

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, light blue circuit-like lines and arrows that crisscross the frame, creating a sense of digital connectivity and data flow.

**PDF/SOLUTIONS™**

## **Investor Presentation**

**August 2023**

**John Kibarian, President & CEO, Co-Founder**

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

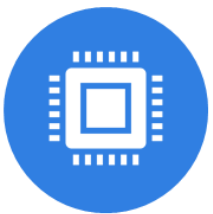
**Adnan Raza, Executive VP, Finance & CFO**



*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: the effectiveness of our business and technology strategies; recent and future acquisitions; current semiconductor trends; continued adoption of the Company's solutions by new and existing customers; project milestones or delays and performance criteria achieved; cost and schedule of new product development; the impact of global economic trends and rising inflation and interest rates; 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; supply chain disruptions; the success of the Company's strategic growth opportunities and collaborations; our ability to successfully integrate acquired businesses and technologies; whether we can successfully convert backlog into revenue; customers' production volumes under contracts that provide Gainshare royalties; possible impacts from the evolving trade regulatory environment and geopolitical tensions; our ability to obtain additional financial if needed; 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, 2022, 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

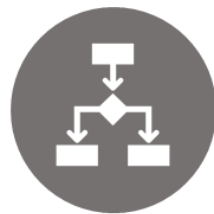
- PDF provides advanced data analytics, machine learning, and equipment connectivity products, services, and systems for the semiconductor supply chain
- PDF products improve process efficiency and product reliability:
  - Analytics software and services for the end-to-end needs of the semiconductor 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

- Analytics revenue grew 23% Y/Y from TTM Q2'22 to TTM Q2'23
- Analytics at 87% of total revenue in TTM Q2'23

## PROFITABILITY

- GAAP gross margin of 70% for Q2'23
- Non-GAAP gross margin of 74% for Q2'23
- 70%+ non-GAAP gross margins target model

## VISIBILITY

- Greater than 100% Exensio® customers dollar-retention rate\*
- Strong ending backlog of \$245M, up 33% YoY vs. ending Q2'22

## DIVERSIFICATION

- No country outside the United States accounts for more than ~19% of revenue in TTM Q2'23
- Regions of North America and APAC grew by double-digit percentages on a Y/Y basis

## STRENGTH

- \$124M in cash and short-term investment as of Q2'23
- No debt

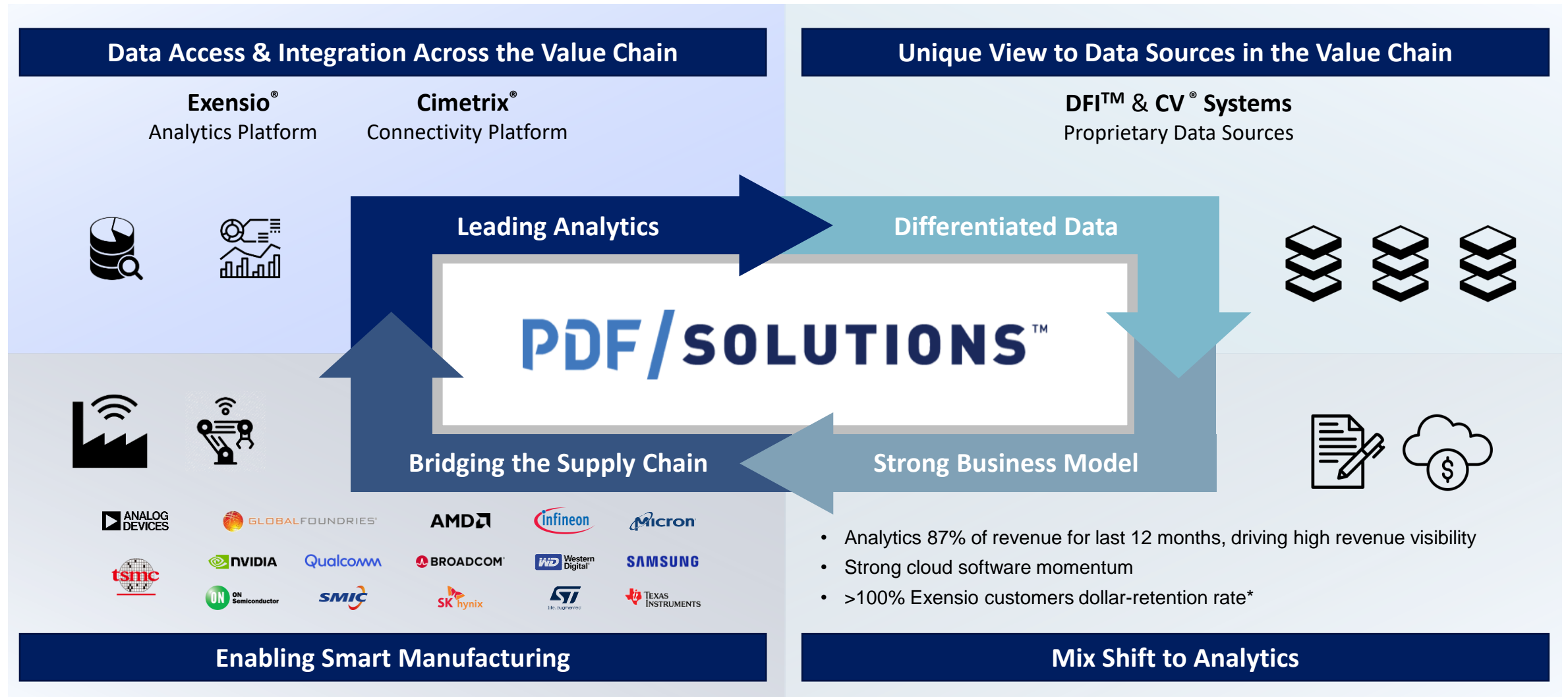
## COLLABORATIONS

- Expanding strategic collaboration across various sectors
- Partnering with industry-leaders, including Advantest, IBM, Kulicke & Soffa, SAP, and Siemens

