



ASX / Media Release

## Presentation to Stocks Down Under Semiconductor Conference

**Fremont, California and Sydney, Australia; 17 November 2020** Pivotal Systems Corporation (“Pivotal” or the “Company”) (ASX: PVS), a leading provider of innovative gas flow control (“GFC”) solutions to the semiconductor industry, today provides the attached presentation, which is being presented by Mr. John Hoffman, Chairman and CEO of Pivotal at 10.30am AEDT today (3.30pm PST on Monday 16 November 2020). Investors should note this represents a late change from the conference organisers from 10.50am AEDT as previously announced to ASX on 13 November 2020.

Shareholders can register for the Virtual Conference at the following link:

[https://bakermckenzie.zoom.us/webinar/register/WN\\_7u\\_1yQb5TF2fCqqyinZRFw](https://bakermckenzie.zoom.us/webinar/register/WN_7u_1yQb5TF2fCqqyinZRFw)

A copy of the webcast will be available on the Company’s website following the conference at:

<https://www.pivotalsys.com/investors/#presentations>

- ENDS -

*THIS RELEASE DATED 17 NOVEMBER 2020 HAS BEEN AUTHORISED FOR LODGEMENT TO ASX BY JOHN HOFFMAN, CHAIRMAN & CEO OF PIVOTAL SYSTEMS.*

For further information, interview and photos:

**Investor Relations & Media (Australia):**

Dr Thomas Duthy  
Nemean Group  
[tduthy@pivotalsys.com](mailto:tduthy@pivotalsys.com)  
+61 402 493 727

**Media Contact (US):**

Rob Haralson  
ANZU Partners  
[rh@anzupartners.com](mailto:rh@anzupartners.com)

**ASX Representative:**

Naomi Dolmatoff  
Company Matters Pty Ltd  
[Naomi.Dolmatoff@companymatters.com.au](mailto:Naomi.Dolmatoff@companymatters.com.au)

**About Pivotal Systems Corporation (ASX: PVS)**

Pivotal Systems provides the best-in-class gas flow monitoring and control technology platform for the global semiconductor industry. The company’s proprietary hardware and software utilizes advanced machine learning to enable preventative diagnostic capability resulting in an order of magnitude increase in fab productivity and capital efficiency for existing and future technology nodes. Pivotal Systems Corporation (ARBN 626 346 325), is a company incorporated in Delaware, USA, whose stockholders have limited liability.

If investors wish to subscribe to Pivotal Systems’ email alert service for ASX Announcements, please follow this [link](#).

Pivotal Systems Corporation  
ARBN 626 346 325  
48389 Fremont Blvd. Suite 100, Fremont, CA, 94538  
Phone +1 (510) 770 9125, Fax +1 (510) 770 9126  
Web / <https://www.pivotalsys.com>



**Stocks Down Under  
Semiconductor Virtual Conference  
17 November 2020  
John Hoffman- Chairman & CEO**

(ASX: PVS)

# DISCLAIMER

This presentation dated 17 November 2020 has been prepared by and is being issued by Pivotal Systems Corporation, Inc (ASX: PVS) (**Company** or **Pivotal Systems**) for information purposes only. Each recipient of this presentation is deemed to have agreed to accept the qualifications, limitations and disclaimers set out below.

The information in this presentation is an overview and does not contain all information necessary for investment decisions. The information in this presentation should be read together with the Company's full year financial results for the half year ended 30 June 2020 released on the ASX announcement platform on 28 August 2020 together with other announcements and information about the Company released on its ASX announcement platform and on its website at <https://www.pivotalsys.com/>. The information in this presentation does not constitute investment or financial product advice (nor taxation or legal advice) or a recommendation to acquire securities in Pivotal Systems and is not intended to be used as the basis for making any investment decision. This presentation does not take into account your individual investment objectives, financial situation or particular needs. In making investment decisions in connection with any acquisition of securities, investors or potential investors should rely on their own examination of the assets and financial position of the Company and should consult their own legal, business and/or financial advisers before making any investment decision.

The information contained in this presentation has been prepared in good faith by Pivotal Systems, however no representation or warranty expressed or implied is made by Pivotal Systems, its directors, officers, employees, advisers and agents (**Parties**) as to the accuracy, correctness, completeness or adequacy of any statements, estimates, opinions or other information contained in this presentation including any forecasts or prospective financial information. Nothing contained in this presentation nor any information made available to you is, or shall be relied upon as, a promise, representation, warranty or guarantee, whether as to the past, present or the future. The Parties have not carried out due diligence investigations in connection with the preparation of this presentation and have not verified the information in this presentation. To the extent permitted by law, none of the Parties takes any responsibility for any loss or damage suffered as a result of any inadequacy, incompleteness or inaccuracy in any such statement or information including, without limitation, any financial information, any estimates or projections and any other financial information.

To the maximum extent permitted by law, the Parties disclaim any liability to any person for any direct, indirect or consequential loss or damage which may be suffered by any person through the use or reliance on anything contained in or omitted in this presentation.

Future performance – Past performance information provided in this presentation may not be a reliable

indication of future performance. Certain information in this presentation refers to the intentions of Pivotal Systems, forecasts, forward looking statements and comments about future events. The occurrence of events in the future are subject to risks, uncertainties and other factors, many of which are outside the control of Pivotal Systems, that may cause Pivotal System's actual results, performance or achievements to differ from those referred to in this presentation. Such forward-looking statements speak only as of the date of this presentation. Forward looking statements should not be relied on as an indication or guarantee of future performance. Accordingly, the Parties do not give any assurance, representation or guarantee that the occurrence of the events or forward looking statements referred to in the presentation will actually occur or be achieved as contemplated, nor take any responsibility or duty to update or maintain these forward looking statements to reflect any change in expectations in relation to any forward looking statements or any change in events, conditions or circumstances on which any such statement is based.

Financial data - All dollar values are in US dollars (US\$) unless as otherwise presented.

