



ASX / Media Release

## Presentation to ASX Small to Mid-Cap Conference

**Fremont, California and Sydney, Australia; 9 September 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 10.00am AEST today (5.00pm PDT 8 September 2020).

- ENDS -

*THIS RELEASE DATED 9 SEPTEMBER 2020 HAS BEEN AUTHORISED FOR LODGEMENT TO ASX BY JOHN HOFFMAN, CHAIRMAN & CEO OF PIVOTAL SYSTEMS.*

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**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](#).

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**ASX Small & Mid-Cap Conference**  
**9 September 2020**  
**John Hoffman- Chairman & CEO**

(ASX: PVS)

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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 31 August 2020)	\$1.15
52 week low / high	\$0.79 / \$1.71
Market Capitalisation <sup>2</sup>	\$130.6 million
Cash on hand <sup>3</sup>	US\$9.1 million
NTA per share <sup>3</sup>	US\$0.14
Top 20 CDI <sup>4</sup> Shareholders	83.6%

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

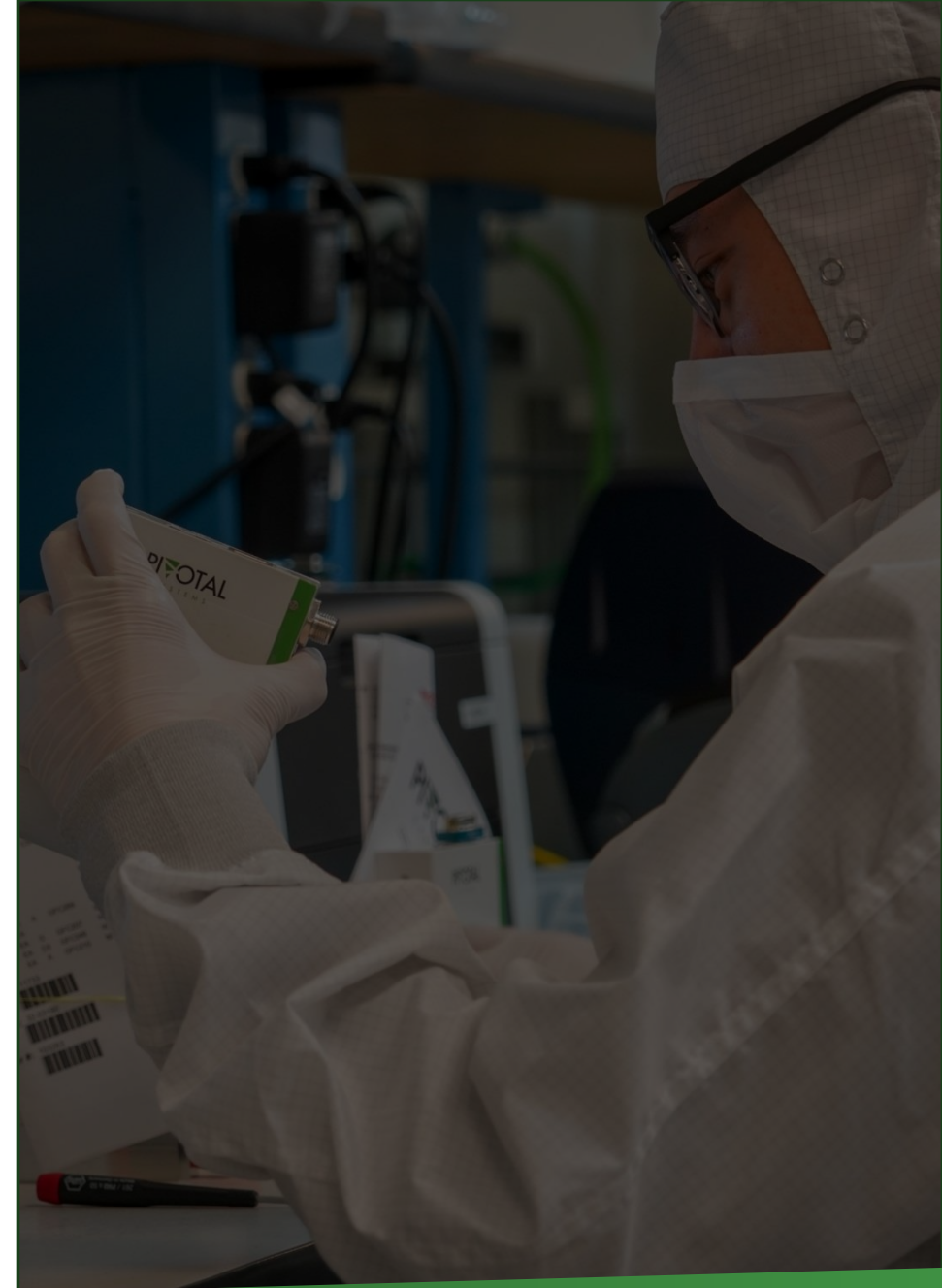
<sup>2</sup> Based on Share price on 1 Sept 2020, issued capital of 113.6M million