\*TTM Q2'23 vs TTM Q2'22



# The Leading Data Analytics Platform



Representative industry participants; not indicative of actual customers. Logos are the property of the respective trademark owners. \*TTM Q2'23 vs TTM Q2'22

# 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 a fixed fee plus 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

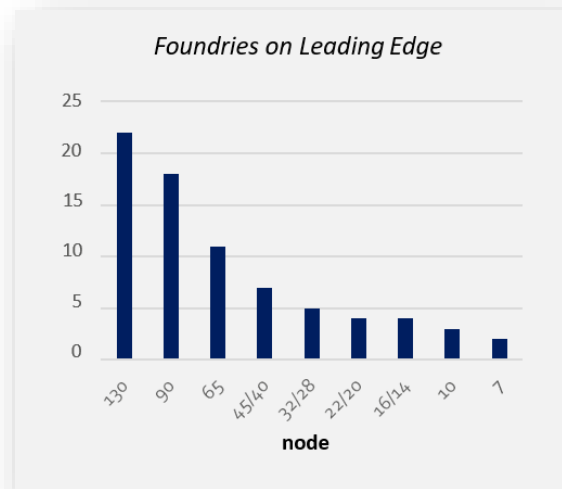
## Value in Semiconductor Supply Chain Shifting to Mass Production:

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

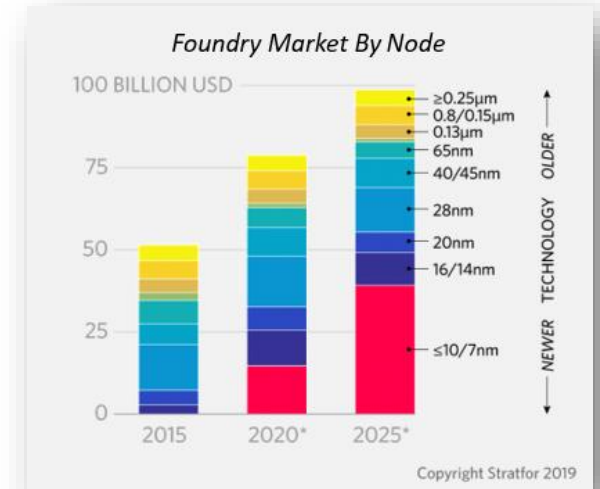
### Moore's Law is Slowing Down



### Foundries consolidating due to process complexity



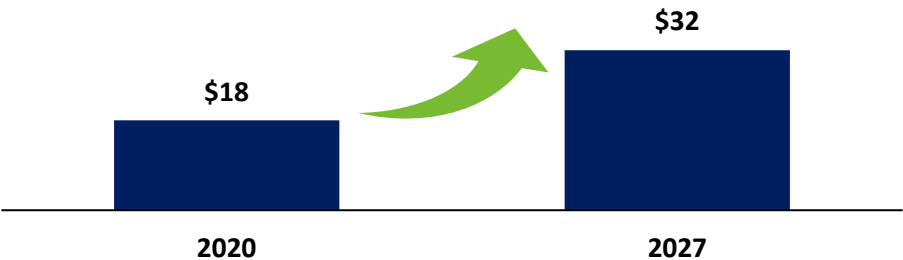
### % of foundry market in finFET nodes expected to grow



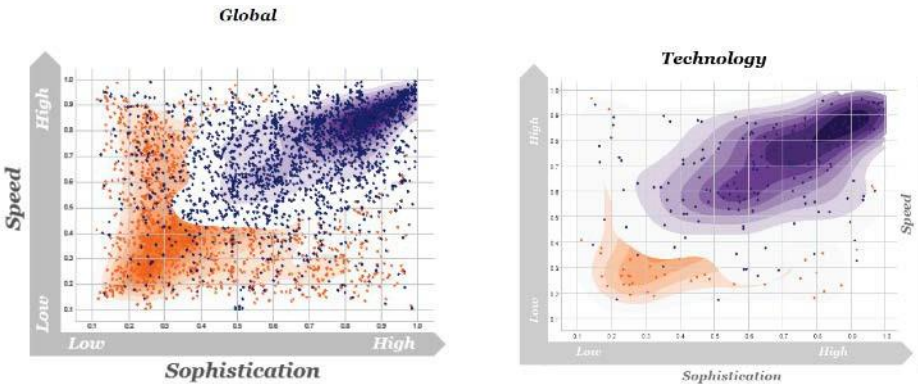
**An increasing number of stakeholders, Hyperscalers, OEMs, Governments, are all realizing the importance of the semiconductors supply chain**

# Data and Analytics Growing in Importance

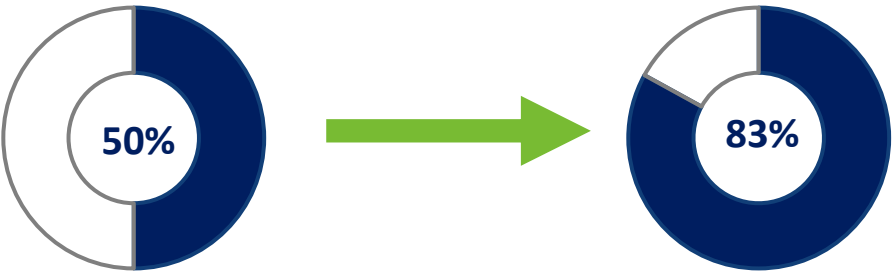
Data & Analytics in Semis & Electronics (\$B)



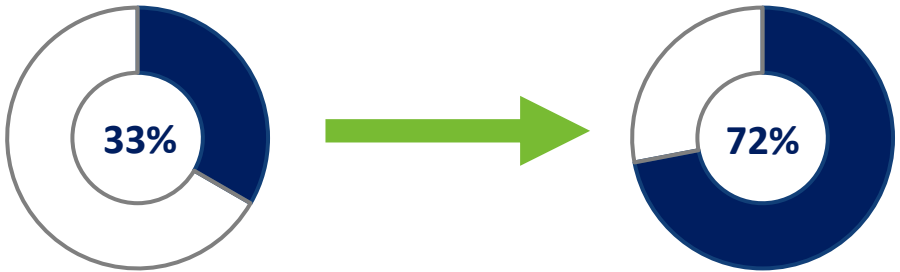
Data & Analytics in Semiconductor & Electronics manufacturing is expected to **grow significantly**



