

The background of the slide features a dark blue field filled with glowing green and white binary code (0s and 1s) arranged in horizontal streams. Overlaid on this are intricate, glowing white and light blue geometric patterns resembling circuit traces or a complex network diagram, with lines intersecting at various angles.

PDF/SOLUTIONS™

Investor Presentation

February 2022

John Kibarian, President & CEO, Co-Founder

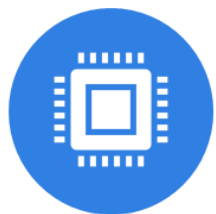
Kimon Michaels, Executive VP, Products and Solutions, Co-Founder

Adnan Raza, Executive VP, Finance & CFO

Certain statements in this presentation, and statements that may be made when discussing it, regarding the Company's future expected business performance and financial results are forward looking and are subject to future events and circumstances. Actual results could differ materially from those expressed in these forward-looking statements. Risks and uncertainties that could cause results to differ materially include risks associated with: customers' production volumes under contracts that provide Gainshare royalties, cost and schedule of new product development; continued adoption of the Company's solutions by new and existing customers; project milestones or delays and performance criteria achieved; the provision of technology and services prior to the execution of a final contract; the continuing impact of the coronavirus (COVID-19) on the semiconductor industry and on the Company's operations or demand for the Company's products; the time required of the Company's executive management for, and the expenses related to, as well as the success of the Company's strategic growth opportunities and partnerships, including its partnership with Advantest Corporation; our ability to successfully integrate the acquired businesses and technologies; and other risks set forth in PDF Solutions' periodic public filings with the Securities and Exchange Commission, including, without limitation, its Annual Reports on Form 10-K, most recently filed for the year ended December 31, 2021, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K and amendments to such reports. The forward-looking statements made herein or about this presentation are made as of the date hereof, and PDF Solutions does not assume any obligation to update such statements nor the reasons why actual results could differ materially from those projected in such statements.

PDF Solutions Overview

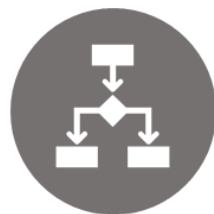
- PDF provides advanced data analytics, machine learning, and equipment connectivity products, services, and systems for the semiconductor supply chain
- PDF products improve process efficiency and product reliability:
 - Analytics software and services for the end-to-end needs of the semiconductor value chain
 - Connectivity and control software and services for factory equipment
 - Differentiated data from manufacturing, test, and in-field use based on IP integrated into semiconductor devices



IC Design



Fab



Sort



Assembly



Test



System

Building a Platform for Success

GROWTH

- Record total full year CY 2021 revenue of \$111.1M
- Analytics at 84% of total revenue in CY 2021, grew at a CAGR of 37% from CY 2019 to CY 2021

PROFITABILITY

- GAAP gross margin of 61% for Q4'21, and 60% for CY 2021
- Non-GAAP gross margin of 65% for Q4'21, and 64% for CY 2021
- 70%+ non-GAAP gross margins target model

VISIBILITY

- Greater than 100% Exensio® customers dollar-retention rate*
- Strong ending backlog of \$179.5M, a 66% increase from a year ago

DIVERSIFICATION

- Largest customer concentration down to 17% of revenue in CY 2021, from 23% in CY 2020
- No country outside the United States accounts for more than 13% of revenue in CY 2021

STRENGTH

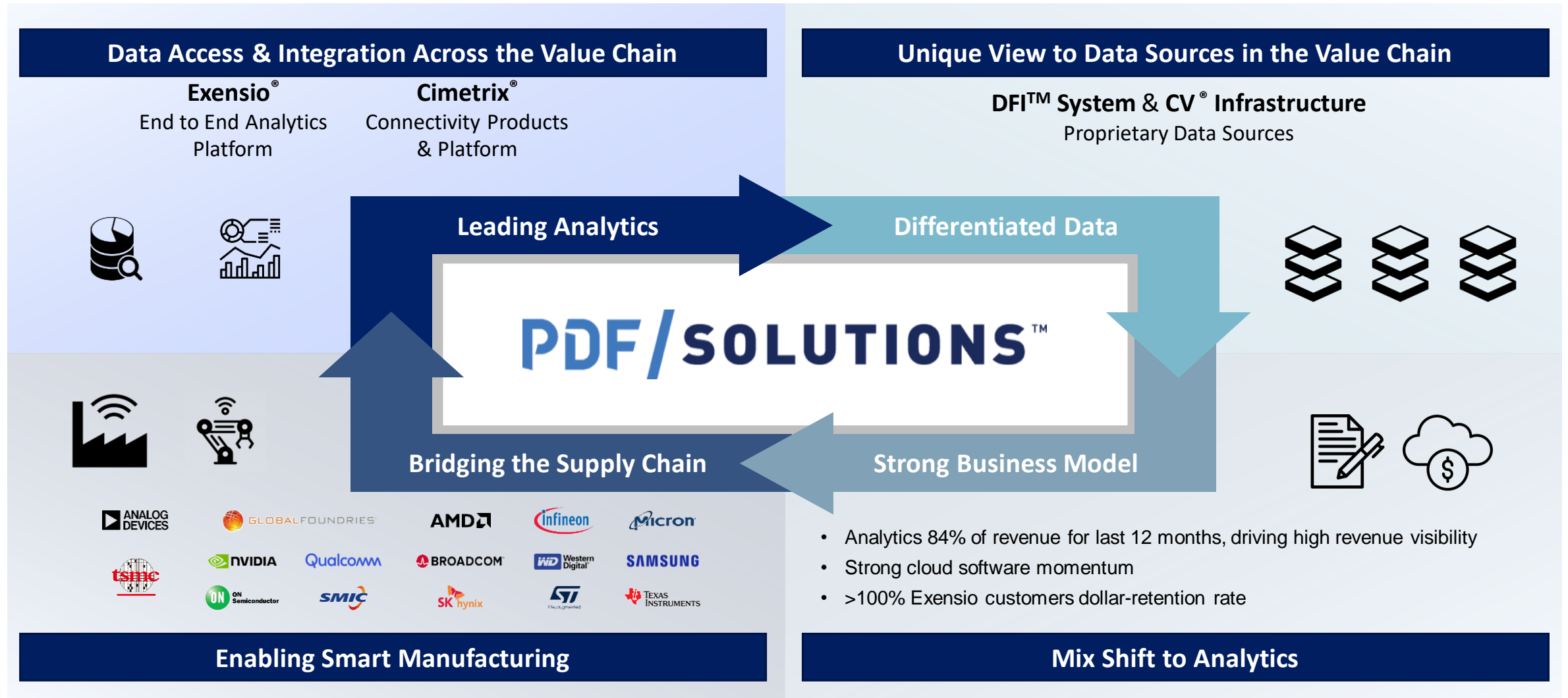
- \$140M in cash and short term investment as of Q4'21, with no debt
- Opportunistic share buybacks; \$19.4 million since 2018 including \$4.5M in 2021

INVESTMENT

- Strategic investment and partnership with Advantest
- Cimatrix acquisition to expand products and market portfolio

*CY 2021 vs CY 2019

The Leading Data Analytics Platform



PDF Business Models

**PDF has two business models to capture the value of our solutions,
which combines advanced analytics and differentiated data**

Subscription Model:

when value is data and analytics

- Analytics is primarily subscription-based and is the growth driver for PDF
- Subscription model enables PDF to be compensated on continuous usage

Gainshare Model:

when value is time to volume

- Integrated Yield Ramp revenue is the variable-fee royalty model that enables PDF to be compensated based on measurable value delivered
- In competitive foundry market, time to mass production is critical