## Non IFRS financial measures

Pivotal Systems uses certain measures to manage and report on its business that are not recognised under Australian Accounting Standards or IFRS. These measures are collectively referred to in this document as 'non-IFRS financial measures' under Regulatory Guide 230 'Disclosing non-IFRS financial information' published by the Australian Securities and Investments Commission (ASIC). Management uses these non-IFRS financial measures to evaluate the performance and profitability of the overall business. The principal non-IFRS financial measures that are referred to in this document is EBITDA. EBITDA is earnings before interest, tax, depreciation and amortisation and significant items. Management uses EBITDA to evaluate the operating performance of the business prior to the impact of significant items, the non-cash impact of depreciation and amortisation and interest and tax charges.

Although Pivotal Systems believes that these measures provide useful information about the financial performance of Pivotal Systems, they should be considered as supplements to the income statement measures that have been presented in accordance with the Australia Accounting Standards and IFRS and not as a replacement for them.

# PIVOTAL SYSTEMS SNAPSHOT

Pivotal Systems (**Pivotal**) designs, develops, manufactures and sells high quality and performance gas-flow controllers for both device manufacturers and equipment companies participating in the semiconductor capital equipment market

ASX Ticker	PVS
GICS <sup>1</sup> Code	4530 (Semiconductor Equipment)
Share Price (as at 10 November 2020)	\$0.86
52 week low / high	\$0.71 / \$1.71
Market Capitalisation <sup>2</sup>	\$98.0 million
Cash on hand <sup>3</sup>	US\$6.2 million
NTA per share <sup>3</sup>	US\$0.14
Top 20 CDI <sup>4</sup> Shareholders	83.2%

<sup>1</sup> GICS – Global Industry Classification Standard

<sup>2</sup> Based on Share price on 12 Nov 2020, issued capital of 114.0M million

<sup>3</sup> As at 30 June 2020

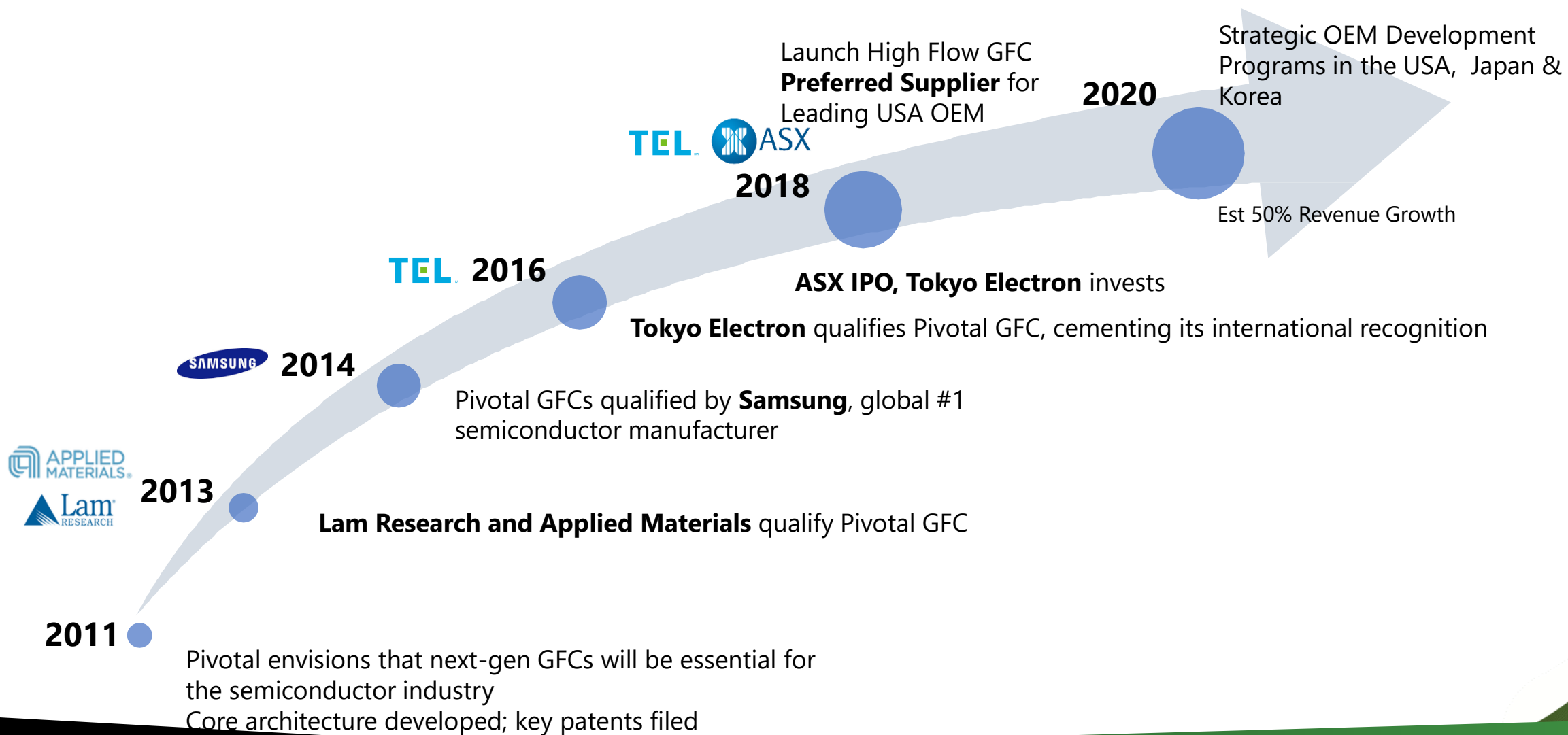
<sup>4</sup> CDI – Chess Depository Interests (1:1 ratio with common stock)



GFC5L™ | GFC20L™ | GFC50L™  
HIGH FLOW GAS FLOW CONTROLLER (GFC)



# PIVOTAL HAS BEEN DEVELOPING AND MARKETING NEXT-GEN GAS FLOW CONTROLLERS FOR A DECADE, ENABLING ADVANCES IN SEMICONDUCTOR ETCHING & DEPOSITION



