

# Innovation Through Pervasive Engineering Simulation

Investor Presentation

Q4 and FY 2019

NASDAQ: ANSS



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

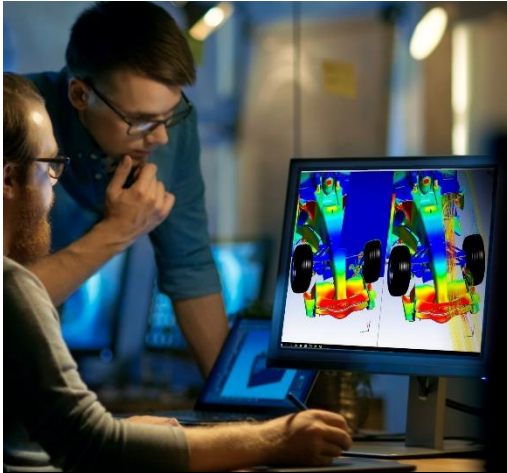
This presentation contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are statements that provide current expectations or forecasts of future events based on certain assumptions. Forward-looking statements are subject 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 employee or 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 including pandemics such as the coronavirus 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; 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.

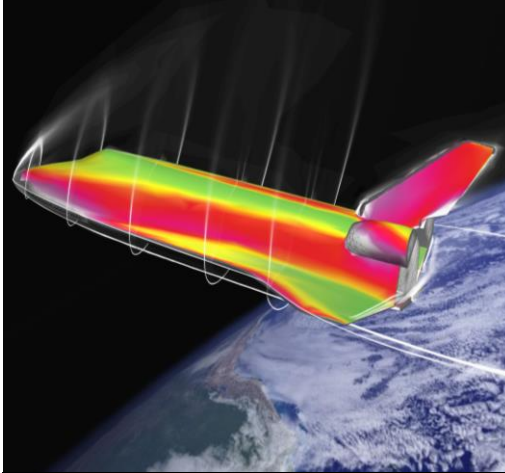
Forward-looking statements speak only as of the date they are made and we undertake no obligation to publicly update forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law. We may not actually achieve the plans, intentions, or expectations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

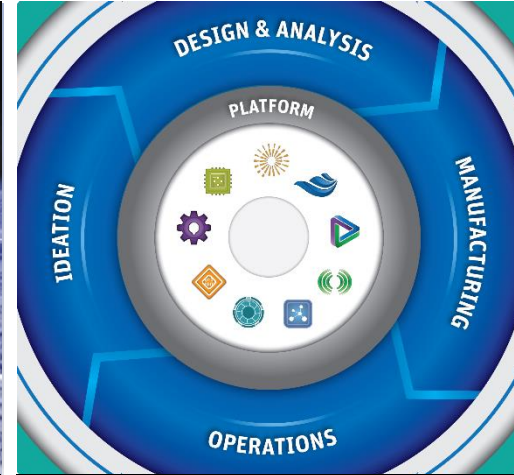
# Well-Positioned in a Growing Market



**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** **Nasdaq 100**  
**Index**

**\$24B market capitalization**

**COMMITTED**

OVERALL CUSTOMER SATISFACTION  
GLOBALLY (2018): 89.1%

**CAPABLE**

**4,100** EMPLOYEES GLOBALLY

90 ANSYS OFFICES  
>100 CHANNEL  
PARTNERS GLOBALLY

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

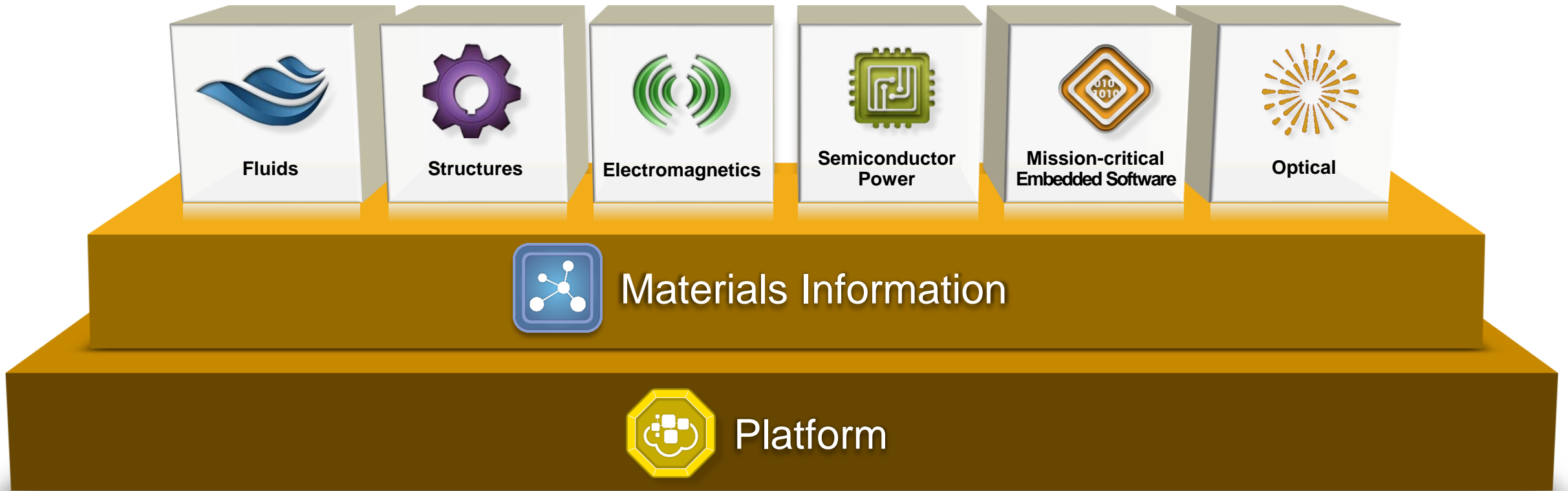
# World-class companies leveraging our platform

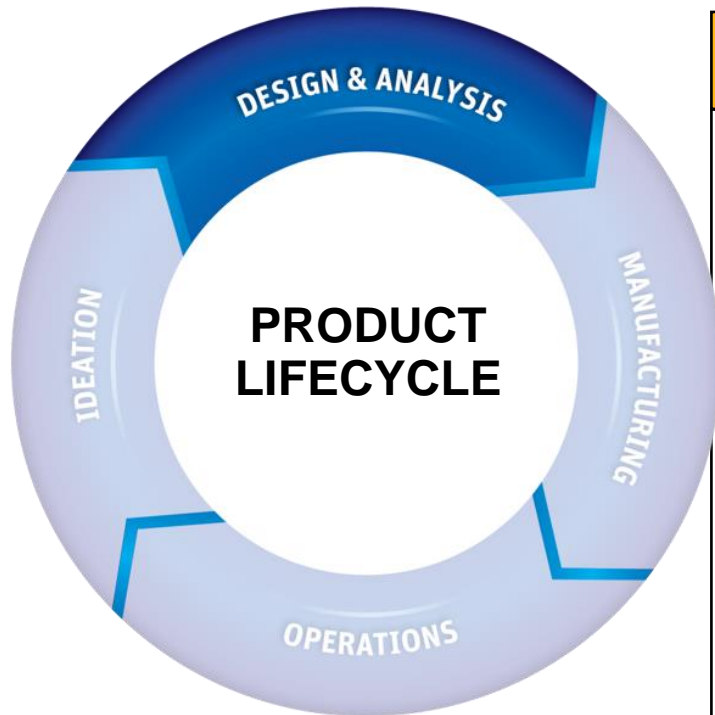
# / Ansys Offers the Only True Simulation Platform...

