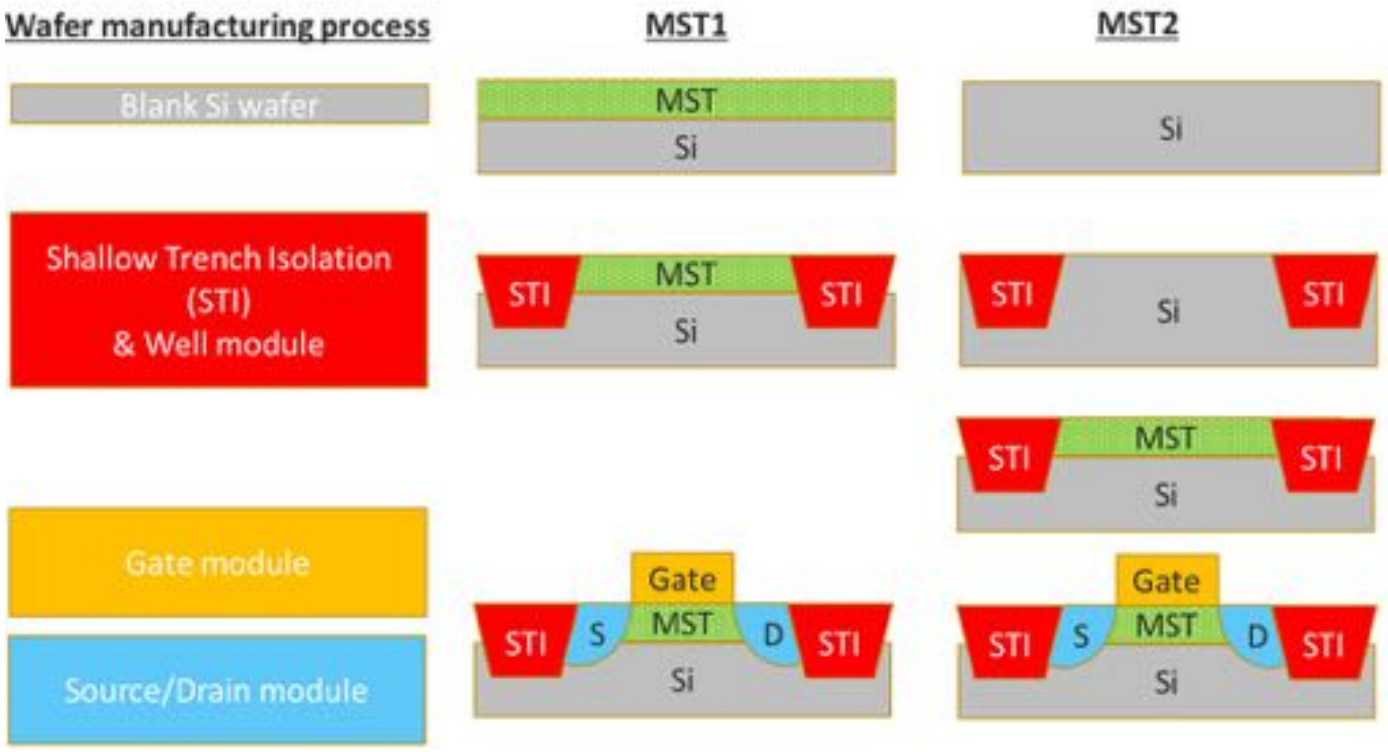
life.augmented

Large fabless RF semiconductor company

Market Leading semiconductor company

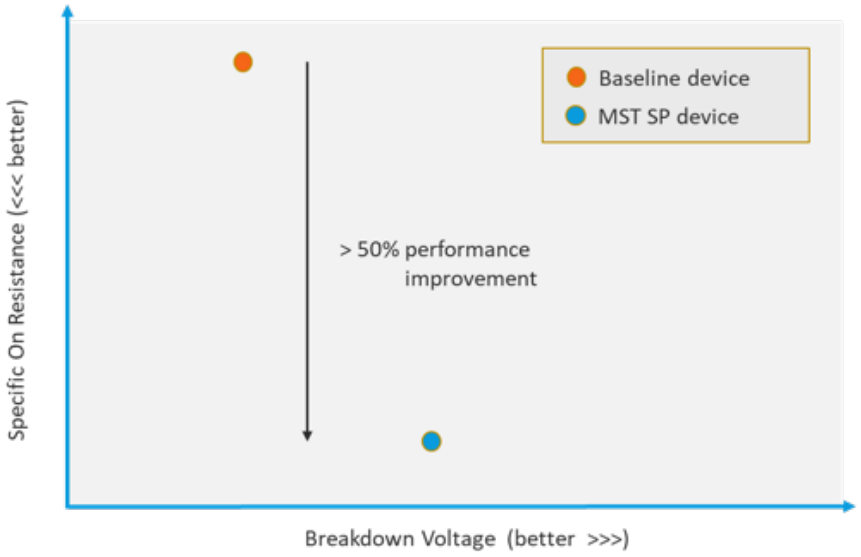
MST1 vs MST2

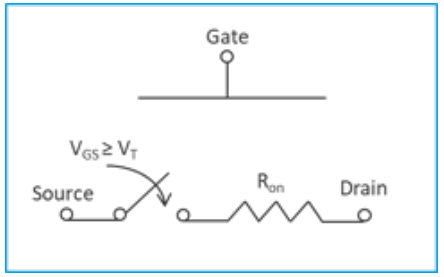
- **MST1**
  - Blanket technology
  - Easy to integrate
  - Deposited at beginning of mfg process
  - Degraded by high heat in STI/Well module
  - Faster time to market for low heat processes
  - Used for FinFET, RFSOI, newer process nodes
- **MST2**
  - Selective technology
    - Integrated after STI/Well so avoids highest heat
  - More flexible to apply to selected areas only
  - Used for 5V, Analog, older process nodes