# GLOBAL FOOTPRINT

PIVOTAL HAS A MANUFACTURING AND SALES AND TECHNICAL SUPPORT PRESENCE ACROSS THE US, EUROPE AND ASIA



- Pivotal technical, sales and distributor support
- ★ Pivotal Corporate HQ & R&D Center, Flex Capacity As Required

- Production Partnerships in Korea and China
- Korea Upgrade & Service Center
- R&D partnerships in US and Japan
- Support in all key IC markets globally

*All software development and R&D is conducted and securely held in Pivotal's headquarters in Fremont, California.*



# MARKET OPPORTUNITY

## Flow controller manufacturers

- Manufacturers of gas flow control devices
- Industry participants include:
  - Horiba, Ltd.
  - Brooks Instruments
  - Fujikin
  - Hitachi Metals

**PIVOTAL**  
SYSTEMS



## Original Equipment Manufacturers (OEMs)

- Designers and manufacturers of process tools used in the production of semiconductors
- Industry participants include:



**2020 EST. GFC DEMAND  
(OEM NEW TOOL)**

**PVS GFCs are designed into OEM  
semiconductor processing tools sold to  
IDMs for use in FAB plants (95% of TAM)**

**384,625**

Units @ ASP of  
\$1,200\*

**\$461M**

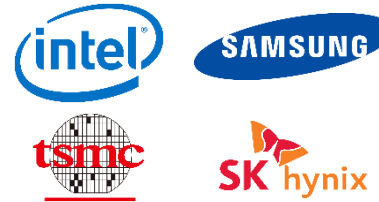
TAM by Value

**8%**

Est. 2020  
growth

## Integrated Device Manufacturers (IDMs)

- Semiconductor and integrated device manufacturers
- A sample of industry participants include:



**2020 EST. GFC DEMAND  
(IDM / RETROFIT)**

**Retrofits are approximately 5% of TAM and  
Driven by OPEX Spending at FAB Level**

**19,875**

Units @ ASP of  
\$1,200\*

**\$24M**

TAM by Value

**8%**

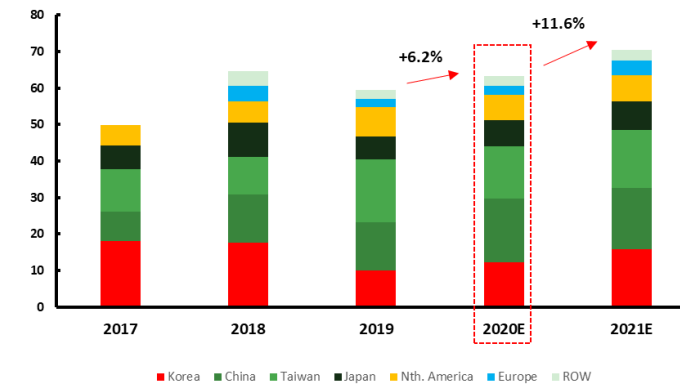
Est. 2020  
growth

**\$485M** MFC TOTAL ADDRESSABLE MARKET IN 2020

**3.2%** PIVOTAL IMPLIED PENETRATION @ 2019 REVENUES

## SEMICONDUCTOR CAPITAL EQUIPMENT MARKET FORECAST TO GROW 8% IN 2020 & 15% in 2021, DESPITE COVID-19

TOTAL SEMICONDUCTOR EQUIPMENT MARKET (US\$Bn)<sup>1</sup>



Forecast 2020 global semiconductor equipment sales of US\$63.2Bn with wafer fabrication equipment (WFE) up 8%

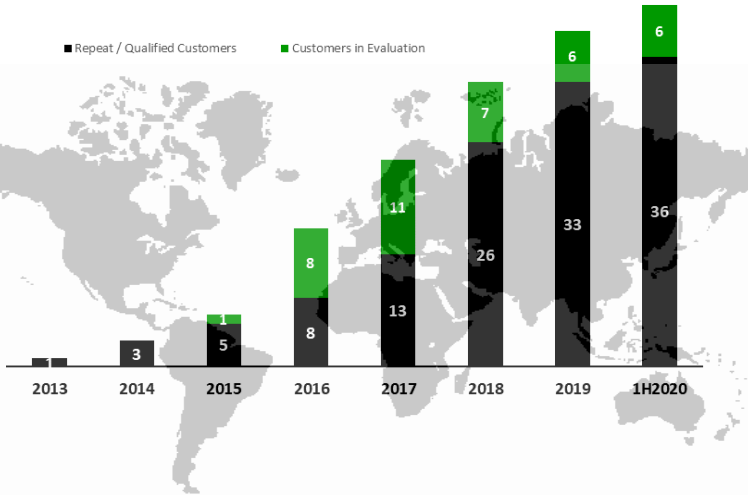
Forecast 2021 global semiconductor equipment sales reaching over US\$70Bn driven by WFE up 15% (All time record)

Growth trajectory driven by advanced logic/foundry (single digit growth) and the memory market (DRAM, NAND) spending with growth over 20% in 2021