Benefiting From Strong Market Tailwinds

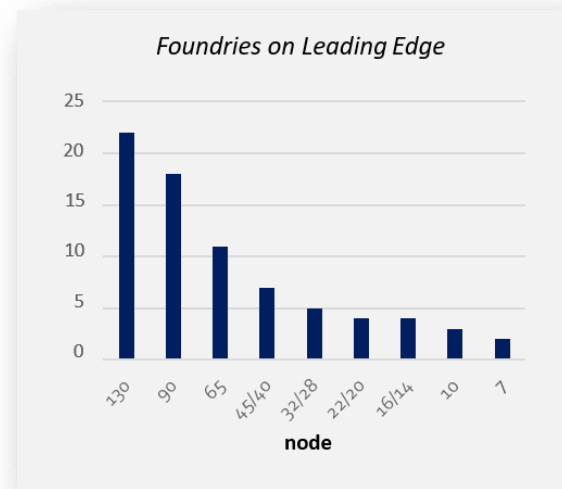
Value in Semiconductor Supply Chain Shifting to Mass Production:

- Increased value in mass production continuous improvement vs. simply time to market
- Financial risk shifting away from foundry to fabless & system companies

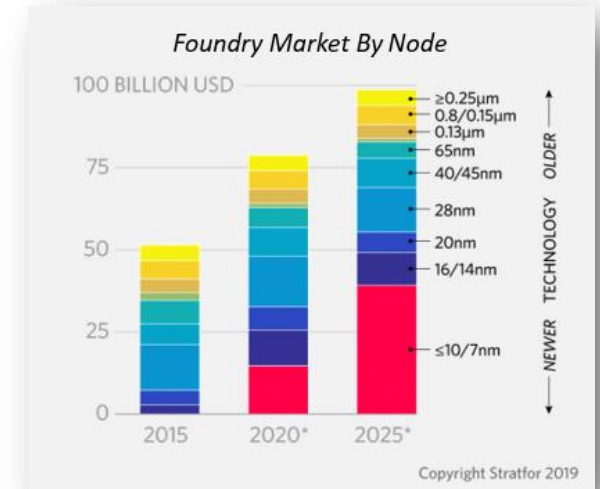
Moore's Law is Slowing Down



Foundries consolidating due to process complexity



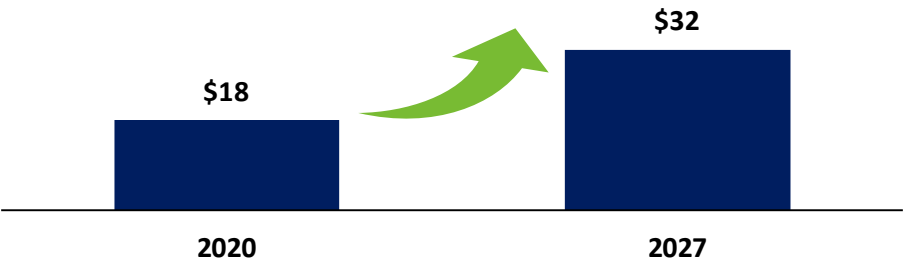
% of foundry market in finFET nodes expected to grow



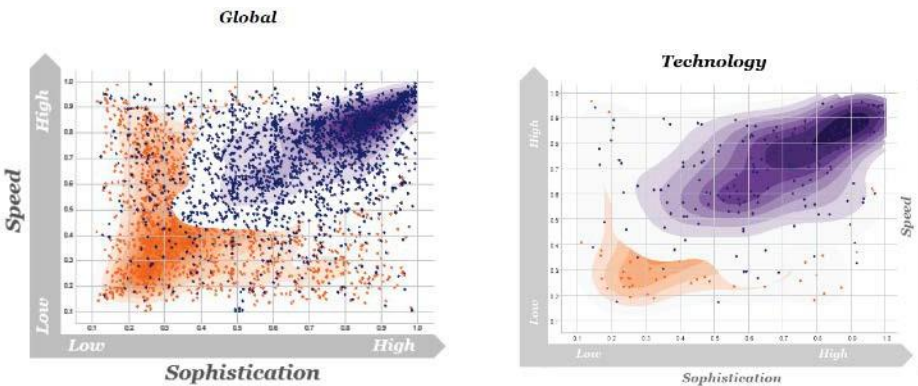
An increasing number of stakeholders, Hyperscalers, OEMs, Governments, are all realizing the importance of the semiconductors supply chain

Data and Analytics Growing in Importance

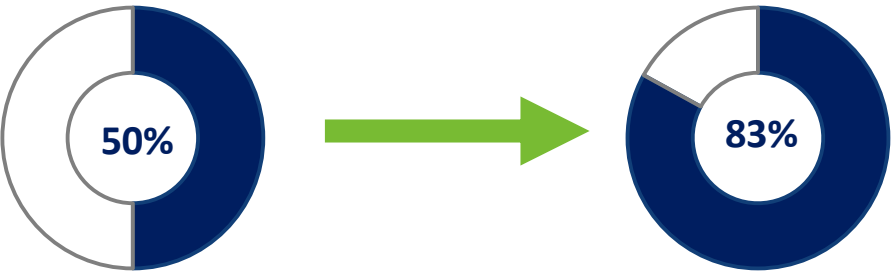
Data & Analytics in Semis & Electronics (\$B)



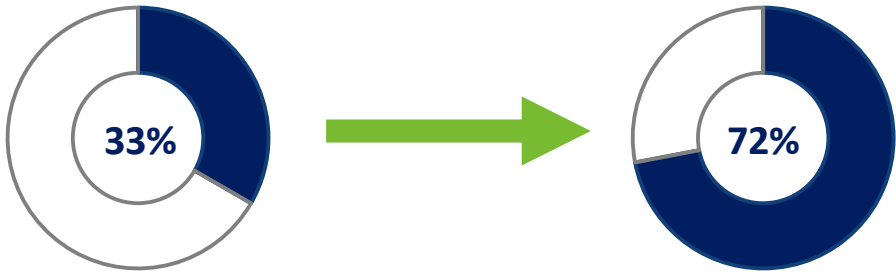
Data & Analytics in Semiconductor & Electronics manufacturing is expected to **grow significantly**



Companies moving to **faster decision speed** with **greater sophistication**, especially in tech. sector



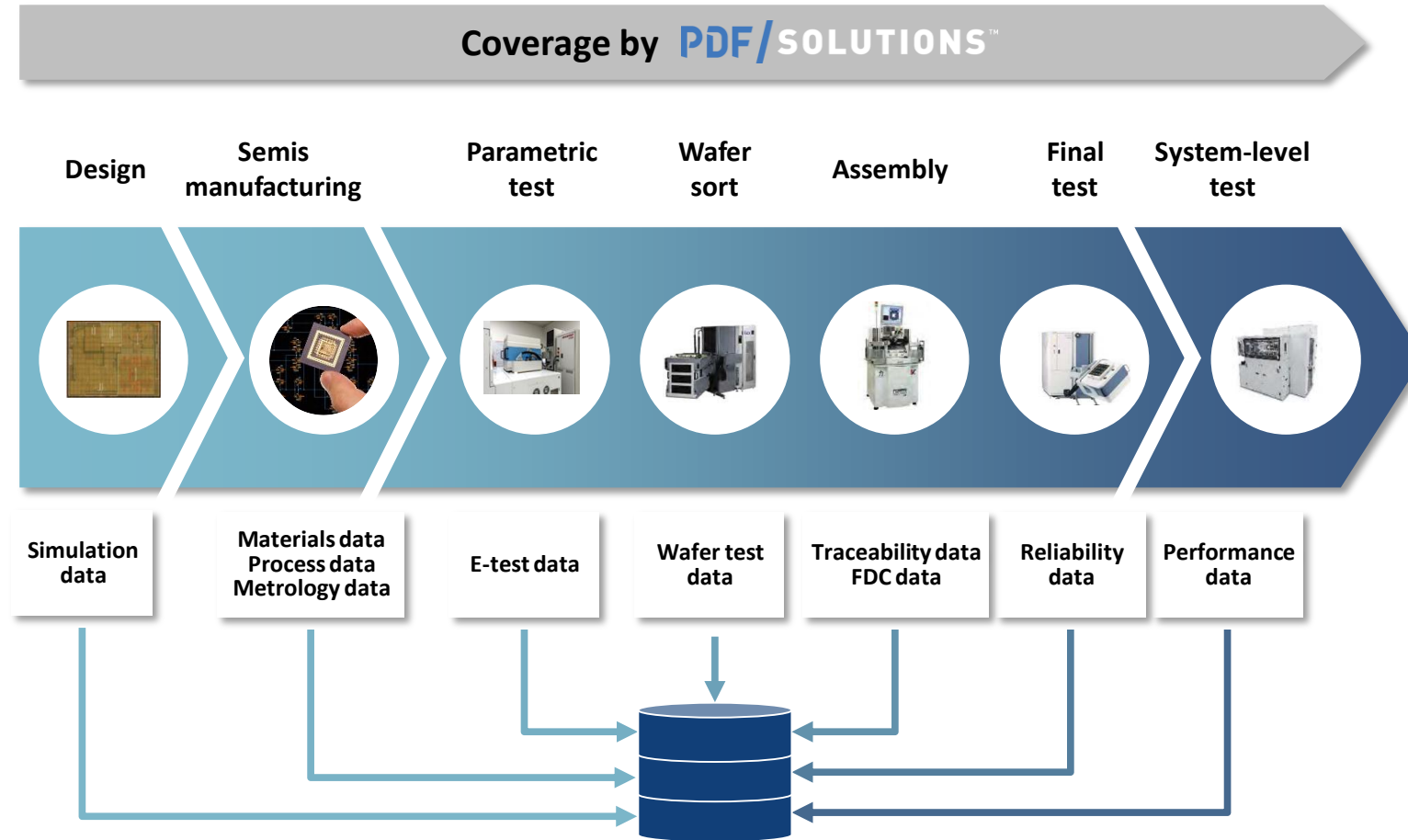
Only half of companies today place a high importance on data analytics, but **83% expect that it will be a core competence in five years**



