Innovation Through Pervasive Engineering Simulation

Investor Presentation
Q3 2019

NASDAQ: ANSS

Cautionary Statement Regarding Forward-Looking and Non-GAAP Financial Information

This presentation contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are statements that provide current expectations or forecasts of future events based on certain assumptions. Forward-looking statements are subject to risks, uncertainties, and factors relating to our business which could cause our actual results to differ materially from the expectations expressed in or implied by such forward-looking statements. Forward-looking statements may use words such as "anticipate," "believe," "could," "estimate," "expect," "forecast," "intend," "likely," "may," "outlook," "plan," "predict," "project," "should," "target," or other words of similar meaning. Forward looking statements include those about market opportunity, including our total addressable market.

Risks, uncertainties, and factors that could cause actual results to differ materially from those implied by these forward-looking statements include: adverse changes in global economic and/or political conditions; declines in our customers' businesses resulting in adverse changes in customer procurement patterns; uncertainties regarding demand for our products and services in the future and our customers' acceptance of new products; plans for future capital spending; investments in complementary companies, products, services and technologies; our ability to complete and successfully integrate our acquisitions and realize the financial and business benefits of the transactions; political, economic, and regulatory risks and uncertainties in the countries and regions in which we operate; impacts from tariffs, trade sanctions, export license requirements or other trade barriers; the effect of changes in currency exchange rates and changes in interest rates; potential variations in our sales forecasts compared to actual sales; the volatility of our stock price; failures or errors in our products and services; our industry's rapidly changing technology; the quality of our products, including strength of features, functionality and integrated multi-physics capabilities; lease license volatility; the investment of more resources in research and development than anticipated; increased pricing pressure as a result of the competitive environment in which we operate; our ability to recruit and retain key personnel; our ability to protect our proprietary technology; cybersecurity threats or other security breaches; disclosure and misuse of customer data whether as a result of a cybersecurity incident or otherwise; implementation of our new IT systems; investments in global sales and marketing organizations and global business infrastructure; dependence on our channel partners for the distribution of our products; increased variability in our revenue due to the adoption of Accounting Standards Codification 606; our reliance on high renewal rates for annual lease and maintenance contracts; catastrophic events which may damage our facilities or otherwise disrupt our business; operational disruptions or the failure of our technological infrastructure; periodic reorganization of our sales force; the repatriation of previously taxed earnings in excess of working capital and capital expenditure requirements; a loss of revenue if contracts with the U.S. government or foreign governments are canceled; the outcome of contingencies, including legal proceedings and government or regulatory investigations and service tax audit cases; uncertainty regarding income tax estimates in the jurisdictions in which we operate; the effect of changes in tax laws and regulations in the jurisdictions in which we operate; changes in accounting principles or standards; the uncertainty of estimates relating to the impact on reported revenue related to the acquisition accounting treatment of deferred revenue; and other risks and uncertainties described in our reports filed from time to time with the Securities and Exchange Commission.

Forward-looking statements speak only as of the date they are made and we undertake no obligation to publicly update forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law. We may not actually achieve the plans, intentions, or expectations disclosed in our forward-looking statements and we caution you to not place undue reliance on our forward-looking statements.

We include non-GAAP financial information in this presentation. Reconciliations for such financial information may be found in our presentation, in these slides including in the Appendix, in other materials on our corporate website, and in our SEC filings. This information supplements our GAAP results and should not be viewed in isolation from, or as a substitute for, GAAP results. We believe that this information and the related reconciliations may be useful to investors, analysts and others to help understand and evaluate our financial results, and with respect to adjusted metrics, because we believe they better reflect the ongoing financial results and trends of our businesses and increase comparability of period-to-period results.

Well-Positioned in a Growing Market
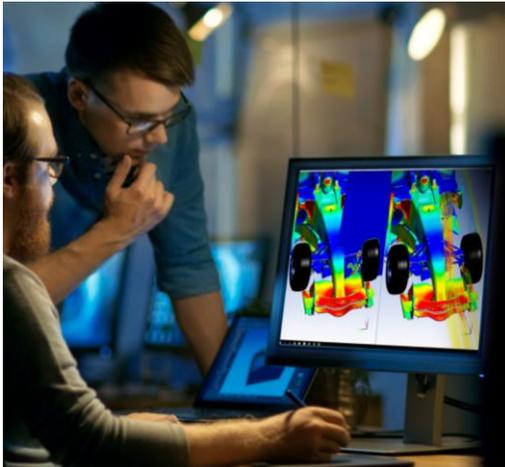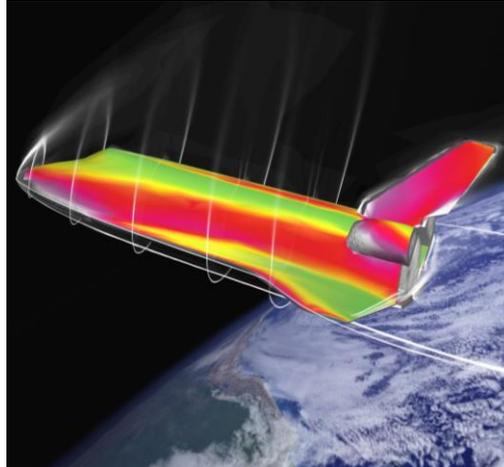
ANSYS is the simulation market leader

The simulation market is strong and growing
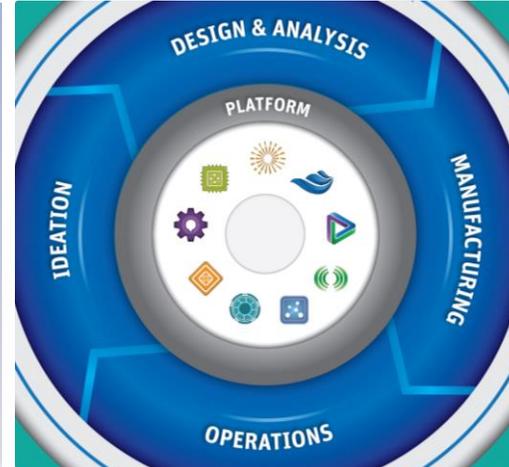
Our strategy capitalizes on this growing market

We have a proven record of execution

A Leader in the Simulation Market for 50 Years

~2X THE SIZE OF OUR NEAREST COMPETITOR

(CIMdata 2019 REPORT) *

#1 IN SIMULATION

FOCUSED
SIMULATION IS ALL WE DO

PROVEN
MEMBER OF PRESTIGIOUS **STANDARD &POOR'S**

$18B market capitalization

COMMITTED
OVERALL CUSTOMER SATISFACTION GLOBALLY (2018): 89.1%

CAPABLE
3,900 EMPLOYEES GLOBALLY

88 ANSYS OFFICES
>100 CHANNEL PARTNERS GLOBALLY

Source: ConfirmIT for customer satisfaction results. *Excludes MathWorks due to differences in product portfolio.

Large, Highly Diversified Customer Base

Rare Combination of Scale, Profitability and Growth

Growth
CY'19 Revenue Growth ~10%+
3 Companies

Profitability
CY'19 EBITDA Margin > 40%
12 Companies

Scale
CY'19E Revenue > $1 Billion
60 Companies

Broad Universe
Public Software
~250 Companies

 Source: Capital IQ as of July 23, 2019. Note: Analysis reflects companies with a market capitalization greater than $50M.
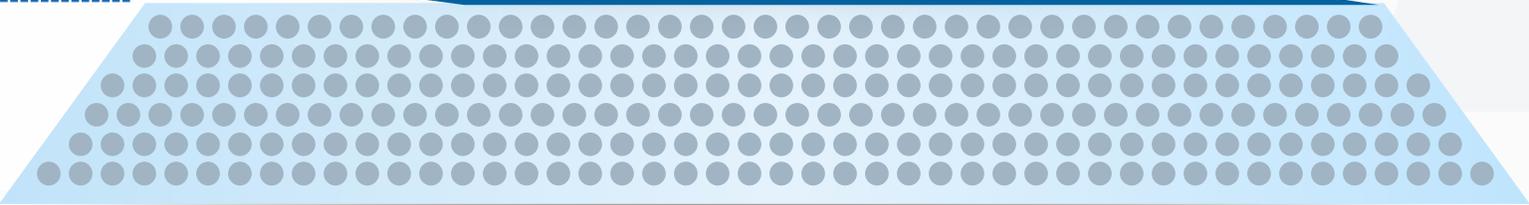
ANSYS Offers the Only True Simulation Platform...

With best-of-breed simulation across all major physics

**A market leader across individual physics with industry-leading platform**

Fluids · Structures · Electromagnetics · Semiconductor Power · Mission-critical Embedded Software · Optical

Materials Information

Platform
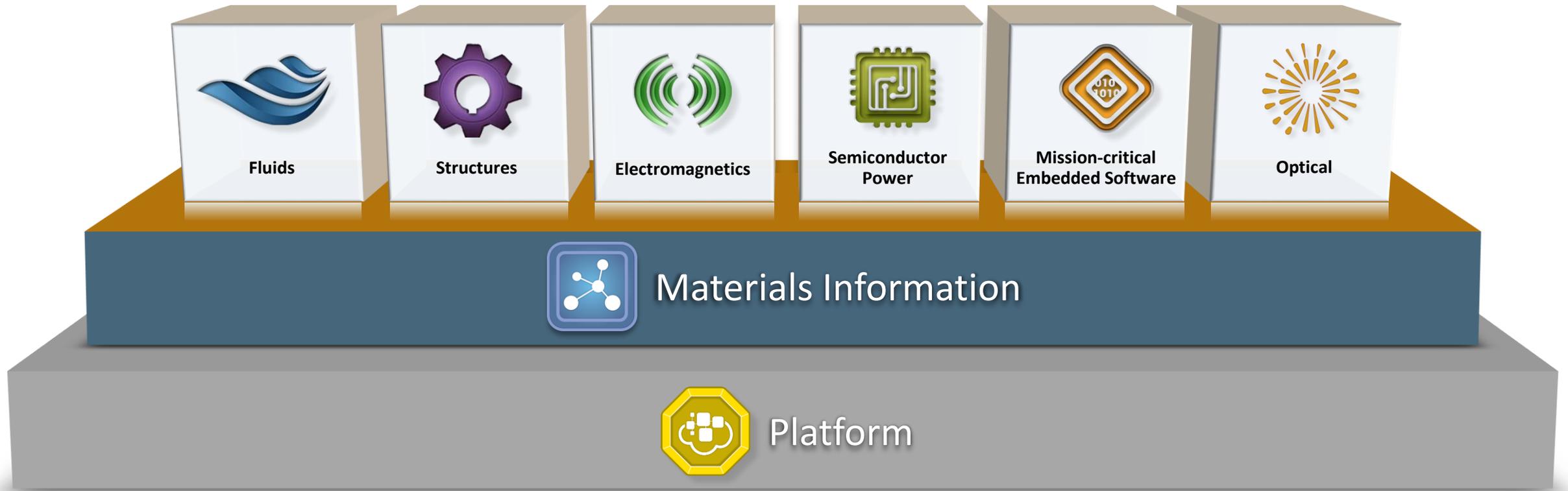
ANSYS' Simulation Provides Customers Top-Line Growth and Bottom-Line Savings

PRODUCT LIFECYCLE

DESIGN & ANALYSIS

MANUFACTURING

OPERATIONS

IDEATION

Simulation impact

Rapid innovation

Lower cycle time

Reduced risks

Increased quality

Manage complexity

Revenue growth

Offer more products

Launch right products

Faster time to market

Cost savings

Improved R&D efficiency

Fewer physical prototypes

Lower warranty costs

Strong Customer Trust Creating High Barriers to Entry

Our differentiators

Best-in-class and proven physics solutions

Advanced methods

Industry-leading platform

Delivered on-premises and in the cloud

Open ecosystem

World-class customer engagement

High barriers to entry

...And the Market Recognizes our Product Leadership...

First Mention / Top Of Mind – Unaided Awareness

Overall Analysis and Simulation Software

ANSYS	25.1%
Dassault Systèmes	16.4%
Autodesk	7.4%
Siemens PLM Software	7.0%
COMSOL	6.0%
MathWorks	5.3%
Hexagon AB/MSC	2.6%
PTC	2.1%

CFD Analysis and Modeling Software

ANSYS	40.5%
Dassault Systèmes	11.5%
COMSOL	10.0%
Siemens PLM Software	8.3%
Autodesk	5.2%
MathWorks	2.0%

FEA Analysis and Modeling Software

ANSYS	36.6%
Dassault Systèmes	17.2%
Autodesk	7.5%
COMSOL	5.4%
Siemens PLM Software	5.4%
Hexagon AB/MSC	4.3%
MathWorks	3.6%
Nastran (unspecified)	2.2%

Electromagnetic Analysis and Modeling

ANSYS	35.0%
COMSOL	18.3%
Siemens PLM Software	7.1%
Dassault Systemès	7.1%
Altair	3.1%
MathWorks	3.1%
Keysight	2.5%

Source: Peerless Media (Publisher of Digital Engineering magazine) ANSYS Confidential

…And our Knowledge and Quality Leadership

The ONE Company…

Most Trustworthy

ANSYS	**23.6%**
Autodesk	17.7%
Dassault Systèmes	12.2%
Siemens PLM Software	10.6%
Mathworks	8.4%
Altair	8.0%
ESRD	8.0%
SIMSOLID	8.0%
PTC	7.2%
COMSOL	5.1%
MSC Software	4.6%
Livermore Software Technology Corp.	3.0%
MultiMechanics	1.7%
Vanderplaats Research and Development	1.3%
Prenscia/HBM	1.3
SimScale	0.0%
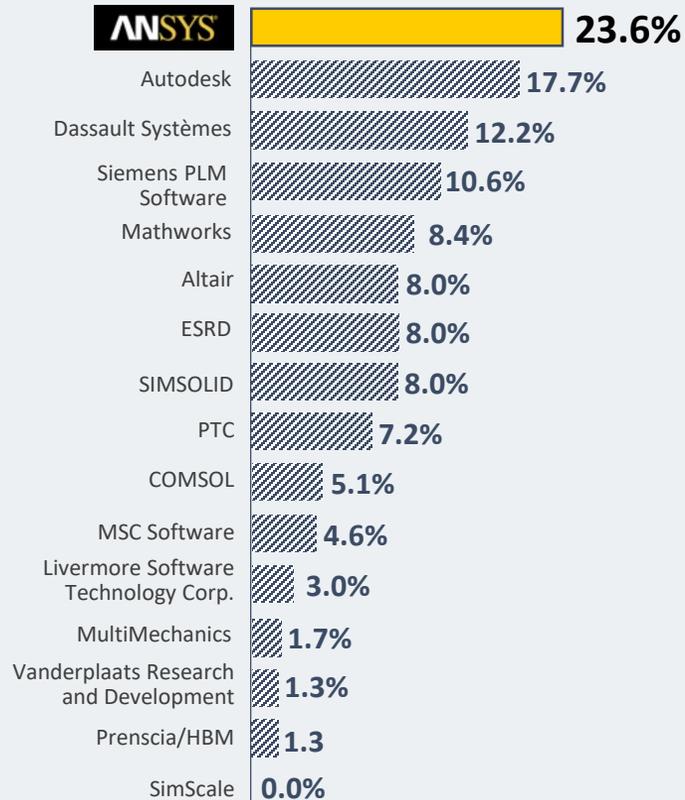
Most Knowledgeable Service

ANSYS	**23.3%**
Autodesk	13.1%
Siemens PLM Software	11.0%
Dassault Systèmes	10.6%
COMSOL	8.2%
Mathworks	8.2%
ESRD	8.0%
Altair	4.5%
PTC	4.5%
MSC Software	2.9%
Livermore Software Technology Corp.	2.9%
MultiMechanics	2.9%
Vanderplaats Research and Development	2.0%
SimScale	1.6%
Prenscia/HBM	1.6%
SIMSOLID	1.2%
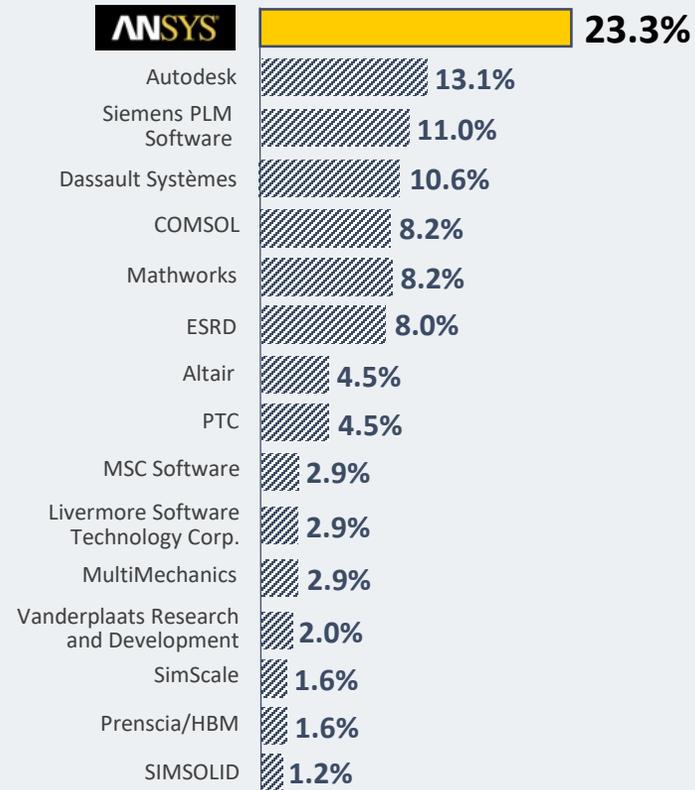
Highest Quality Products
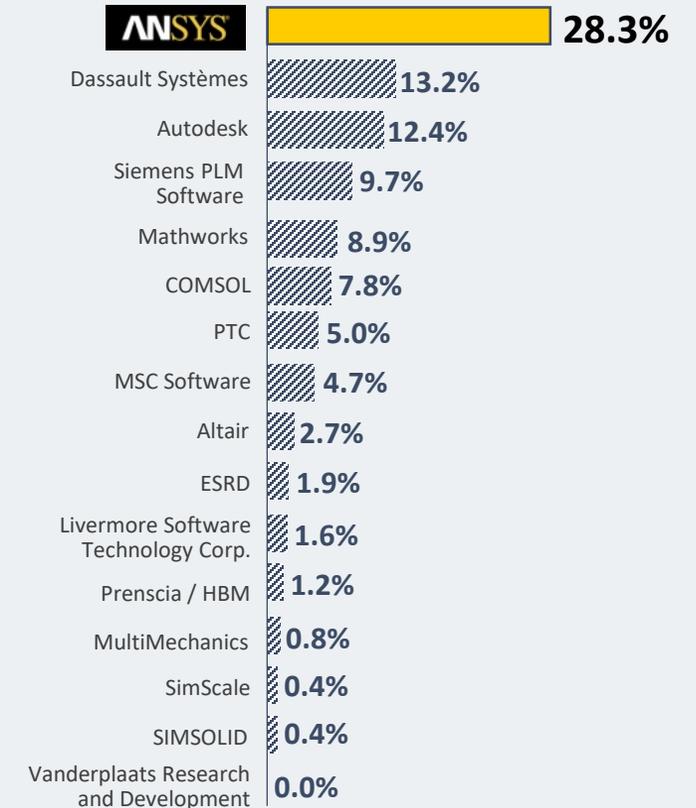
ANSYS	**28.3%**
Dassault Systèmes	13.2%
Autodesk	12.4%
Siemens PLM Software	9.7%
Mathworks	8.9%
COMSOL	7.8%
PTC	5.0%
MSC Software	4.7%
Altair	2.7%
ESRD	1.9%
Livermore Software Technology Corp.	1.6%
Prenscia / HBM	1.2%
MultiMechanics	0.8%
SimScale	0.4%
SIMSOLID	0.4%
Vanderplaats Research and Development	0.0%