With best-of-breed simulation across all major physics

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



# Anslys' Simulation Provides Customers Top-Line Growth and Bottom-Line Savings



## 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**

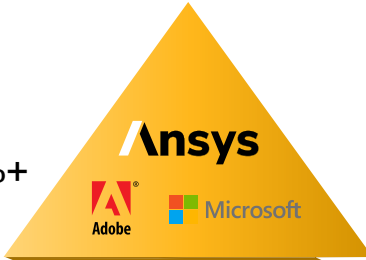
**High barriers to entry**



# Rare Combination of Scale, Profitability and Growth

## Growth

CY'19 Revenue Growth ~10%+  
3 Companies



## Profitability

CY'19 EBITDA Margin > 40%  
12 Companies



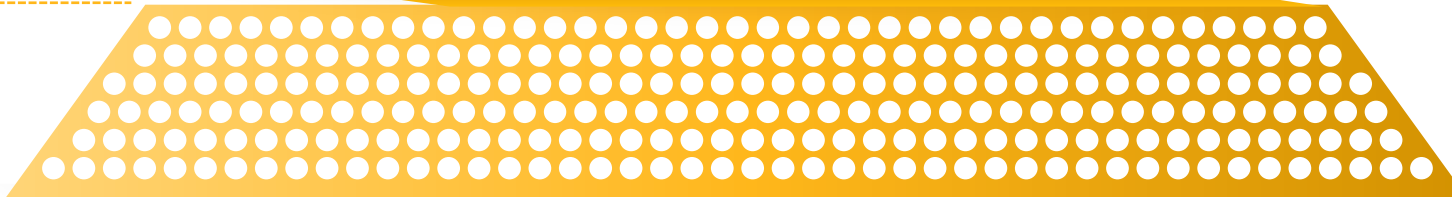
## Scale

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



## Broad Universe

Public Software  
~250 Companies



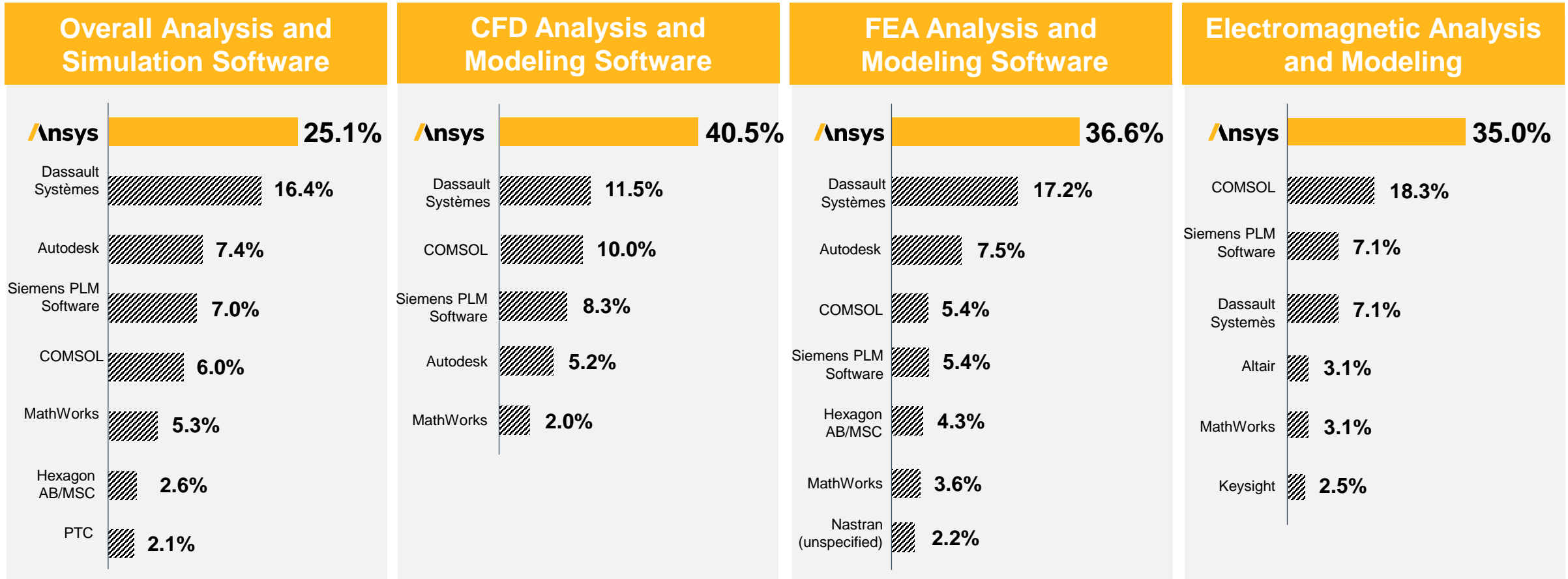
Bank of America  
Merrill Lynch

Source: Capital IQ as of July 23, 2019. Note: Analysis reflects companies with a market capitalization greater than \$50M.

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



## First Mention / Top Of Mind – Unaided Awareness



Source: Peerless Media (Publisher of Digital Engineering magazine)