% of companies with “**highly digitized functional groups**” expected to **double over next 5 years**

Source: PwC – Industry 4.0 Building your digital enterprise, Allied Market Research.

PDF has a Unique View & Comprehensive Access to Data Across the Supply Chain




- ✓ Wafer-level grading and disposition
- ✓ Test reduction and adaptation
- ✓ Die quality and RMA prediction
- ✓ Virtual metrology
- ✓ Yield prediction
- ✓ Predictive maintenance
- ✓ Fault detection and classification
- ✓ Capacity and efficiency improvement
- ✓ Connectivity to equipment for control and data exchange

PDF Spans and Bridges the Supply Chain Stack to Enable Smart Manufacturing





Cimetrix platform provides high-performance data pipelines between equipment, factories and application environments (AI/ML/Analytics)



Exensio platform provides the data collection, connections and analytics for feedback and insight down the stack

PDF/SOLUTIONS™

- ✓ The only commercial data and analytics-focused provider with breadth and scale required by our customers
- ✓ Analytics and data implemented broadly across the supply chain
- ✓ Most of the top 50 equipment suppliers in the world use Cimetrix software
- ✓ Unique view and comprehensive access to data sources in the manufacturing and testing supply chain
- ✓ Continue to increase our established relationships with critical industry members

Representative industry participants; not indicative of actual customers. Logos are the property of the respective trademark owners.

Customer Base Spans Equipment, Fabless, Fab, OSAT and System



>125K equipment
to factory
connections



>40K process tools
under PDF process
control across the
ecosystem



>340 revenue
generating customers
in 36 countries
through TTM Q4'21



#1 commercial
solution for mfg yield
and control with large
cloud customer base



Fastest growing
commercial provider
in manufacturing test
operations leveraging
DEX network

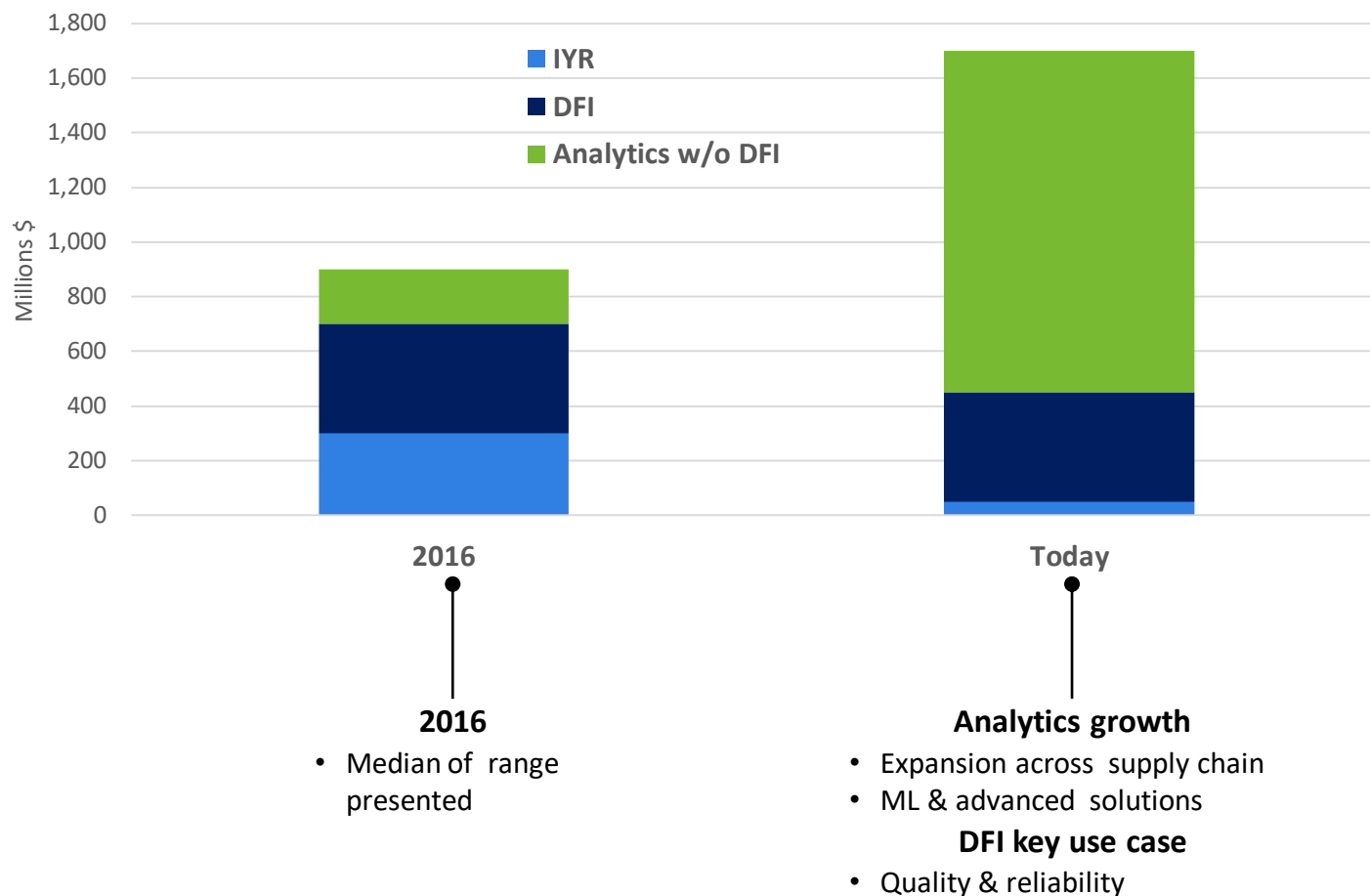


Leading solution for
die traceability
through the supply
chain



Companies who attended the 2019 PDF Solutions Users Conference; Logos are the property of the respective trademark owners.