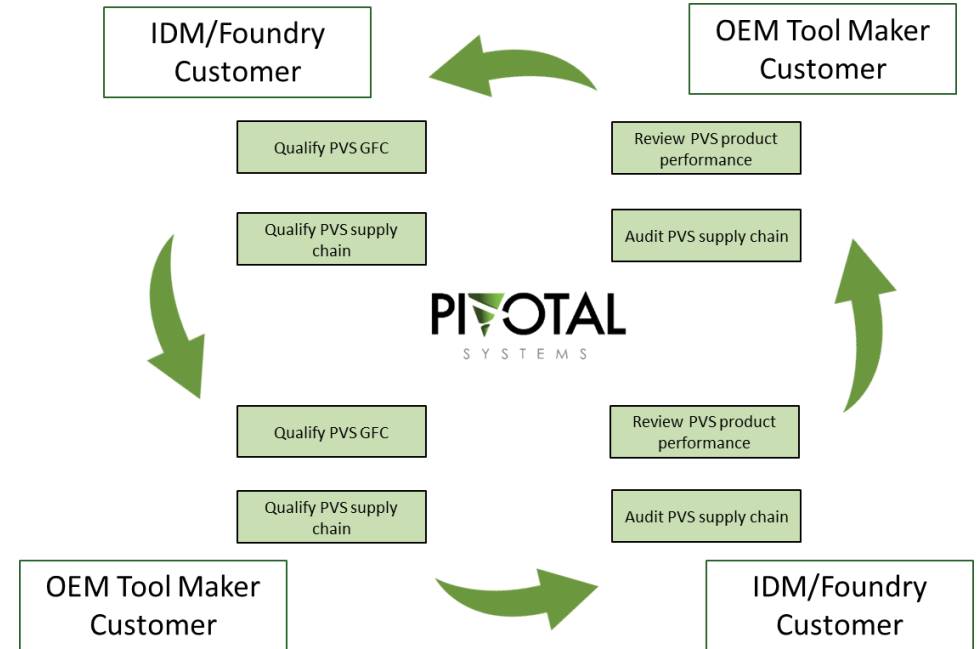
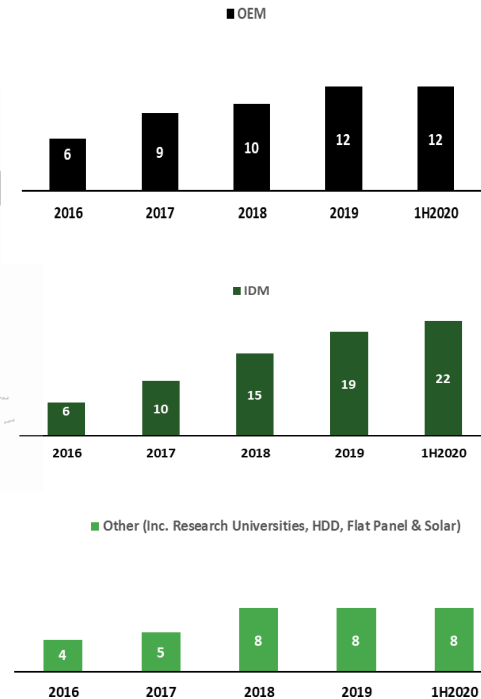
Source: Pivotal analysis based on public filings, market reports, Statista.  
TAM – total addressable market.  
\* Industry estimate only – not representative of Pivotal pricing structures

# CUSTOMER EXPANSION & BUILDING DURABLE BARRIERS TO ENTRY

## Global Customer Base



## Customer Stratified by Type



Pivotal has mastered the “qualification and audit obstacle course” and has built a durable technical advantage

ISO 9001:2015 Re- Certified

Large, Multi-Billion Dollar Customers

Multiple Successful OEM / IDM  
Operational Audits Completed

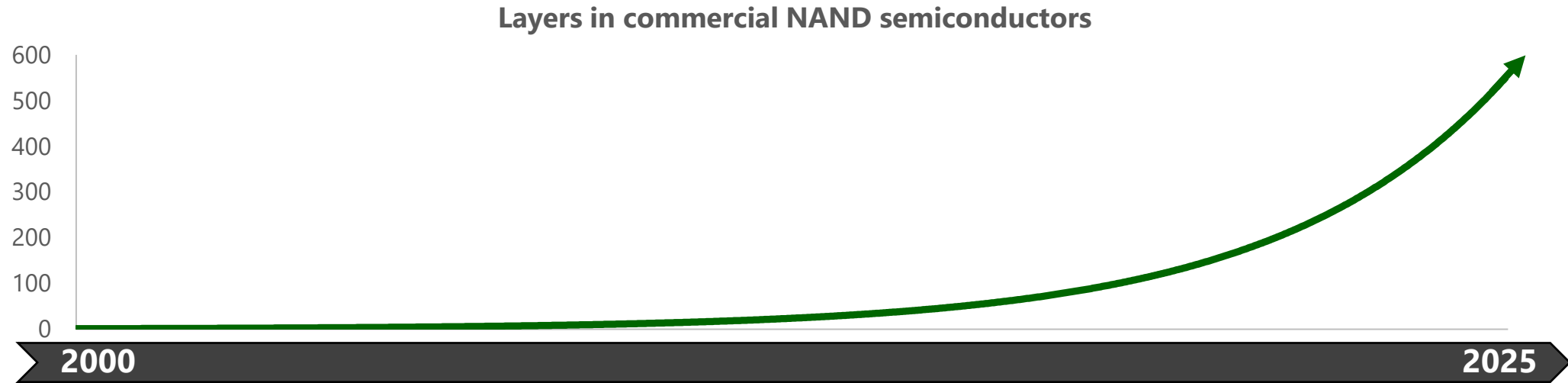
36 Qualified Customers to Date

- 5 Year customer Acquisition CAGR to FY19 – **61%**
- Continued Momentum in 2020
- Multiple OEM Development Programs
- Continuous Innovation and Customer Acceptance
- PVS Now viewed as the “Go To” Technology Leader

1. Repeat / Qualified customers defined as a customer who has qualified Pivotal GFCs on production tools & ordered a Pivotal product on more than one occasion.  
2. Customers who are currently Validating the Pivotal GFC Technology.



# WHAT'S THE PROBLEM? GAS FLOW CONTROL INNOVATION HAS LAGGED BEHIND, WITH OUTDATED TECHNOLOGY PLATFORMS—UNTIL PIVOTAL SYSTEMS LAUNCHED



## Thermal-based Flow Control Platforms

**BROOKS**  
INSTRUMENT  
**HORIBA**  
Scientific  
**Fujikin**

## Pressure-based Flow Control Platforms

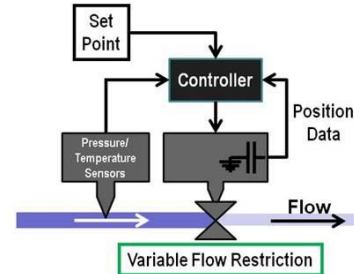
**Fujikin** ( **Fugacity** )  
**HORIBA**  
Scientific  
**BROOKS**  
INSTRUMENT  
**STEC Fluid Control Technology**