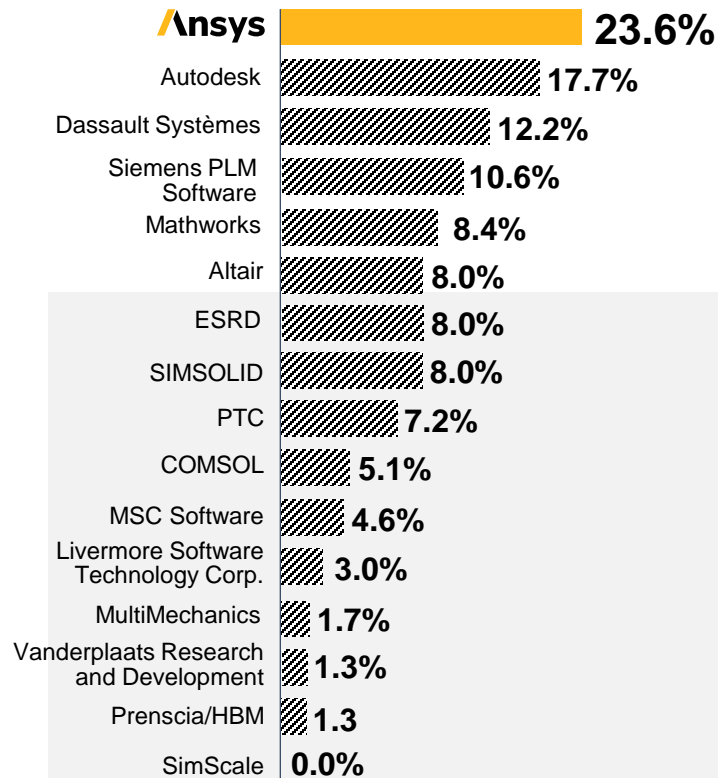


# ...And our Knowledge and Quality Leadership

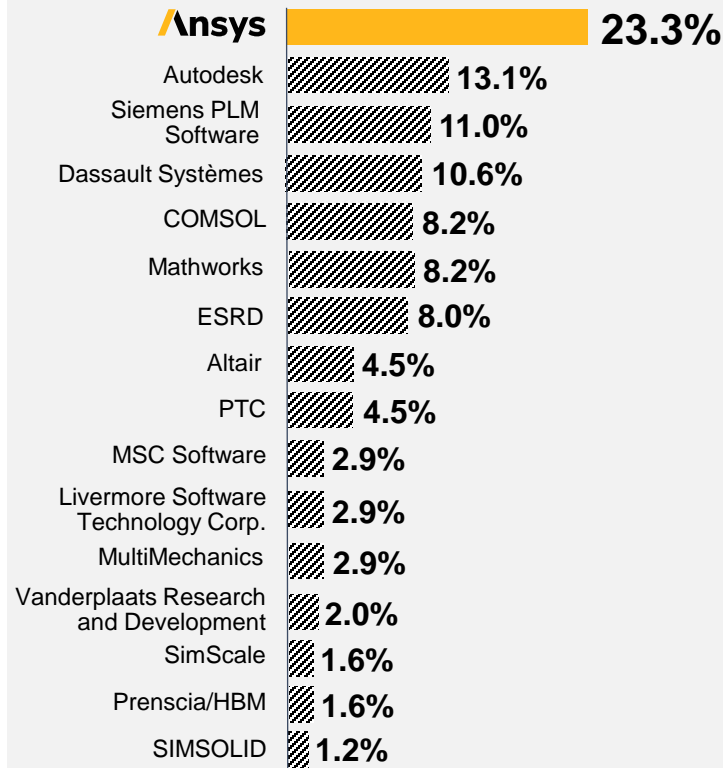


## The ONE Company...

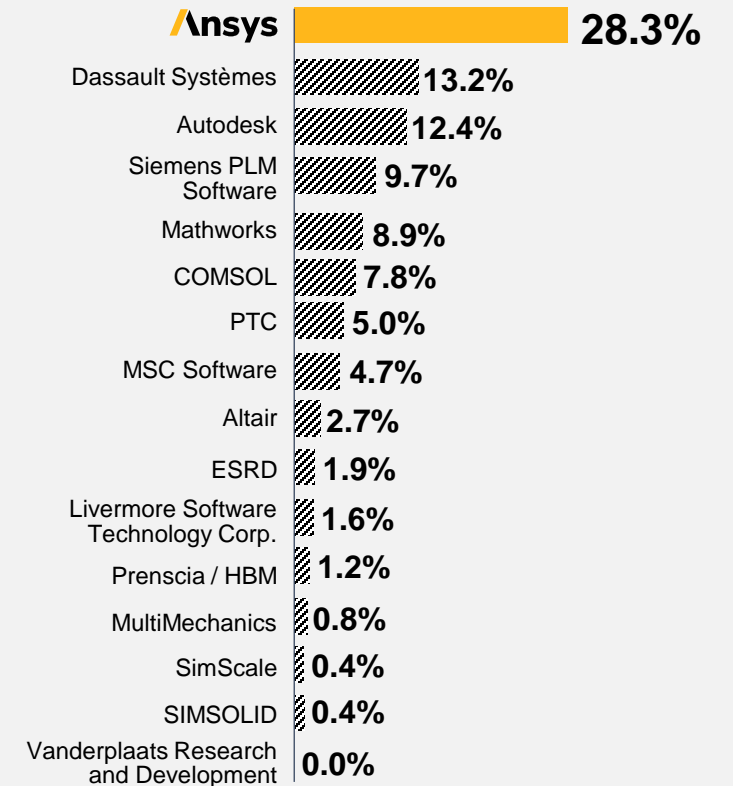
### Most Trustworthy



### Most Knowledgeable Service



### Highest Quality Products



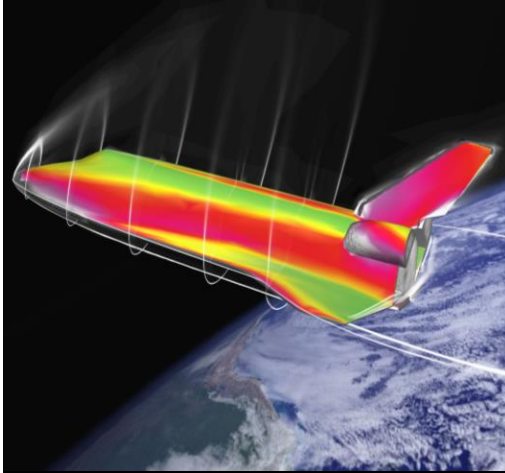
Sour



# Well-Positioned in a Growing Market



**Ansys is the simulation market leader**



**The simulation market is strong and growing**

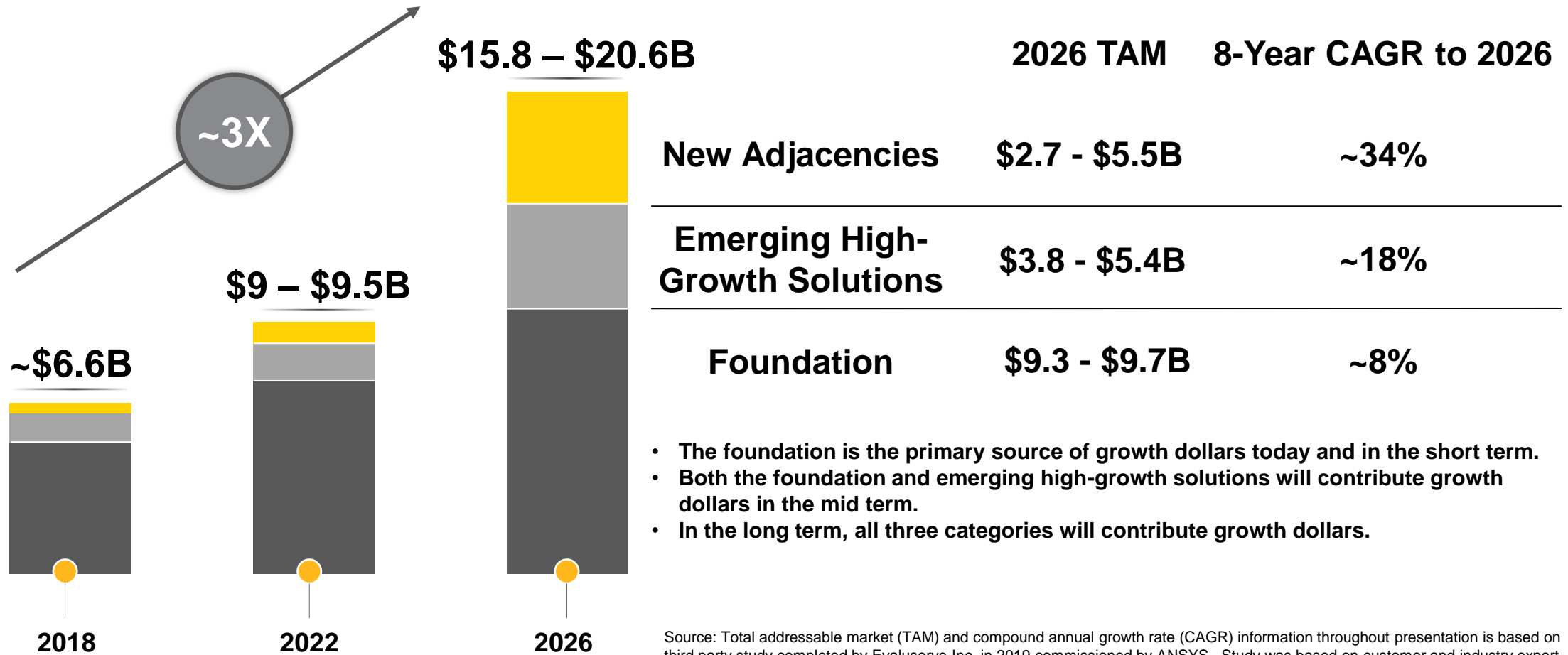


**Our strategy capitalizes on this growing market**



**We have a proven record of execution**

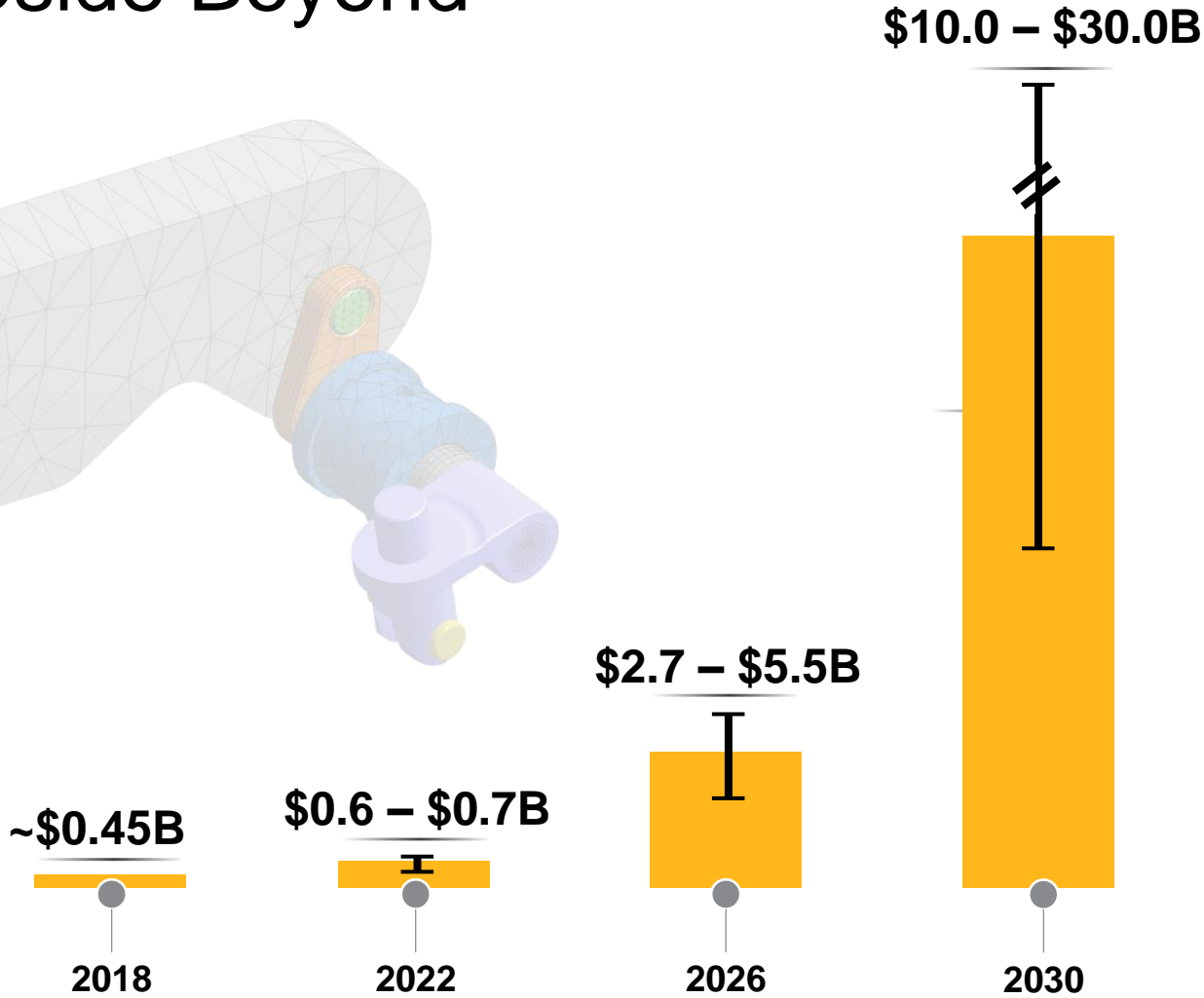
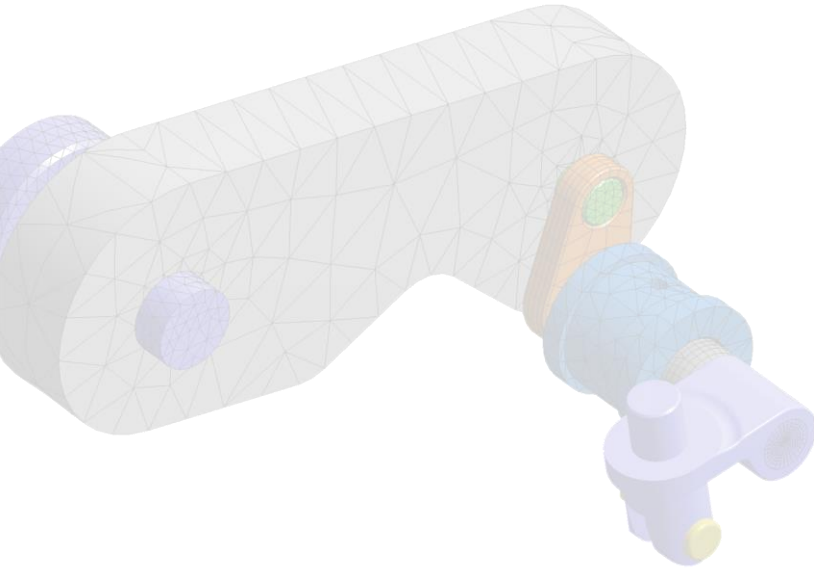
# The Ansys Total Addressable Market For Simulation will ~Triple in the Next 7-10 Years



- 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.

Source: Total addressable market (TAM) and compound annual growth rate (CAGR) information throughout presentation is based on third party study completed by Evaluserve Inc. in 2019 commissioned by ANSYS. Study was based on customer and industry expert interviews and review of industry analyst reports and commentaries. Refer to Cautionary Statement for a discussion of factors that could impact future financial results.

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

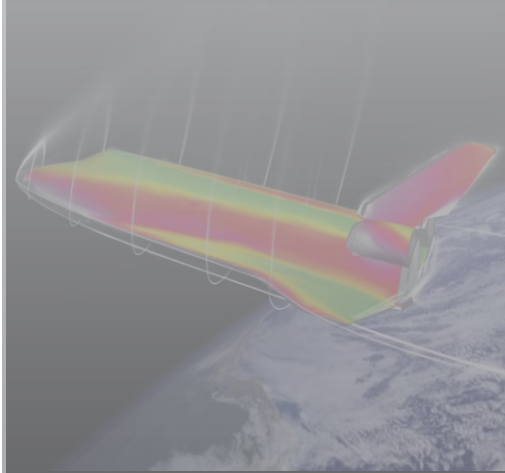


New adjacencies	
2026 TAM	CAGR
\$2.7 – \$5.5B	~32%
<hr/>	
2030 TAM	CAGR
\$10.0 – \$30.0B	~37%