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

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



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



# PIVOTAL SYSTEMS OVERVIEW



## GLOBAL LEADER IN GAS FLOW CONTROL (GFC) SOLUTIONS

- Leading provider of innovative gas flow control solutions which are integral in the production of semiconductor devices (semiconductors)
- Pivotal's portfolio of GFCs and Flow Ratio Controllers (FRCs) assist semiconductor manufacturers to stabilise and control the delivery of gases used to deposit or remove materials during the semiconductor manufacturing process
- Significant patent protection in place with 36 issued patents and 389 patent claims



## FINANCIAL POSITION

- Pivotal recorded 1H2020 revenues of \$10.1M, an increase of 26% (1H2019: \$8.0M)
- Operating Loss of \$5.0M represents an improvement of 2.5% over 1H2019. Operating margins during 1H2020 were negatively impacted by temporary increases in US Customs Duty and higher US labor costs while certain manufacturing processes were being performed in Pivotal's US facilities
- Completed a \$13M Revenue Based Preferred Stock Financing with Anzu Partners (\$10M tranche 1 drawn)
- Cash balance of \$9.1M at 30 June 2020, sufficient to fund ongoing operations



## POSITIONED WITHIN MULTIBILLION DOLLAR INDUSTRY

- The broader mass flow controller (MFC) market is forecast to grow to well above \$1 billion by 2022
- Pivotal's customer base continues to grow and includes some of the largest integrated device manufacturers (IDMs) and original equipment manufacturers (OEMs)
- Opportunity for significant increase in customer penetration and expansion of overall market share

*All amounts are expressed in US\$ unless otherwise indicated*

# 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
- Apple New Product Operations with Foxconn
- 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

# GLOBAL FOOTPRINT

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



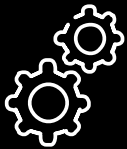
- Pivotal technical, sales and distributor support
- ★ Pivotal Corporate HQ & R&D Center, Flex Capacity As Required

- 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.*

# WHAT IS THE INDUSTRY PROBLEM?

THE PRODUCTION OF SEMICONDUCTORS IS EXPENSIVE, COMPLEX, AND HIGHLY COMPETITIVE, WITH A SMALL NUMBER OF BLUE CHIP MANUFACTURERS COMPETING LARGELY ON COST AND YIELD



Wide range of production yields due to difficulty in producing *repeatable gas flows*. Yields may vary in a wide range between 85-99% of total factory output.



The various gases that are used in the manufacturing process can be expensive and toxic. *Wasted gas* is expensive and not good for the environment.



Gas *flow errors* in the production process lead to expensive wafer materials being scrapped and potentially lower yields on “good” wafers.



Slow machine turn-on and turn-off times (*settling times*) contribute to lower productivity and output.



Maintenance costs involved with the *manual recalibration* of competitors’ flow controllers are a double hit, labor and lost production time.



Limited gas flow *intelligence and diagnostic* capabilities.

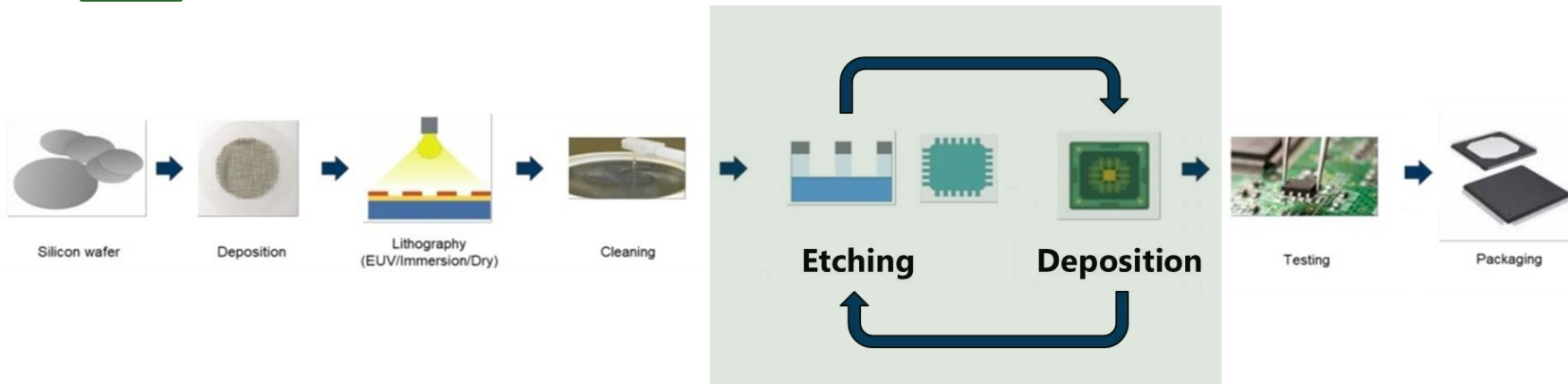


Expensive upstream and downstream *equipment (valves, regulators etc.) required to help stabilize gas flows*.