Source: Peerless Media (Publisher of Digital Engineering magazine)

ANSYS Confidential

Well-Positioned in a Growing Market

ANSYS is the simulation market leader

The simulation market is strong and growing

Our strategy capitalizes on this growing market

We have a proven record of execution

ANSYS Confidential
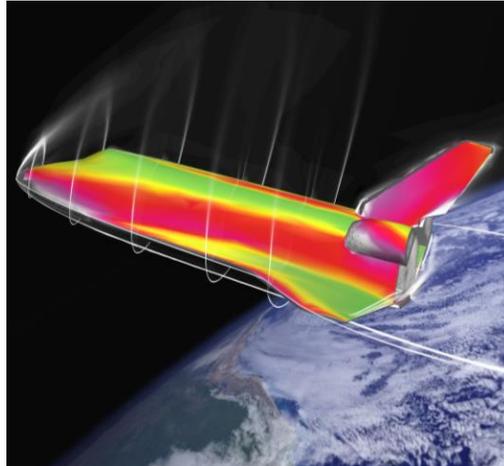
The ANSYS Total Addressable Market For Simulation will ~Triple in the Next 7-10 Years
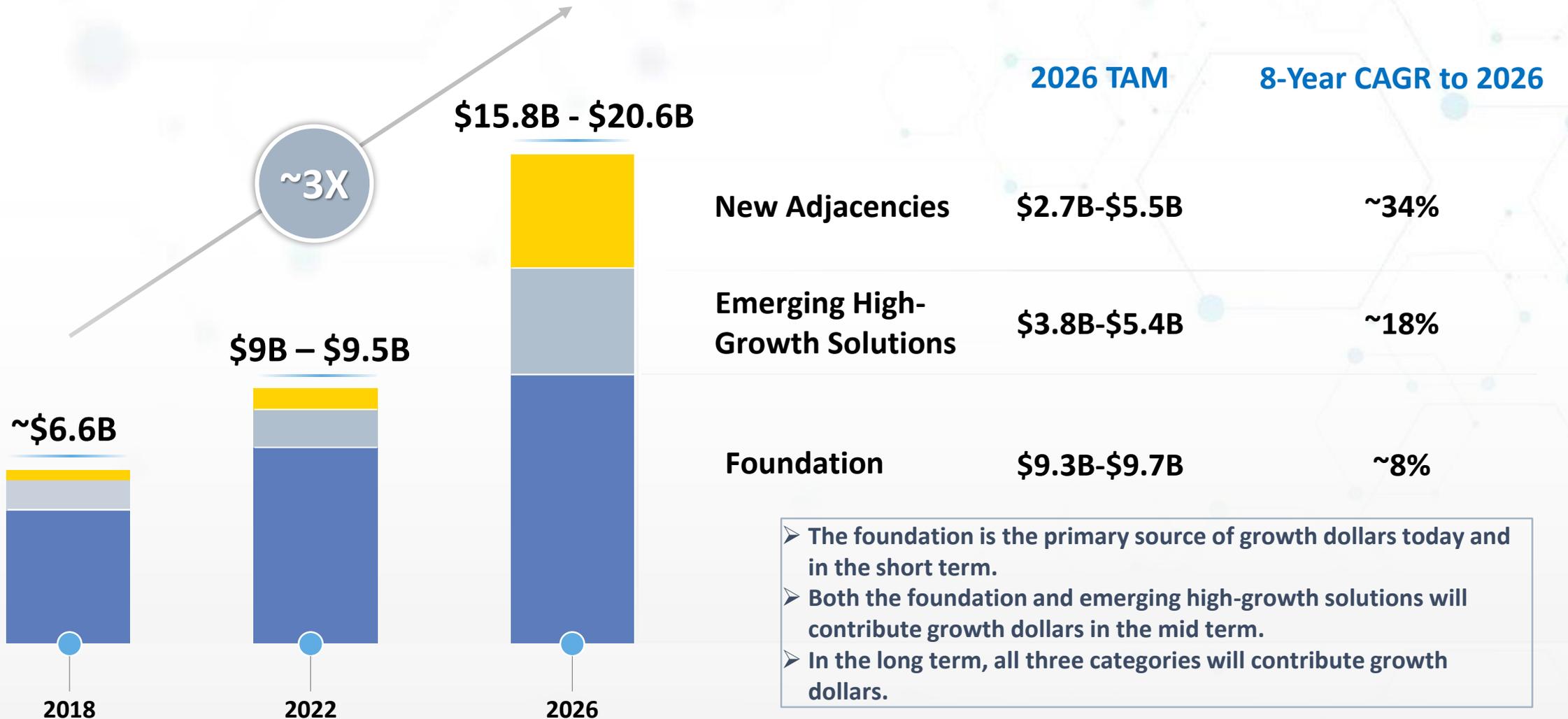
$15.8B - $20.6B

~3X

$9B – $9.5B

~$6.6B

2018   2022   2026

	2026 TAM	8-Year CAGR to 2026
New Adjacencies	$2.7B-$5.5B	~34%
Emerging High-Growth Solutions	$3.8B-$5.4B	~18%
Foundation	$9.3B-$9.7B	~8%

> The foundation is the primary source of growth dollars today and in the short term.
> Both the foundation and emerging high-growth solutions will contribute growth dollars in the mid term.
> In the long term, all three categories will contribute growth dollars.

Foundation: Underlying Strong Growth Amplified by Increased Product Complexity and End-user Expectations...

> **Overall, we've been pleased with the way simulation technology has evolved to help us launch more complex, value-added product designs while still launching new offerings rapidly and cost-effectively — which is critically important as our global competition continues to grow.**

GRUNDFOS

Jakob Vernersen
Senior R&D Manager, Grundfos

> **Our product development team needs to work fast and efficiently to drive innovation and maintain our industry leadership. Simulation helps us accomplish that.**

SUBZERO
A SENNECA COMPANY

Anderson Bortoletto
Principal Engineer, Sub-Zero

> **Without FEA simulation, we would be guessing at safety thresholds and inspection schedules, and unable to demonstrate to customers that we have met their requirements.**

Sigurd Kubel
Lead Engineer, General Electric

> **Simulation gives our team permission to take chances and make mistakes, which is often how you arrive at big ideas.**

Wayne Eckerle
Vice President, Corporate Research & Technology, Cummins

> **Modeling a healthcare device inside the human body, and looking at interactions in a simulated environment, just makes sense. It reduces costs, it saves time and it minimizes the impact on human patients.**

Adriano Henney
Secretary General of Avicenna Alliance
for Predictive Medicine

ANSYS

Foundation: Strong Sustained Growth

$9.3B – $9.7B

$6.8B – $6.95B

~$5.2B
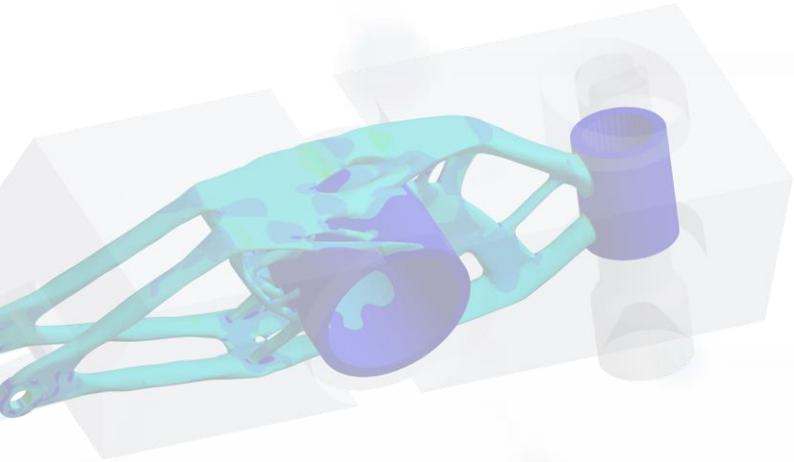
2018

2022

2026

Foundation	
2026 TAM	**CAGR**
$9.3B – $9.7B	~8%

Emerging High-Growth Solutions: Cross-Industry Trends will Accelerate Growth

ELECTRIFICATION

AUTONOMY

5G

INDUSTRIAL IoT

Play to our strengths

Disruptive market opportunities

Large – and growing –
customer investment

Unprecedented product complexity

Requires extensive use
of simulation

Emerging High-Growth Solutions: Substantial Growth into 2022 and Beyond

Emerging High-Growth Solutions	
2026 TAM	**CAGR**
$3.8B – $5.4B	~21%

~$1.0B

$1.6B – $1.85B

$3.8B – $5.4B

2018

2022

2026

New Adjacencies: Drive Simulation across the Entire Product Lifecycle

ADDITIVE MANUFACTURING

ANSYS Additive Suite – 2018

DIGITAL EXPLORATION
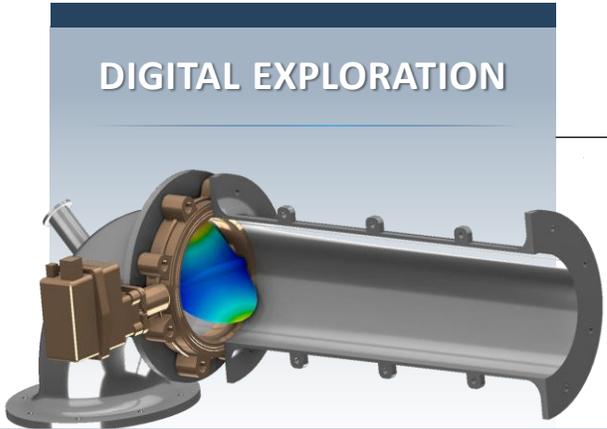
ANSYS Discovery Live – 2018

Creo Simulation Live – 2019
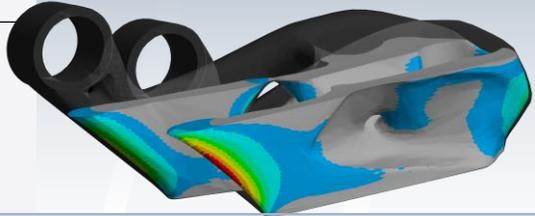
DIGITAL TWINS
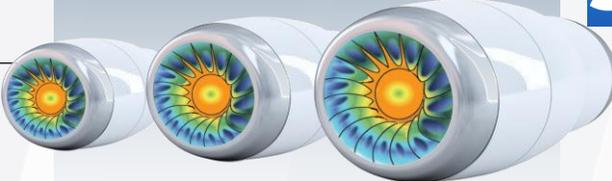
ANSYS Twin Builder – 2018
SAP Predictive Engineering Insights
enabled by ANSYS – 2019

DESIGN & ANALYSIS

IDEATION

MANUFACTURING

OPERATIONS
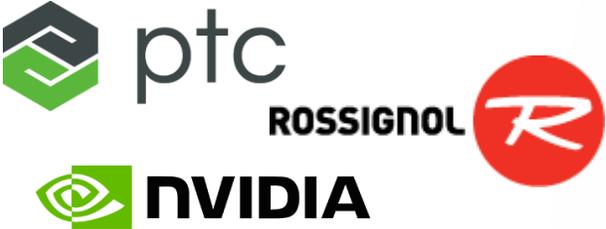
New Adjacencies: Substantial Growth into 2026 and Major Upside Beyond

$10.0B – $30.0B

$2.7B – $5.5B

$0.6B – $0.7B

~$0.45B

2018 2022 2026 2030
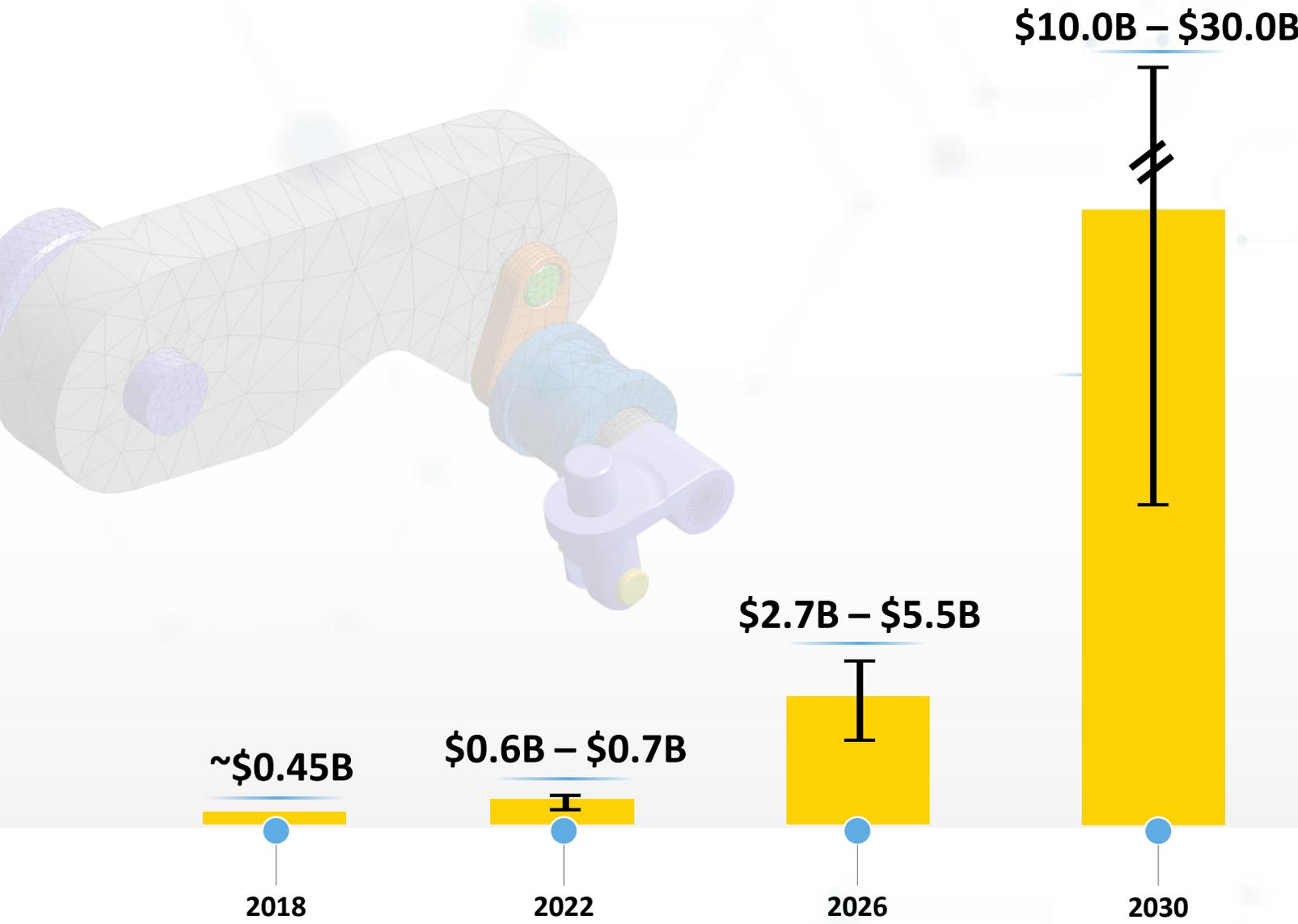
New adjacencies	
2026 TAM	**CAGR**
$2.7B – $5.5B	~32%
2030 TAM	**CAGR**
$10.0B – $30.0B	~37%