5V Analog Breakthrough

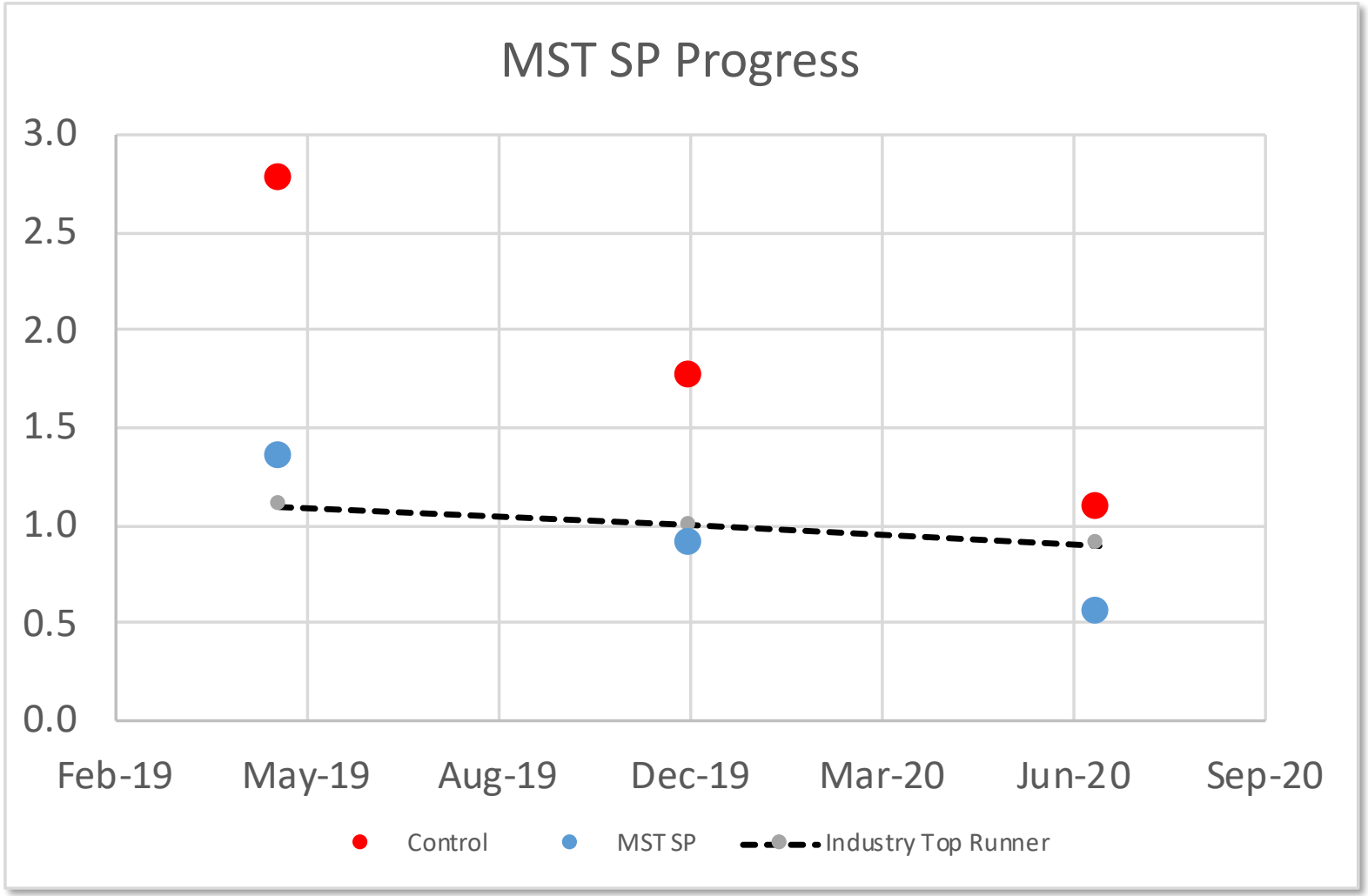
- **3. Breakthrough performance achieved on 5V analog products**
- **Large segment of the overall analog market**
- **Atomera has targeted ~20% improvement on 5V devices**
- **In April Atomera demonstrated a 50%+ improvement**
  - Using MST-SP technology
  - Relatively fast and easy to implement
- **Expected to give many business advantages**
  - Time to license, accelerated time to royalty, negotiating leverage
  - Applicable to even more markets
- **Market size: ~$33B, or $660M in royalties**





MST-SP Progress

R_{SP} ($m\Omega$-mm^2)



MST Matching Performance

- **Transistor mismatch is an industry problem**
- **Certain circuit designs benefit from mismatch reduction**
  - A-D convertors
  - SRAM
  - Flash
  - DRAM sense amplifiers
- **MST can reduce mismatch by more than 50%**
- **Details available at Atomera's website**
  - blog.atomera.com