## Pivotal GFC: Positive Positional Control

**PIVOTAL**  
SYSTEMS

# PIVOTAL'S POSITIVE POSITIONAL CONTROL TECHNOLOGY ENABLES MUCH HIGHER SPEEDS, BETTER ACCURACY, AND DYNAMIC FLOW SHAPING, RENDERING OTHER PLATFORMS OBSOLETE

## Positive Positional Control GFC



**Technology** Direct real-time control of valve position at all times

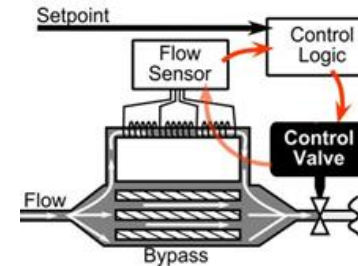
**Key physical performance limitations** **None**  
Elimination of buildup enables near instantaneous response

**Typical Response Speed** **10 milliseconds**

**Verifiable Accuracy** **Accurate to  $\pm 0.5\%$**  with continuous real time verification

**Dynamic Flow Shaping** **Yes;** dynamic ability to shape the gas flow throughout the cycle

## Thermal-based MFC



Metal tube, heater, thermometer to measure flow

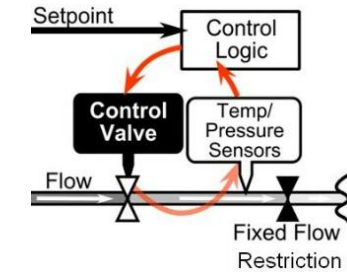
Buildup of temperature inherently limits speed

1000 milliseconds

No verification or correction possible; with inherent drift

None

## Pressure-based MFC



Control of pressure upstream of a flow restrictor to control flow

Buildup of pressure inherently limits speed

500-800 milliseconds

No correction possible, limited verification

None

# PIVOTAL NOW HAS A WIDE RANGE OF PRODUCTS BASED UPON THE POSITIVE POSITIONAL CONTROL TECHNOLOGY

## Gas Flow Controllers



## High Flow Gas Flow Controllers



## Flow Ratio Controller



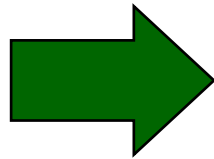
Application	Etch	Deposition	Etch and Deposition
Specs	<p><b>Wide Flow Range:</b> 0.5-100% Full Scale</p> <p><b>Best Flow Accuracy:</b> <math>\pm 0.5\%</math> of Setpoint</p> <p><b>Fastest On/Off Settling Time:</b></p> <ul style="list-style-type: none"> <li>10%-100% FS <math>\leq 100\text{ms}</math></li> <li>0.5%-10% FS <math>\leq 300\text{ms}</math></li> </ul>	<p><b>Wide Flow Range:</b> 2.0-100% Full Scale</p> <p><b>Flow Accuracy:</b></p> <ul style="list-style-type: none"> <li><math>\pm 1.0\%</math> of Setpoint 0.5slm – 5slm, 2.0slm – 20slm, 5.0slm – 50slm</li> <li><math>\pm 0.25\%</math> of full scale for 2.0-10.0% Full Scale</li> </ul> <p><b>Fastest On/Off Settling Time:</b></p> <ul style="list-style-type: none"> <li>10%-100% FS <math>\leq 100\text{ms}</math></li> <li>0.5%-10% FS <math>\leq 300\text{ms}</math></li> </ul>	<p><b>Flow Range:</b> 30L per channel</p> <p><b>Number of Channels:</b></p> <ul style="list-style-type: none"> <li>2-8</li> </ul> <p><b>Flow Accuracy:</b></p> <ul style="list-style-type: none"> <li><math>\pm 0.5\%</math> of set point</li> </ul> <p><b>Set Point Change Settling Time:</b></p> <ul style="list-style-type: none"> <li><math>&lt; 100\text{ms}</math></li> </ul> <p><b>Flow Change Settling Time:</b></p> <ul style="list-style-type: none"> <li><math>&lt; 500\text{m}</math></li> </ul>
Model numbers	GFC5™   GFC20™   GFC200™   GFC1000™   GFC2000™	GFC5L™   GFC20L™   GFC50L™	PPC 30L

Pivotal product line covers all aspects of industry needs

# SPEED MATTERS: ILLUSTRATION OF FASTER PIVOTAL GFC'S DELIVERING MORE FAB OUTPUT

**PIVOTAL**  
SYSTEMS

0.5% accuracy  
On: 50 msec  
Off: 50 msec



Typical OEM 3-Chamber Process Tool

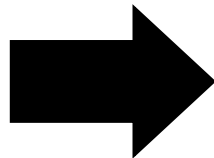
**Example: Pivotal's faster GFC technology translates to 16%+ more wafers on bottleneck tools**