Available Market Size



Source: PDF Solutions estimates

- Today, PDF provides the only commercial, supply-chain-wide analytics products, services, and systems
- Growth in analytics market being driven from
 - Move to cloud and increased data volumes
 - Additional opportunities in fabless, OSAT, system analytics
 - Increased adoption of connectivity products in factory equipment
- DFI™ market growth driven by
 - Need for electrical data for quality and reliability
 - Observability limits of conventional inspection

PDF Solutions and Advantest Partnership – 30 July 2020

Overview of PDF Solutions



- The only end-to-end data and analytics solutions provider for the semiconductor and electronics manufacturing supply chains
- PDF's Exensio Analytics Platform provides a semantic data model to integrate and align data from across the semiconductor product lifecycle
- CY 2019 revenues of \$86 million with 65% gross margins
- \$100 million cash and no debt, as of Q1 ended March-2020
- Worldwide ~350 employees and presence in 11 countries

Overview of Partnership

- Development of a software platform based on Exensio ("Advantest Cloud powered by PDF Exensio") for Advantest's internal & customers use
- Joint development and sale of technology solutions based on Advantest testing platforms and PDF's Exensio analytics software
- A 5-year subscription for the PDF Exensio cloud platform and DEX network, which is expected to result in >\$50 million revenue, subject to successful deployment of the Exensio platform (anticipated this year)
- Purchase of 3,306,924 PDF common shares for \$65.2 million
- PDF remains independent and will continue to work with all equipment providers in both the front-end and back-end

Strategic Rationale of Partnership

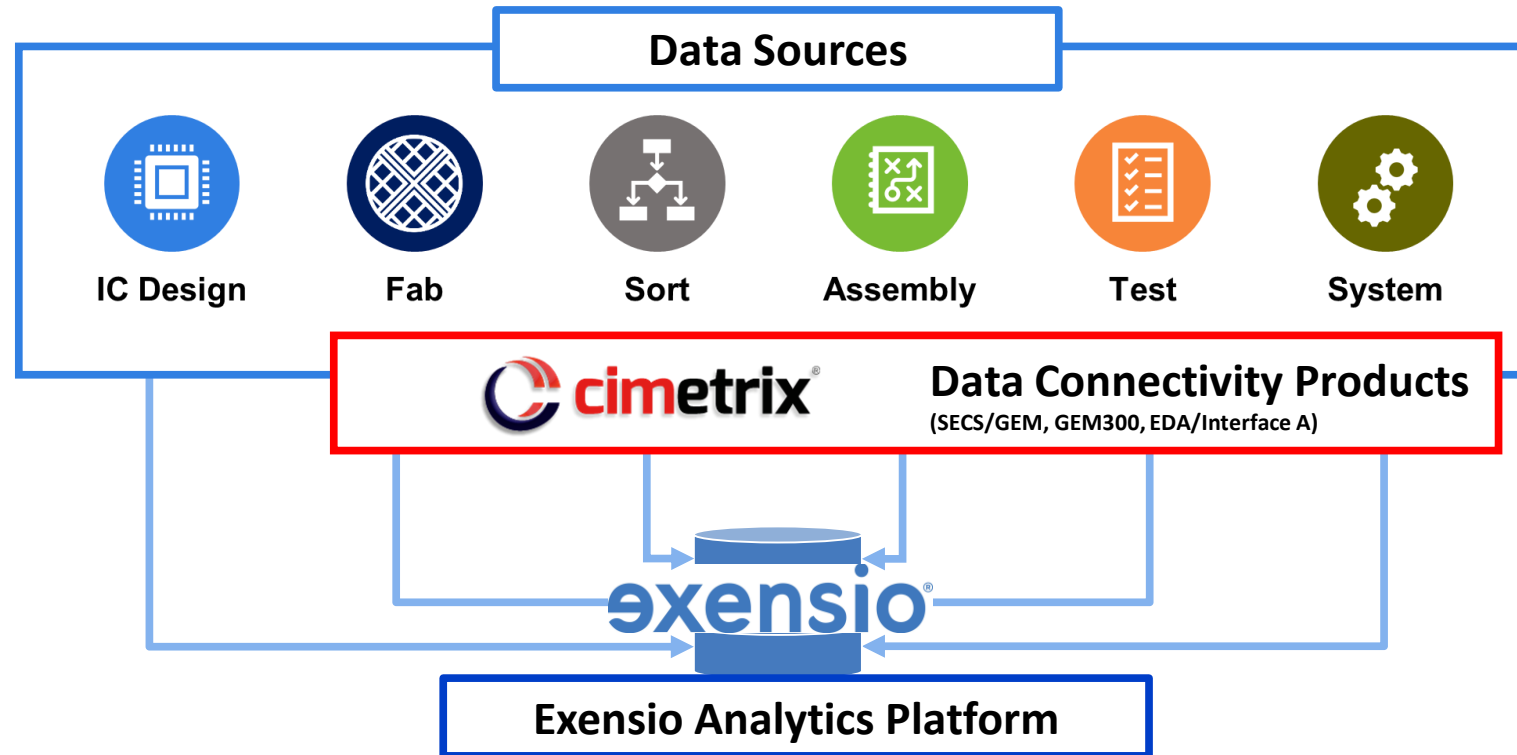


- Expands and deepens tools supported by Exensio, already at >300 tool types from >100 equipment companies and >40k connected tools worldwide
- Increases number of fabs/OSATs using PDF to communicate product data
- Advantest is the established leader in test systems global ecosystem, with greater than 50% market share
- Partnering with Advantest allows PDF to further solidify our industry-leading footprint in the manufacturing & test equipment data collection ecosystem

Benefits for PDF Solutions

- Validates PDF strategy of making Exensio an open and independent analytics platform for partners to use as a base for their own solutions
- Creates additional opportunities for PDF at fabless and system companies from accelerated adoption of Exensio solution for test, as well as revenue from the Advantest solutions that leverage Exensio
- Accelerates adoption of DEX nodes connecting customers, manufacturers and suppliers
- Accretive deal for PDF stockholders, including share issuance
- \$65.2 million of additional cash provides a platform to accelerate PDF's growth and investments going forward

PDF Offers Connectivity and Control for Manufacturing Equipment Since Dec 2020



- PDF is the only provider of analytics, differentiated data and connectivity
- PDF's mission is to lead the trend toward Smart Manufacturing & Industry 4.0
- Enable customers to extract more intelligence – not just data – from their factory floor
- Extends the reach of our “whole supply chain” strategy to include packaging, test and assembly at OSATs and PCBA