Well-Positioned in a Growing Market
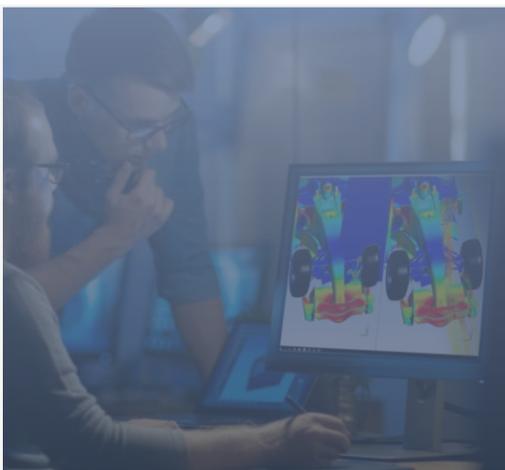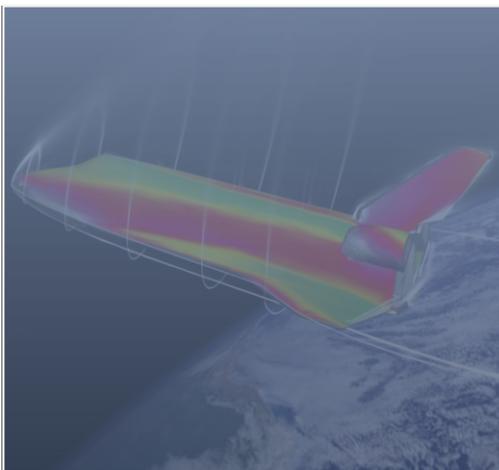
ANSYS is the simulation market leader

The simulation market is strong and growing

Our strategy capitalizes on this growing market

We have a proven record of execution

# Our Product Strategy is Based on Pervasive Simulation
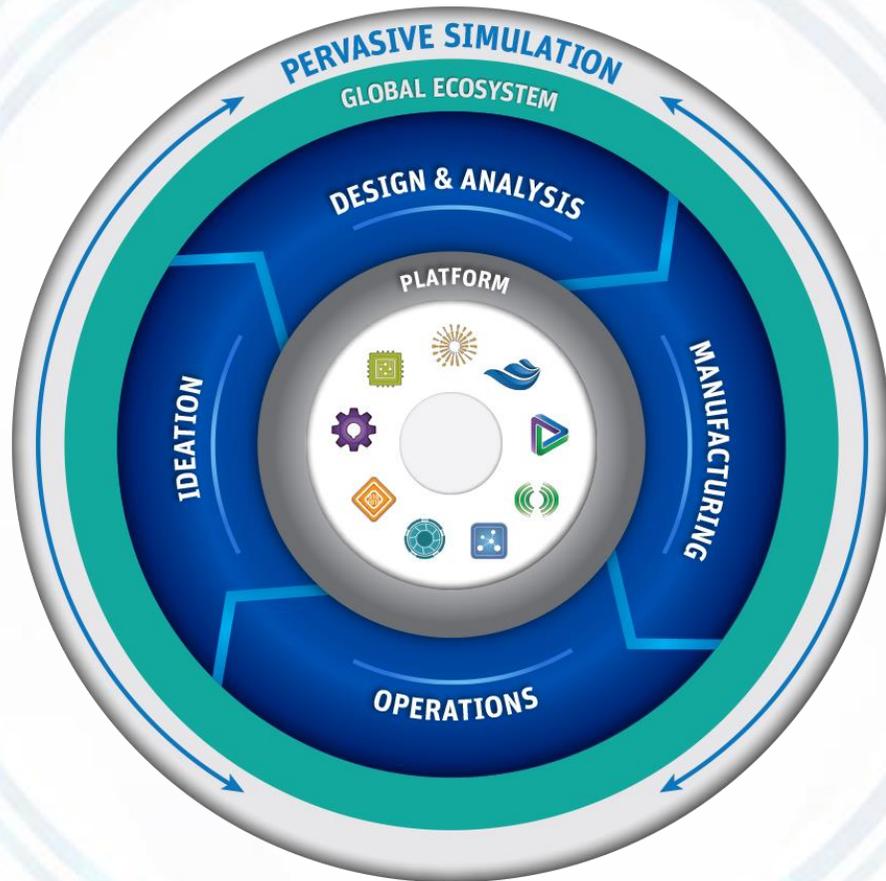
Pervasive Simulation Is:

- Integration across all physics on a single open platform

- And the injection of simulation into partner ecosystems

Our Product Strategy:

- Continuing investment to extend leading positions in all physics

- Leveraging and expanding platform to drive deeper client relationships

- Selectively targeting highest-growth market opportunities

- Accelerating opportunities and growth through world-class ecosystem

# Our Strategy of Pervasive Simulation is Aligned with Market Growth
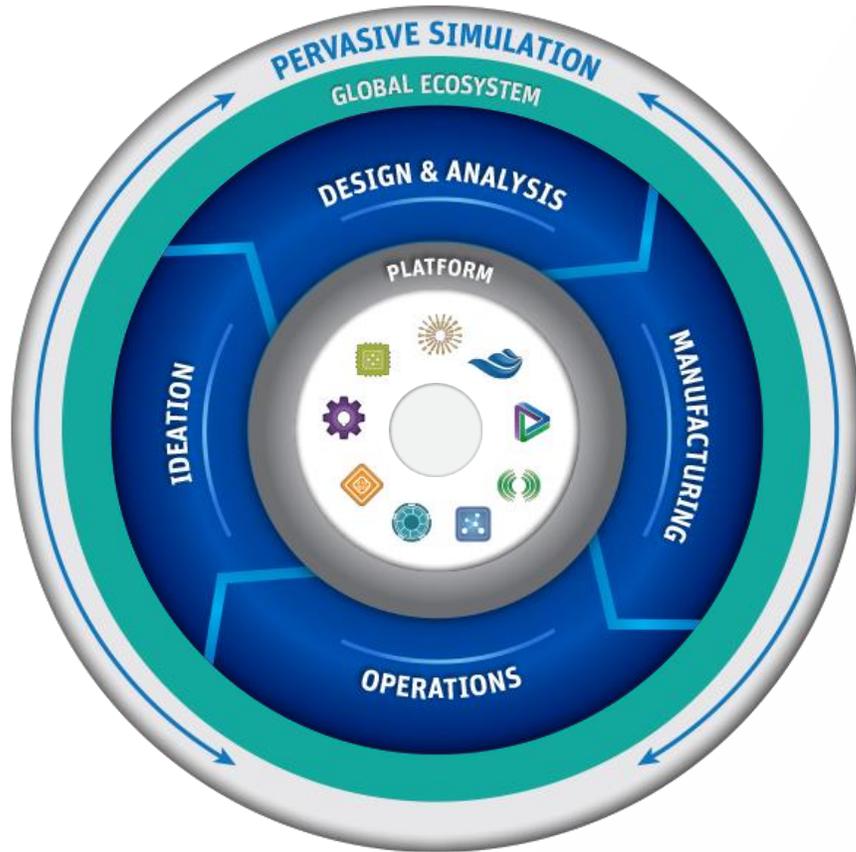
Core	➢ Strengthen our foundation ➢ Deliver offerings for emerging high-growth solutions ➢ Will deliver the bulk of ANSYS growth for the next 3-5 years
Expansion	➢ Drive simulation across the entire product cycle ➢ Embed ANSYS into partners' ecosystems ➢ Provides significant upside to long-term growth

ANSYS Delivers What Matters Most to Customers

Accuracy

True Multiphysics

Close Technical Partnership

Advanced Methods

 ANSYS Confidential **ANSYS**

We are Uniquely Positioned to Make Simulation Pervasive...

	#1 STRUCTURES	#1 FLUIDS	#1 ELECTRO-MAGNETICS	#1 SEMICONDUCTOR POWER	#1 SAFETY-CRITICAL EMBEDDED SOFTWARE	#1 MATERIALS	#1 OPTICAL
ANSYS	●	●	●	●	●	●	●
COMPETITOR #1	○	○	○				
COMPETITOR #2	○	●	○		○	○	○
COMPETITOR #3	●	○	●		○		
COMPETITOR #4	○	○	○		○		
COMPETITOR #5	○	○					
COMPETITOR #6	○					○	
COMPETITOR #7							●
COMPETITOR #8		●					
COMPETITOR #9			●	●			

● Best-of-breed offering   ○ More limited offering

Source: **Summary of competitor offerings based on ANSYS analysis of public information and third-party market research.**

Continuously Investing to Strengthen the Core — Organically and Through Acquisitions

Organic and Inorganic R&D Investments
(in Millions)

~80% of investment in core technology
~20% on next-generation technology

Acquisitions by year:
- 2000: ICEM-CFD
- 2001: CADOE
- 2002: CFX
- 2003: CDI
- 2005: FLUENT
- 2006: ANSOFT
- 2008: APACHE
- 2009: ESTEREL
- 2011: EVEN
- 2012: SPACECLAIM REACTION DESIGN
- 2014: NTI GEAR DESIGN DELCROSS
- 2015: MEDINI
- 2016: CLK CEI 3DSIM
- 2017: OPTIS
- 2019E: HELIC GRANTA DfR LSTC DYNARDO

Source: Annual ANSYS R&D expense reported in Form 10-K. Refer to www.investors.ansys.com for additional details on acquisitions. 2019 R&D expense represents a forecast as of June 30, 2019.

Improving Materials Intelligence across the Portfolio

ANSYS Granta Solves Materials Challenges

"Certified savings are ~$8.5m per annum."

- Efficiencies in materials engineering

- Avoiding duplicated testing and other costs

- Legacy data capture and re-use

Rolls-Royce
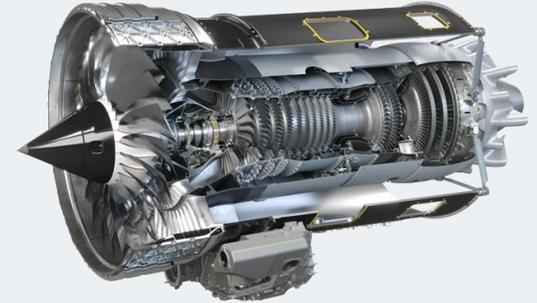
ANSYS Granta Provides:

Data Access

- More materials data in each ANSYS application

- Addresses gap in ANSYS portfolio
  - Now a key competitive strength

Materials Intelligence

- Dedicated tools for making better materials decisions

- Next-generation material design & analysis capabilities

Data Management

- Selling materials database tool to Enterprise accounts

- Improves simulations via data that is:
  - Single-source
  - More accurate
  - Fully traceable
  - Directly connected to ANSYS tools

Continuously Investing to Strengthen the Core — Organically and Through Acquisitions

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NEWS RELEASE

ANSYS AND LS-DYNA CREATOR LIVERMORE SOFTWARE TECHNOLOGY CORPORATION SIGN DEFINITIVE ACQUISITION AGREEMENT

Acquisition will bolster ANSYS' passenger safety, healthcare and manufacturing capabilities

PITTSBURGH, September 11, 2019 – ANSYS (NASDAQ: ANSS), the global leader and innovator of engineering simulation software, announced today that it has entered into a definitive agreement to acquire Livermore Software Technology Corporation (LSTC), the premier provider of explicit dynamics and other advanced finite element analysis technology. Once closed, the acquisition will empower ANSYS customers to solve a new class of engineering challenges, including developing safer automobiles, aircraft and trains while reducing or even eliminating the need for costly physical testing. The purchase price for the transaction is $775 million, of which 60% of the consideration will be paid in cash and 40% will be paid through the issuance of

- Premier provider of explicit dynamics solutions
- ~25-year ANSYS partner
- ansys.com/lstc
- Acquisition closed on November 1st 2019

# Investing in Four Key Product Initiatives to Drive Growth

1 CAPITALIZE ON RECENT ACQUISITIONS

2 GROW INDUSTRY-LEADING SIMULATION PLATFORM

3 EXPAND INTO NEXT-GENERATION USE CASES

4 GROW GLOBAL ECOSYSTEM

1. Capitalize on Recent Acquisitions

	STRENGTHENS CORE	ADJACENCIES			EMERGING HIGH-GROWTH SOLUTIONS			
		ADDITIVE MFG.	DESIGN ENGINEERS	DIGITAL TWIN	ELECTRIFICATION	AUTONOMOUS	5G	IIoT
GRANTA MATERIAL INTELLIGENCE	✓	✓	✓	✓	✓			✓
Helic	✓					✓	✓	
DfR	✓		✓	✓	✓	✓	✓	✓
OPTIS	✓			✓		✓		✓
LSTC Livermore Software Technology Corp.	✓	✓			✓	✓		
dynardo dynamic software & engineering	✓	✓	✓	✓	✓	✓		✓

2. Grow Industry-Leading Simulation Platform

Computer Aided Engineering Digital Thread

Simulation Process and Data Management

Traceability, collaboration and decision support

Multiphysics Process Integration and Optimization

Integration/automation of chained data flows and design space exploration for optimal performance parameters

Materials Data Connectivity

Smart materials decisions via reference databases, materials research and test calibration

ANSYS Granta Integration
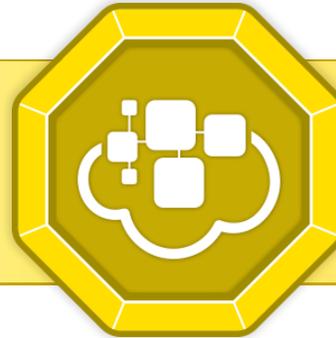
PLM / ERP Interoperability

Standards-based connectivity to engineering applications and lifecycle systems

Simulation And Data

Connect physics with data. Reimagine and amplify simulation using AI

Cloud / Hybrid Deployment

Composable on-prem and cloud deployment for more complex and broader usage

ANSYS® 2019 R3 Expands Autonomous Vehicles Solution

With the release of ANSYS 2019 R3, ANSYS Autonomy enables engineers to develop safer autonomous vehicles (AVs) through advanced closed-loop scenario simulation, automated driving and control software development, functional safety analysis, and sensor, camera, lidar, and radar simulation.

Fully autonomous vehicles require rigorous testing in complex environments and under variable conditions. Physical testing would require billions of miles of driving or flying — a time-consuming, cost-prohibitive, approach. Using simulation to virtually test AVs is the only viable option for validating systems safety and accelerating AV development. From sensors to virtual environments to artificial intelligence (AI), ANSYS 2019 R3 includes robust offerings that speed the safe development and deployment of AVs on the road and in the air.

- **Announcing ANSYS Minverva -** A knowledge management product that improves productivity and maximizes business value from existing engineering technology investments by providing model-based system engineering, simulation process and data management, lifecycle traceability, process integration, design optimization and simulation-driven data science capabilities. ANSYS Minerva is critical for managing the volume of simulation data required for testing complex systems, such as AVs.

- **ANSYS® Mechanical™ now fully integrated with ANSYS Motion -** Also available is Sherlock Automated Design Analysis Software™ and the new coupled field analysis systems.

- **ANSYS® Maxwell® and Q3D Extractor® can now easily submit jobs to ANSYS Cloud** significantly reducing turnaround time for compute-intensive electromagnetic problems.

- **Announcing Distributed Compute Services (DCS**) Enabling users to distribute, manage and solve simulations on a variety of compute resources to more effectively use existing compute resources across operating systems, networks and locations – maximizing simulation investment with design optimization.

- **ANSYS Fluent has fully automated the adjoint solver workflow** so users can easily find the optimal shape for given operating conditions. Fluent users can also quickly and easily evaluate very complex reduced order models and post-process results directly within Fluent to gain even more insight when exploring design alternatives.

- **Discovery family introduces generative design capabilities** through the first interactive topology optimization tool with groundbreaking speed and ease-of-use that finds optimal designs in minutes.

- **Granta Materials Data for Simulation now embedded within ANSYS Electronics Desktop.**

- **ANSYS semiconductor portfolio achieves ISO 26262 certifications** to enable automotive integrated circuit designers to meet rigorous safety requirements for AV applications.