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**

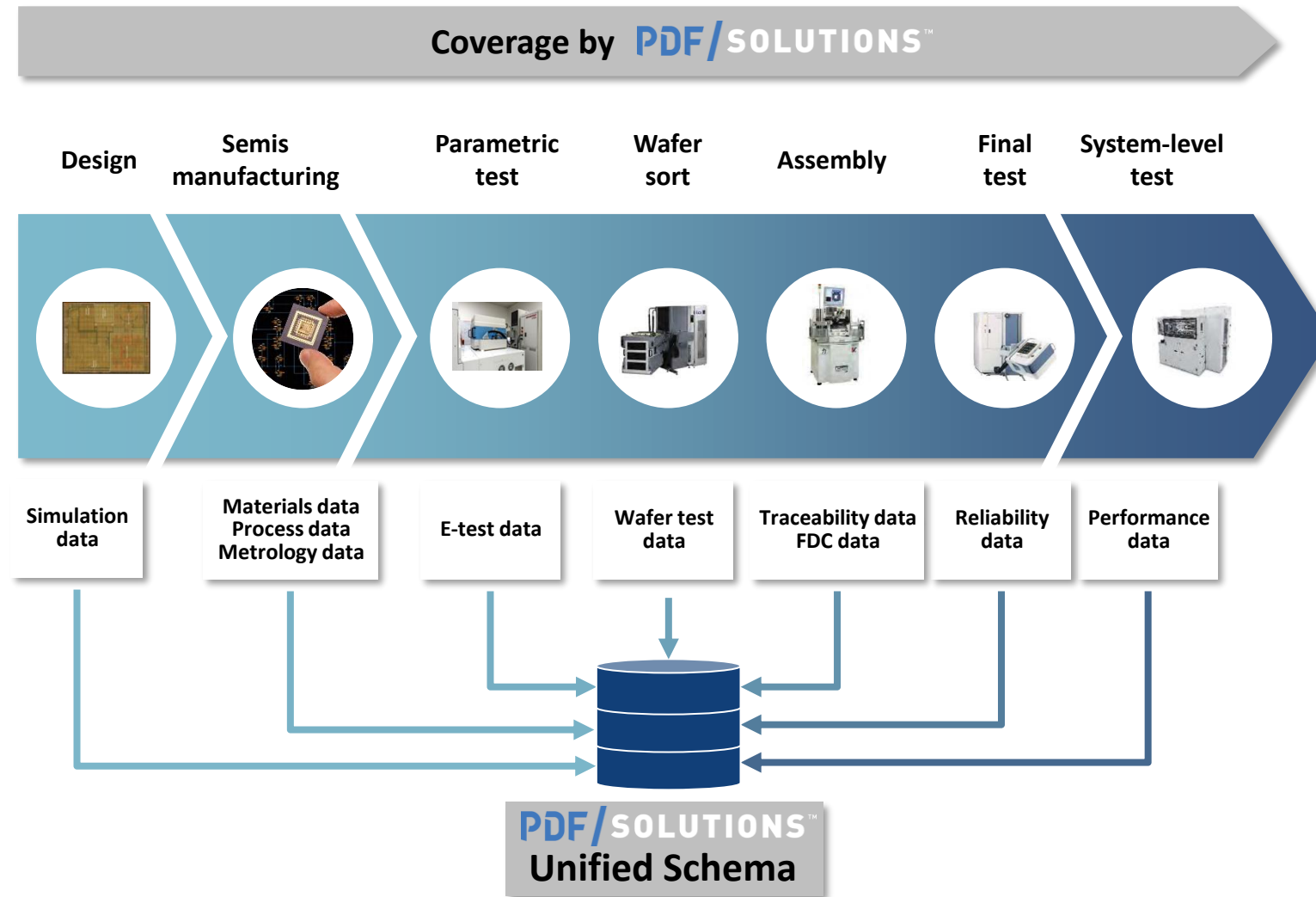


% of companies with “**highly digitized functional groups**” expected to **double over next 5 years**

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)