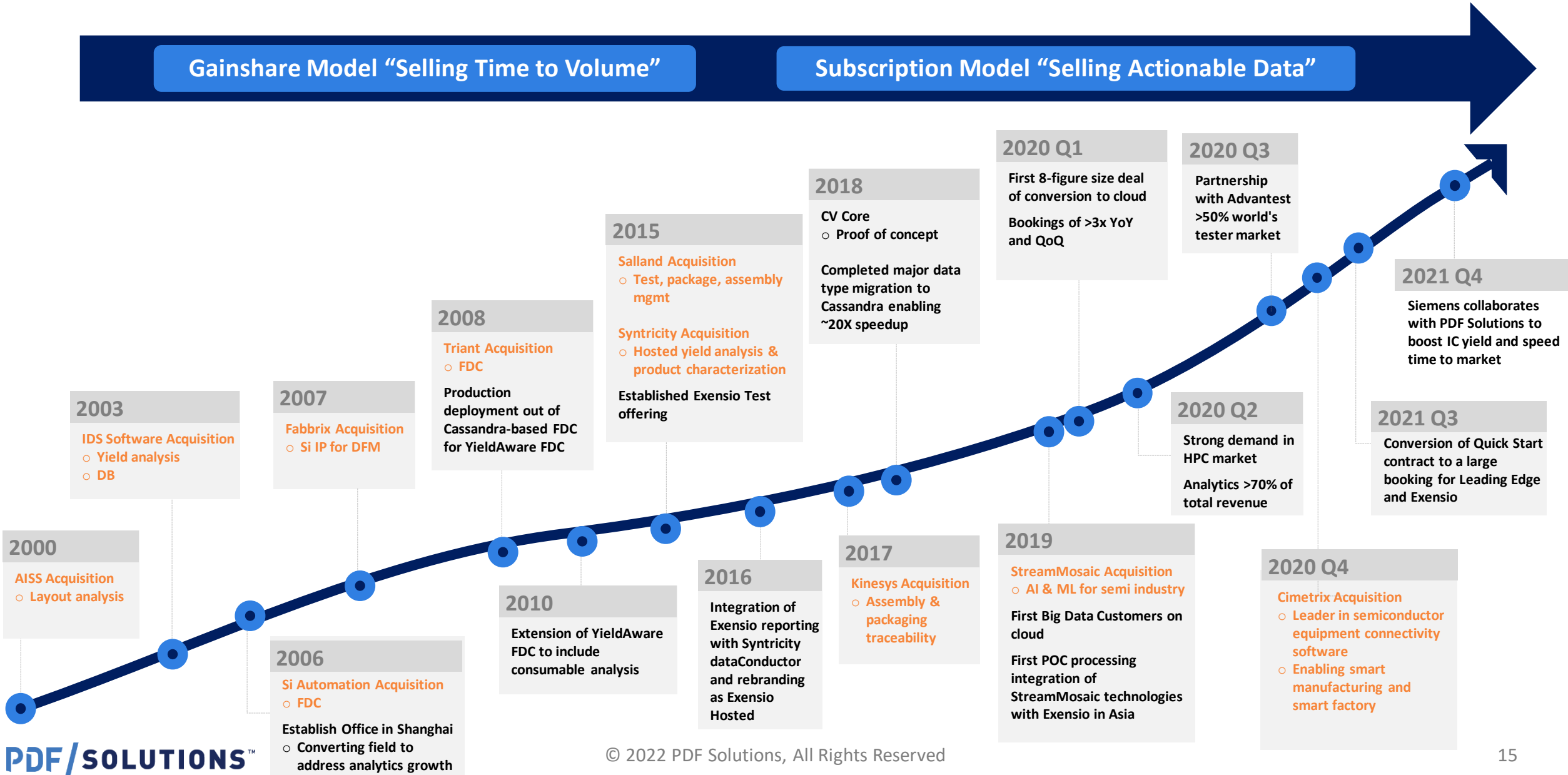


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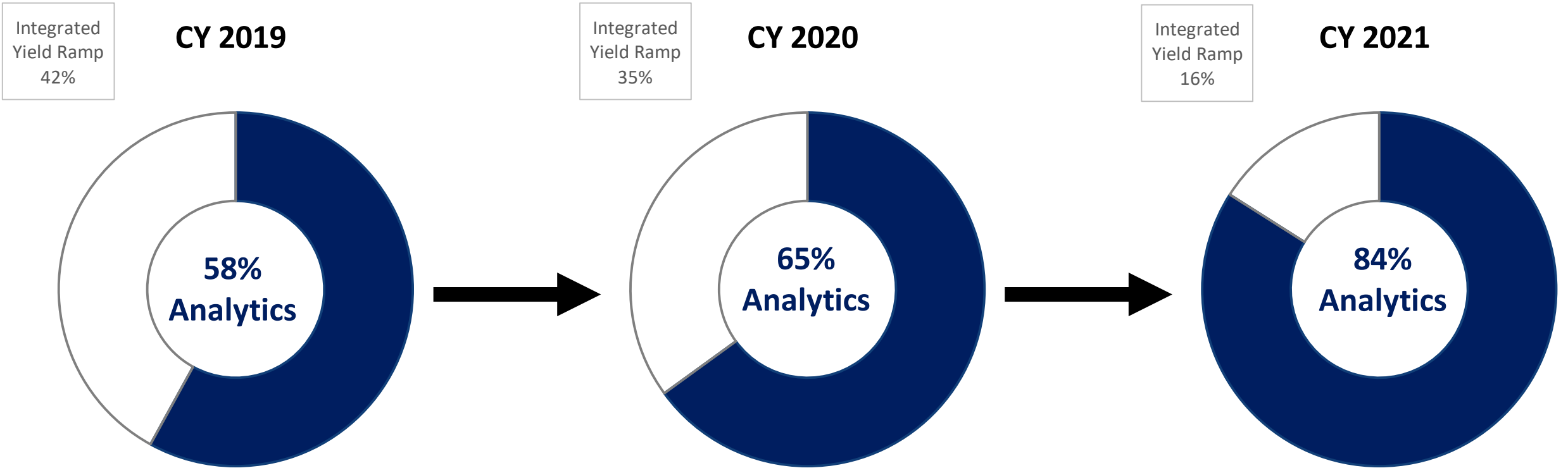
Acquisitions and Product Releases Expanded Scope

Gainshare Model "Selling Time to Volume"

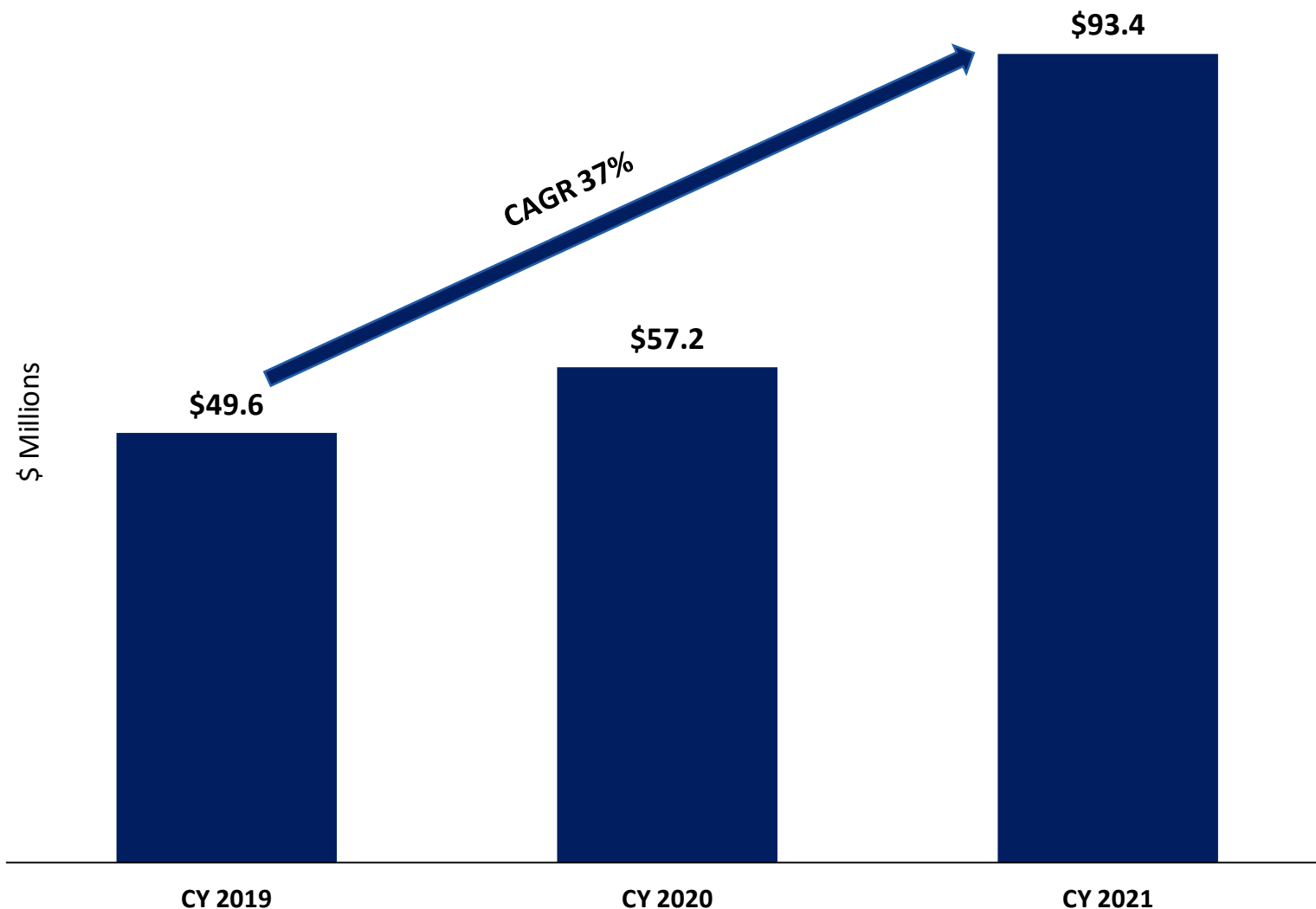
Subscription Model "Selling Actionable Data"