ANSYS CLOUD COMPUTE
EASY ACCESS TO ON-DEMAND HPC DIRECTLY FROM ANSYS FLAGSHIP PRODUCTS

SUPPORTED APPLICATIONS:
2019 R1: MECHANICAL & FLUENT
2019 R2: ELECTRONICS

Microsoft Azure

	UNIQUE VALUE PROPOSITION	TYPICAL ACCOUNT	SOLVERS REQUIRED	LICENSE PREFERENCE
ANSYS Cloud	• One click burst to cloud-HPC from ANSYS flagships - no setup or IT changes required • Highly optimized for ANSYS solvers • Free web-based post processing without having to download results • Single vendor solution with simplified usage-based pricing for HW+SW	Existing SMBs with little or no investment in HPC, and need burst capacity	Mechanical Fluent (Electronics in R2)	ON-DEMAND ANSYS Elastic Units (AEUs)
CHPs	• Support for other simulation tools besides ANSYS • Availability on private and public clouds • Custom hardware configurations and support for 3rd party tools	Existing Strategic & Enterprise	ANSYS + Other ISVs	BRING YOUR OWN LICENSE (BYOL)

3. Expanding our Technology to Enable Emerging Solutions and Adjacencies

ANSYS ADDRESSABLE MARKET (2026)
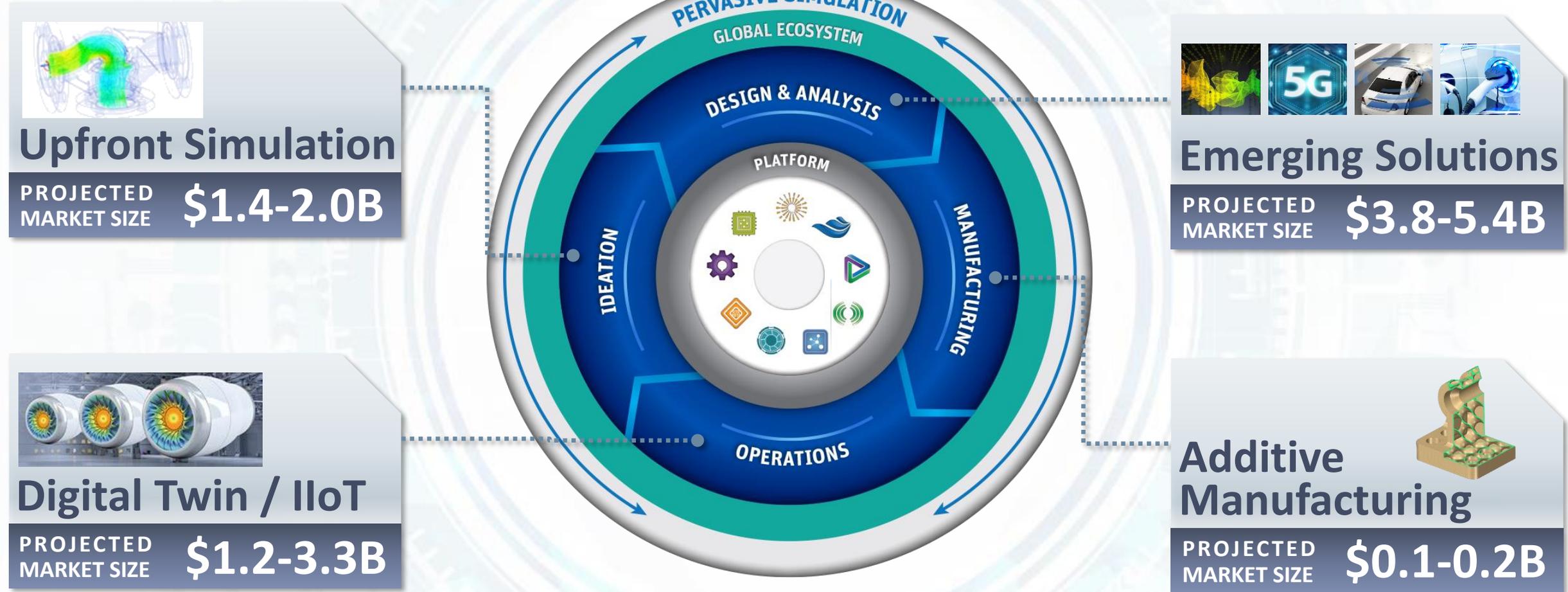
Upfront Simulation
PROJECTED MARKET SIZE $1.4-2.0B

Digital Twin / IIoT
PROJECTED MARKET SIZE $1.2-3.3B

Emerging Solutions
PROJECTED MARKET SIZE $3.8-5.4B

Additive Manufacturing
PROJECTED MARKET SIZE $0.1-0.2B

PERVASIVE SIMULATION
GLOBAL ECOSYSTEM
DESIGN & ANALYSIS
PLATFORM
IDEATION
MANUFACTURING
OPERATIONS

4. Partnerships Expand ANSYS Simulation into other Ecosystems

Go-To-Market expansion through partner activities

SAP Predictive Engineering Insights (PEI) Enabled by ANSYS - High-fidelity physics-based digital twins for real-time monitoring of physical assets

Early success:

- Streamlined customer's Configure Price Quote (CPQ) timeline from months to days
- Showcased benefits of SAP PEI with A&D industry leaders at the Paris Air Show

Creo Simulation Live Powered by ANSYS - Integrates real-time simulation directly into 3D CAD modeling environment to get instant feedback for designers

Last quarter success:

- PTC closed ~75+ deals across a variety of vertical industry customers
- PTC & ANSYS collaborated at a defense contractor: Largest-ever Creo Simulation Live deal and substantial Discovery Live deal

Synopsys IC Compiler™ II with ANSYS RedHawk™ Analysis Fusion - Delivers cohesive and integrated workflow that shortens time on challenging power requirements

Early success:

- Automaker realized 35% reduction in peak dynamic IR drop

# 4. Partnerships Expand ANSYS Simulation into other Ecosystems

Go-To-Market expansion through customer activities

BMW Group (BMW / MINI / ROLLS ROYCE)

- ANSYS and BMW Group are partnering to create the automotive industry's first holistic simulation tool chain for developing autonomous vehicle technologies.
- BMW Group is leveraging ANSYS' broad pervasive engineering simulation solutions and experience to speed up the development of a safety-focused solution for the validation of Autonomous Driving systems.

AIRBUS

- Through a new collaboration, ANSYS and Airbus plan to develop a new ANSYS solution for enabling safety-critical flight controls with sophisticated artificial intelligence (AI), aiming at autonomous flight by 2030.
- The intent is to engineer an advanced ANSYS SCADE® tool that links traditional model-based software development with new AI-based development flow. The new solution will be pivotal to reducing development time and expenses.

AV SIMULATION

- ANSYS and AVSimulation are partnering to speed the development of safe autonomous driving for automobile manufacturers.
- The collaboration integrates revolutionary simulation technology from AVSimulation with ANSYS' immersive autonomous driving simulation solutions, expediting vehicle design and validation by using virtual testing.

Source: Partners websites, white-papers, press releases, and earnings prepared remarks

Investing in Emerging High-Growth Solutions and Adjacencies to Support our Strategy

		Expands TAM	Leverages Core Technology	New Portfolio Vertical	Emerging High-Growth Solutions
	Designer - Launched ANSYS Discovery	✔	✔	✔	
	Additive manufacturing - Acquired 3DSIM, combined with organic development, released ANSYS Additive	✔	✔		
	Digital Twin - Released Twin Builder product line	✔	✔		
	Autonomy - Acquired OPTIS, launched end-to-end AV solution	✔	✔	✔	✔
	5G - Acquired Helic, combined with focused organic development	✔	✔		✔
	Electrification - Significant development of workflow and cross-physics capabilities	✔	✔		✔
	Materials - Acquired Granta Design	✔	✔	✔	

ANSYS 5G Solutions for the Complete Ecosystem

100% of the semiconductor top 10 use ANSYS
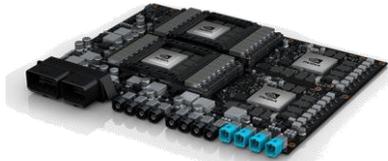
| Chip | Board | Data Center | Network | User Equipment |

Massive MIMO

Fiber Fronthaul

DU
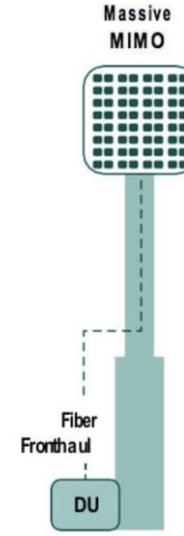
Electronics Reliability

Power Integrity

Electromagnetics

| DfR | | Delcross | | Helic | Medini | | Optis | Granta |

Our Agreements with our Ecosystem Partners Enable us to Fully Cover the AV Simulation Opportunity

Sensors Simulation

ANSYS

Automated Driving Software (incl. AI)

ANSYS AIRBUS

Object Perception (incl. AI)

ANSYS

Environment Simulation

ANSYS BMW

Control Software & Safety

ANSYS

HD Maps

BMW

ANSYS Discovery Family of Products
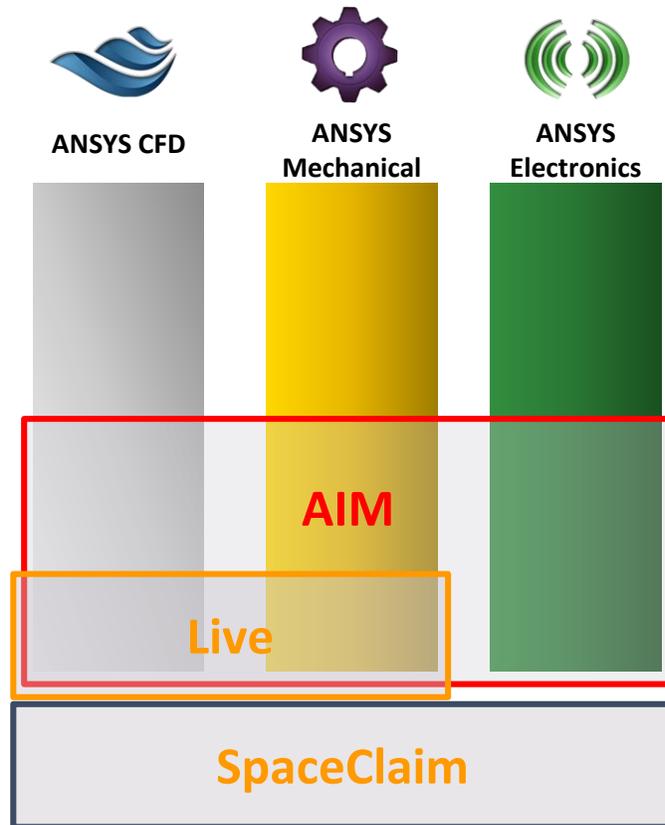
Discovery AIM

➢ Easy to use high-fidelity simulation providing ANSYS gold-standard accuracy and speed

➢ Comprehensive physics

Discovery Live

➢ Instantaneous simulation, tightly coupled with direct geometry modeling

➢ Qualitative results; high accuracy is not the goal

Discovery SpaceClaim

➢ Fast and intuitive 3D Direct Modeling to create, edit and repair geometry for concept design and simulation

Additional information located at www.ansys.com/products/3d-design/ansys-discovery-live.

Additive - Two distinct customer groups – Two products

ANSYS Additive Print

- Reduce Trial and Error
- Predict Distortion
- Predict Stress
- Auto Distortion Compensation
- Auto Generate Supports
- Predict Thermal Strain

Center: Designers / Operators
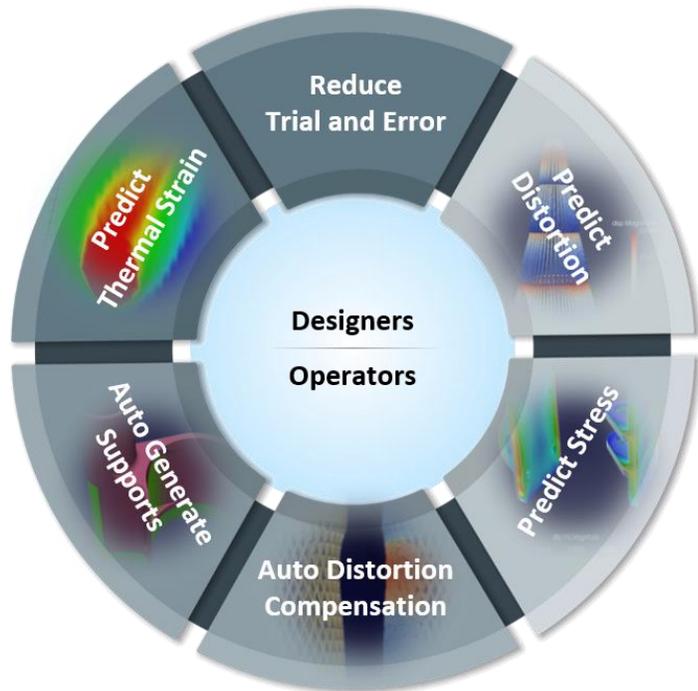
– *Designers in aerospace, defense, auto OEMs & medical*

– *Metal AM machine operators*

– *Part manufacturing operations managers*

ANSYS Additive Suite

- Track Phase Transformation
- Run Parametric Studies
- Predict Microstructure
- Predict Thermal History
- Predict Sensor Measurements
- Analyze Porosity and Meltpools

Center: Engineers / Scientists
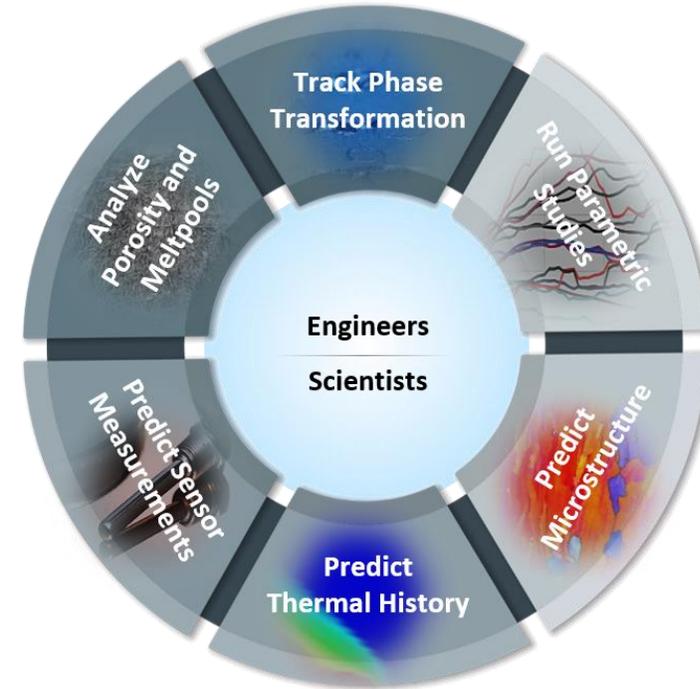
– *FEA analysts in aerospace, defense, auto OEMs & medical*

– *Owners of "part qualification" within OEMs*

– *Materials/manufacturing researchers*

Additional information located at www.ansys.com/products/structures/additive-discovery-manufacturing.

Simulation in Operations of Products: Digital Twin

➢ A digital twin is a real-time, virtual copy of an actual operating machine that provides insight into individual product performance and maintenance. Sensors on the machine relay data — temperature, pressure, flow rate, voltage, loading, etc. — to the digital twin, and the twin evolves in step with the machines working environment. The digital twin can predict conditions long before they happen, so you can take corrective actions during scheduled downtime, rather than making an untimely shutdown. You can also use the collected data to improve the design of next-generation products.

➢ A digital twin of a working product system is created when smart sensors mounted on the product are connected to a computer model of that system in near real time. The twin system reflects the current condition of the actual product and changes during operation — reflecting wear, degraded performance or shifting conditions. When simulation is added to the digital twin ecosystem, conditions that are otherwise impossible to see and assess can be revealed.

➢ By studying the digital twin, engineers can determine the root cause of performance problems, schedule predictive maintenance, evaluate different control strategies and otherwise work to optimize product performance — and minimize operating expenses — in near real time. Simulation is the only way to fully realize the tremendous value contained within the digital twin.
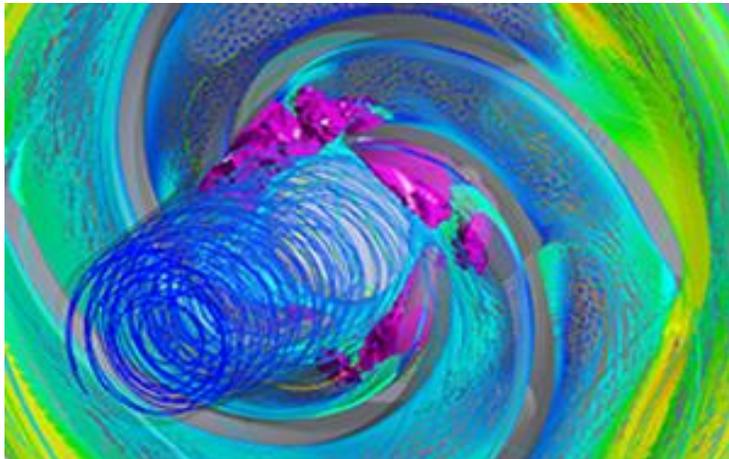
– With the emergence of the Industrial Internet of Things (IIoT), simulation is expanding into operations.
– The IIoT enables engineers to communicate with sensors and actuators on an operating product to capture data and monitor operating parameters.
– The digital twin can be used to monitor prescriptive analytics and test predictive maintenance to optimize asset performance.

Additional information located at www.ansys.com/products/systems/digital-twin.