One important issue for semiconductor manufacturers is variability in gas flows.

An inability to accurately measure and control gas flows creates a range of issues for semiconductor manufacturers.

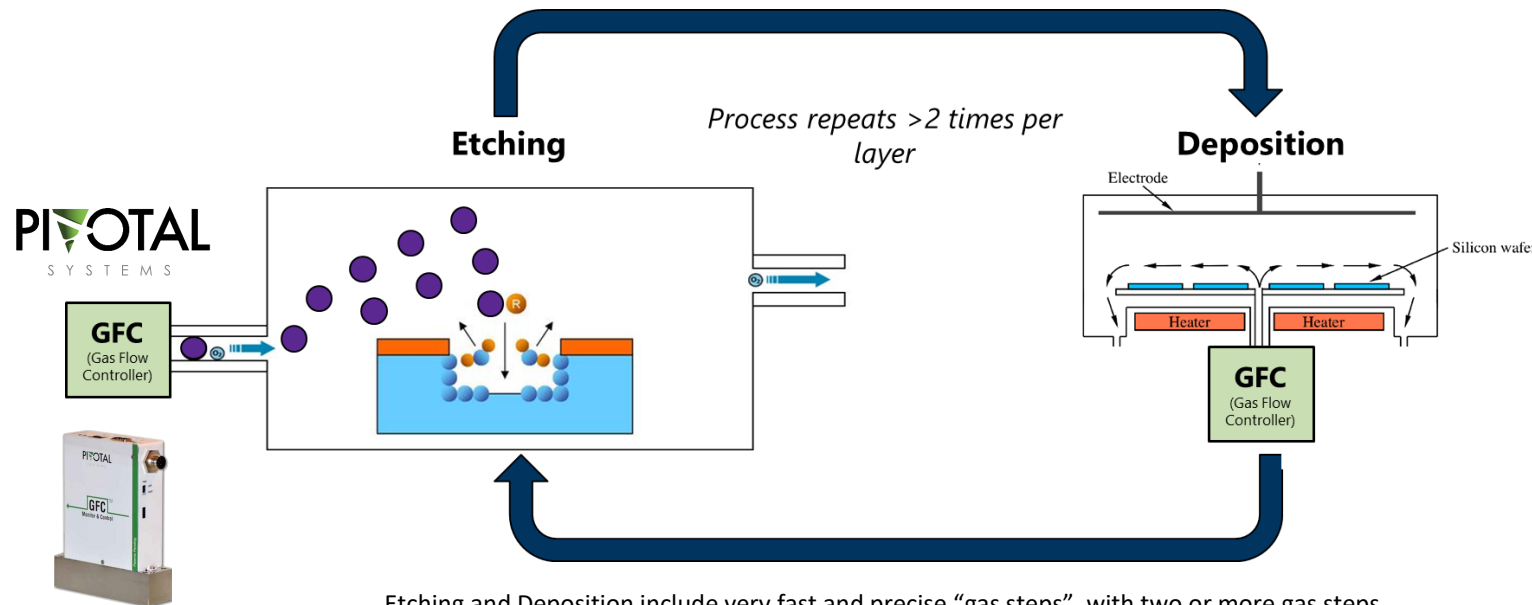
# BUILDING SEMICONDUCTORS AND WHERE PIVOTAL GFCs ARE USED



How are these semiconductor layers built?

Through repeated precision steps of **Etching** and **Deposition**, using specialty gases

Through repeated precision steps of **Etching** and **Deposition**, using specialty gases



## What matters in Etching and Deposition:

Atomic-level precision, millisecond speed, multi-factor data capture, diversity of gases, diversity of thermal conditions, flow repeatability in a dynamic environment

**Pivotal Systems has overcome these obstacles with its unique, patented GFC solutions**

- A typical 4 chamber Etch tool may contain up to **64** GFCs
- A typical 4 chamber Deposition tool may contain **56** GFCs
- A typical IDM fabrication plant operating at full capacity may hold **>75,000** GFCs installed across a number of process tools
- A large, growing market for GFC manufacturers

Etching and Deposition include very fast and precise “gas steps”, with two or more gas steps required to build each layer. More layers = more gas steps

# GFC PRODUCT PLATFORM

**PIVOTAL DESIGNS AND MANUFACTURES INNOVATIVE GFCs WHICH HELP IMPROVE SEMICONDUCTOR MANUFACTURING YIELDS, ALLEVIATE KEY PROCESS INEFFICIENCIES WHILE INCREASING PRODUCTION OUTPUT.**

Innovative hardware design eliminates need for supporting upstream or downstream machinery, alleviating additional costs.