Revenue Transition to Analytics



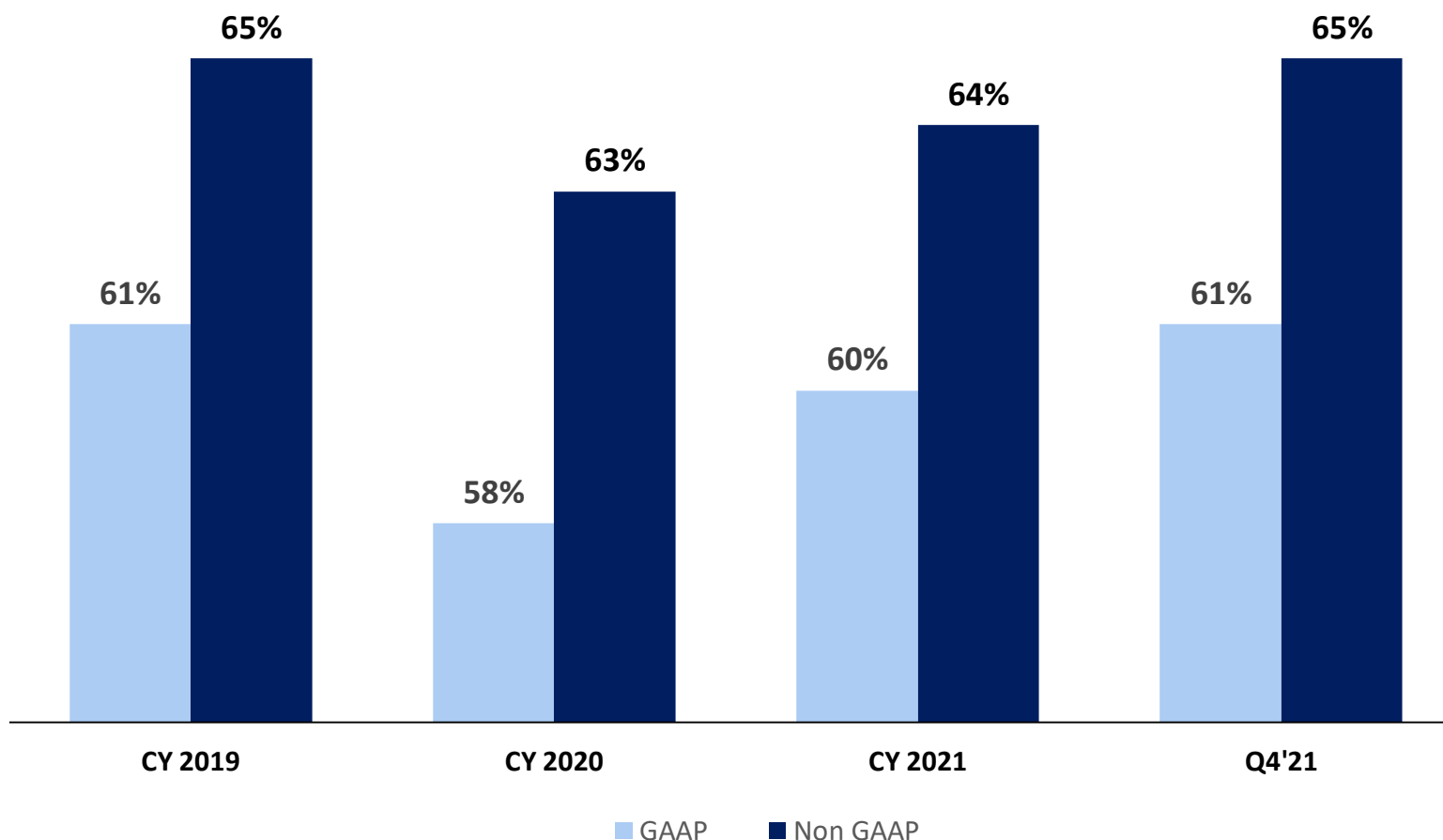
Analytics Revenue



GROWTH

- CAGR of 37% from 2019 to CY 2021
- Average Analytics revenue per customer, excluding Cimetricx, \$594K in CY 2021, a 34% increase from \$443K in 2019

Gross Margins

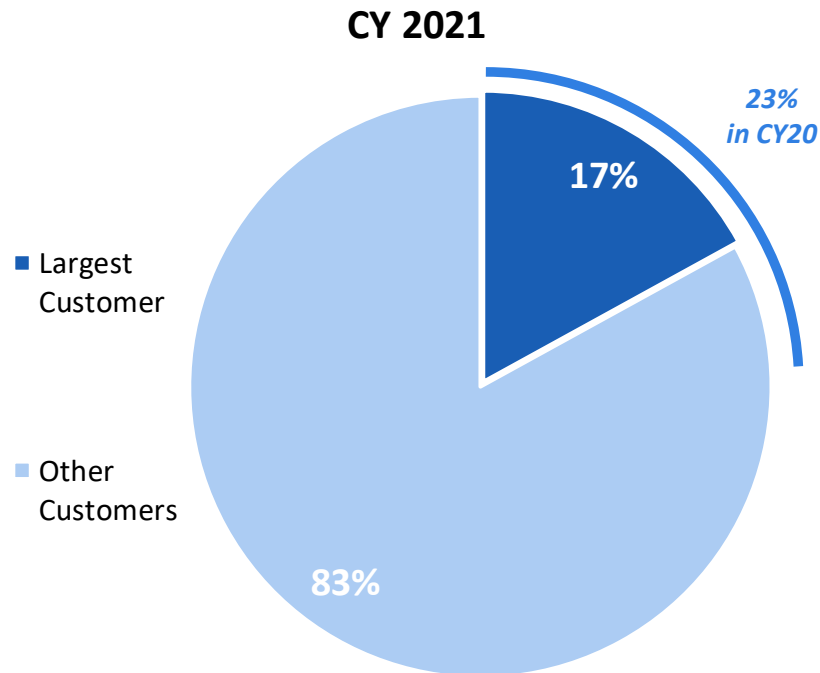


PROFITABILITY

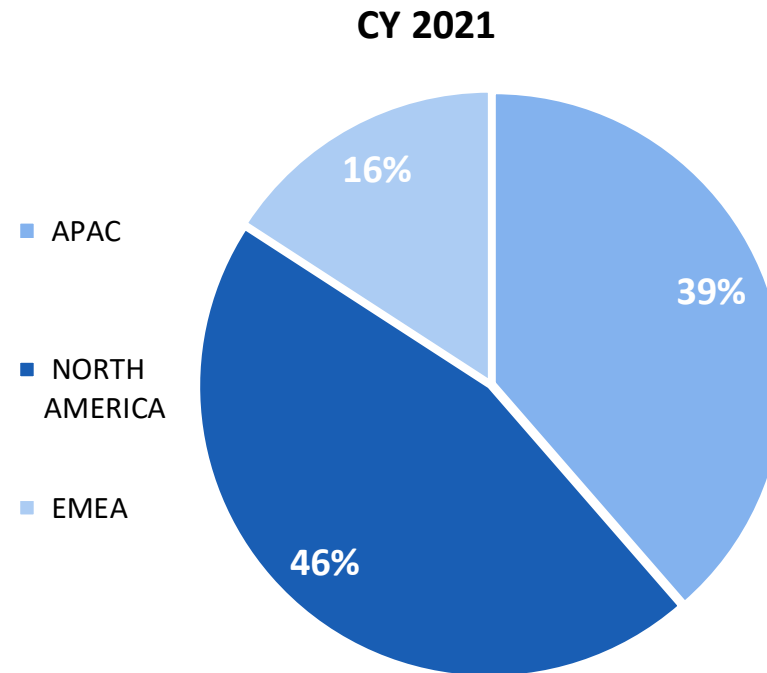
- Progressing towards our long term target Non-GAAP gross margin of 70%+
- Analytics customers transitioning to subscription and cloud over time
- First monetization of technology was IYR engagements with associated royalties
- Second wave of monetization consists of growing the Analytics business