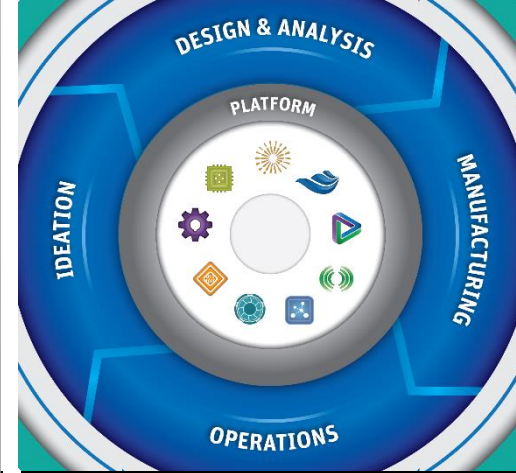
# Well-Positioned in a Growing Market



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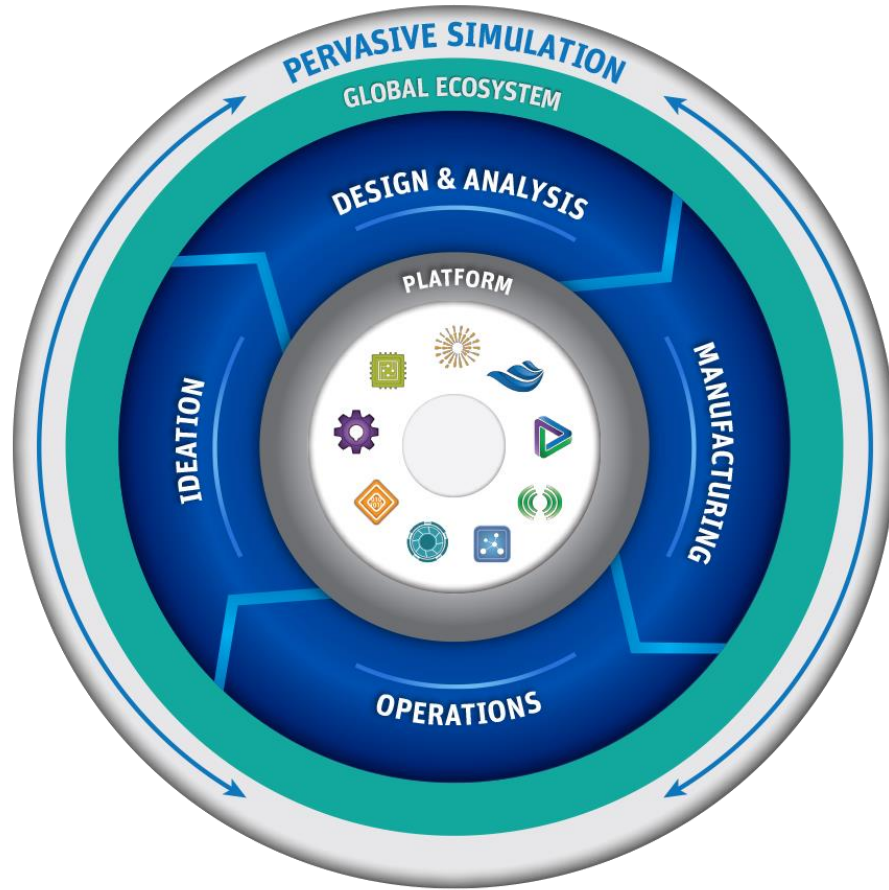


**Our strategy capitalizes on this growing market**



**We have a proven record of execution**

# Our Product Strategy is Based on Pervasive Simulation



## Pervasive Simulation Is:

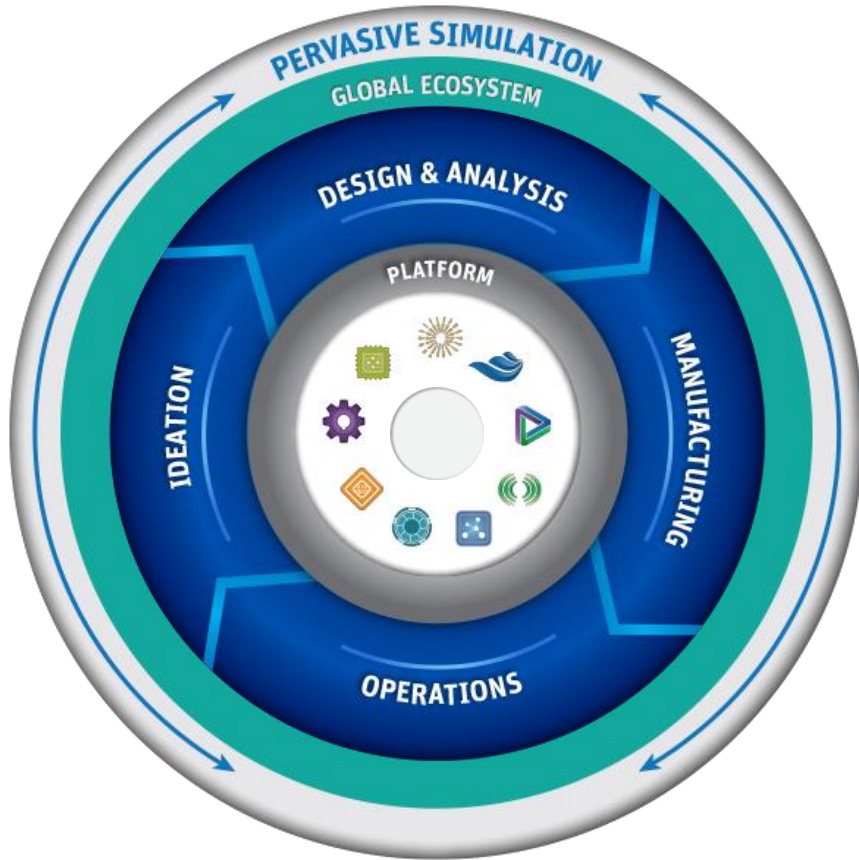
- Integration across all physics on a single open platform
- And the injection of simulation into partner ecosystems

## 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



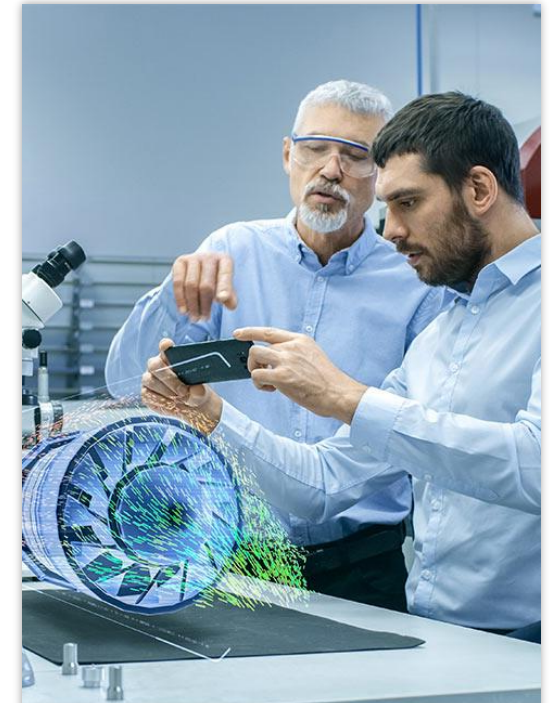
**Accuracy**



**True  
Multiphysics**









**Close Technical  
Partnership**



**Advanced  
Methods**

# / We are Uniquely Positioned to Make Simulation Pervasive...



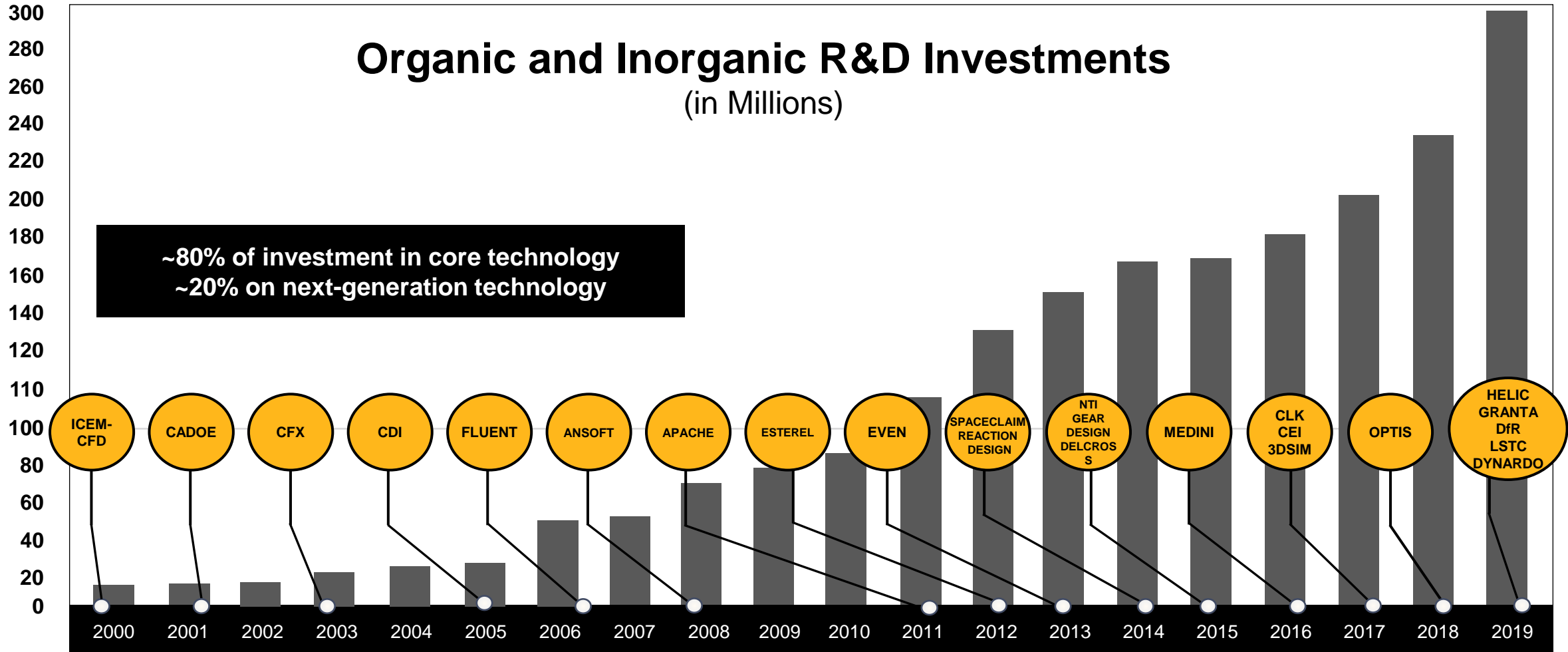
	#1 STRUCTURES 	#1 FLUIDS 	#1 ELECTRO- MAGNETICS 	#1 SEMICONDUCTOR POWER 	#1 SAFETY-CRITICAL EMBEDDED SOFTWARE 	#1 MATERIALS 	#1 OPTICAL 
	●	●	●	●	●	●	●
COMPETITOR #1	○	○	○				
COMPETITOR #2	○	●	○		○	○	○
COMPETITOR #3	●	○	●		○		
COMPETITOR #4	○	○	○		○		
COMPETITOR #5	○	○					
COMPETITOR #6	○					○	
COMPETITOR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



Source: Annual ANSYS R&D expense reported in Form 10-K. Refer to [www.investors.ansys.com](http://www.investors.ansys.com) for additional details on acquisitions.