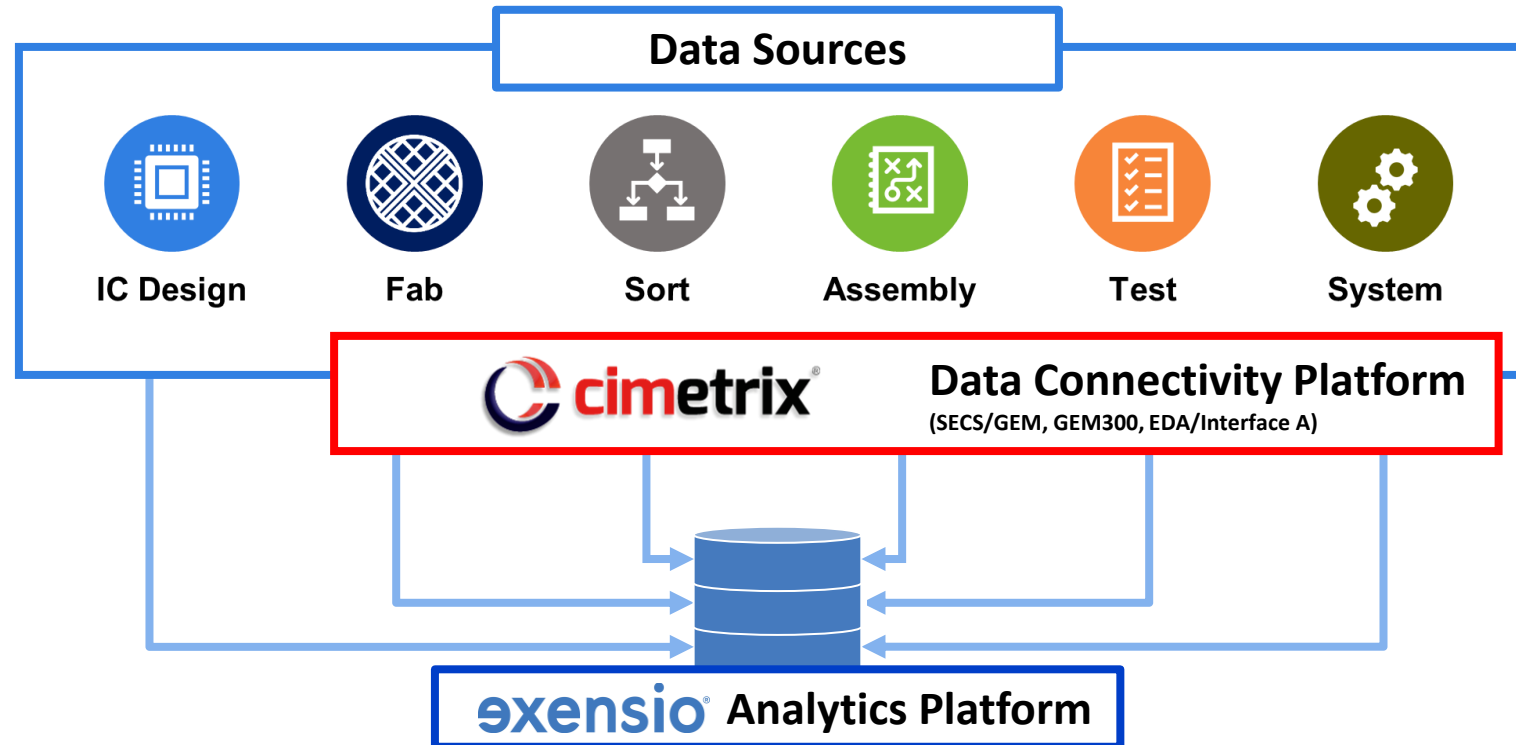
Exensio platform provides the data collection, connections and analytics for feedback and insight down the stack