**while improving production output (Yield)**

## Competitor Solutions

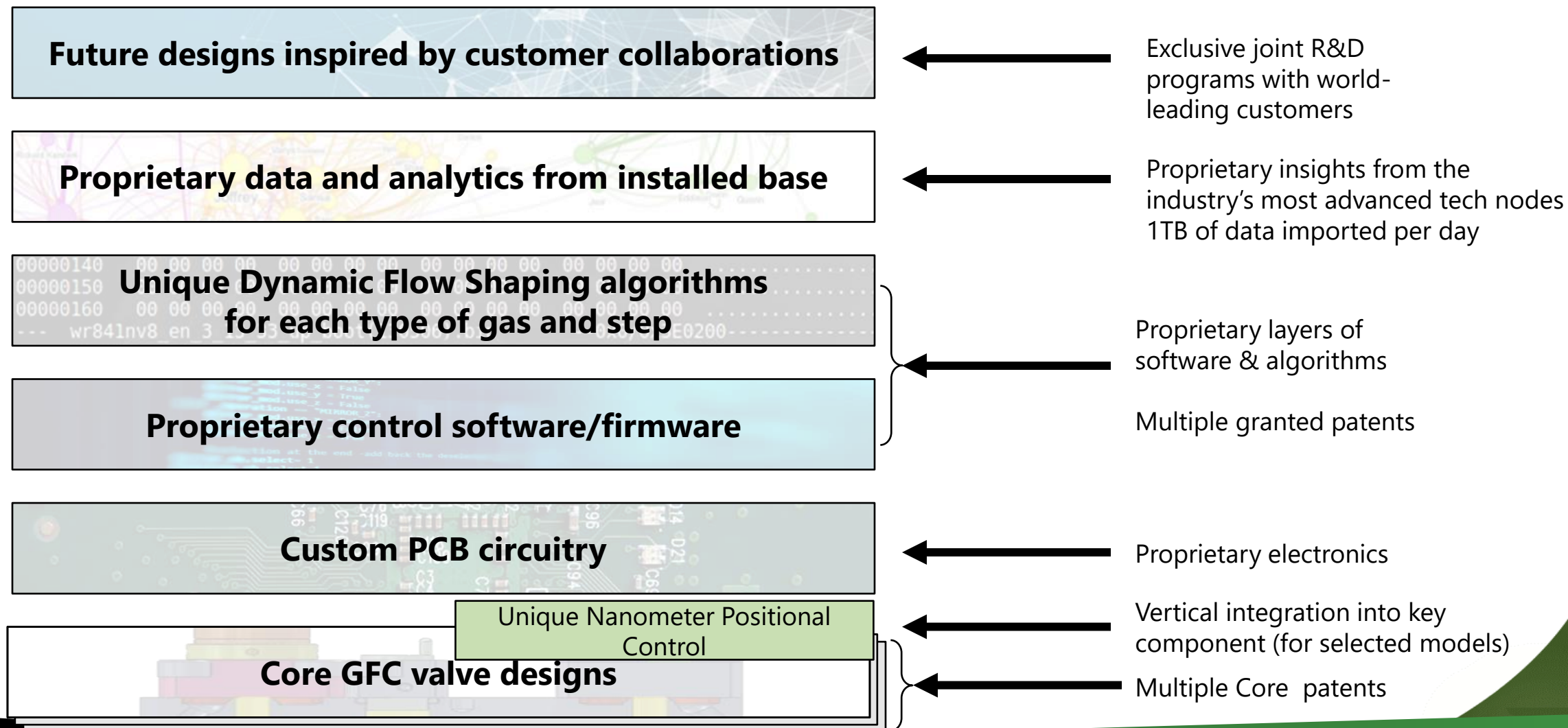
**BROOKS<sup>®</sup>**  
**Fujikin**  
**HORIBA**  
Scientific

1% accuracy  
On:  $\pm 500$  msec  
Off: Up to 1 second



1: Assume 10 Sec Etch Process: Pivotal Provides 9.9 sec of Production; Competitor 8.5 sec of Production