Diversified Revenue Distribution

Customer Concentration



Regional Concentration



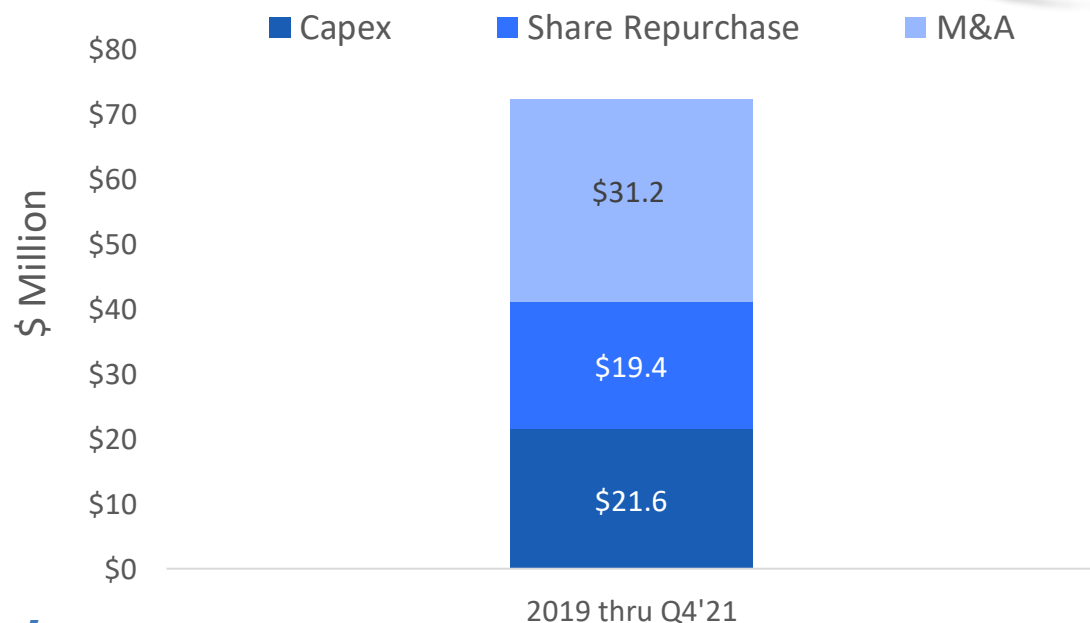
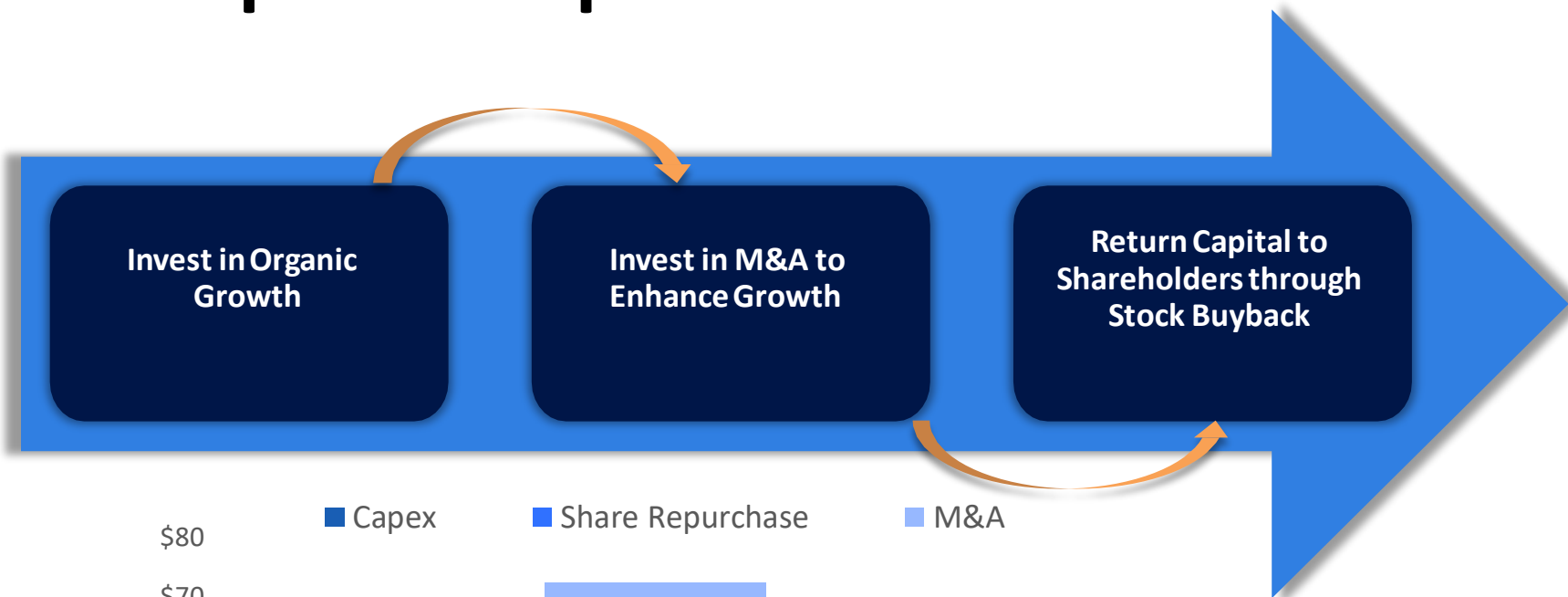
- Largest customer down to 17% of revenue in CY 2021 vs. 23% in CY 2020
- Globally diverse geographic distribution
- No country outside the United States accounts for more than 13%
- North America largest market at 46% of revenues

Balance Sheet Strength

<i>(\$ Millions)</i>	End of 2018	End of 2019	End of 2020	End of 2021
Cash and ST invt	\$96.1	\$97.6	\$145.3	\$140.2
Debt	\$0	\$0	\$0	\$0

- Existing balance sheet strength provides foundation for investment in growth of analytics business both organically and inorganically
- Shares buyback \$4.5M in 2021
- Investments made in R&D, PP&E, M&A, S&M and share buyback

Disciplined Capital Allocation



INVESTMENT

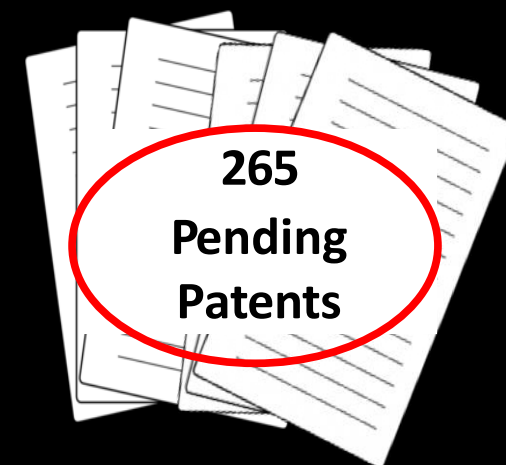
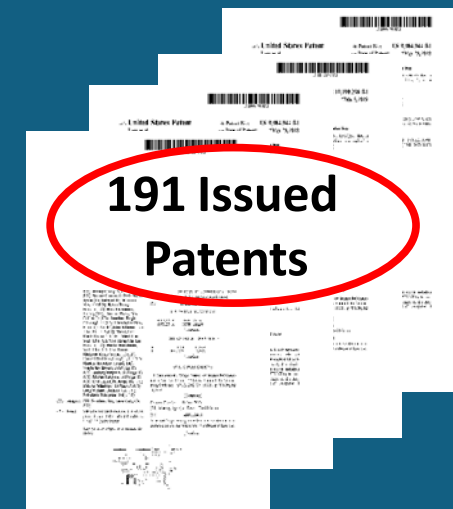
- Capex investments include DFI, CVi, IP, DEX network, and infrastructure
- Cash balance has increased while we:
 - Invest in Capex
 - Received strategic investment
 - Make acquisitions
 - Purchase T-bills
 - Return capital to stockholders through stock buyback

Long-Term Financial Targets

Target	
Annual Analytics Revenue Growth	20%
Non-GAAP Gross Margins	>70%
Non-GAAP Operating Margin	20%