## 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.

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



>125K equipment  
to factory  
connections



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



>350 revenue  
generating customers  
in 32 countries  
through TTM Q2'23



#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

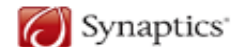


TEXAS INSTRUMENTS



FUJITSU

TOSHIBA



UMC

SONY

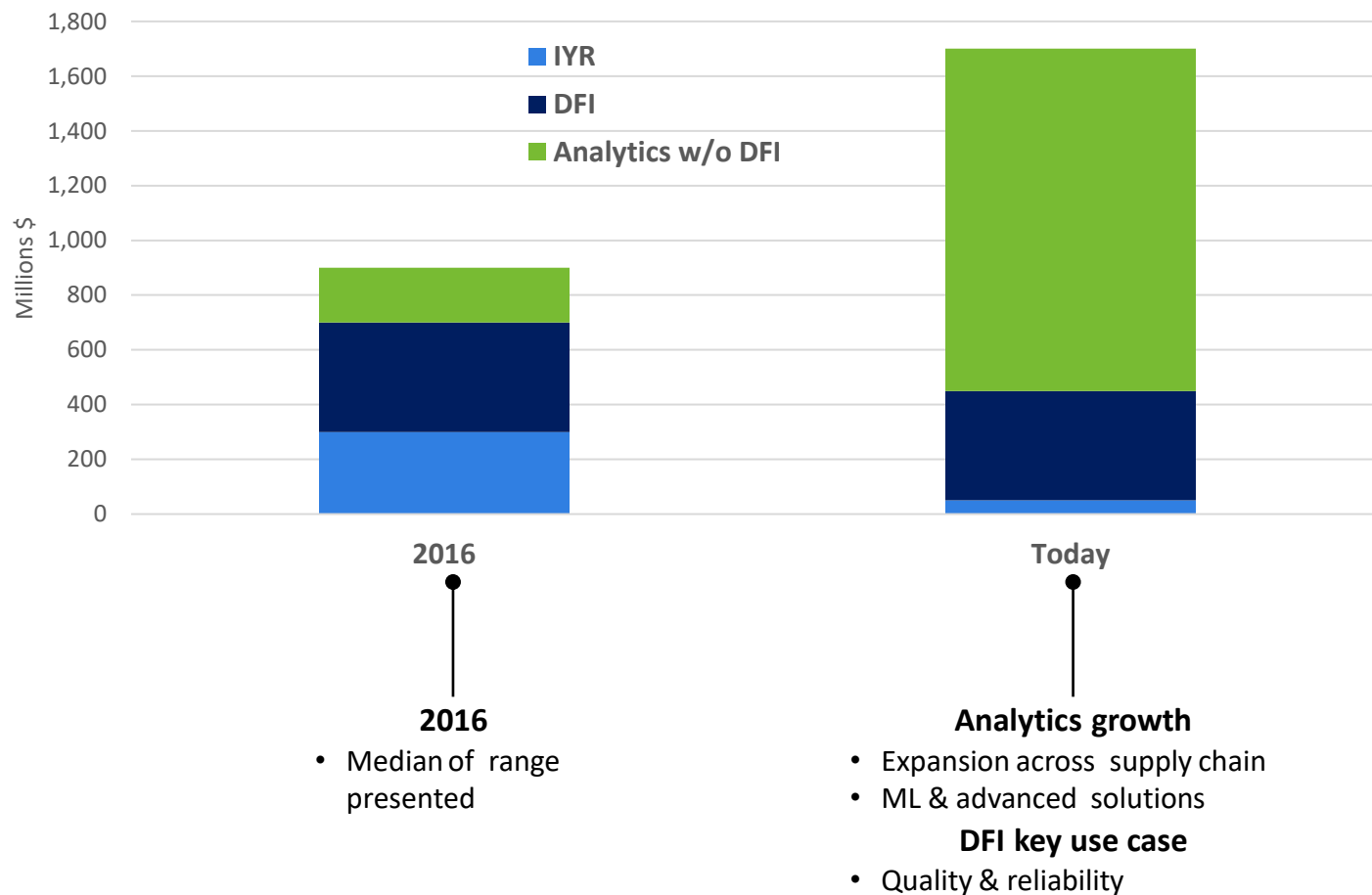


Dongbu HiTek



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# Available Market Size