# Ansys Long-Term Technology Strategy Dimensions



## Artificial Intelligence and Machine Learning

- Simulation used to train AI methods
- AI used to improve simulation
- ML based Models & data confluence



## Digital and Physical Worlds

- AR/VR for Simulation brings digital world to physical
- IOT and Connectedness brings physical world to digital
- Smart Energy, Smart Cities



## Platform for Multi-physics simulation

- Seamless simulation & visualization process
- Robust Multiphysics, Multi-disciplinary Optimization
- Azure/AWS microservices for simulation



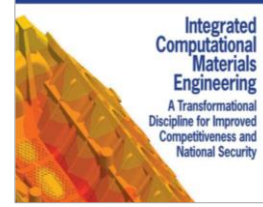
## Digital Transformation

- Digital Threads, Digital Continuity, Digital Twins
- Model Based Systems Engineering
- Simulation-led engineering outcome



## Hyperscale Simulation, Collaboration on Cloud

- GPU, SMP, MPI, Task based
- Quantum computing?
- Hyperscale Real Time Simulation



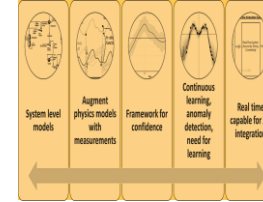
## Computational Methods in New Areas

- Integrated Computational Materials Engineering
- Computational Chemistry, Drug Design, Healthcare,
- Photonic IC, 3D IC, Digital Manufacturing



## Predictive and Robust Design

- High accuracy, adaptive numerical methods
- Integrated Verification and Validation
- Uncertainty Quantification



## How can Simulation be Disrupted?

- ML based Flow-Solver, Generative design
- Integrated synthesis and verification
- Automated Mixed mode (0D-4D), MF, MS simulation

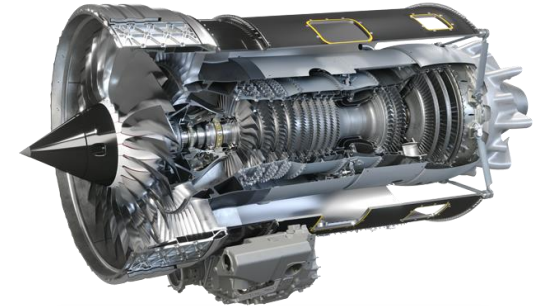
# Improving Materials Intelligence across the Portfolio



## 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



## 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



## NEWS RELEASE

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**Investors**    Annette Arribas  
724.820.3700  
annette.arribas@ansys.com

### **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 1<sup>st</sup> 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

**GRANTA**  
MATERIAL INTELLIGENCE

Helic

DfR

OPTIS

LSTC  
Livermore Software  
Technology Corp.

dynardo  
dynamic software & engineering

	ADJACENCIES			EMERGING HIGH-GROWTH SOLUTIONS			
STRENGTHENS CORE	ADDITIVE MFG.	DESIGN ENGINEERS	DIGITAL TWIN	ELECTRIFICATION	AUTONOMOUS	5G	IIoT
GRANTA	✓	✓	✓	✓			✓
Helic	✓				✓	✓	
DfR	✓		✓	✓	✓	✓	✓
OPTIS	✓		✓		✓		✓
LSTC	✓			✓	✓		
dynardo	✓	✓	✓	✓	✓		✓

# / 2. Grow Industry-Leading Simulation Platform

## Computer Aided Engineering Digital Thread

### Simulation Process and Data Management

Traceability, collaboration and decision support

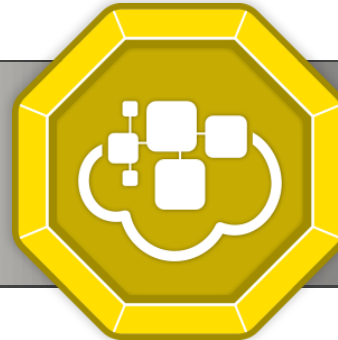
### Multiphysics Process Integration and Optimization

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

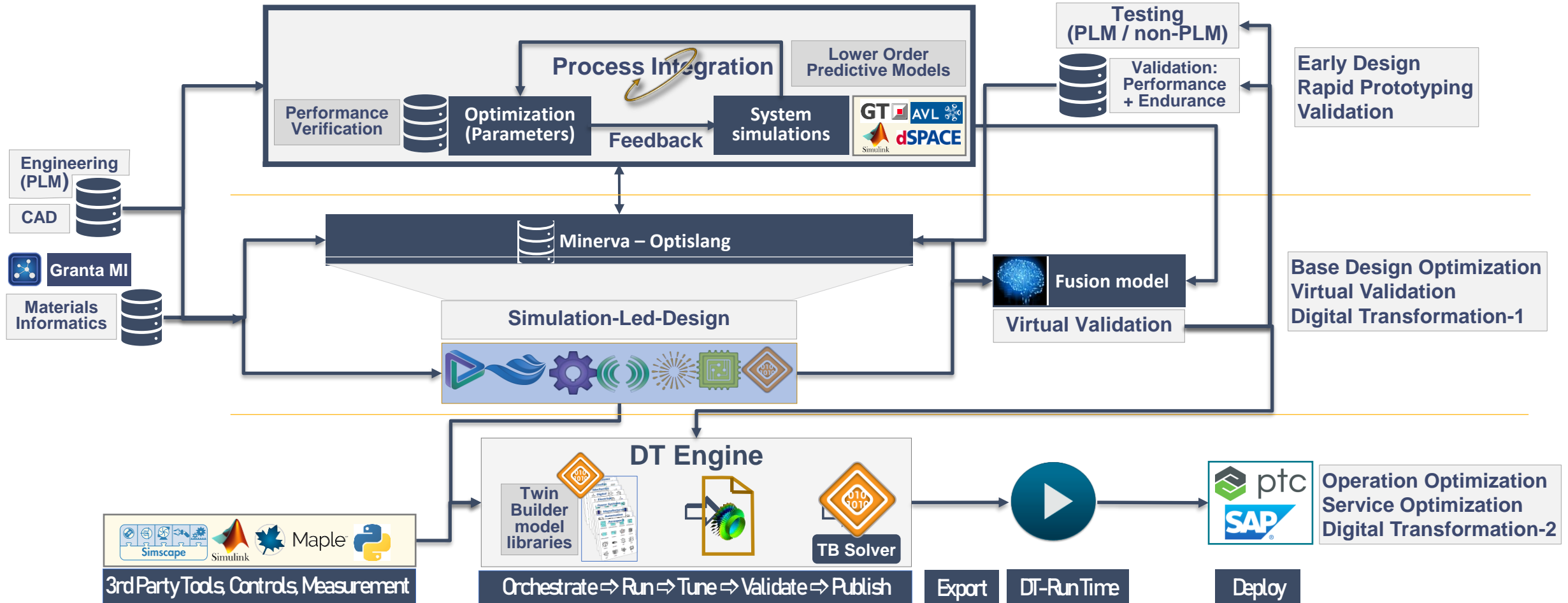
### Simulation And Data

Connect physics with data. Reimagine and amplify simulation using AI

### Cloud / Hybrid Deployment

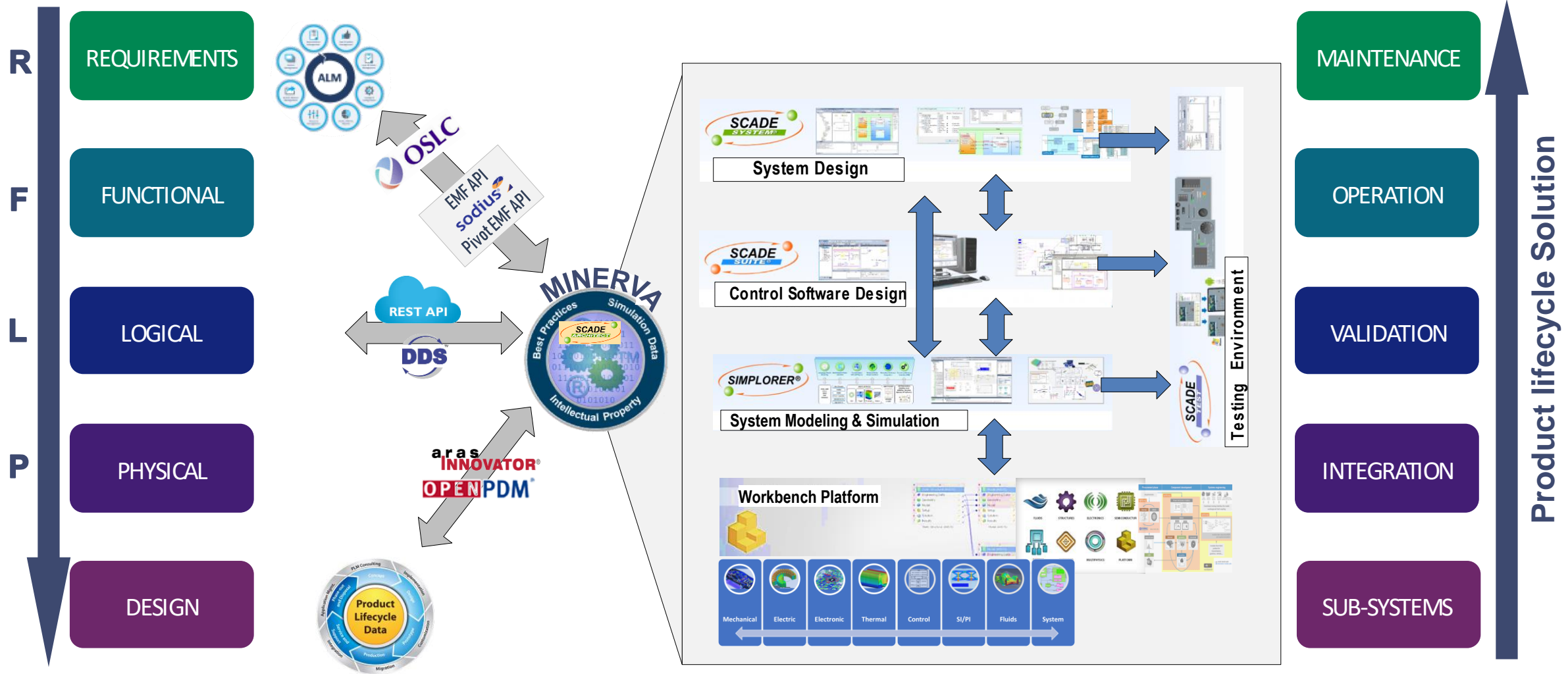
Composable on-prem and cloud deployment for more complex and broader usage

# Blueprint for Enterprise Digital Transformation



Open for Collaborative Interoperability of ANY Tool Delivered On-prem | On-cloud in Support of Full Life Cycle