Self calibration software – avoids the need for systems to ever come offline, saving valuable production time.

Highly intelligent software platform capable of providing ongoing updates and product improvements.



Highly accurate proprietary nanotechnology derived valve delivers industry leading accuracy.

Sensors able to monitor & control gas flows in real-time, every millisecond.

Built-in machine learning software capable of identifying changes in gas temperature and pressure as a process is being run.

Fastest turn on and turn off times in the industry – provides an increase in productivity for customers.

# PIVOTAL'S SOLUTIONS SET IS RADICALLY DIFFERENT FROM COMPETITORS

## Existing Flow Control Suppliers

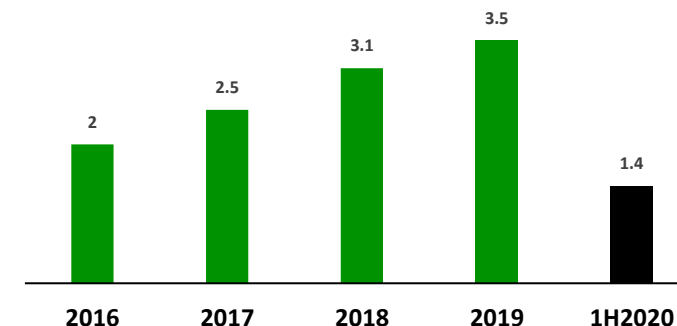


×	HELP CLIENT GET YOUR <u>ONE</u> PRODUCT TO WORK	SALES/SUPPORT	ADVISE ON A RANGE OF SOLUTIONS	✓
×	ARCHAIC CONTROLS SUBJECT TO VARIABILITY	MANUFACTURING	PROPRIETARY TUNABLE SOFTWARE	✓
×	LIMITED/EXPIRED IP	INTELLECTUAL PROPERTY	BROAD FRESH IP ON HARDWARE & METHODS	✓
×	N/A	FLOW TUNABILITY FRAMEWORK	CAN REFINE CONTROL SW BASED ON CUSTOMER REQUEST	✓
×	CONTROL VALVE / PID LOOP 500msec	CONTROL VALVE	CONTROL VALVE / PID LOOP 10msec	✓
×	GAS SPECIFIC 1%	ACCURACY	GAS INDEPENDENT 0.5%	✓

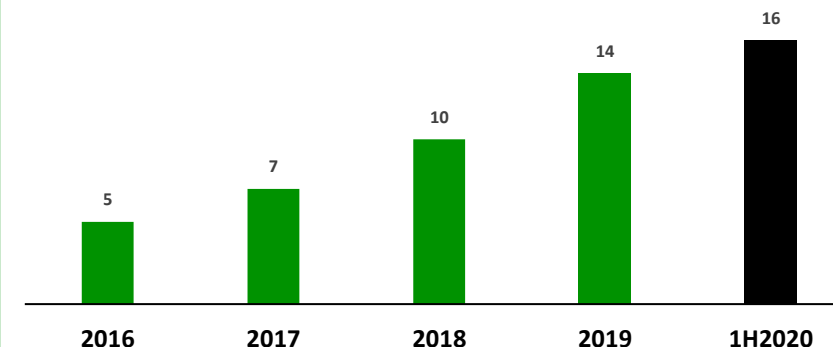
Pivotal's technology stack enables positive feedback loop from customer requirement to solution(s)

Pivotal aims to release at least two new products each financial year to meet the requirements of our customers and remain at the forefront of technical innovation and drive a sustainable competitive advantage

RESEARCH AND DEVELOPMENT EXPENDITURE (\$M)



CUMULATIVE PRODUCTS LAUNCHED



# GROWTH STRATEGIES

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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