# Pivotal's Positive Positional Control Technology: several proprietary layers





# PIVOTAL'S POSITIVE POSITIONAL CONTROL TECHNOLOGY: HIGHLY PATENT-PROTECTED



Process &  
Chamber Diagnostics



Process Control



Fab/Tool/Network  
Communications



Gas Flow Measurement  
& Control

**Pivotal holds a total of 36 Patents and 389 Claims**

## **GFC WITH PRESSURE REGULATOR**

US 7,823,436  
November 2010

## **PIVOTAL GFC SYSTEM WITH IN- SITU FLOW CORRECTION**

US 8,240,324  
August 2012

## **GFC WITH DATA EXCLUSION**

US 8,271,211  
September 2012

## **GFC WITH DERIVED TIMESTAMP**

US 8,265,888  
September 2012

## **GFC WITH ANALOG AND DIGITAL NORMALIZATION**

US 8,271,210  
September 2012

## **INSITU TESTING OF GAS FLOW CONTROLLERS**

US 8,667,830  
March 2014

## **GFC DRIFT MEASUREMENT**

US 8,857,456  
October 2014

## **INSITU VOLUME MEASUREMENT**

US 8,857,456  
October 2014

## **TRANSIENT MEASUREMENT OF MFC**

US 9,400,004  
July 2016

## **GFC WITH DISPLACEMENT SENSOR**

US 9,523,435  
December 2016

## **ACTUATOR CONTROLLED GFC**

US 9,904,297  
February 2018

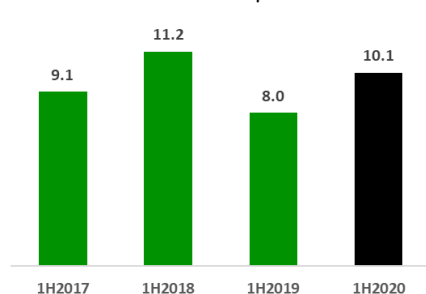
## **ACTUATOR GFC WITH LOOKUP TABLE**

US 10,401,202  
September 2019

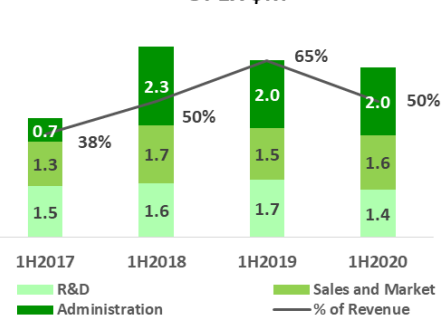


# KEY FINANCIAL METRICS

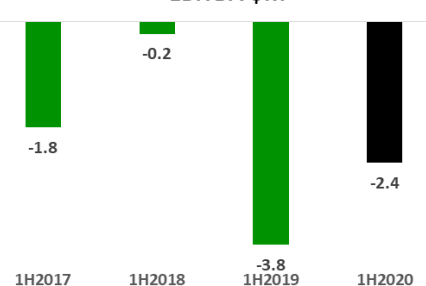
REVENUE \$M



OPEX \$M

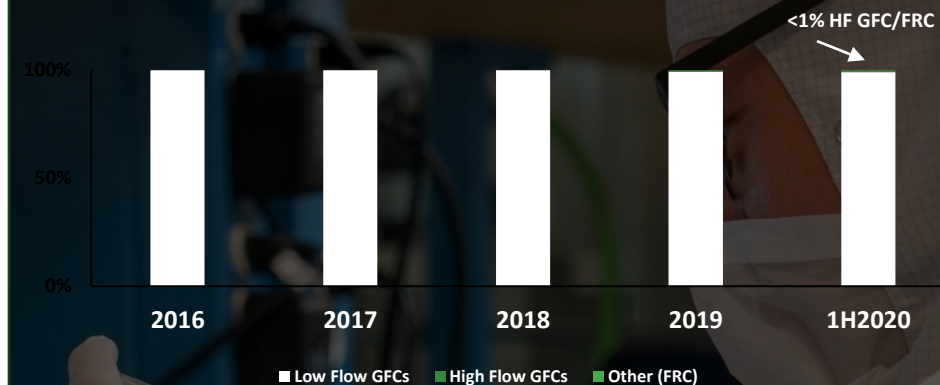


EBITDA \$M

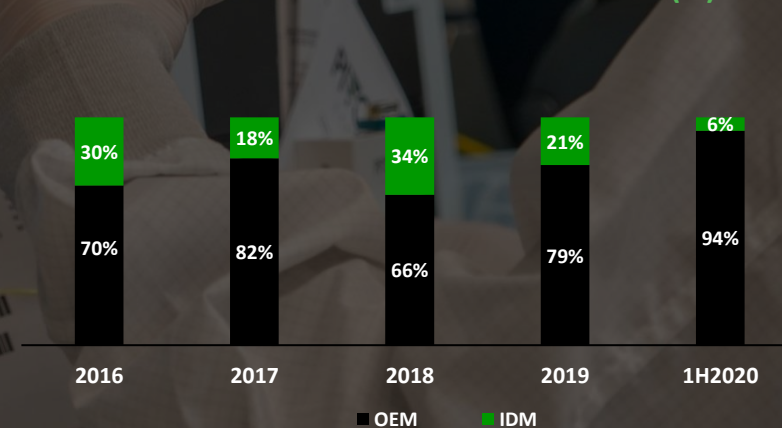


- 1H2020 Pivotal revenue up 26% on pcp; strong recovery in the global semiconductor market and Pivotal focus on customer diversification
- New orders were up 553% versus the prior corresponding period (pcp) and represents 142% of the entire new orders achieved in FY2019, where industry downturn was significant
- **Product diversification** (>99% revenues for etch (low flow GFCs) applications), now building momentum in deposition (high flow GFCs) – 1% revenue in 1H2020, significant opportunity for growth
- Pivotal to capitalize on the strength of growth in the semiconductor industry in 2H 2020 and 2021
- OPEX in 1H 2020 represented 50% sales versus 65% in the pcp
- 1H2020 Proforma GPM of 18.9%, after adjusting substantially for US Customs Duty (reported margin of 1.5%)
- 2021 Steady state gross margins expected to be in the 30-40% range
- 1H2020 EBITDA loss improvement of 37%, driven by strong revenue growth and lower operating expenditures.
- 2H2020 Korean CM Activation Eliminates China – USA Duty
- Business has exceptional operating leverage potential
- Improving GPM from 2H2020 onwards

REVENUE CONTRIBUTION BY PRODUCT (%)



REVENUE CONTRIBUTION BY CUSTOMER (%)



# GROWTH STRATEGIES



WFE sector growing.  
Etch and deposition  
are fastest-growing  
segments of WFE



Growing installed  
base of Pivotal GFCs  
drives recurring  
revenue streams



Market share gains  
and margins are  
growing, as Pivotal  
move from qualified  
to preferred to  
exclusive

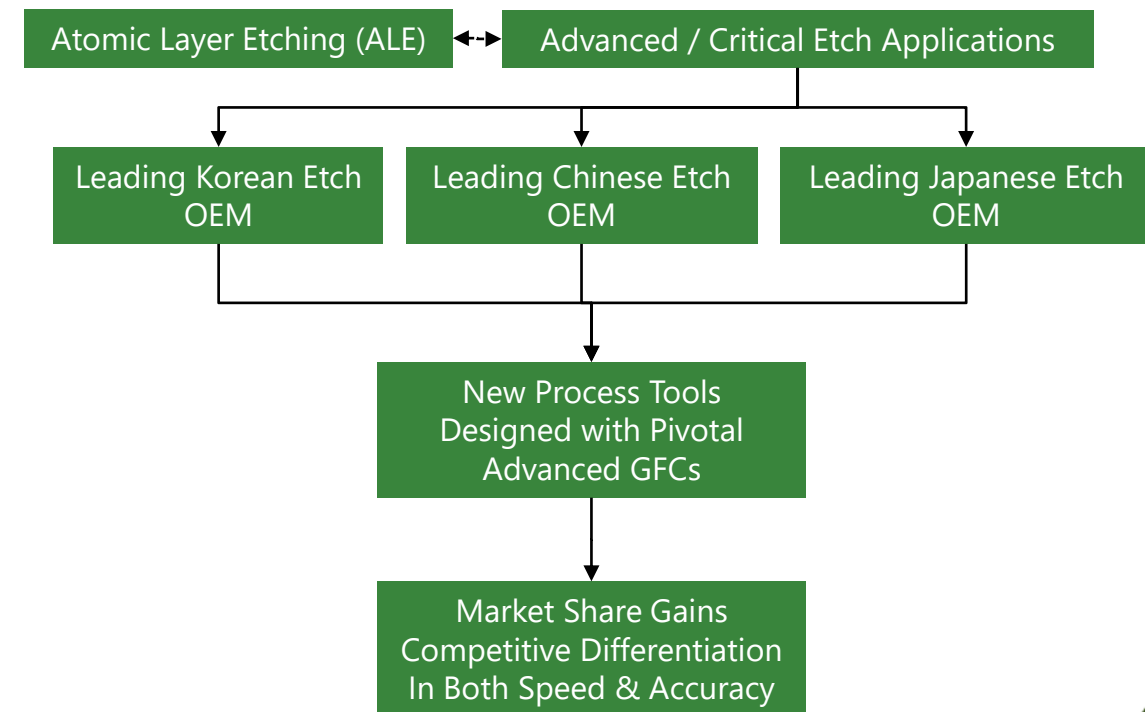
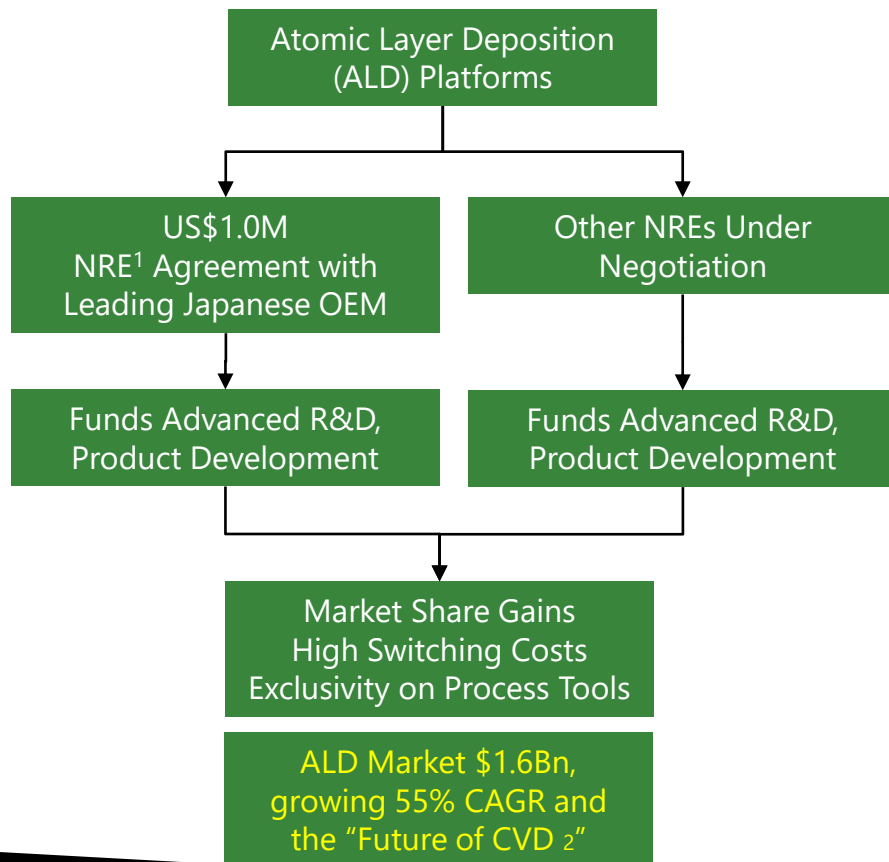