# Ansys MBSE Environment for Open Collaboration



The whole environment is open to integrate and interoperate with ANY non-Ansys Tool Chain





**Ansys**

## Ansys Cloud

Easy access to on-demand HPC directly from Ansys flagship products

 Microsoft Azure

*1-click  
burst-to-the  
cloud*

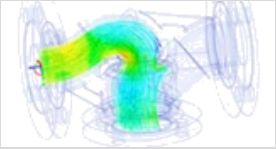
*Web-based 3-D  
Postprocessing*

*Highly optimized for  
Ansys solvers*

*Single vendor solution  
for Software +  
Hardware*

# 3. Expanding our Technology to Enable Emerging Solutions and Adjacencies

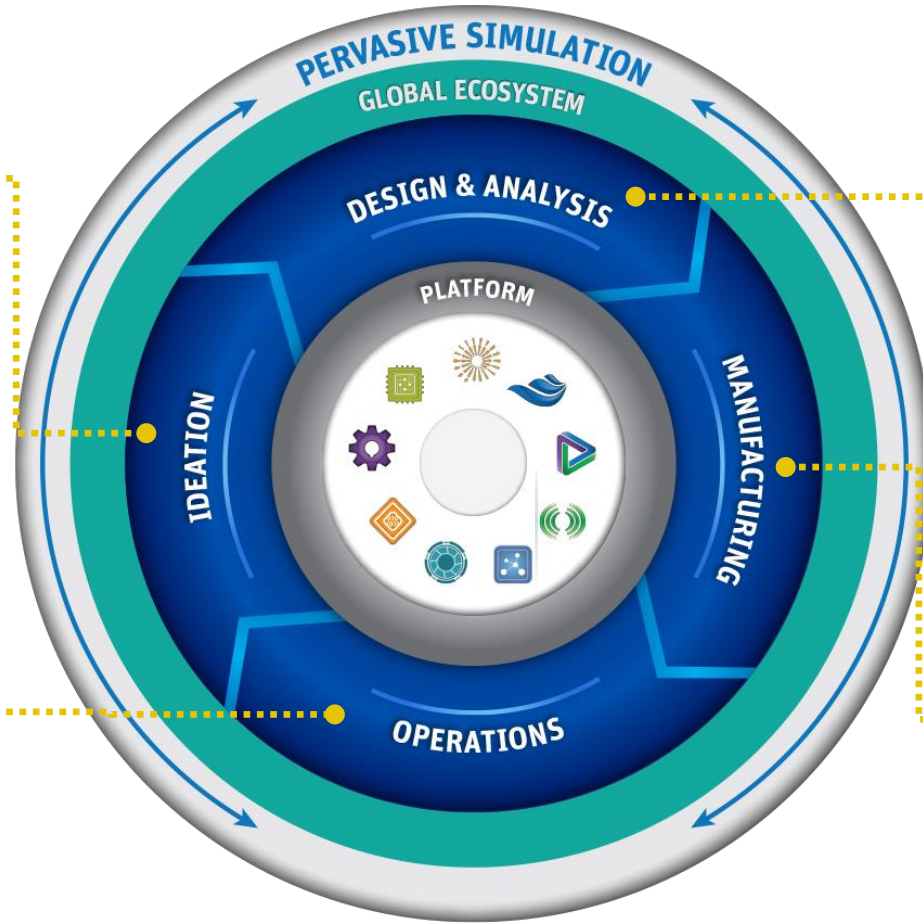
Ansys Addressable Market (2026)



**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**




# 4. Partnerships Expand Ansys Simulation into other Ecosystems

## Go-To-Market expansion through partner activities

	<p><b>SAP Predictive Engineering Insights (PEI) Enabled by Ansys</b> - High-fidelity physics-based digital twins for real-time monitoring of physical assets</p> <p>Early success:</p> <ul style="list-style-type: none"><li>• Streamlined customer's Configure Price Quote (CPQ) timeline from months to days</li><li>• Showcased benefits of SAP PEI with A&amp;D industry leaders at the Paris Air Show</li></ul>
	<p><b>Creo Simulation Live Powered by Ansys</b> - Integrates real-time simulation directly into 3D CAD modeling environment to get instant feedback for designers</p> <p>Early success:</p> <ul style="list-style-type: none"><li>• PTC closed 100+ deals across a variety of vertical industry customers in fiscal Q4 2019</li><li>• PTC &amp; ANSYS collaborated at a defense contractor: Largest-ever Creo Simulation Live deal and substantial Discovery Live deal</li></ul>
	<p><b>Synopsys IC Compiler™ II with Ansys RedHawk™ Analysis Fusion</b> - Delivers cohesive and integrated workflow that shortens time on challenging power requirements</p> <p>Early success:</p> <ul style="list-style-type: none"><li>• Automaker realized 35% reduction in peak dynamic IR drop</li></ul>

# 4. Partnerships Expand Ansys Simulation into other Ecosystems




## Go-To-Market expansion through partner activities

 <p><b>BMW Group</b></p>	<ul style="list-style-type: none"><li>• Ansys and BMW Group are partnering to create the automotive industry's first holistic simulation tool chain for developing autonomous vehicle technologies.</li><li>• 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.</li></ul>
 <p><b>AIRBUS</b></p>	<ul style="list-style-type: none"><li>• 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.</li><li>• 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.</li></ul>
 <p><b>AV SIMULATION</b></p>	<ul style="list-style-type: none"><li>• Ansys and AVSimulation are partnering to speed the development of safe autonomous driving for automobile manufacturers.</li><li>• The collaboration integrates revolutionary simulation technology from AVSimulation with Ansys' immersive autonomous driving simulation solutions, expediting vehicle design and validation by using virtual testing.</li></ul>



# 4. Partnerships Expand Ansys Simulation into other Ecosystems

## Go-To-Market expansion through partner activities

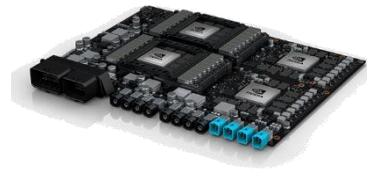
	<ul style="list-style-type: none"><li>• The partnership will allow seamless interoperability across Ansys and Autodesk products to drive revolutionary design and engineering agility for our customers.</li><li>• The collaboration connects Autodesk® Fusion 360®, integrated design and manufacturing software, with world-class Ansys® Mechanical™ simulation solutions to expedite products to market.</li><li>• The collaboration breaks down silos in the product development process by driving a best-in-breed, connected and interoperable designer-to-analyst workflow.</li></ul>
	<ul style="list-style-type: none"><li>• Ansys is partnering with Microsoft to extend Microsoft Azure Digital Twins with Ansys® Twin Builder™ to enable mutual customers to significantly improve operations. The collaboration will empower Microsoft's enterprise customers to more accurately predict an asset's future performance and reduce unscheduled downtime expenses — enabling users to slash product maintenance costs and speed high-quality products to market.</li><li>• Through the collaboration, manufacturers that model and connect assets using Azure Digital Twins can optimize asset production and operations using Ansys Twin Builder.</li></ul>
	<ul style="list-style-type: none"><li>• Our strategic partnership provides industrial companies with access to a streamlined, holistic, end-to-end solution for design, automation, production and lifecycle management.</li><li>• The partnership helps customers develop simulation-based digital twins of products, processes or manufacturing. Now customers can design and test through simulation to accelerate development and analysis, improving product quality and reducing testing time.</li></ul>