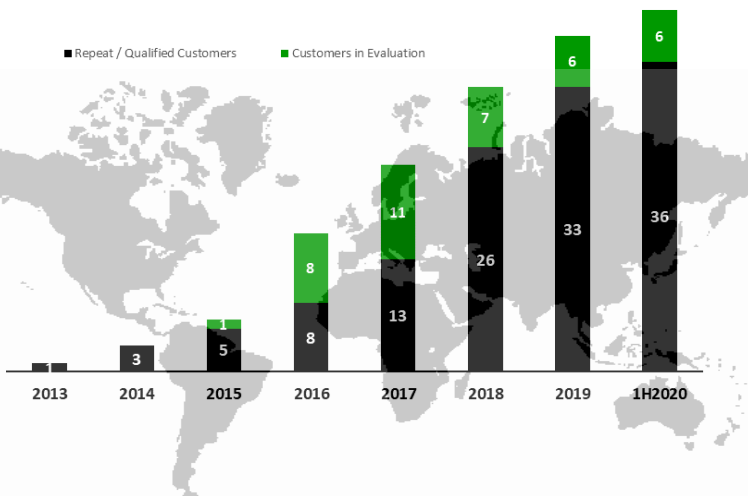


SAM is growing as  
Pivotal expands  
product portfolio  
across the WFE  
value chain

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

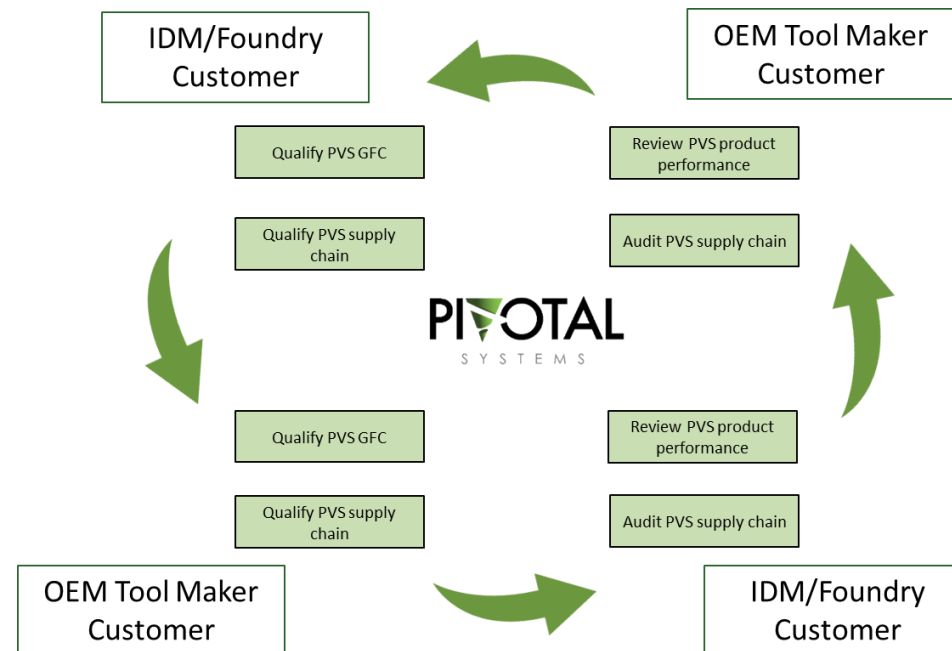
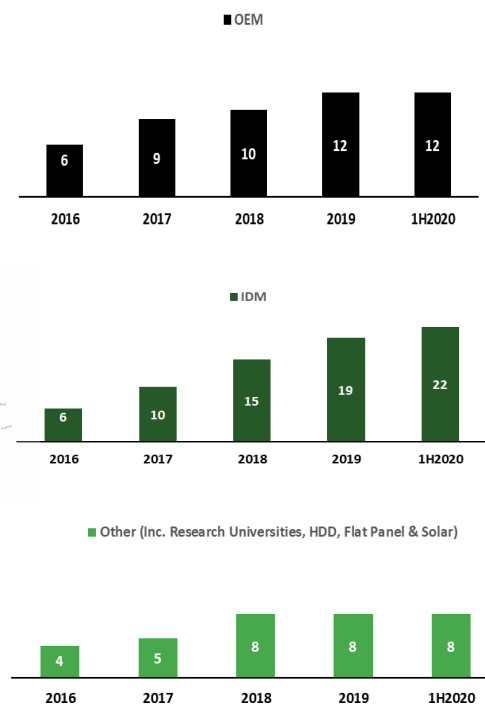
# CUSTOMER EXPANSION & BUILDING DURABLE BARRIERS TO ENTRY

## Global Customer Base



- 5 Year customer Acquisition CAGR to FY19 – **61%**
- Expense of IDM Requalification's by OEMs
- Customer Relationships and Joint Development Programs
- Intellectual Property Constraints

## 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

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.