Digital Twins Expands Simulation Usage from # Of Human Designers to # of Equipments

- **ANSYS Digital Twin launch in May 2018 has exceeded our initial expectations**

- **Connectivity to SAP IIoT platform is fully operational since February 2019, enabling initial deal closings**

- **Preventive maintenance use cases are now building, with initial data points suggesting a $1.2B to $3.3B in manufacturing domain only**

Well-Positioned in a Growing Market
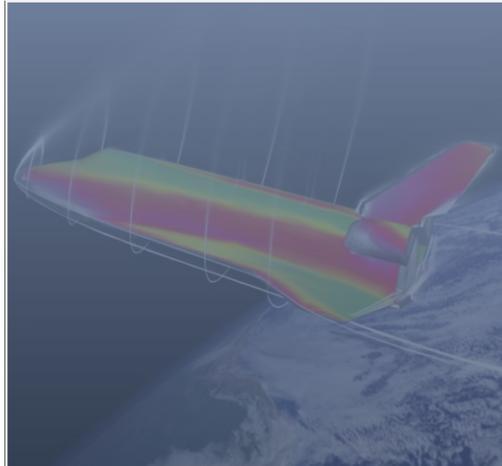
ANSYS is the simulation market leader

The simulation market is strong and growing

Our strategy capitalizes on this growing market

We have a proven record of execution

Our Go-To-Market has Changed to Deliver Greater Customer Success

Enterprise

80+ Accounts
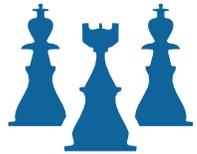
Strategic

100s of Accounts

Volume

1000s of Accounts
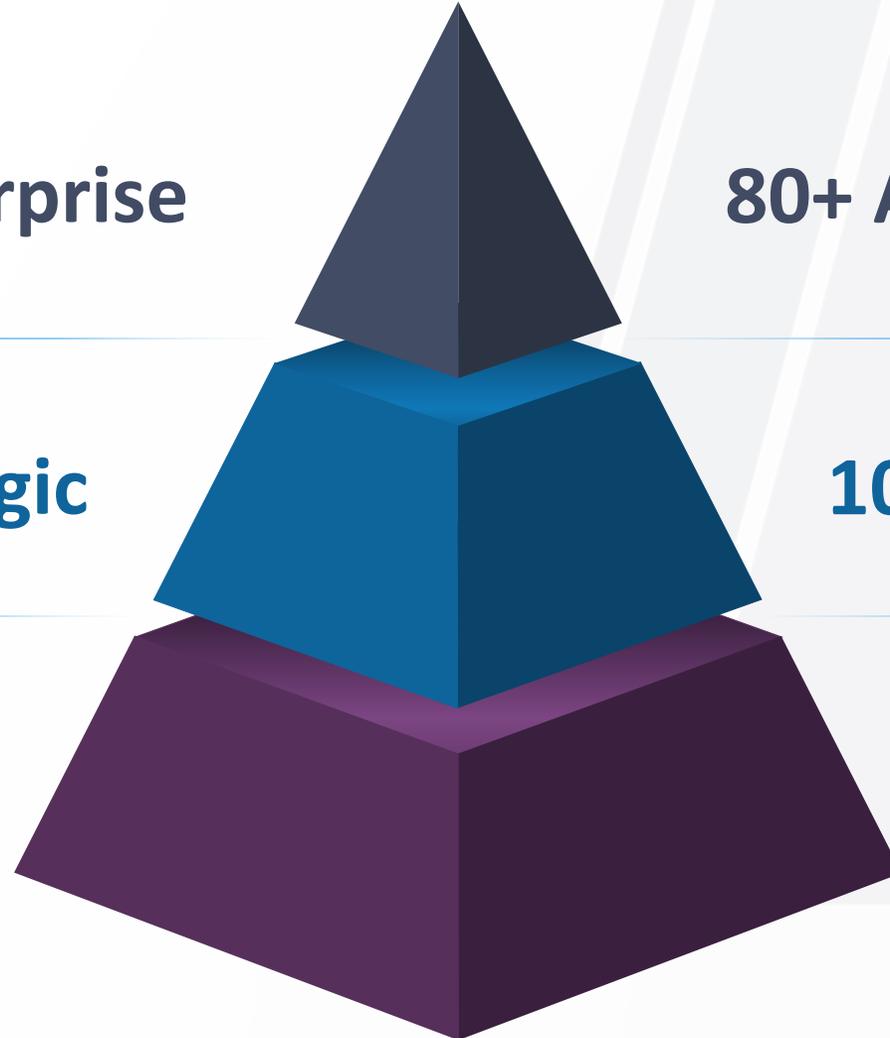
Reinforce and Extend Leadership in The Core

Each of the 80+ enterprise accounts offers strong growth opportunities

U.S. multinational case example

- **Strong growth as enterprise account**
  - **Increased usage**
  - **Multiphysics**

- **Large electrification opportunity**

Electrification Functional Safety

Low-frequency Electronics and Systems

Materials

High-frequency Electronics and Systems

Direct Modeling

Computational Fluid Dynamics

Structures

17.5% CAGR

9.4% CAGR

~$16.7M

~$10.3M

~$8.6M

ACV

ACV

ACV

2 Years

3 Years

1995

ACCELERATED ADOPTION OF SIMULATION

2019

2026
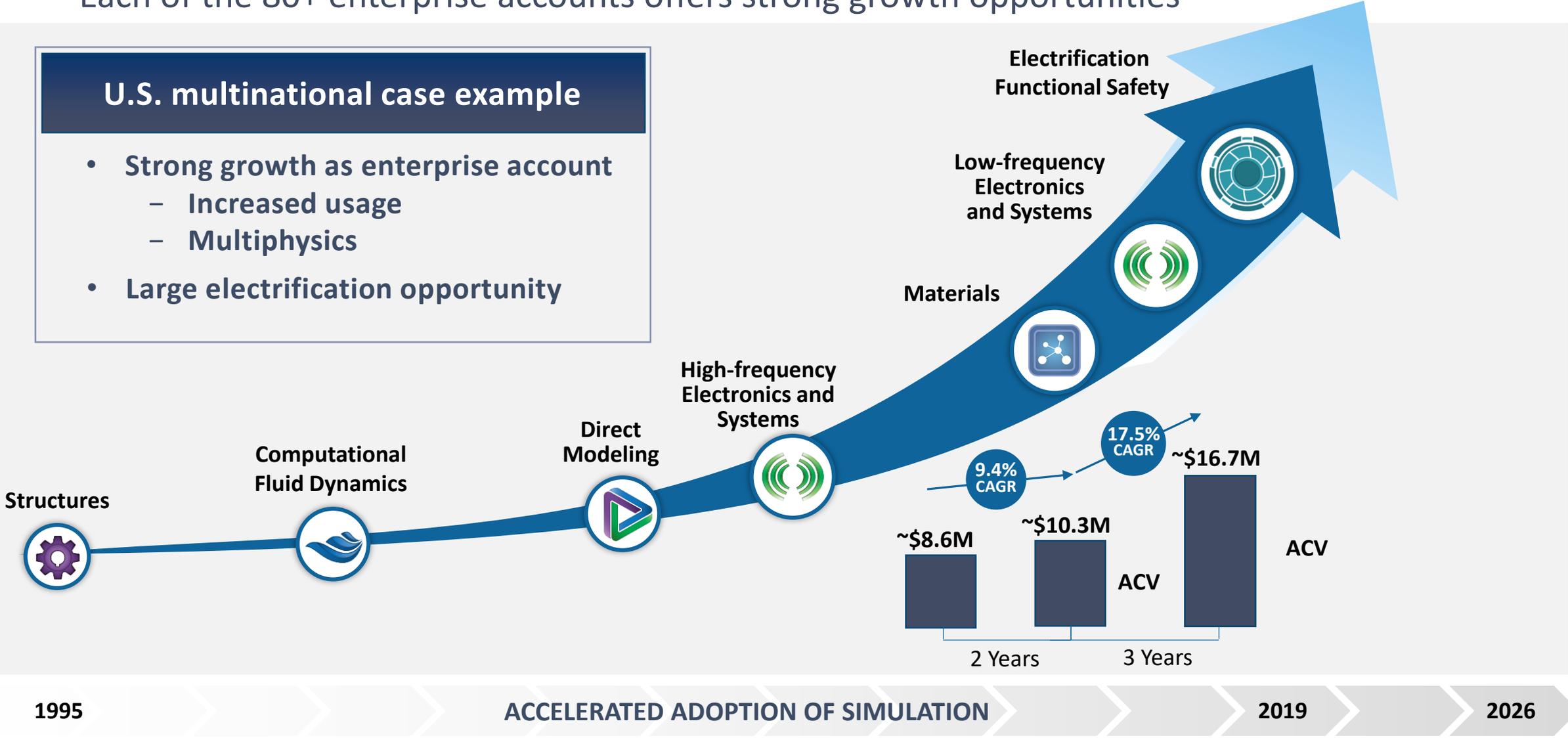
Future Sales Growth Drivers: 2019 to 2022

1 Big Deals

2 New Logos

3 Brand Awareness

4 New Technologies

1. Optimizing Organization to Grow Big Deals

Invest in field engineers globally

Align sales headcount with growth opportunities

**Evolve organizational structure**

GROW BIG DEALS

2. Addressing Whitespace Through Channel Growth

Expand partner coverage in all geographies

+

**Develop partners
products / capabilities**

+

**Establish
sub-distributor network**

3. Investing in Marketing to Optimize Brand Awareness

Platform infrastructure

Global digital reach

Marketing automation

Brand awareness

  ANSYS Confidential **ANSYS**

4. Leveraging Acquisitions and Ecosystem

Expand Customer Relationships With Acquisitions

Cross sell

Upsell

Renewal

Penetrate New Markets With Strategic Ecosystem

Supply chain enablement

Academic

Technology OEM

Industry experts

We are Positioned to Deliver Double-Digit Growth
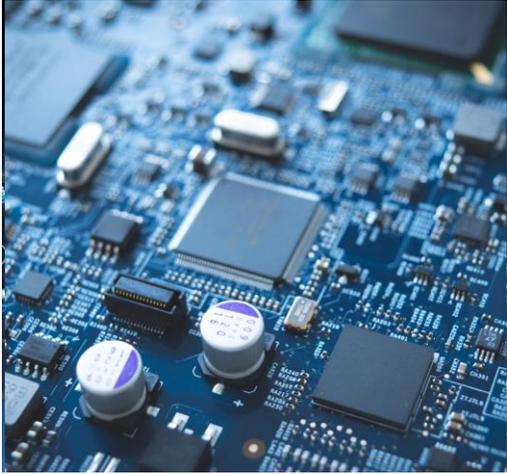
Strong market position AND value proposition

Clear strategic priorities to drive growth

Enterprise

Strategic

Volume
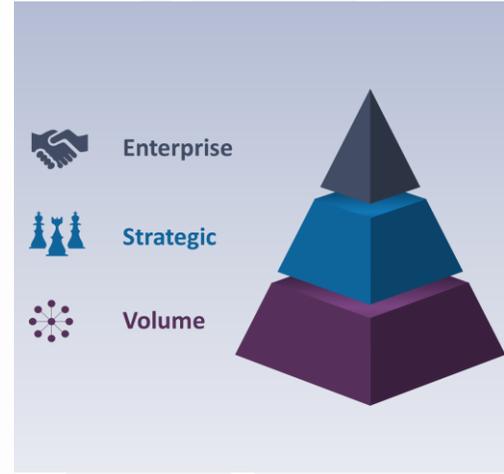
GTM model investments are delivering strong results

"Expect to Win Big" Sales Culture

**ANSYS**

Continued Delivery On Strategy Through Disciplined Execution

1   **Reinforce and Extend Leadership in the Core**

2   **Capture Upside in High-Potential Adjacencies**

3   **Programmatically Pursue Strategic Acquisitions**

4   **Forge Partnerships to Embed ANSYS into Other Ecosystems**

5   **Build a Winning Culture**

Executing on our Growth Strategy

**Performance across key metrics**

Diversified and resilient business
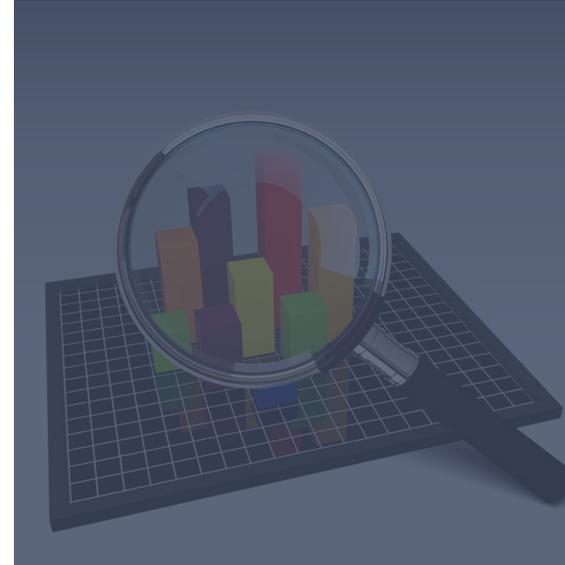
Capital allocation
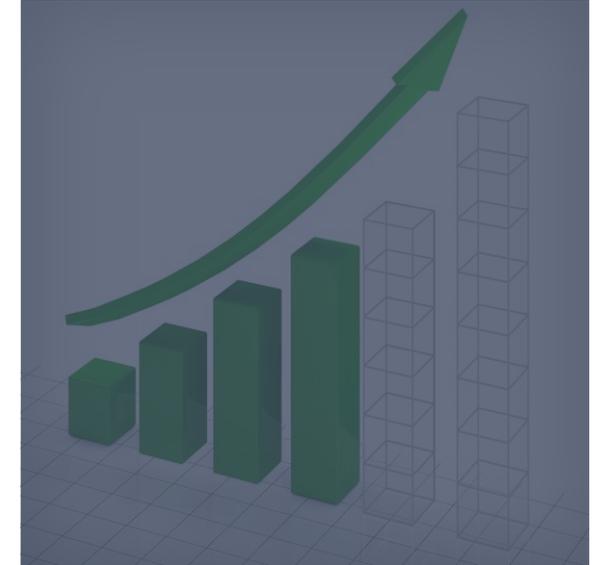
Financial outlook

Key Highlights – Q3 2019

Non-GAAP Financial Highlights

Revenue	**$346M**
Operating Margin	**43.3%**
Tax rate	**20.7%**
Diluted EPS	**$1.42**
Annual Contract Value (ACV)	**$291M**

See reconciliation of Non-GAAP financial metrics in Appendix.

Growing Annual Contract Value

Annual Contract Value (ACV)
($ Million)

11% CC

$845 → $921

76% from recurring sources

Q3 YTD 2018   Q3 YTD 2019

■ Recurring   ■ Non-Recurring
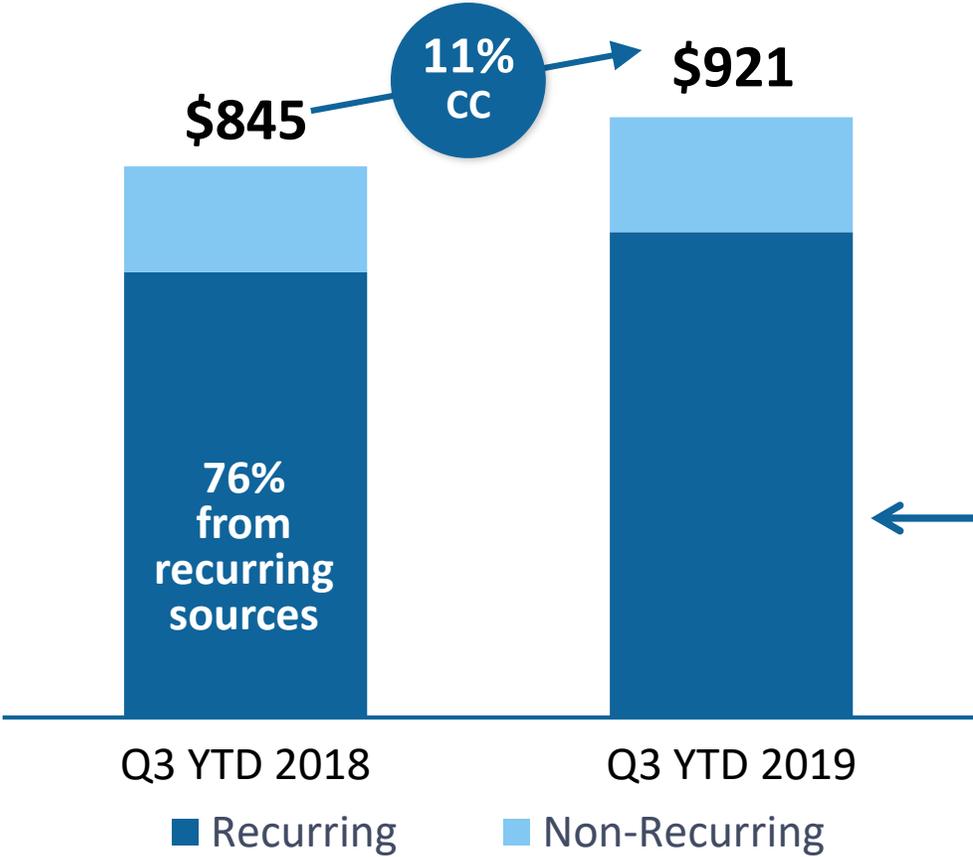
77% of Q3 YTD 2019 ACV **from recurring sources**
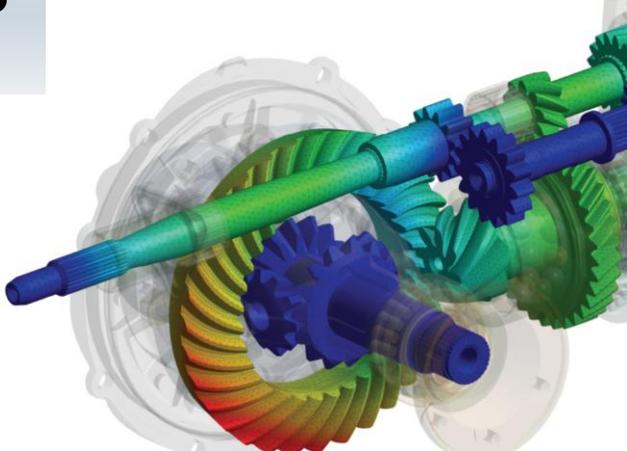
ACV is a performance metric introduced in 2018. See Appendix for ACV definition. CC refers to constant currency.