# Ansys 5G Solutions for the Complete Ecosystem

100% of the semiconductor top 10 use Ansys



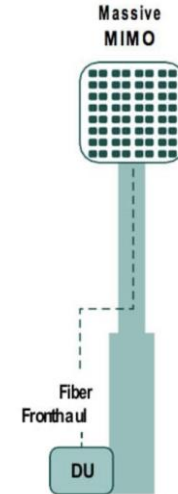
Chip



Board



Data Center



Network



User Equipment

Electronics Reliability

Power Integrity

Electromagnetics



DfR



Fluids



Delcross



Helic



Medini



Optis



Granta

# Ansys Electrification Open Simulation Environment

*For Product Design and Validation*

## Simulation

### Component

#### Battery

#### Power Electronics

#### Embedded Software

#### Mechanics

#### Busbar & Cables

#### Electric Machine

### System

#### Battery

#### Inverter

#### Busbar

#### Motor

#### Mechanics

#### Functional Safety

#### Embedded Software

### Data

Models: Components & Software  
Vendor or Supplier

Physical Test  
& Measurement

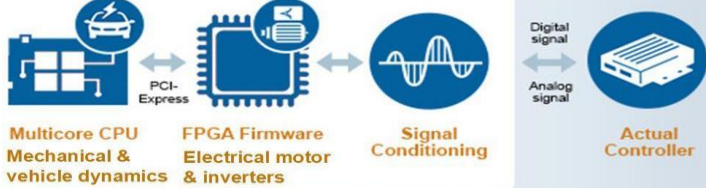
Simulation

### Validation

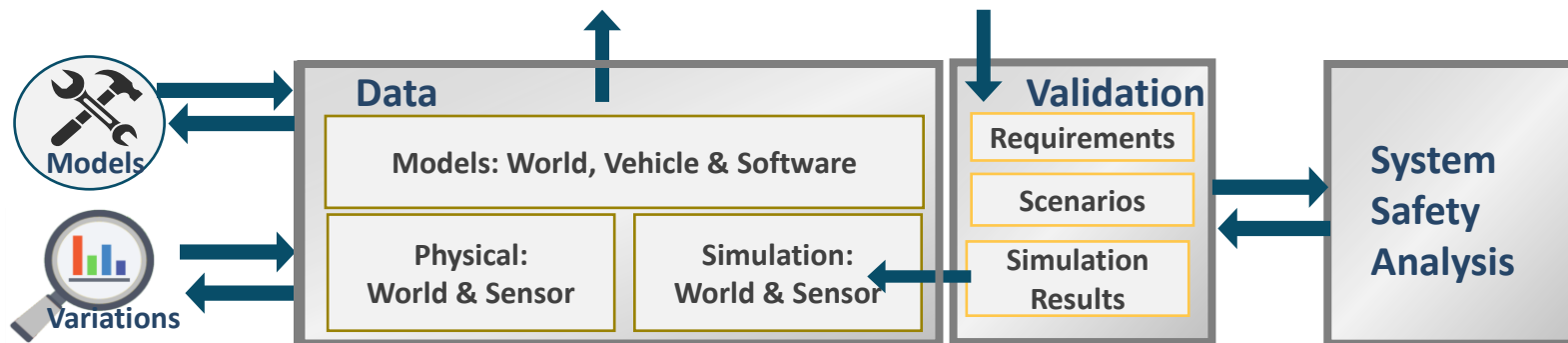
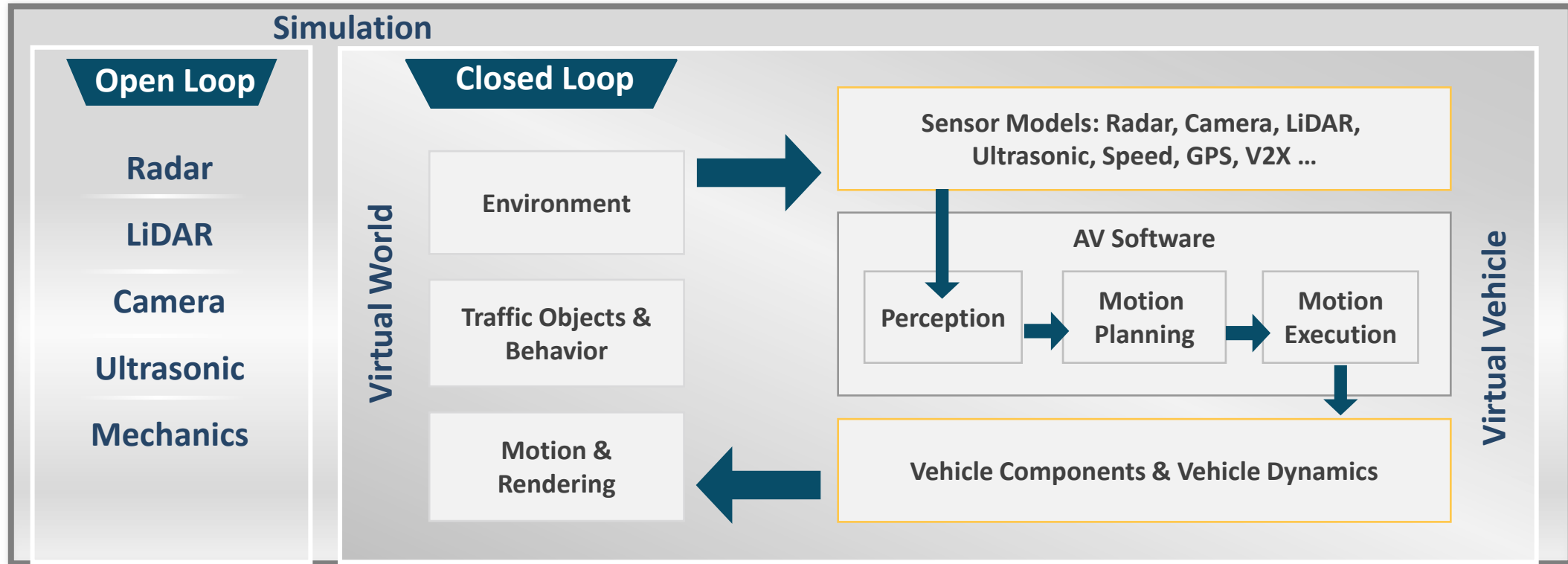
Simulation Results

Requirements

#### Hardware in the Loop (HiL)



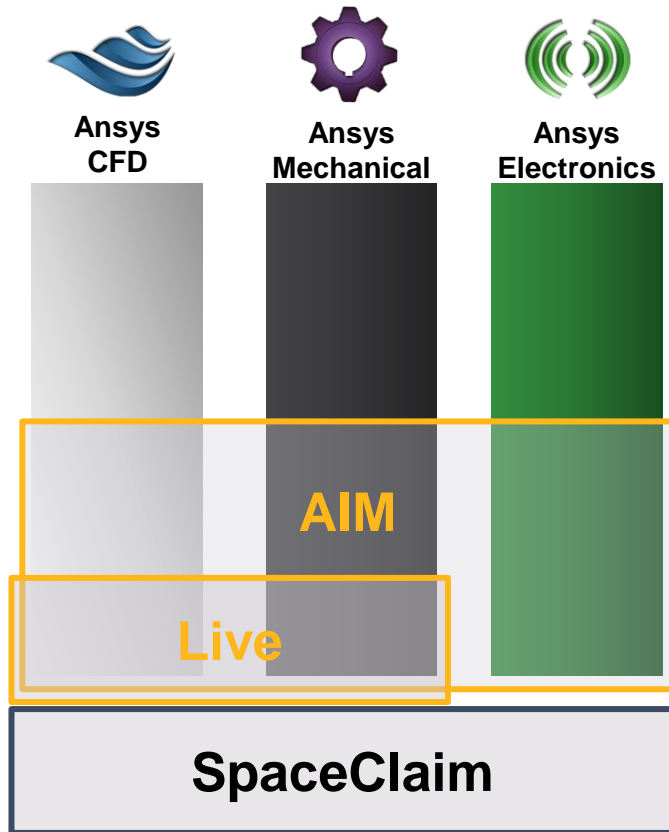
# Ansys AV Open Simulation Environment



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



# 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

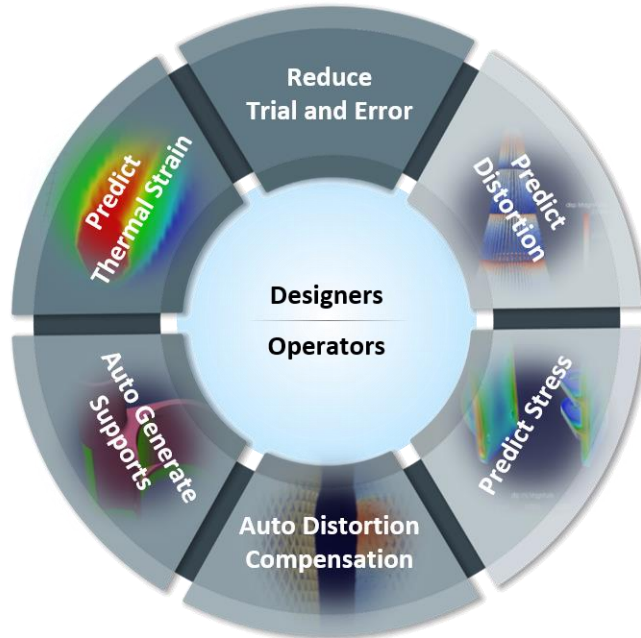
- Fast and intuitive 3D Direct Modeling to create, edit and repair geometry for concept design and simulation

Additional information located at [www.ansys.com/products/3d-design/ansys-discovery-live](http://www.ansys.com/products/3d-design/ansys-discovery-live).

# Additive - Two distinct customer groups – Two products

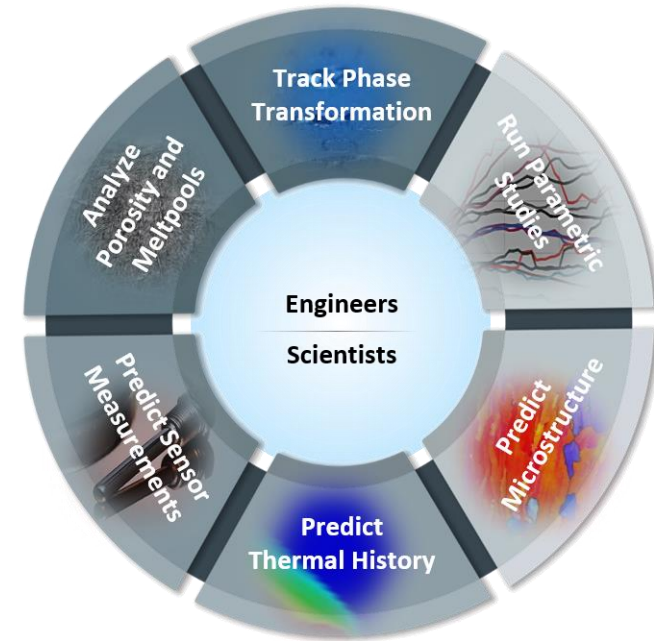


## *Ansys Additive Print*



- Designers in aerospace, defense, auto OEMs & medical
- Metal AM machine operators
- Part manufacturing operations managers

## *Ansys Additive Suite*



- 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/ansys-additive-print](http://www.ansys.com/products/structures/ansys-additive-print)