# 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 (90-95% of TAM)

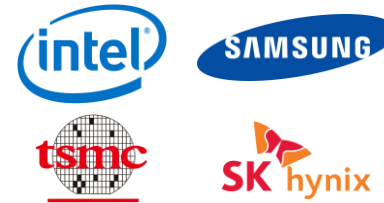
**377,625**  
Units @ ASP of  
\$1,200\*

**\$453M**  
TAM by Value

**6%**  
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 5-10% of TAM and Driven by OPEX Spending at FAB Level

**19,875**  
Units @ ASP of  
\$1,200\*

**\$24M**  
TAM by Value

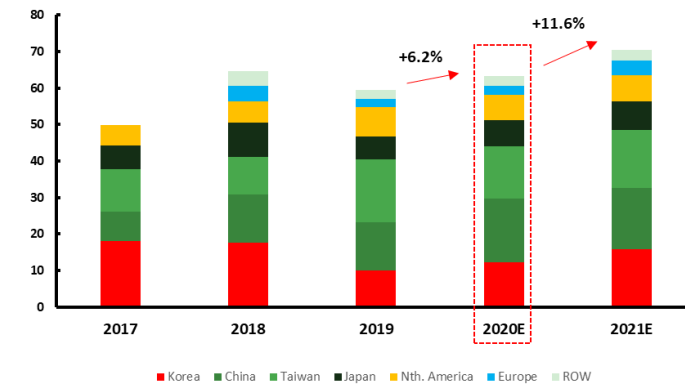
**6%**  
Est. 2020  
growth

**\$477M** MFC TOTAL ADDRESSABLE MARKET IN 2020

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

## SEMICONDUCTOR CAPITAL EQUIPMENT MARKET FORECAST TO GROW 6% IN 2020 & 12% 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 5%

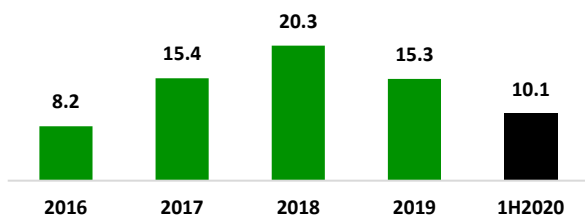
Forecast 2021 global semiconductor equipment sales reaching over US\$70Bn driven by WFE up 13% (All time record)

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

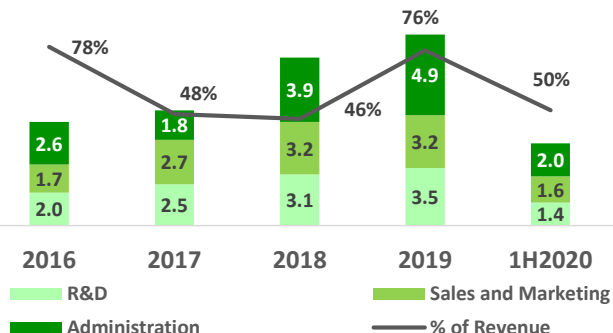
Source: Pivotal analysis based on public filings, market reports, Statista.  
TAM – total addressable market.  
\* Industry estimate only – not representative of Pivotal pricing structures