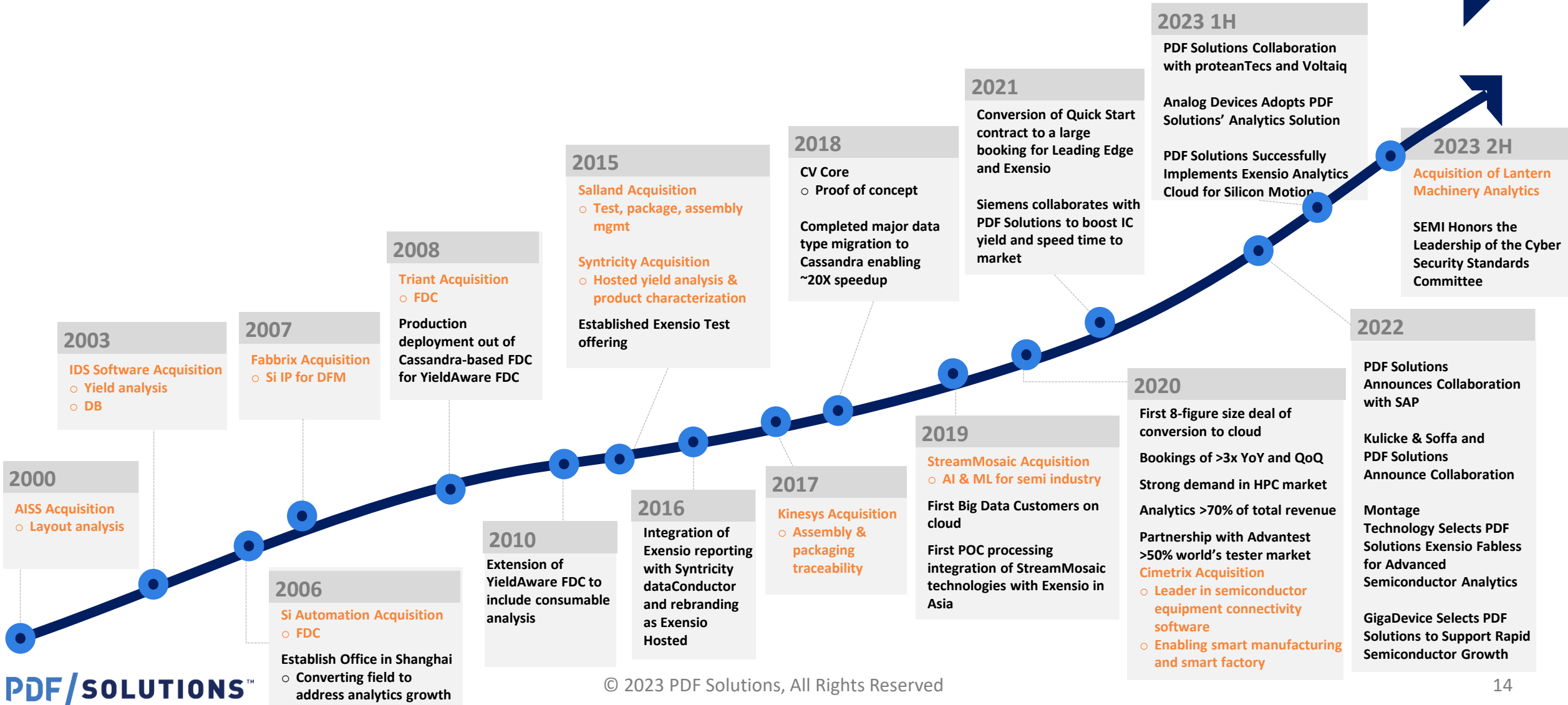
Source: PDF Solutions estimates

- 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

# Acquisitions and Product Releases Expanded Scope

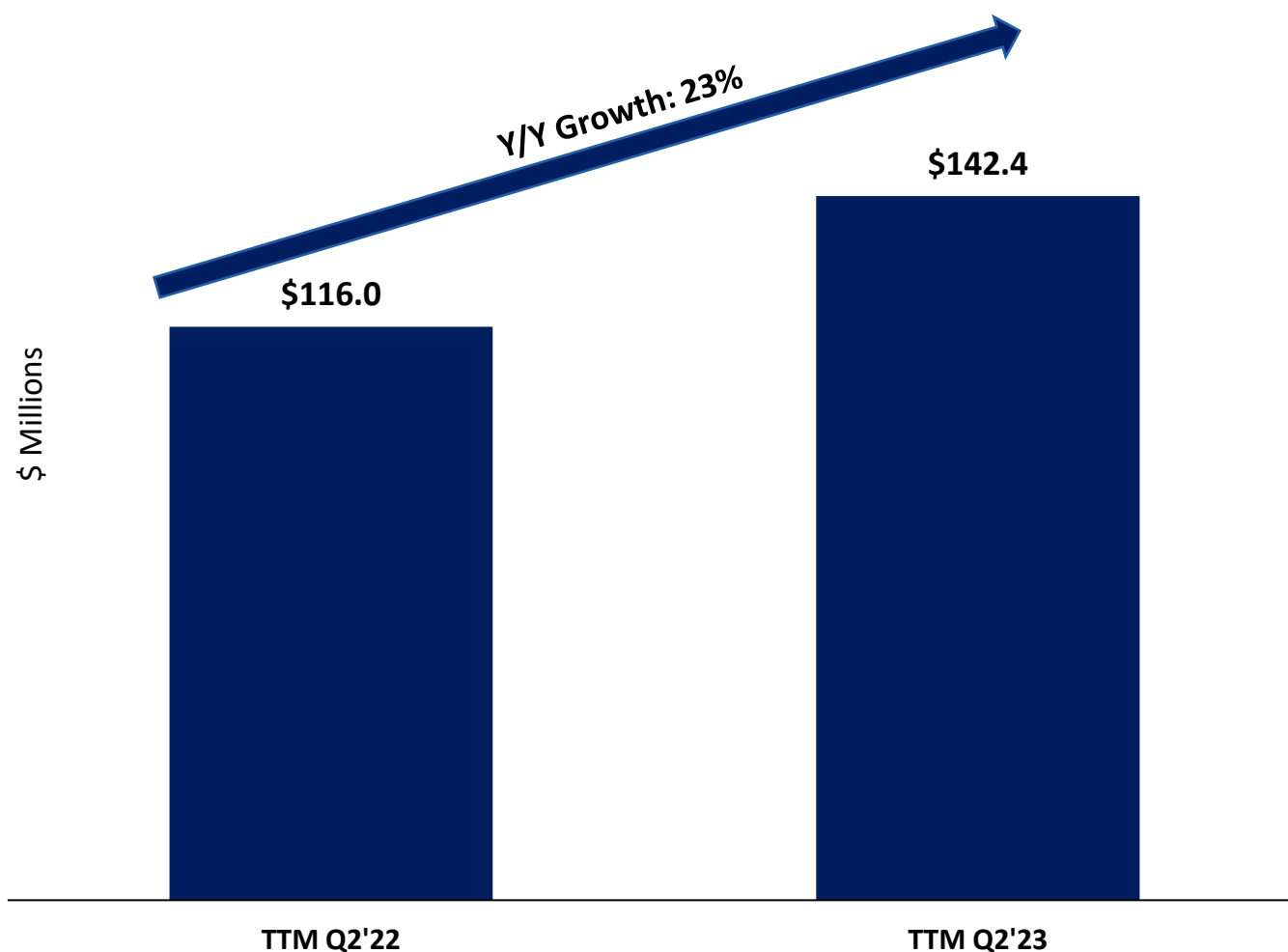
Gainshare Model “Selling Time to Volume”

Subscription Model “Selling Actionable Data”





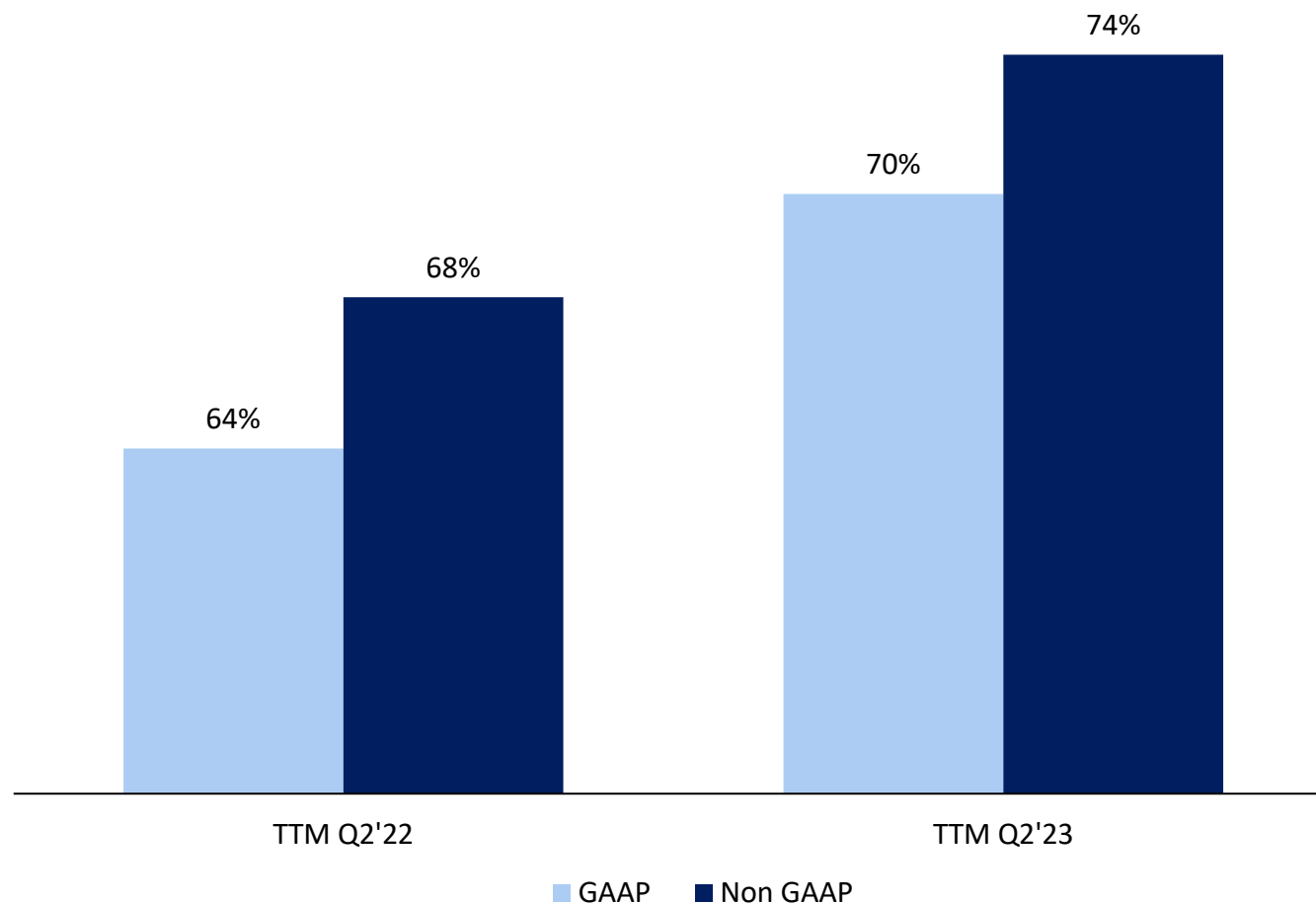
# Analytics Revenue



GROWTH

- Y/Y Analytics Growth of 23% from TTM Q2'22 to TTM Q2'23
- Average Analytics revenue per customer, excluding Cimetricx, \$840K in TTM Q2'23, a 11% increase from \$754K in TTM Q2'22