| ANSYS Confidential   **ANSYS**

Non-GAAP – Q3 YTD

Revenue

$ in millions

$885 — Q3 YTD 2018
$1,036 — Q3 YTD 2019

Operating Margins

46% — Q3 YTD 2018
44% — Q3 YTD 2019

Tax Rate

19% — Q3 YTD 2018
20% — Q3 YTD 2019

EPS

$3.86 — Q3 YTD 2018
$4.33 — Q3 YTD 2019
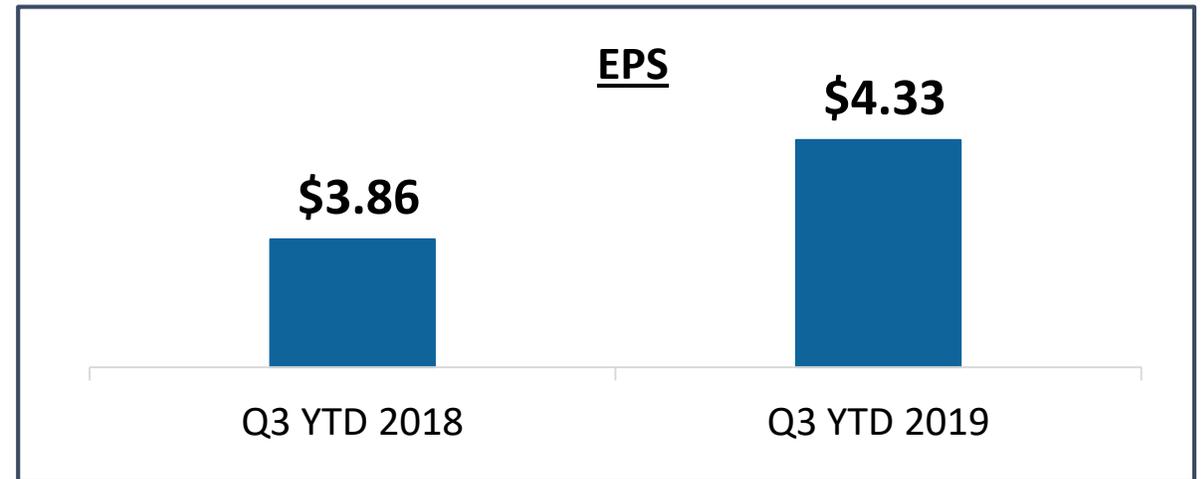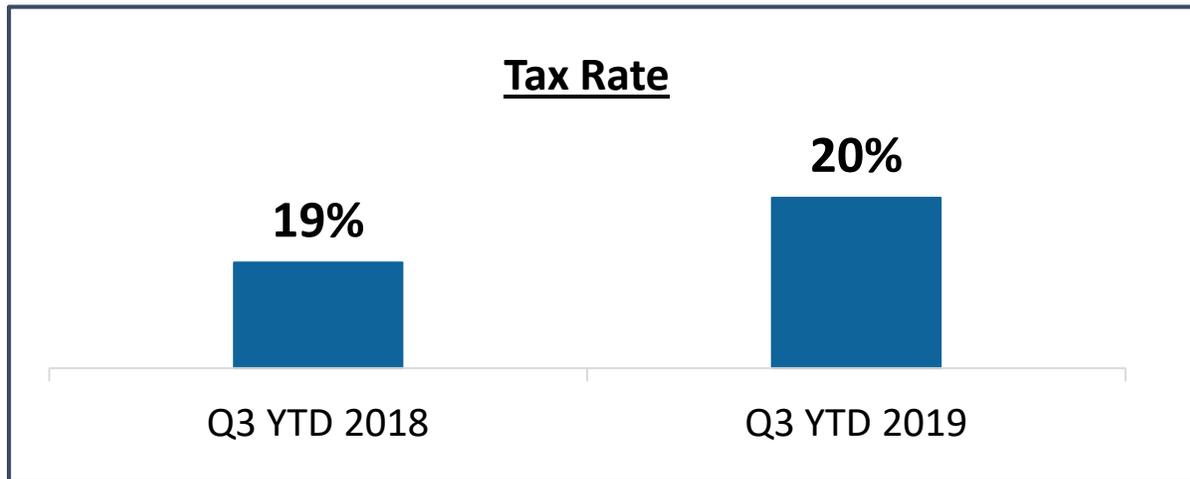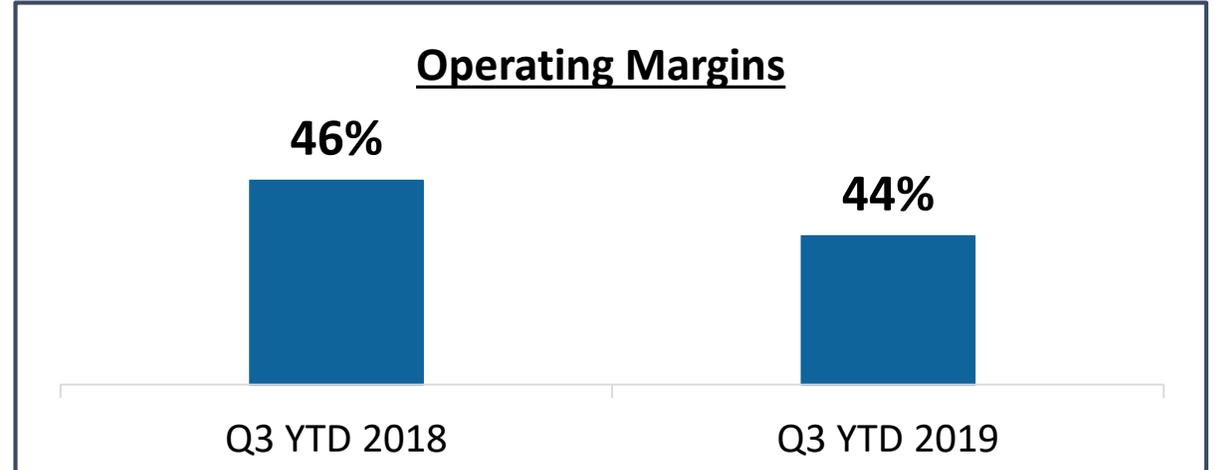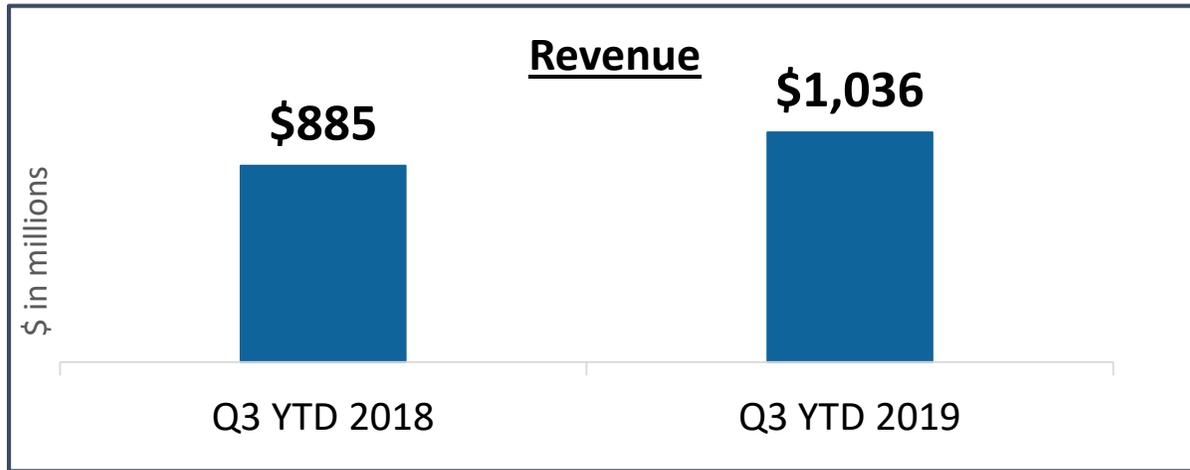
See reconciliation of Non-GAAP financial metrics in Appendix.

Executing on our Growth Strategy

Performance across key metrics

Diversified and resilient business
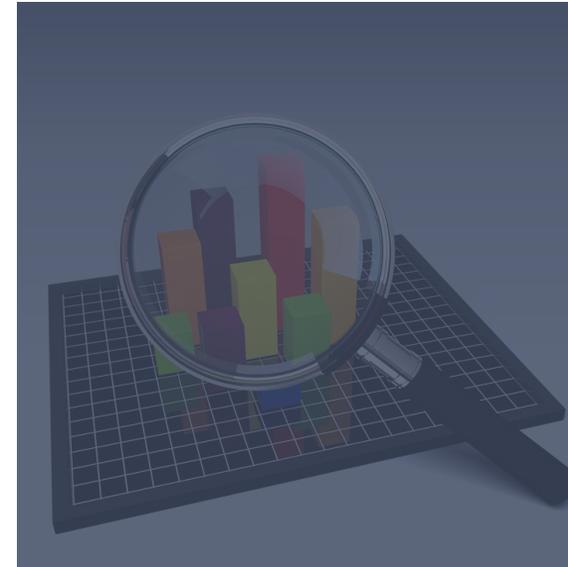
Capital allocation
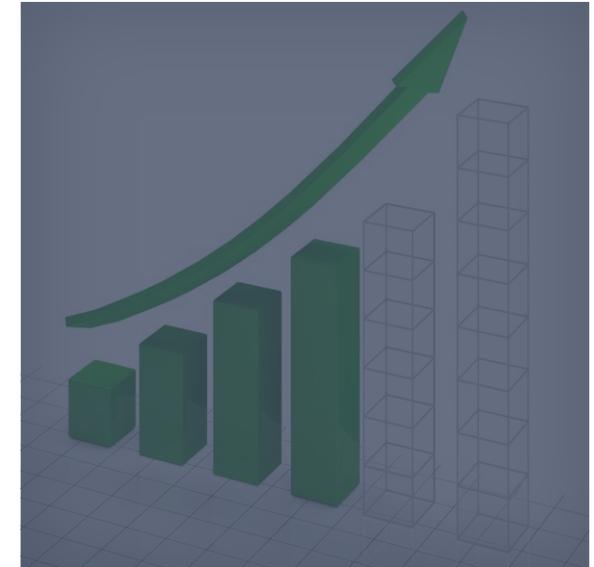
Financial outlook

Geographic Diversity

Revenue by Geography - Non-GAAP

Q3 YTD 2018: Americas, 39% — EMEA, 32% — APAC, 29%

Q3 YTD 2019: Americas, 43% — EMEA, 28% — APAC, 29%
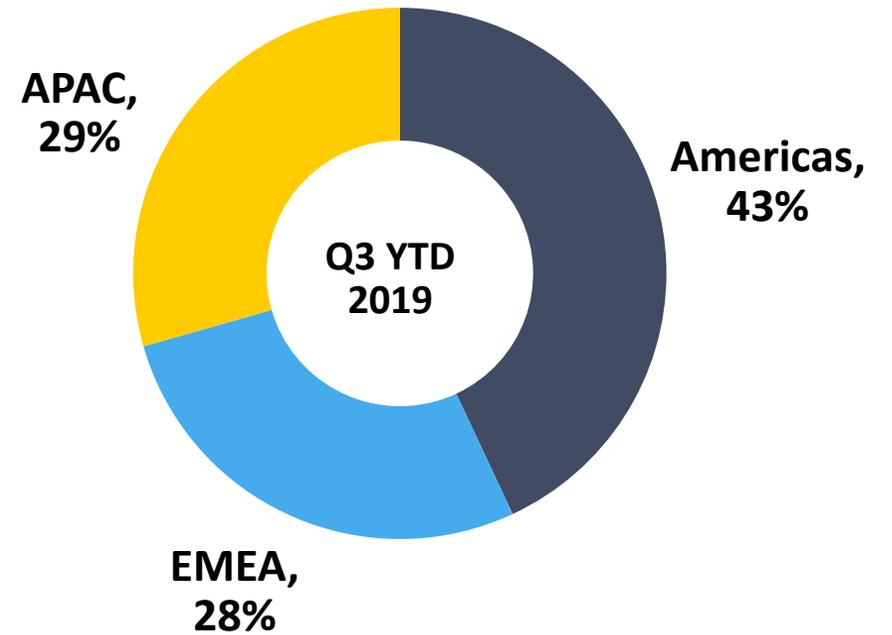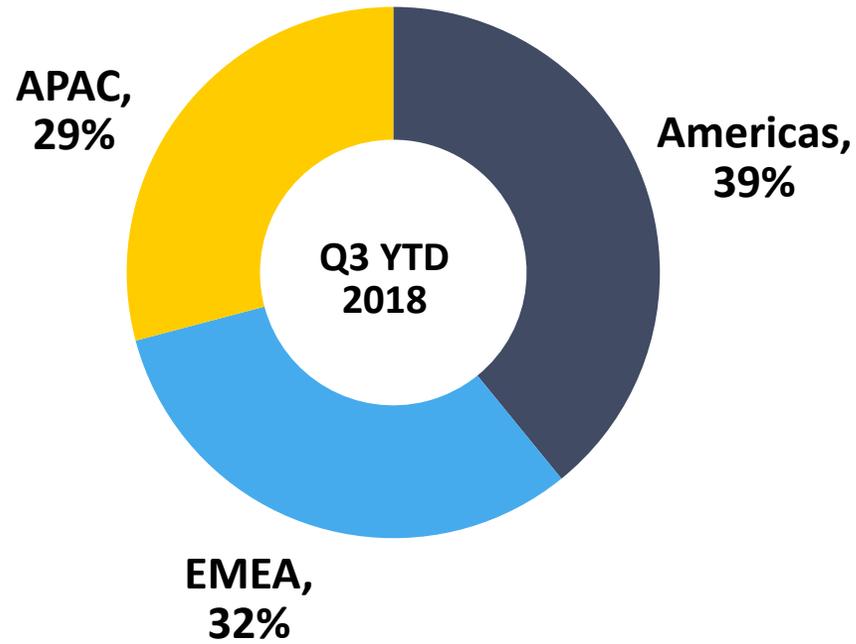
Diverse Customer Base

% Total Trailing Twelve-Month ACV by Industry

- Consumer, 1%
- Aerospace & Defense, 17%
- High-Tech, 35%
- Automotive, 17%
- Industrial Equipment, 10%
- Other, 1%
- Energy, 7%
- Materials & Chemicals, 6%
- Academic, 3%
- Construction, 2%
- Healthcare, 2%
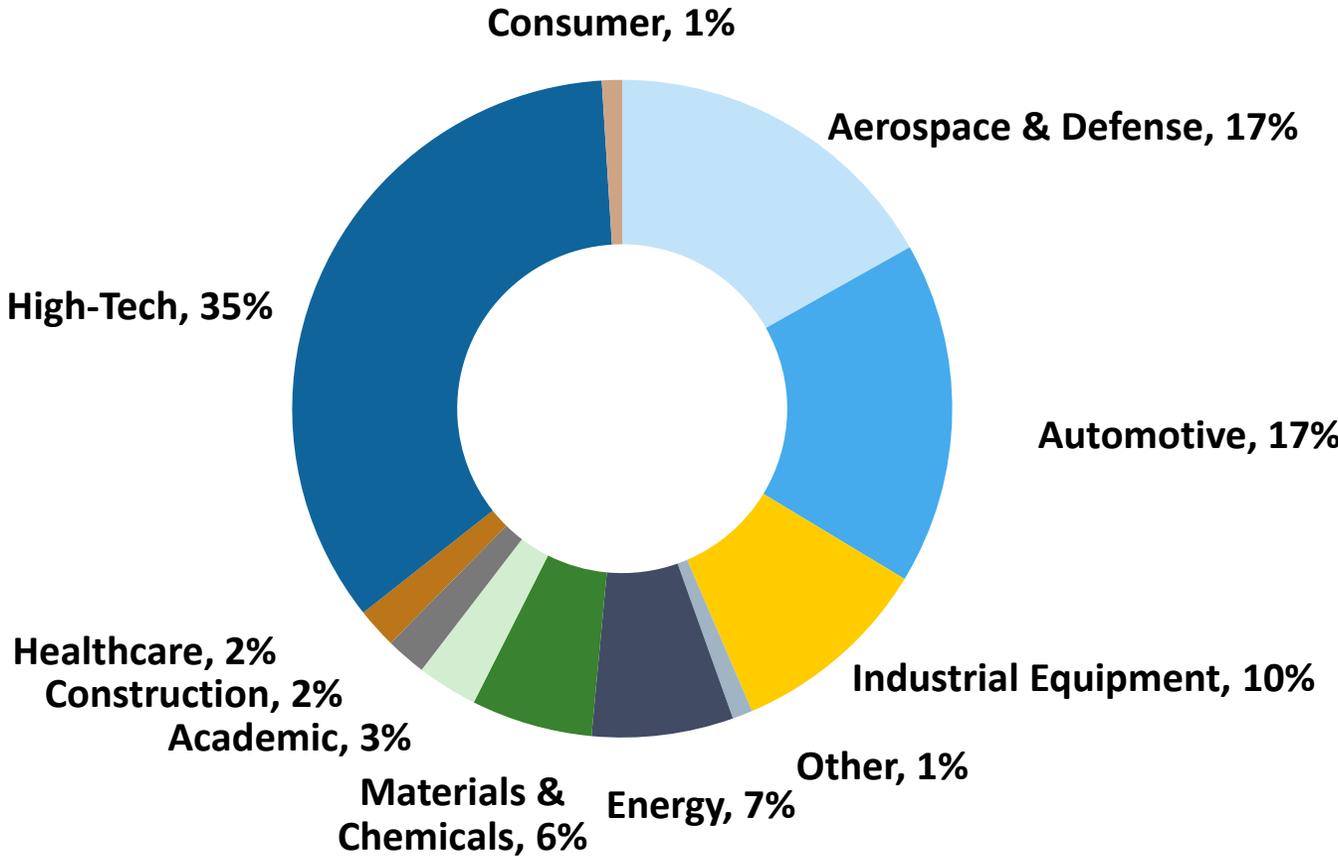
ACV is a performance metric introduced in 2018. See Appendix for ACV definition.