# KEY FINANCIAL METRICS

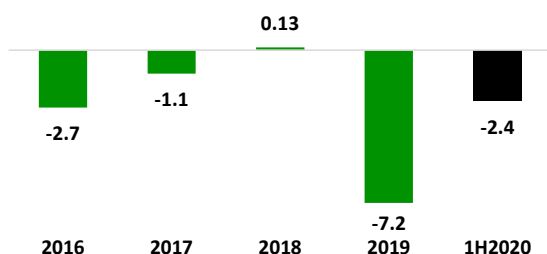
REVENUE \$M



OPEX \$M

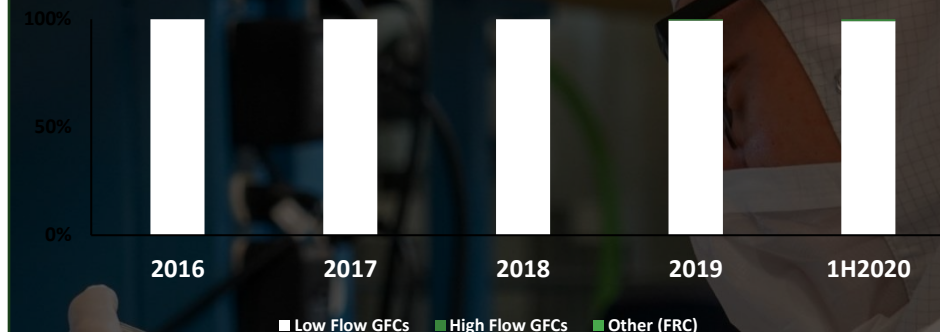


EBITDA \$M

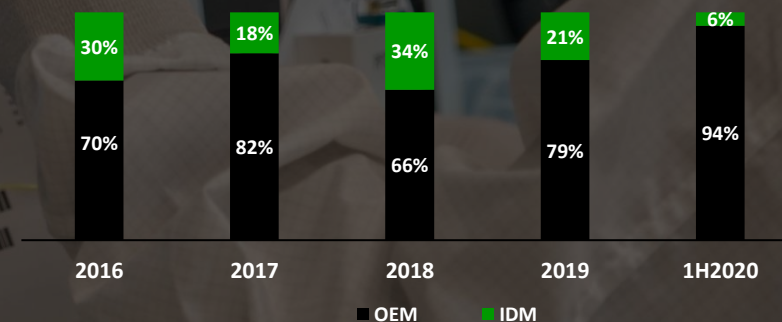


- 1H2020 Pivotal revenue up 26% on pcp; strong recovery in the global semiconductor market and Pivotal focus on customer diversification
- New orders were up 553% versus the prior corresponding period (pcp) and represents 142% of the entire new orders achieved in FY2019, where industry downturn was significant
- **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 76% in FY19
- 1H2020 Proforma GPM of 18.9%, after adjusting for US Customs Duty (reported margin of 1.5%)
- 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, inc. R&D
- Business has exceptional operating leverage potential
- Normalisation of GPM from 2H2020 onwards

REVENUE CONTRIBUTION BY PRODUCT (%)

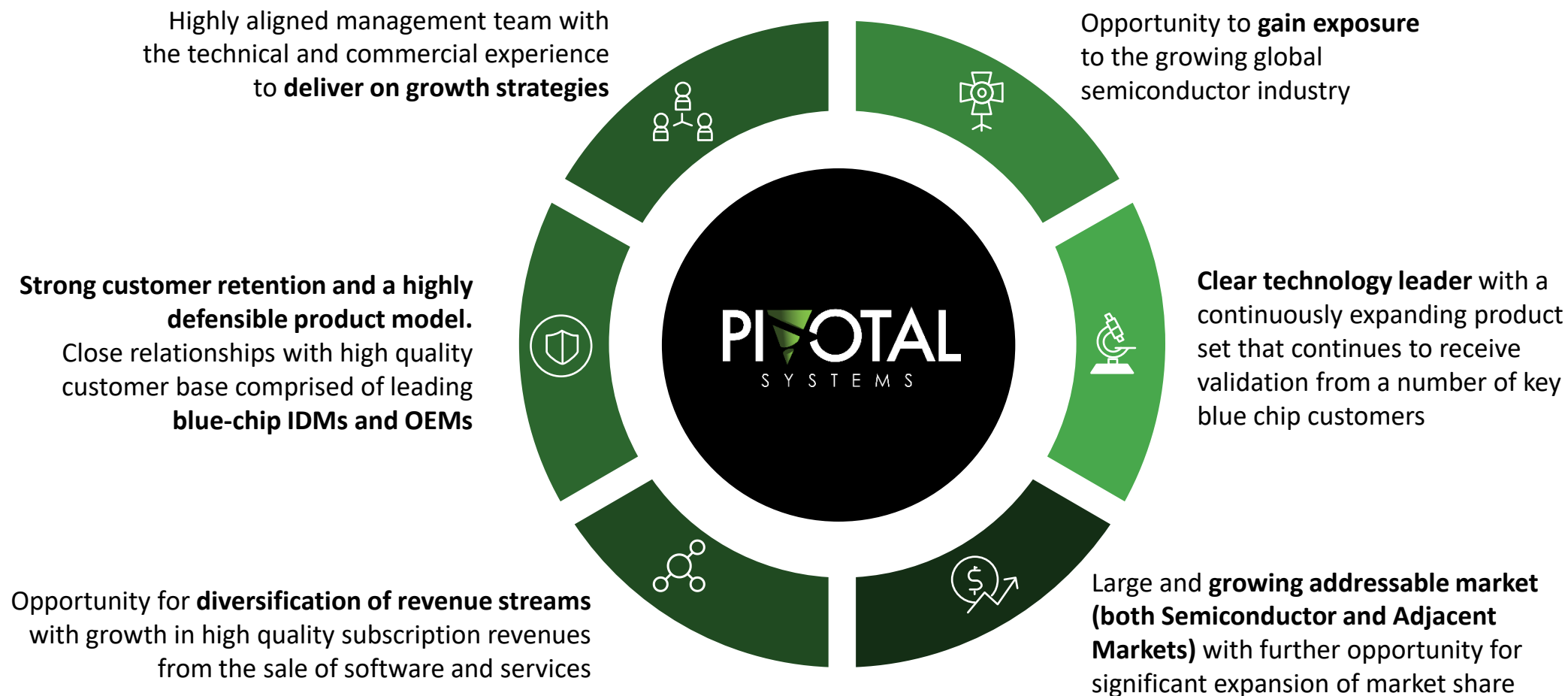


REVENUE CONTRIBUTION BY CUSTOMER (%)