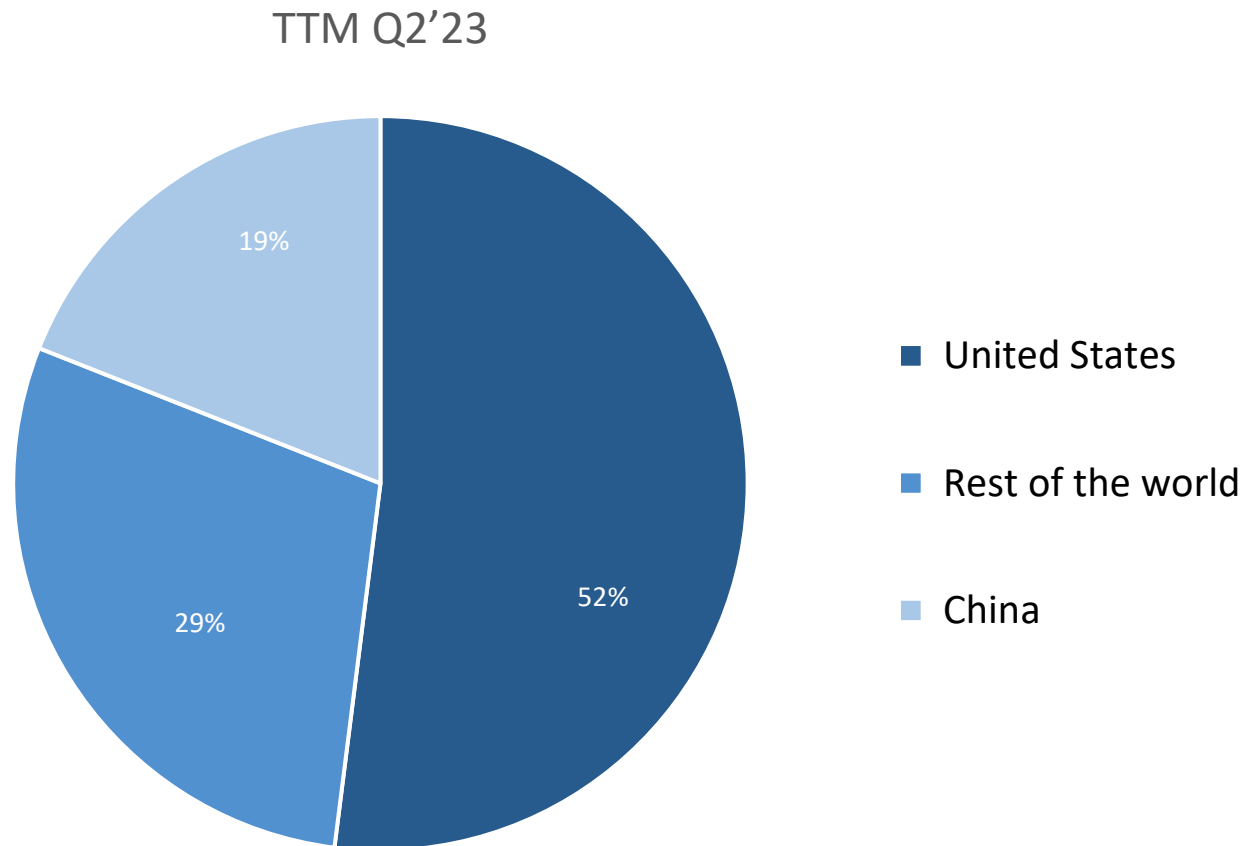
# Gross Margins



## PROFITABILITY

- Achieved our long-term target Non-GAAP gross margin of 70%+ in TTM Q2'23
- 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

# Global Geographic Revenue Distribution



- Globally diverse geographic distribution
- No country outside the United States accounts for more than ~19%
- United States largest market at 52% of revenues



# Balance Sheet Strength

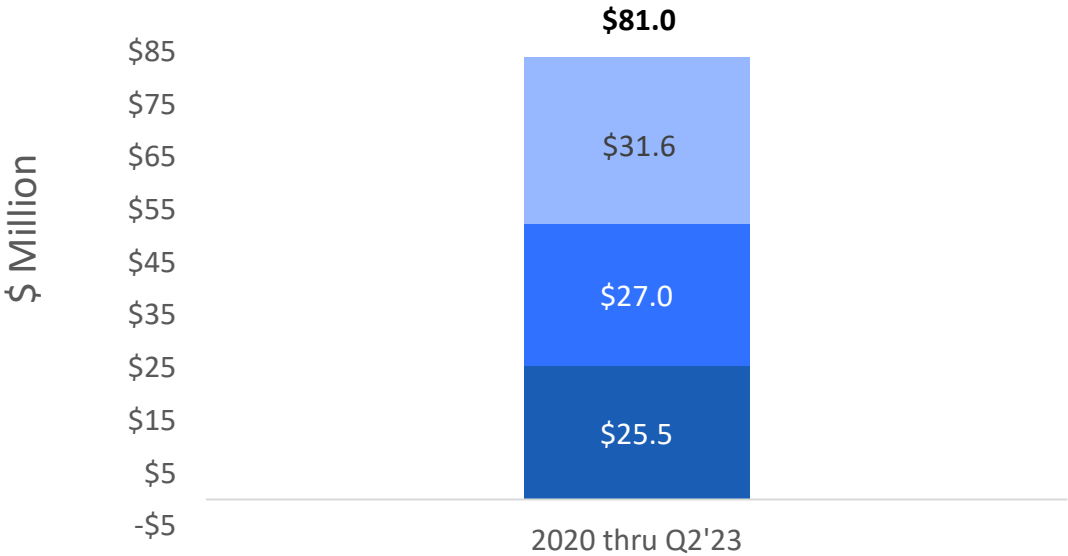
<i>(\$ Millions)</i>	End of 2019	End of 2020	End of 2021	End of 2022	Q1 2023	Q2 2023
Cash and ST invt	\$97.6	\$145.3	\$140.2	\$139.2	\$133.5	\$124.0
Debt	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Share Repurchase	\$9.6	\$0.0	\$4.5	\$22.5	\$0.0	\$0.0