Investment Results in Strong Patent Position

- Our investments in analytics & differentiated data result in a strong and growing patent position
- Patents based on 30 years of know-how in semiconductor development and mass production
- Key patents in areas of:
 - Design for inspection and CV structures for advanced nodes
 - Electrical characterization
 - AI/ML technology



Summary



Thank You

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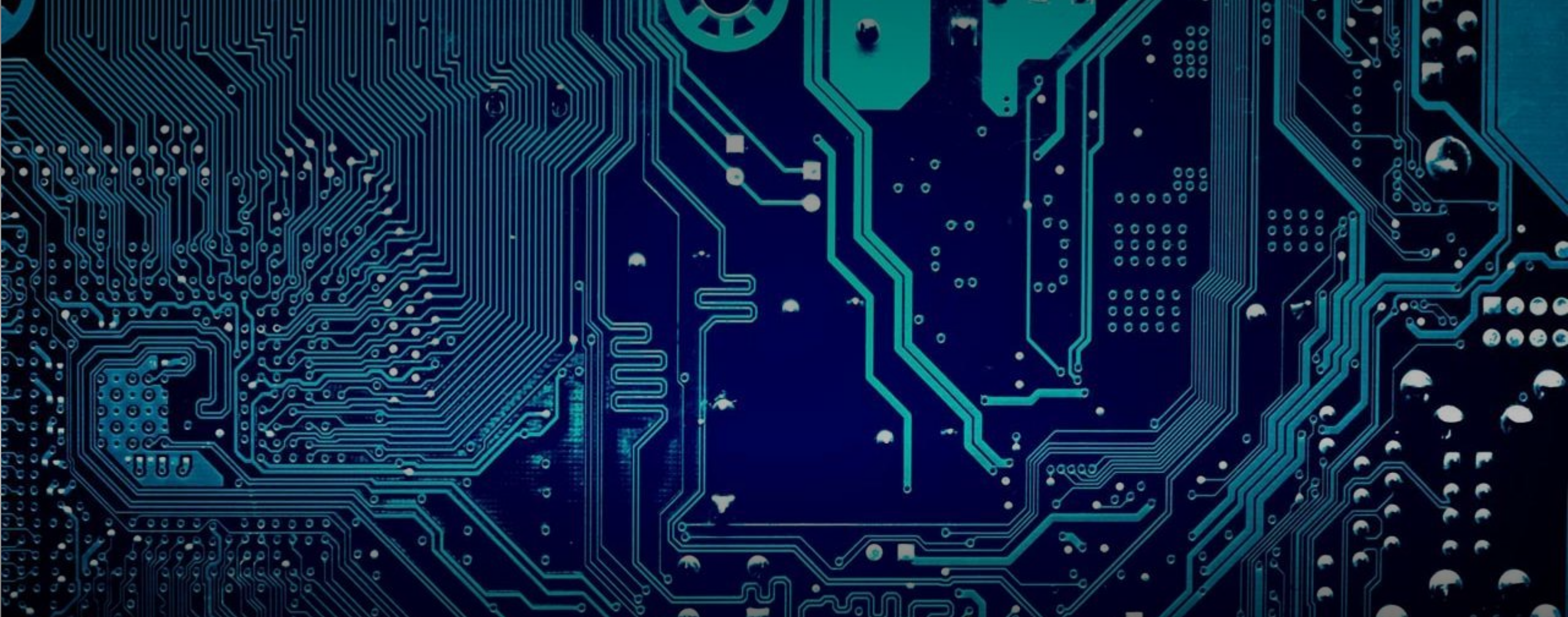
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Financials - Appendix

Non-GAAP Presentation

In addition to providing results that are determined in accordance with Generally Accepted Accounting Principles in the United States of America (GAAP), the Company also provides certain non-GAAP financial measures. Non-GAAP net income (loss) excludes the effects of non-recurring items (including adjustment to contingent consideration related to acquisition, restructuring charges and severance payments, and expenses related to an arbitration proceeding for a disputed contract with a customer), stock-based compensation expense, amortization of acquired technology and other acquired intangible assets, and their related income tax effects, as applicable, as well as adjustments for the non-cash portion of income taxes and tax impact of the CARES Act. These non-GAAP financial measures are used by management internally to measure the Company's profitability and performance. PDF Solutions' management believes that these non-GAAP measures provide useful supplemental measures to investors regarding the Company's ongoing operations in light of the fact that none of these categories of expense has a current effect on the future uses of cash (with the exception of certain non-recurring items) nor do they impact the generation of current or future revenues. These non-GAAP results should not be considered an alternative to, or a substitute for, GAAP financial information, and may be different from similarly titled non-GAAP measures used by other companies. In particular, these non-GAAP financial measures are not a substitute for GAAP measures of income or loss as a measure of performance, or to cash flows from operating, investing and financing activities as a measure of liquidity. Management uses these non-GAAP financial measures internally to measure profitability and performance; these non-GAAP measures are presented here to give investors an opportunity to see the Company's financial results as viewed by management. A detailed reconciliation of the adjustments made to comparable GAAP measures is included herein.

GAAP to Non-GAAP Income Reconciliation

in thousands (except share amounts, percent of revenue, and EPS)

	2019	2020	2021
GAAP net income (loss)	\$ (5,418)	\$ (40,363)	\$ (21,488)
Adjustments to reconcile GAAP net income (loss) to non-GAAP net income (loss):			
Stock-based compensation expense	11,423	12,463	12,931
Amortization of acquired technology	574	705	2,079
Amortization of other acquired intangible assets	609	741	1,255
Restructuring charges and severance payments	92	-	-
Write-down in value of property and equipment	-	490	3,183
Acquisition costs & adjustment to contingent consideration related to acquisition	30	752	-
Legal arbitration/litigation *	-	1,098	1,951
Tax Impact of Adjustments	(2,785)	23,309	3,091
Non-GAAP net income (loss)	\$ 4,525	\$ (805)	\$ 3,002
GAAP net income (loss) per diluted share	(0.17)	(1.17)	(0.58)
Non-GAAP net income (loss) per diluted share	0.14	(0.02)	0.08
Shares used in diluted shares calculation (in millions)	33.1	34.4	37.9

* Represents the expenses related to an arbitration proceeding over a disputed contract with a customer, which expenses are expected to continue until the arbitration is resolved.

GAAP to Non-GAAP Gross Margin Reconciliation

in thousands

	2019	2020	2021
GAAP Gross Margin	\$ 52,111	\$ 51,281	\$ 66,867
Adjustments to reconcile GAAP gross margin (loss) to non-GAAP gross margin:			
Stock-based compensation expense	3,185	3,454	2,563
Amortization of acquired technology	574	705	2,079
Non-GAAP gross margin	\$ 55,870	\$ 55,440	\$ 71,509

Balance Sheet

(\$ '000)

ASSETS

Current assets:

	2019	2020	2021
Cash and short-term investments	97,605	145,296	140,226
Accounts receivable, net	40,651	34,140	40,087
Prepays and other current assets	9,320	13,944	8,194
Total current assets	147,576	193,380	188,507
Property, plant and equipment, net	40,798	39,242	35,295
Operating lease right-of-use assets	7,609	6,672	5,408
Other assets	43,561	48,286	44,558
TOTAL ASSETS	239,544	287,580	273,768

LIABILITIES AND STOCKHOLDERS' EQUITY

Current liabilities:

Accounts payable	\$7,636	\$4,399	\$5,554
Accrued liabilities	6,737	\$14,648	\$12,823
Operating lease liabilities - current portion	1,867	\$1,926	\$1,758
Deferred revenue and billing in excess of revenue	11,756	\$21,232	\$23,691
Total current liabilities	27,997	42,205	43,826
Non-current operating lease liabilities	7,677	\$6,516	\$5,258
Tax and other long-term liabilities	7,713	\$4,353	\$5,099
Total liabilities	43,387	53,074	54,183

Total stockholders' equity	196,157	234,506	219,585
TOTAL LIABILITIES & EQUITY	239,544	287,580	273,768

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