SAM is growing as  
Pivotal expands  
product portfolio  
across the WFE  
value chain

WFE – wafer fabrication equipment; SAM – \$68Bn in 2020 up 6% according to SEMI in July 2020 Report

# HIGH SWITCHING COSTS AND BARRIERS TO ENTRY FOR NEXT GENERATION TOOLS = SUSTAINABLE COMPETITIVE ADVANTAGE

Pivotal Has OEM-Lead Integration Programs in Place for both Leading-Edge Deposition and Etch Platforms



# 2020 OUTLOOK

## SIGNIFICANTLY IMPROVED SEMICONDUCTOR MARKET OUTLOOK FOR REMAINDER OF 2020 & STRONGER GROWTH IN 2021

- Most recent expectations are for overall industry growth of **8%** in 2020 and **15%** in 2021.
- Forecast 2020 global semiconductor equipment sales of US\$63.2Bn with wafer fabrication equipment (WFE).
- According to SEMI, memory market (DRAM, NAND) expected to grow 16% in 2020 and accelerate further to 18% (Blended) growth in 2021.

---

## PIVOTAL EXPECTS SEQUENTIAL REVENUE GROWTH IN 2H2020

- Company sees continued strengthening in the overall semiconductor industry into 2021, where industry growth is anticipated to achieve record levels.
- The Company anticipates that 2H2020 revenues will increase sequentially on the first half (\$10.1M) with Q3 2020 Revenues of \$5.9M announced in recent 4C Commentary.
- Pivotal maintains that its client-led new product development efforts are the key catalyst for future market share gains.

# PIVOTAL'S LEADERSHIP TEAM



**John Hoffman**  
Chief Executive Officer

- >30 years of global high technology management experience
- 18 years at Applied Materials, Corporate Officer
- B.S., United States Military Academy at West Point and an Executive MBA (AEA), Stanford University



**Joe Monkowski Ph.D**  
Chief Technical Officer

- Founder of Pivotal Systems
- Extensive experience in the semiconductor industry focused on providing process equipment and metrology solutions
- Former CTO of Lam Research



**Dennis Mahoney**  
Chief Financial Officer

- >30 years of experience, across public/private co., raising equity and debt, global M&A
- Former VP Finance, CFO and Corporate Secretary of ADAC Laboratories
- M.B.A from the Haas School of Business UC at Berkeley and a B.S. also from UC Berkeley



**Kevin Hill**  
Chief Operating Officer

- >25 years of global high technology management experience
- Former Apple New Product Operations
- B.S., United States Military Academy at West Point, MSBA Boston University, and Certified Product Manager



**Kelly McDonough**  
VP Engineering

- Former engineer at Applied Materials
- B.S., Mechanical Engineering, Notre Dame and MSME, Mechanical Engineering, U. Wash.



**Adam Goler Ph.D**  
Research & Development

- Graduate research emphasis on molecular dynamics simulation, and super resolution fluorescence microscopy
- Ph.D, Physics, Washington State University, B.S., Physics and Mathematics, American University



**Nori Kobayakawa**  
VP Sales and Marketing

- >20 years experience in Asian markets driving increased market share and revenue
- Former Business Development Executive at KLA-Tencor



Collectively decades of experience across the semiconductor value chain



# Thank You

## CONTACT US

### **Pivotal Systems**

48389 Fremont Blvd. #100

Fremont, CA 94538, USA

+1 (510) 770-9125

[www.pivotalsys.com/](http://www.pivotalsys.com/)

## INVESTORS

### **Dr Tom Duthy**

### **Nemean Group**

[tduthy@pivotalsys.com](mailto:tduthy@pivotalsys.com)

+61 (0) 402 493 727