Diverse Revenue Sources

Strong Growth in Lease & Maintenance Revenue

(Revenue by Type - Non-GAAP)
($ Million)

Q3 YTD 2018 — $885
- Service: $27
- Perpetual: $201
- Maintenance: $508
- Lease: $149

Q3 YTD 2019 — $1,036
- Service: $39
- Perpetual: $191
- Maintenance: $566
- Lease: $240
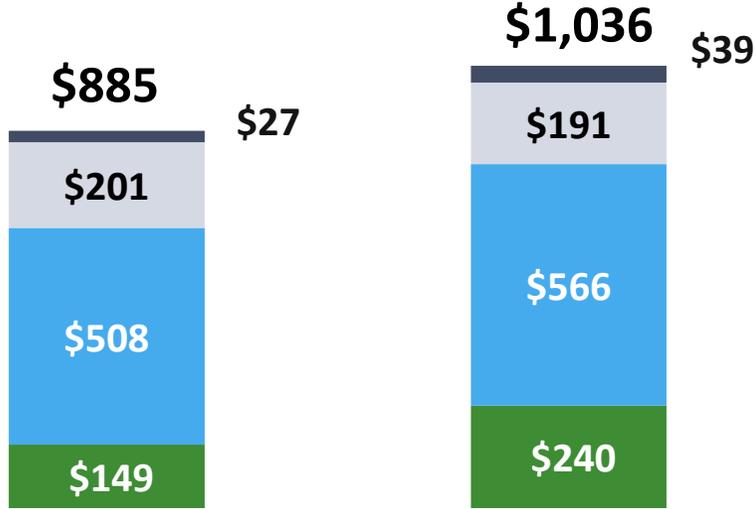
Legend: Lease · Maintenance · Perpetual · Service

(Revenue as a % of Total - Non-GAAP)

Q3 YTD 2018
- Service: 3%
- Perpetual: 23%
- Maintenance: 57%
- Lease: 17%
- Lease & Maintenance Revenue 74%

Q3 YTD 2019
- Service: 4%
- Perpetual: 18%
- Maintenance: 55%
- Lease: 23%
- 78%
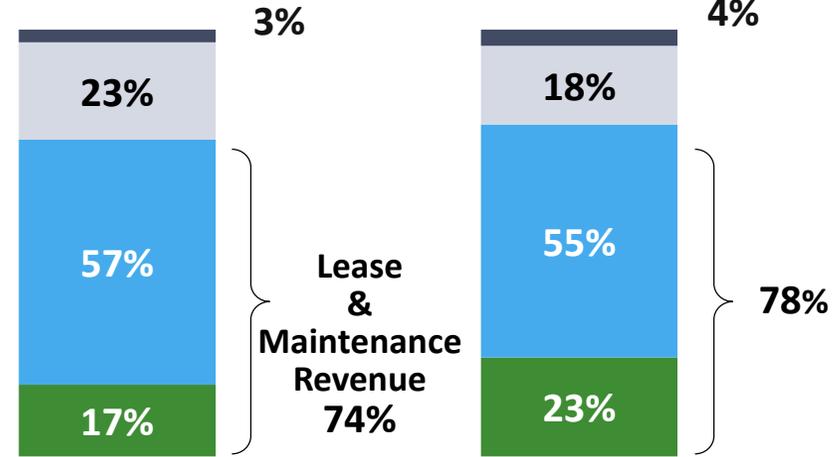
Legend: Lease · Maintenance · Perpetual · Service

Diverse Go-to-Market Revenue

Non-GAAP Revenue by Channel
(% of Total Revenue)

Q3 YTD 2018 — Indirect 23%, Direct 77%

Q3 YTD 2019 — Indirect 24%, Direct 76%
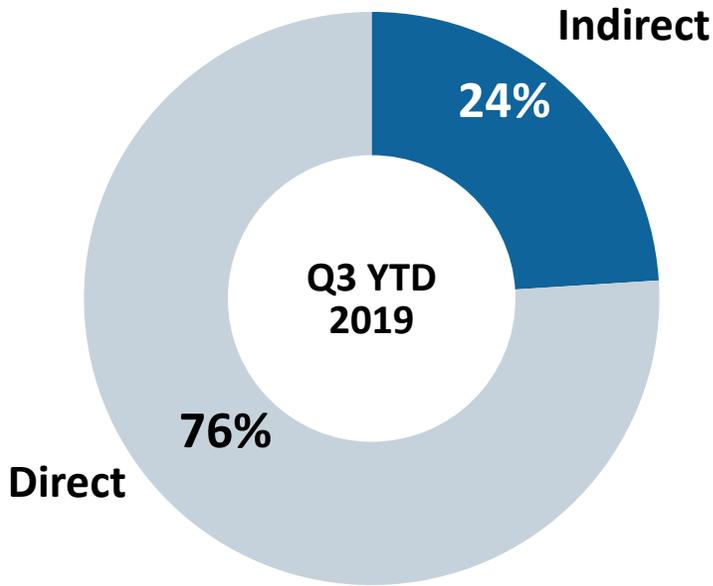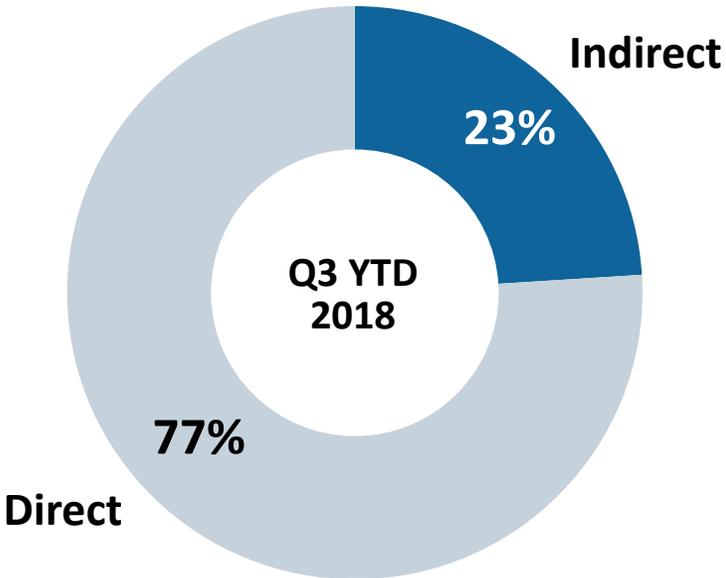
Maintaining a Strong Balance Sheet

As of September 30, 2019	
Cash & short-term investments	**$733M**
Deferred revenue & backlog	**$650M**

Delivering Strong Deferred Revenue and Backlog Growth

Y-O-Y Deferred Revenue & Backlog
($ Million)

19%

Q3 2018 — **$545**

Q3 2019 — **$650**
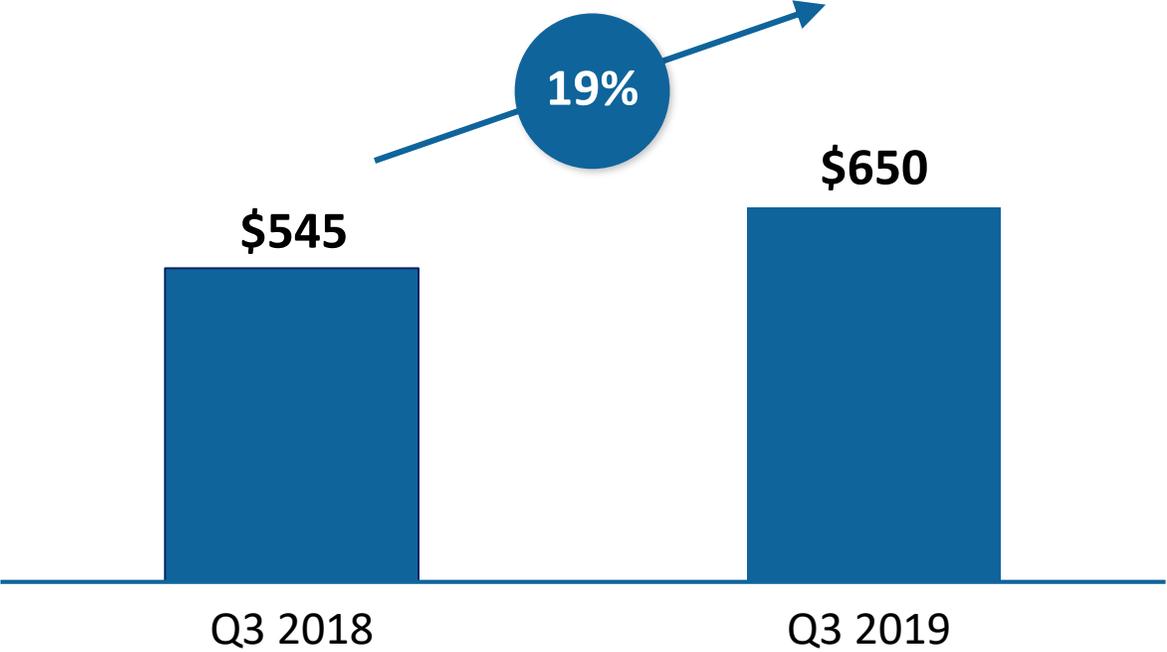
Includes both current and long-term deferred revenue and backlog.

Executing on our Growth Strategy

Performance across key metrics

Diversified and resilient business

Capital allocation
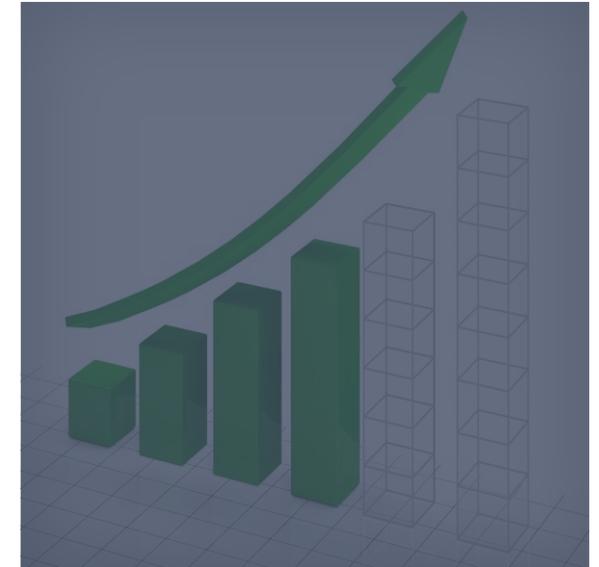
Financial outlook

Capital Allocation Framework

Invest in Organic Growth

- Strategic R&D investment

- Expand field engineering

- Digital transformation and infrastructure build-out

Invest in M&A to Enhance Growth

- Targeted acquisitions

- Leverage cross-selling

- Broaden simulation portfolio and expand TAM

Return Capital to Shareholders

- Maintain a focused repurchasing plan

ANSYS

Targeted M&A To Broaden Simulation Portfolio And Expand TAM

Key Criteria

Strategic Alignment

- Technology alignment considerations
- Gain top talent
- Go-to-market strategy

Growth

- Expand TAM into new markets
- Access to new customers
- Leverage cross-selling

Cultural Fit

- Passion for technology
- Commitment to excellence
- Strong customer relationships

Selectively investing in value-creating opportunities

Return of Excess Capital to Stockholders

➢ **There were no repurchases during Q3**

➢ **We repurchased 0.3 million shares during the first half of 2019 at an average price of $179.41 per share**

➢ **We spent 18% of free cash flow on share repurchases for the first half of 2019**

➢ **As of September 30, 2019, there are 3.5 million shares remaining available for repurchase under our authorized share repurchase program**

Executing on our Growth Strategy

Performance across key metrics

Diversified and resilient business
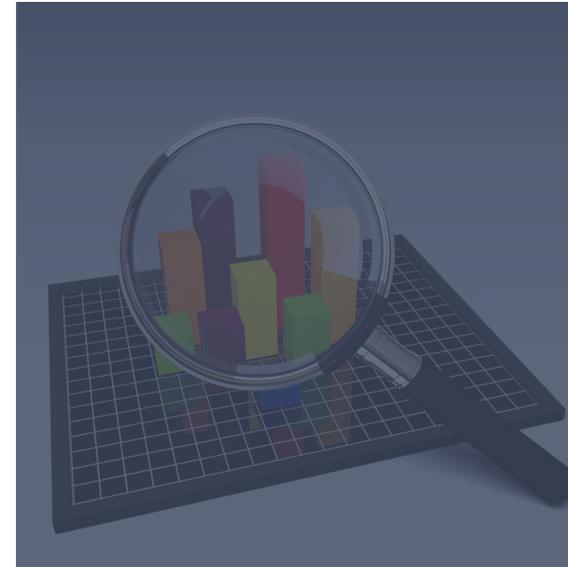
Capital allocation

Financial outlook

Financial Outlook – Q4 2019

	Q4 2019 GAAP	Q4 2019 Non-GAAP
Revenue	**$449.6 - $475.2M**	**$454.1 - $479.1M**
Operating Margin	**34.0% - 38.0%**	**45.0% - 46.5%**
Effective Tax Rate	**18.0% - 18.5%**	**20.0% - 21.0%**
Diluted EPS	**$1.44 - $1.67**	**$1.87 - $2.05**

Outlook speaks only as of November 6, 2019. Any subsequent usage of slide does not constitute guidance confirmation. Refer to Cautionary Statement for a discussion of factors that could cause actual results to differ materially from outlook.

Financial Outlook - FY 2019

|	FY 2019 GAAP	FY 2019 Non-GAAP
Revenue	$1,479.3 - $1,504.9M	$1,490.0 - $1,515.0M
Operating Margin	33.0% - 34.0%	44.5% - 45.0%
Effective Tax Rate	16.0% - 16.5%	20.0% - 20.5%
Diluted EPS	$4.78 - $5.01	$6.20 - $6.38

	FY 2019
Annual Contract Value (ACV)	$1,460.0 - $1,480.0M
Operating Cash Flows	$485.0 - $510.0M

Outlook speaks only as of November 6, 2019. Any subsequent usage of slide does not constitute guidance confirmation. Refer to Cautionary Statement for a discussion of factors that could cause actual results to differ materially from outlook.

The Growth Story Continues to 2022: Marching Towards $2B ACV and Investing Selectively

ACV

11%+ CAGR

$1.5B — 2019
$2.0B — 2022
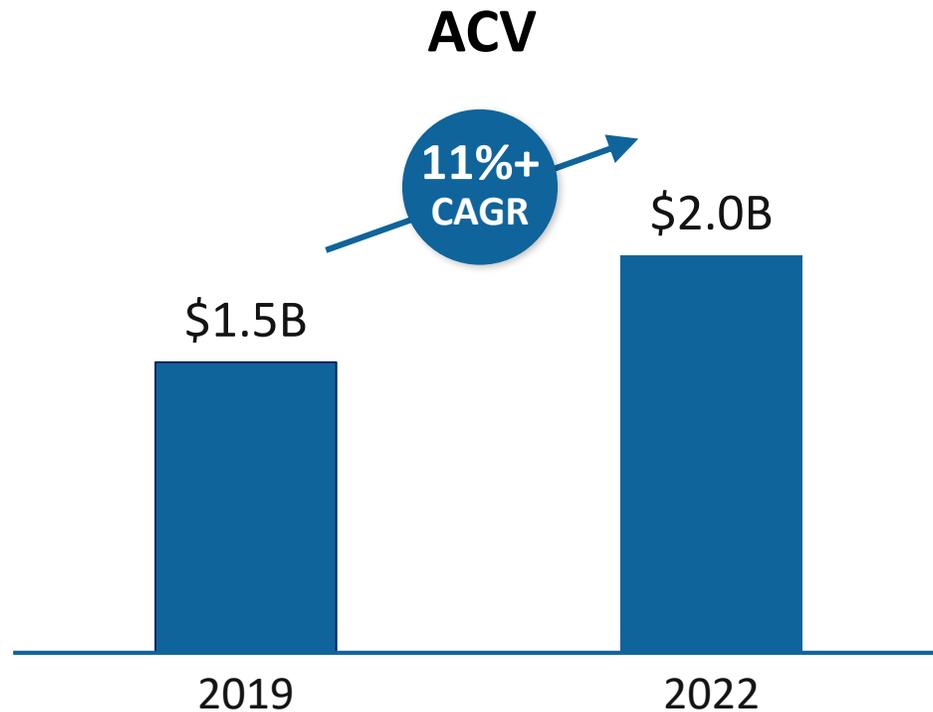
Marching Toward $2 Billion!

- Continued execution on Pervasive Simulation strategy
- Capitalize on emerging high-growth solutions
- Invest in world-class customer-facing expertise
- Includes impact of "tuck-in" acquisitions

Operating Margins
(Non-GAAP)

Investment

44% — 2019
42-44% — 2022
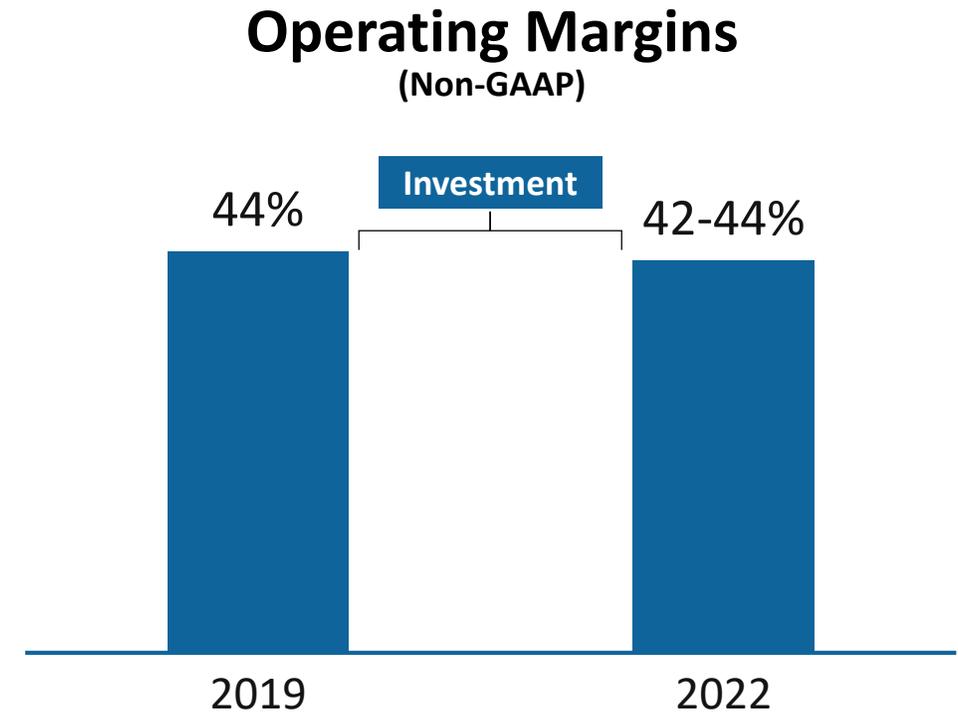
Investing in the Business

- Slight dilution from M&A
- Ongoing infrastructure and digital transformation investments

Refer to Cautionary Statement for a discussion of factors that could cause actual results to differ materially from targets.