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

# Disciplined Capital Allocation



■ Capex   ■ Share Repurchase   ■ M&A



## INVESTMENT

- Capex investments include DFI, CVi, IP, DEX network, and infrastructure
- Cash balance has increased while we:
  - Invested in Capex
  - Returned capital to stockholders through stock buyback
  - Made acquisitions
  - Received strategic investment

# Target Financial Model

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

# Summary





# Thank You

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pdf-solutions



pdfsolutionsinc



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# Financials - Appendix

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# 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)

	2020	2021	2022	Q1'23	Q2'23
<b>GAAP net income (loss)</b>	<b>\$ (40,363)</b>	<b>\$ (21,488)</b>	<b>\$ (3,429)</b>	<b>\$ 355</b>	<b>\$ 6,835</b>
Adjustments to reconcile GAAP net income (loss) to non-GAAP net income (loss):					
Stock-based compensation expense	12,463	12,931	19,648	4,884	4,678
Amortization of acquired technology	705	2,079	2,213	553	553
Amortization of other acquired intangible assets	741	1,255	1,270	325	326
Write-down in value of property and equipment	490	3,183	-	-	-
Acquisition costs & adjustment to contingent consideration related to acquisition	752	-	-	-	176
Legal arbitration/litigation *	1,098	1,951	1,895	2,133	166
Tax Impact of Adjustments	23,309	3,091	1,326	(980)	(5,238)
<b>Non-GAAP net income (loss)</b>	<b>\$ (805)</b>	<b>\$ 3,002</b>	<b>\$ 22,924</b>	<b>\$ 7,270</b>	<b>\$ 7,496</b>
<b>GAAP net income (loss) per diluted share</b>	<b>(1.17)</b>	<b>(0.58)</b>	<b>(0.09)</b>	<b>0.01</b>	<b>0.17</b>
<b>Non-GAAP net income (loss) per diluted share</b>	<b>(0.02)</b>	<b>0.08</b>	<b>0.60</b>	<b>0.19</b>	<b>0.19</b>
<b>Shares used in diluted shares calculation (in millions)</b>	<b>34.4</b>	<b>37.9</b>	<b>38.1</b>	<b>38.9</b>	<b>39.1</b>

\* 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

**GAAP Gross Margin**

*GAAP Gross Margin %*

Adjustments to reconcile GAAP gross margin (loss) to non-GAAP gross margin:

Stock-based compensation expense

Amortization of acquired technology

**Non-GAAP gross margin**

*Non-GAAP gross margin %*

	2020	2021	2022	Q1'23	Q2'23
<b>GAAP Gross Margin</b>	<b>\$ 51,281</b>	<b>\$ 66,867</b>	<b>\$ 100,642</b>	<b>\$ 28,855</b>	<b>\$ 29,232</b>
<i>GAAP Gross Margin %</i>	<i>58%</i>	<i>60%</i>	<i>68%</i>	<i>71%</i>	<i>70%</i>
Adjustments to reconcile GAAP gross margin (loss) to non-GAAP gross margin:					
Stock-based compensation expense	3,454	2,563	2,974	964	938
Amortization of acquired technology	705	2,079	2,213	553	553
<b>Non-GAAP gross margin</b>	<b>\$ 55,440</b>	<b>\$ 71,509</b>	<b>\$ 105,828</b>	<b>\$ 30,372</b>	<b>\$ 30,723</b>
<i>Non-GAAP gross margin %</i>	<i>63%</i>	<i>64%</i>	<i>71%</i>	<i>75%</i>	<i>74%</i>

# Balance Sheet

(\$ '000)

## ASSETS

### Current assets:

Cash and short-term investments	145,296	140,226	139,181	133,528	124,038
Accounts receivable, net	34,140	40,087	42,164	47,048	61,451
Prepays and other current assets	13,944	8,194	12,063	12,565	18,864
Total current assets	193,380	188,507	193,408	193,141	204,353
Property, plant and equipment, net	39,242	35,295	40,174	41,723	42,990
Operating lease right-of-use assets	6,672	5,408	6,002	5,712	5,389
Other assets	48,286	44,558	39,087	38,712	37,540
<b>Total Assets</b>	<b>287,580</b>	<b>273,768</b>	<b>278,671</b>	<b>279,288</b>	<b>290,272</b>

## LIABILITIES AND STOCKHOLDERS' EQUITY

### Current liabilities:

Accounts payable	4,399	5,554	6,388	6,289	2,279
Accrued liabilities	14,648	12,823	22,529	19,737	16,491
Operating lease liabilities - current portion	1,926	1,758	1,412	1,572	1,538
Deferred revenue and billing in excess of revenue	21,232	23,691	27,871	26,664	31,769
Total current liabilities	42,205	43,826	58,200	54,262	52,077
Non-current operating lease liabilities	6,516	5,258	5,932	5,597	5,260
Deferred revenue - noncurrent portion		2,443	1,905	2,267	5,358
Tax and other long-term liabilities	4,353	2,656	2,622	3,737	3,407
Total liabilities	53,074	54,183	68,659	65,863	66,102

Total stockholders' equity	234,506	219,585	210,012	213,425	224,170
<b>Total liabilities and stockholders' equity</b>	<b>287,580</b>	<b>273,768</b>	<b>278,671</b>	<b>279,288</b>	<b>290,272</b>

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