# PIVOTAL SUMMARY

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# 2020 OUTLOOK

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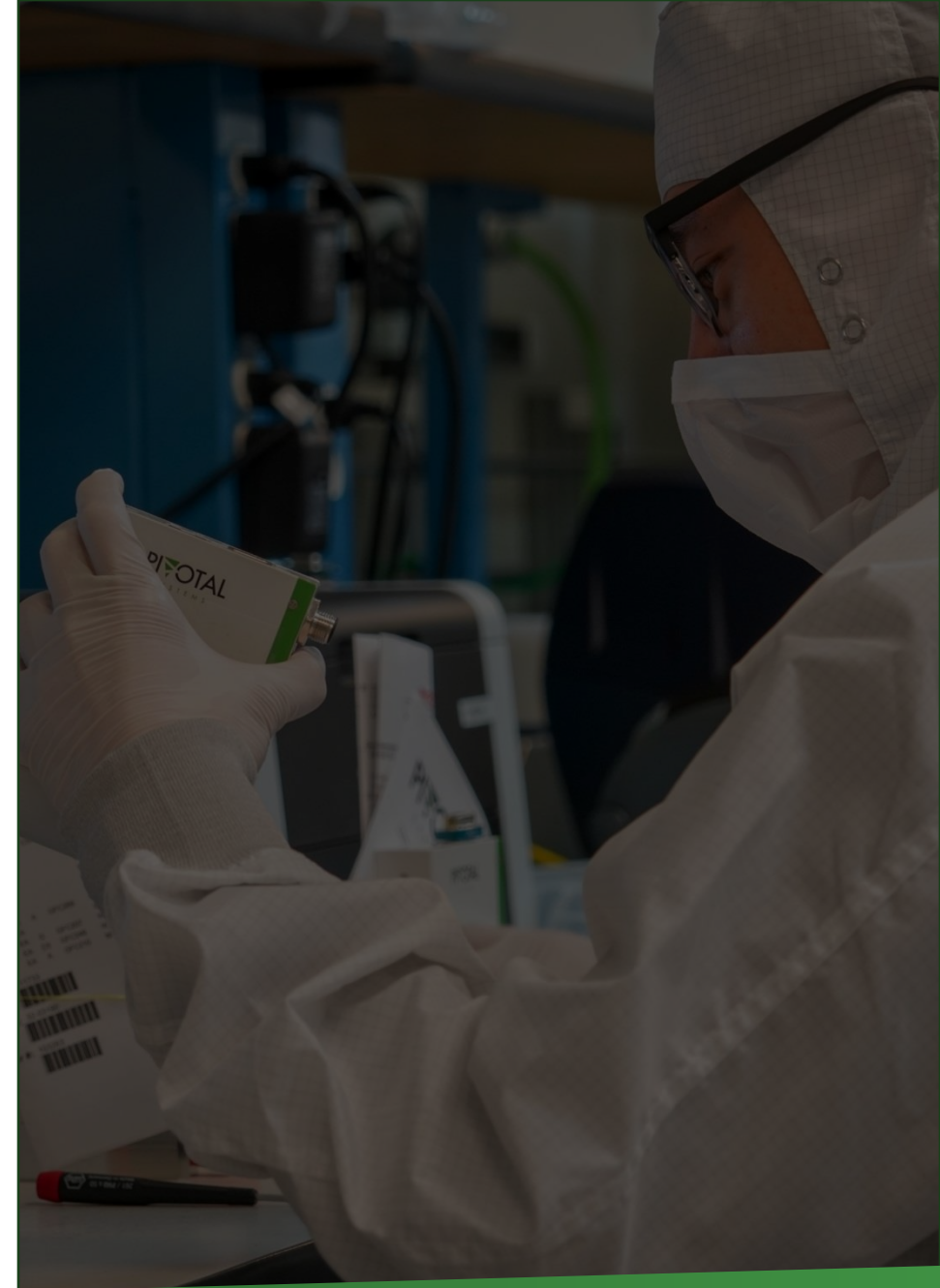
## SIGNIFICANTLY IMPROVED SEMICONDUCTOR MARKET OUTLOOK FOR REMAINDER OF 2020 & STRONGER GROWTH IN 2021

- Expectations are for overall industry growth of **6.2%** in 2020 and **11.6%** in 2021
- Forecast 2020 global semiconductor equipment sales of US\$63.2Bn with wafer fabrication equipment (WFE) up 5%
- According to SEMI, both DRAM and NAND spending in 2020 will surpass 2019 levels and are projected to grow over 20%, respectively, in 2021.

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## 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
- Pivotal maintains that its client-led new product development efforts are the key catalyst for future market share gains.





# Thank You

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