# Executing on our Growth Strategy
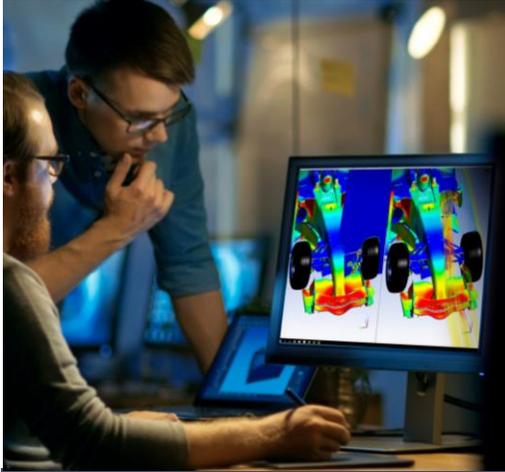
ANSYS is the leader in simulation with a powerful business model
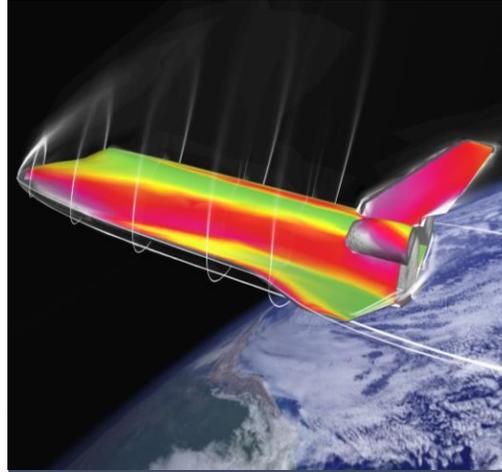
ANSYS' total addressable market will grow ~3x by 2026
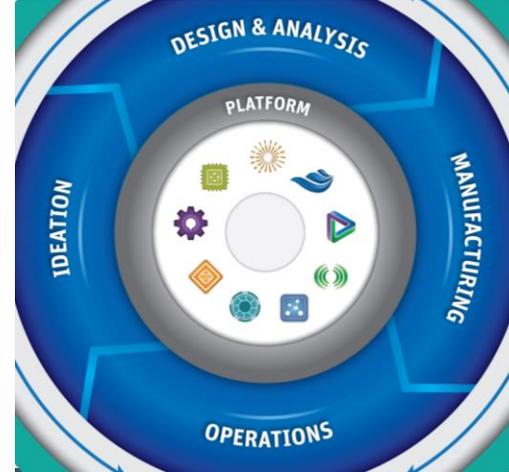
Our strategy is aligned with rapidly growing markets

We are on track to deliver sustained growth and create long-term stockholder value

Continued Double-Digit ACV growth with Industry-Leading Margins

Appendix

Appendix

ANSYS, INC. AND SUBSIDIARIES
Reconciliation of Non-GAAP Measures
(Unaudited)

(in thousands, except percentages and per share data)	Three Months Ended					
	September 30, 2019			September 30, 2018		
	GAAP Results	Adjustments	Non-GAAP Results	GAAP Results	Adjustments	Non-GAAP Results
Total revenue	$ 343,899	$ 1,596 (1)	$ 345,495	$ 289,418	$ 3,548 (4)	$ 292,966
Operating income	105,047	44,675 (2)	149,722	93,024	35,889 (5)	128,913
Operating profit margin	30.5%		43.3%	32.1%		44.0%
Net income	$ 89,463	$ 32,245 (3)	$ 121,708	$ 89,336	$ 23,557 (6)	$ 112,893
Earnings per share – diluted:						
Earnings per share	$ 1.04		$ 1.42	$ 1.04		$ 1.31
Weighted average shares	85,733		85,733	86,043		86,043

(1) Amount represents the revenue not reported during the period as a result of the acquisition accounting adjustment associated with the accounting for deferred revenue in business combinations.

(2) Amount represents $31.9 million of stock-based compensation expense, $0.1 million of excess payroll taxes related to stock-based awards, $8.5 million of amortization expense associated with intangible assets acquired in business combinations, $2.5 million of transaction expenses related to business combinations and the $1.6 million adjustment to revenue as reflected in (1) above.

(3) Amount represents the impact of the adjustments to operating income referred to in (2) above, decreased for the related income tax impact of $12.4 million.

(4) Amount represents the revenue not reported during the period as a result of the acquisition accounting adjustment associated with the accounting for deferred revenue in business combinations.

(5) Amount represents $23.0 million of stock-based compensation expense, $0.3 million of excess payroll taxes related to stock-based awards, $9.0 million of amortization expense associated with intangible assets acquired in business combinations and the $3.5 million adjustment to revenue as reflected in (4) above.

(6) Amount represents the impact of the adjustments to operating income referred to in (5) above, decreased for the related income tax impact of $11.7 million, adjustments related to the transition tax associated with the Tax Cuts and Jobs Act of $0.5 million, and rabbi trust income of $0.1 million.

Appendix

ANSYS, INC. AND SUBSIDIARIES
Reconciliation of Non-GAAP Measures
(Unaudited)

Nine Months Ended

(in thousands, except percentages and per share data)	GAAP Results	Adjustments		Non-GAAP Results	GAAP Results	Adjustments		Non-GAAP Results
	September 30, 2019				September 30, 2018			
Total revenue	$ 1,029,664	$ 6,249	(1)	$ 1,035,913	$ 878,204	$ 6,897	(4)	$ 885,101
Operating income	329,324	126,597	(2)	455,921	296,638	105,796	(5)	402,434
Operating profit margin	32.0%			44.0%	33.8%			45.5%
Net income	$ 285,443	$ 84,841	(3)	$ 370,284	$ 266,212	$ 65,591	(6)	$ 331,803
Earnings per share – diluted:								
Earnings per share	$ 3.34			$ 4.33	$ 3.09			$ 3.86
Weighted average shares	85,570			85,570	86,060			86,060

(1)   Amount represents the revenue not reported during the period as a result of the acquisition accounting adjustment associated with the accounting for deferred revenue in business combinations.

(2)   Amount represents $84.8 million of stock-based compensation expense, $4.5 million of excess payroll taxes related to stock-based awards, $25.4 million of amortization expense associated with intangible assets acquired in business combinations, $5.6 million of transaction expenses related to business combinations and the $6.2 million adjustment to revenue as reflected in (1) above.

(3)   Amount represents the impact of the adjustments to operating income referred to in (2) above, decreased for the related income tax impact of $39.7 million, adjustments related to the transition tax associated with the Tax Cuts and Jobs Act of $1.8 million, and rabbi trust income of $0.3 million.

(4)   Amount represents the revenue not reported during the period as a result of the acquisition accounting adjustment associated with the accounting for deferred revenue in business combinations.

(5)   Amount represents $58.9 million of stock-based compensation expense, $3.8 million of excess payroll taxes related to stock-based awards, $33.8 million of amortization expense associated with intangible assets acquired in business combinations, $2.4 million of transaction expenses related to business combinations and the $6.9 million adjustment to revenue as reflected in (4) above.

(6)   Amount represents the impact of the adjustments to operating income referred to in (5) above, decreased for the related income tax impact of $41.0 million and rabbi trust income of $0.1 million, and increased for adjustments related to the transition tax associated with the Tax Cuts and Jobs Act of $0.9 million.

Appendix

ANSYS, INC. AND SUBSIDIARIES

Reconciliation of Forward-Looking Guidance

Quarter Ending December 31, 2019

	Operating Margin	Earnings Per Share Range - Diluted
U.S. GAAP expectation	34.0% - 38.0%	$1.44 - $1.67
Adjustment to exclude acquisition adjustments to deferred revenue	0.8% - 1.0%	$0.04
Adjustment to exclude acquisition-related amortization	1.8% - 2.1%	$0.07 - $0.08
Adjustment to exclude stock-based compensation	5.8% - 7.7%	$0.26 -$0.30
Adjustment to exclude acquisition-related transaction expenses	0.1% - 0.2%	$0.01
Non-GAAP expectation	45.0% - 46.5%	$1.87 - $2.05

ANSYS, INC. AND SUBSIDIARIES

Reconciliation of Forward-Looking Guidance

Year Ending December 31, 2019

	Operating Margin	Earnings Per Share Range - Diluted
U.S. GAAP expectation	33.0% - 34.0%	$4.78 - $5.01
Adjustment to exclude acquisition adjustments to deferred revenue	0.7%	$0.09 - $0.10
Adjustment to exclude acquisition-related amortization	2.2% - 2.4%	$0.30 - $0.31
Adjustment to exclude stock-based compensation	7.7% - 8.0%	$0.94 - $0.97
Adjustment to exclude acquisition-related transaction expenses	0.4%	$0.06
Adjustment to exclude transition tax adjustments related to the Tax Cuts and Jobs Act	-	($0.02)
Non-GAAP expectation	44.5% - 45.0%	$6.20 - $6.38

Use of Non-GAAP Measures

The Company provides non-GAAP revenue, non-GAAP operating income, non-GAAP operating profit margin, non-GAAP net income and non-GAAP diluted earnings per share as supplemental measures to GAAP regarding the Company's operational performance. These financial measures exclude the impact of certain items and, therefore, have not been calculated in accordance with GAAP. A detailed explanation of each of the adjustments to such financial measures is described below. This press release also contains a reconciliation of each of these non-GAAP financial measures to its most comparable GAAP financial measure.

Management uses non-GAAP financial measures (a) to evaluate the Company's historical and prospective financial performance as well as its performance relative to its competitors, (b) to set internal sales targets and spending budgets, (c) to allocate resources, (d) to measure operational profitability and the accuracy of forecasting, (e) to assess financial discipline over operational expenditures and (f) as an important factor in determining variable compensation for management and its employees. In addition, many financial analysts that follow the Company focus on and publish both historical results and future projections based on non-GAAP financial measures. The Company believes that it is in the best interest of its investors to provide this information to analysts so that they accurately report the non-GAAP financial information. Moreover, investors have historically requested, and the Company has historically reported, these non-GAAP financial measures as a means of providing consistent and comparable information with past reports of financial results.

While management believes that these non-GAAP financial measures provide useful supplemental information to investors, there are limitations associated with the use of these non-GAAP financial measures. These non-GAAP financial measures are not prepared in accordance with GAAP, are not reported by all the Company's competitors and may not be directly comparable to similarly titled measures of the Company's competitors due to potential differences in the exact method of calculation. The Company compensates for these limitations by using these non-GAAP financial measures as supplements to GAAP financial measures and by reviewing the reconciliations of the non-GAAP financial measures to their most comparable GAAP financial measures.

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Appendix - Reconciliations Of GAAP To Non-GAAP Financial Information

Earnings Per Share

	Q3 2019 QTD	Q3 2019 YTD
Diluted earnings per share (GAAP)	$1.04	$3.34
Acquisition adjustments to deferred revenue	$0.02	$0.06
Acquisition-related amortization	$0.10	$0.30
Stock-based compensation	$0.37	$1.04
Acquisition-related transaction expenses	$0.03	$0.07
Adjustments related to Tax Cuts and Jobs Act	-	($0.02)
Income tax impact	($0.14)	($0.46)
Diluted earnings per share (Non-GAAP)	$1.42	$4.33

Appendix - Reconciliations Of GAAP To Non-GAAP Financial Information

Revenue by Geography
Q3 2018 YTD
in millions, except percentages

Geography	Geographic Revenue (GAAP)	% of Total GAAP Revenue	Acquisition Adjustments to Deferred Revenue	Geographic Revenue (Non-GAAP)	% of Total Non-GAAP Revenue
Americas	$345	39.3%	$1	$346	39.1%
APAC	$255	29.0%	$3	$258	29.1%
EMEA	$278	31.7%	$3	$281	31.8%
Total Revenue	$878		$7	$885	

Revenue by Geography
Q3 2019 YTD
in millions, except percentages

Geography	Geographic Revenue (GAAP)	% of Total GAAP Revenue	Acquisition Adjustments to Deferred Revenue	Geographic Revenue (Non-GAAP)	% of Total Non-GAAP Revenue
Americas	$443	43.0%	$3	$446	43.1%
APAC	$304	29.5%	$1	$305	29.4%
EMEA	$283	27.5%	$2	$285	27.5%
Total Revenue	$1,030		$6	$1,036	

Appendix - Reconciliations Of GAAP To Non-GAAP Financial Information

Revenue by Geography
Q3 2018 YTD
in millions, except percentages

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EMEA	$283	27.5%	$2	$285	27.5%
Total Revenue	$1,030		$6	$1,036	

Appendix - Reconciliations Of GAAP To Non-GAAP Financial Information

Revenue by Source

in millions	Q3 2018 YTD ($ in millions)	Q3 2018 YTD (%)	Q3 2019 YTD ($ in millions)	Q3 2019 YTD (%)
Lease Revenue (GAAP)	$149	17%	$240	23%
Acquisition adjustments to deferred revenue	-		-	-
Total Lease Revenue (Non-GAAP)	$149	17%	$240	23%
Maintenance Revenue (GAAP)	$501	57%	$560	54%
Acquisition adjustments to deferred revenue	$7		$6	
Total Maintenance Revenue (Non-GAAP)	$508	57%	$566	55%
Perpetual Revenue (GAAP)	$201	23%	$191	19%
Acquisition adjustments to deferred revenue	-	-	-	-
Total Perpetual Revenue (Non-GAAP)	$201	23%	$191	18%
Service Revenue (GAAP)	$27	3%	$39	4%
Acquisition adjustments to deferred revenue	-	-	-	-
Total Service Revenue (Non-GAAP)	$27	3%	$39	4%

Appendix - Reconciliations Of GAAP To Non-GAAP Financial Information

Revenue by Channel
Q3 2018 YTD
in millions, except percentages

| Channel	Channel Revenue (GAAP)	% of Total GAAP Revenue	Acquisition Adjustments to Deferred Revenue	Channel Revenue (Non-GAAP)	% of Total Non-GAAP Revenue
Direct	$669	76.1%	$6	$675	76.3%
Indirect	$209	23.9%	1	$210	23.7%
Total Revenue	$878		$7	$885	

Revenue by Channel
Q3 2019 YTD
in millions, except percentages

Channel	Channel Revenue (GAAP)	% of Total GAAP Revenue	Acquisition Adjustments to Deferred Revenue	Channel Revenue (Non-GAAP)	% of Total Non-GAAP Revenue
Direct	$782	75.9%	$6	$788	76.0%
Indirect	$248	24.1%	-	$248	24.0%
Total Revenue	$1,030		$6	$1,036	

ACV metric will provide increased clarity into business health

NEW ANNUALIZED CONTRACT VALUE (ACV) METRIC

= **Bookings that occur during the quarter** **+** **Bookings in previous quarters with current period start date** **−** **Bookings in current quarter with a future start date** **+/−** **Adjustment to annualize time-based license and maintenance contracts greater than 1 year**
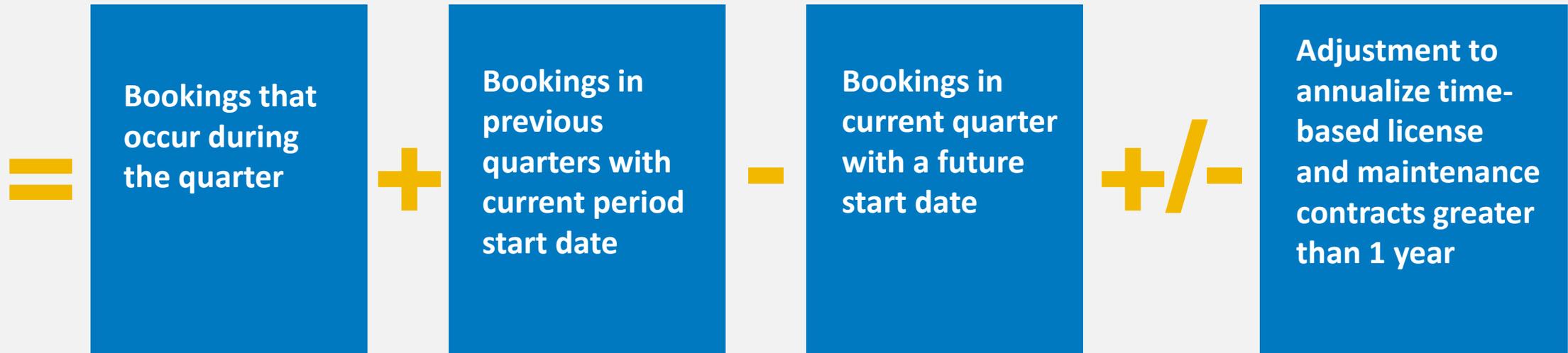
- We will continue to report and provide guidance on the same key financial metrics as we do today (revenue, operating margin, EPS, tax rate, etc.)

- We will begin disclosing fiscal year guidance on operating cash flow, free cash flow and ACV

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