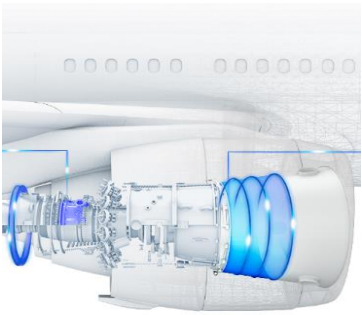
# ANSYS Digital Twin Key Capabilities

## System Preventive Maintenance

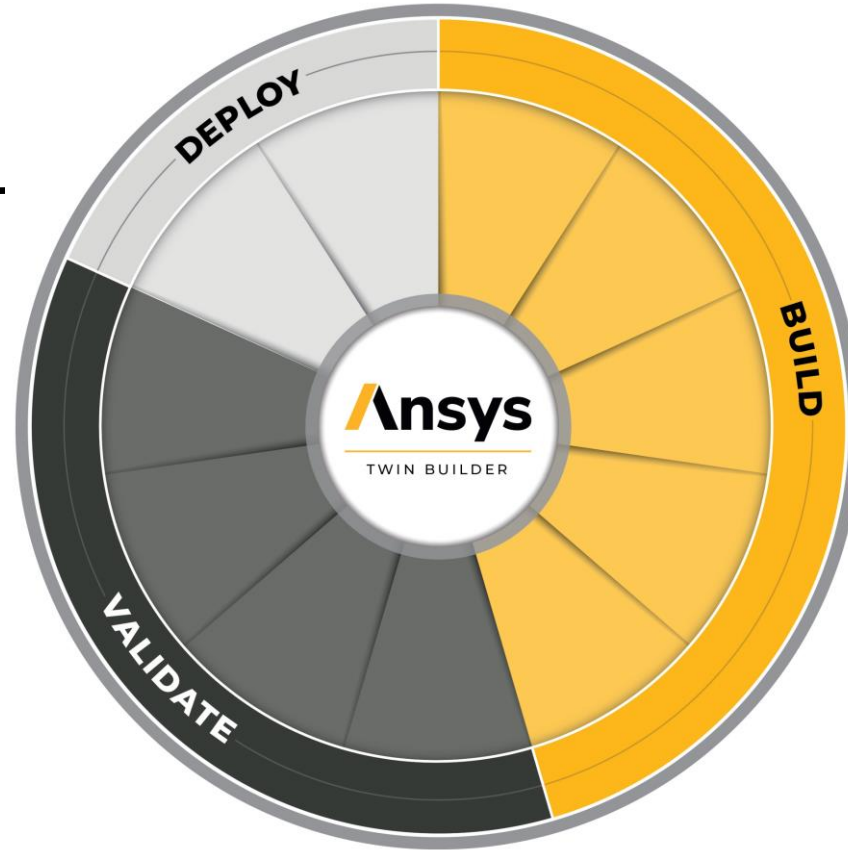


**CONNECT** the TWINS to IIoT Platforms and **DEPLOY** TWIN Run times in **OPERATION**

## System Validation & Optimization



**VALIDATE** and **OPTIMIZE** the TWINS



## System Simulation



**BUILD** an accurate **Physics-Based DIGITAL TWIN** in record time



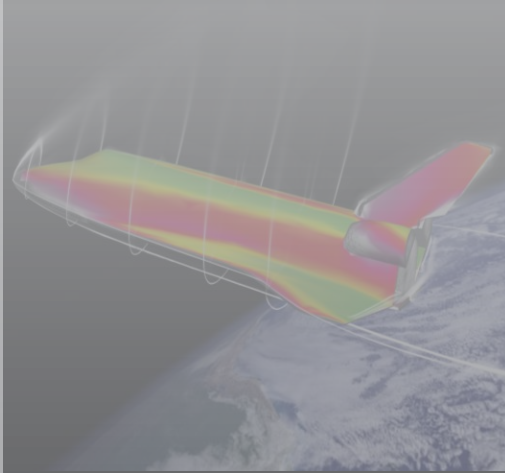
Additional information located at:  
[www.ansys.com/products/systems/digital-twin](http://www.ansys.com/products/systems/digital-twin)



# 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**



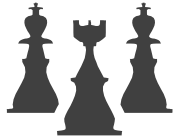
**We have a proven record of execution**

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



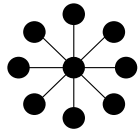
**Enterprise**

**80+ Accounts**



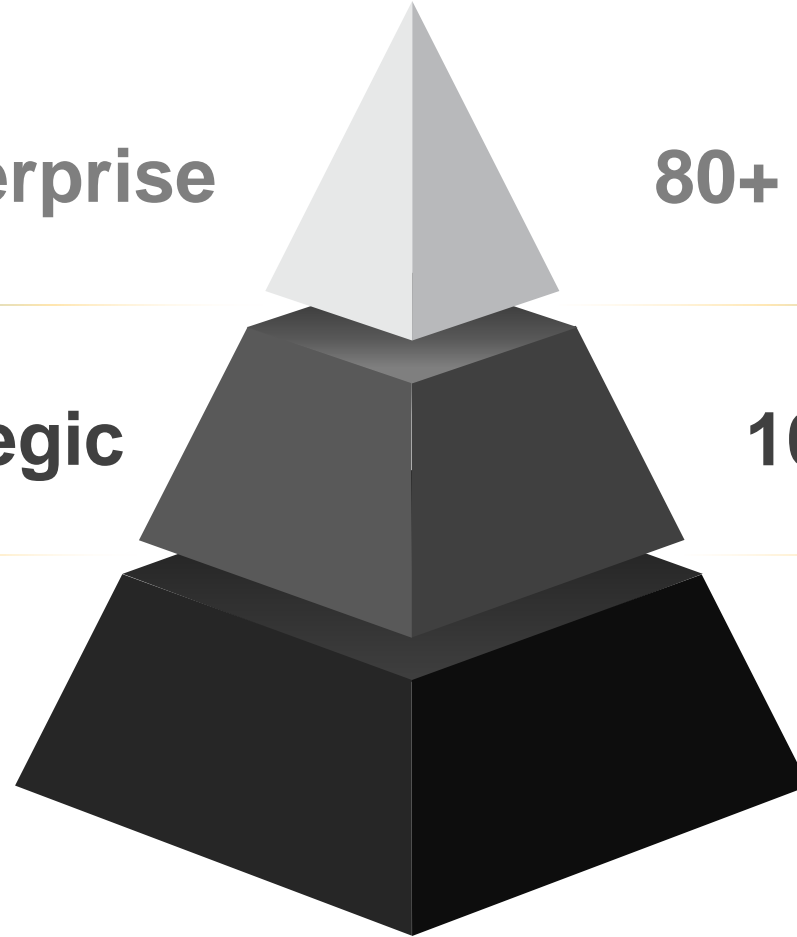
**Strategic**

**100s of Accounts**



**Volume**

**1000s of Accounts**

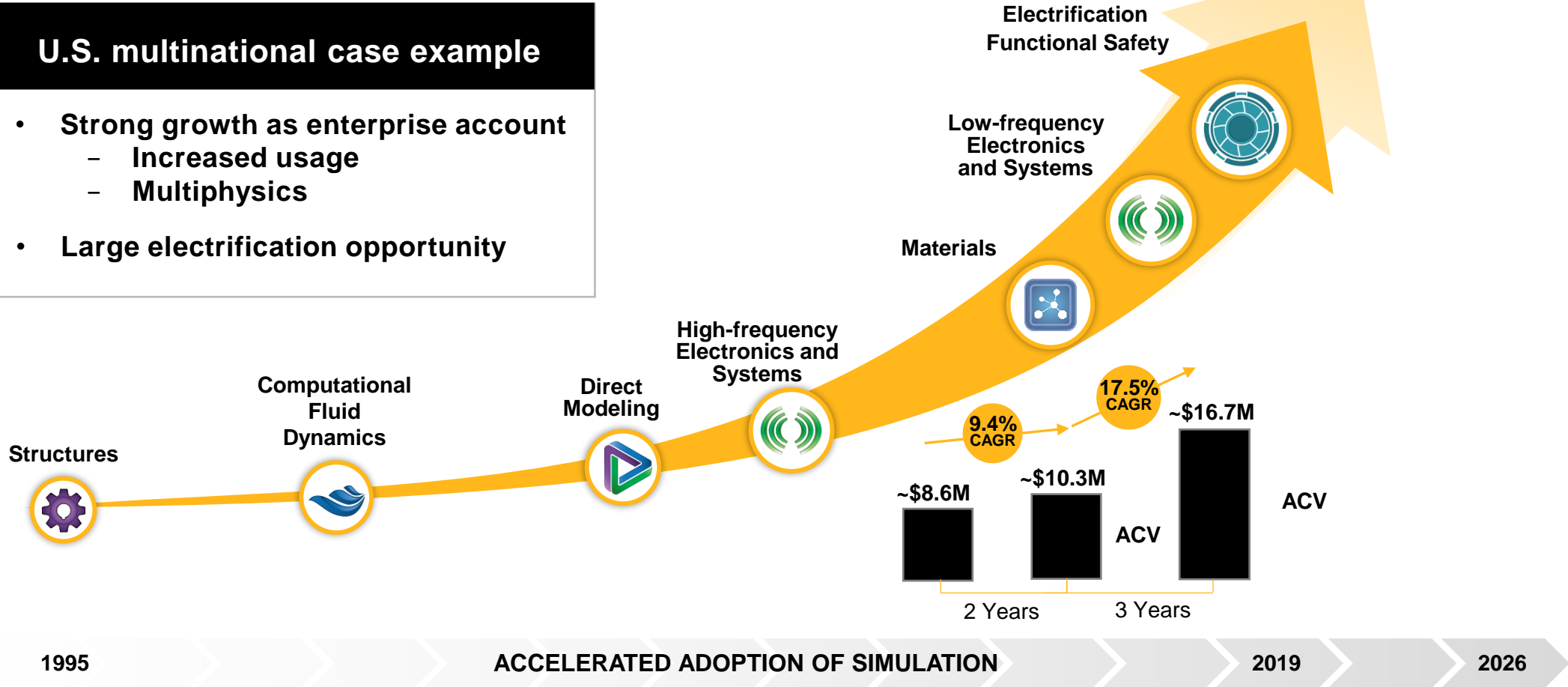


# Reinforce and Extend Leadership in The Core

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



# Future Sales Growth Drivers: 2019 to 2022



# 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



# 4. Leveraging Acquisitions and Ecosystem

## Expand Customer Relationships With Acquisitions



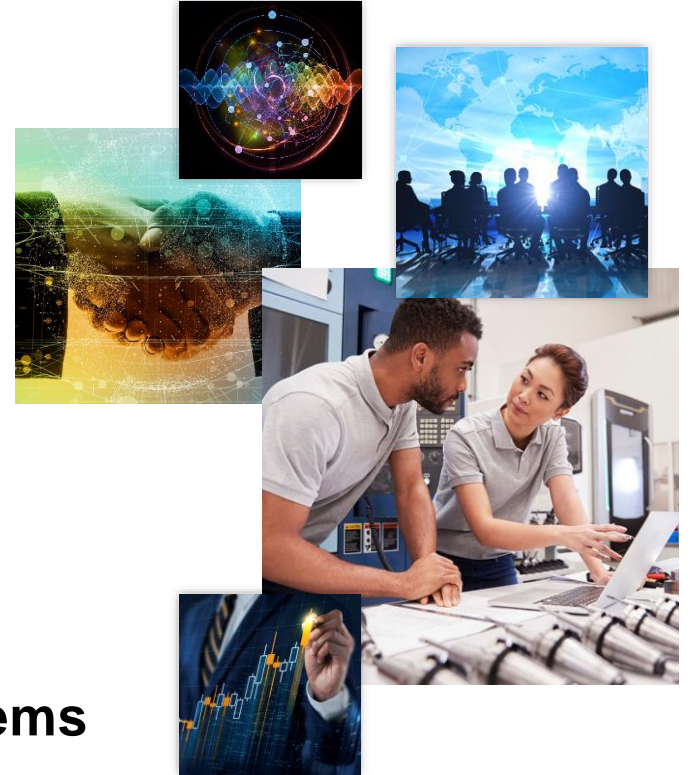
## Penetrate New Markets With Strategic Ecosystem





# 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**



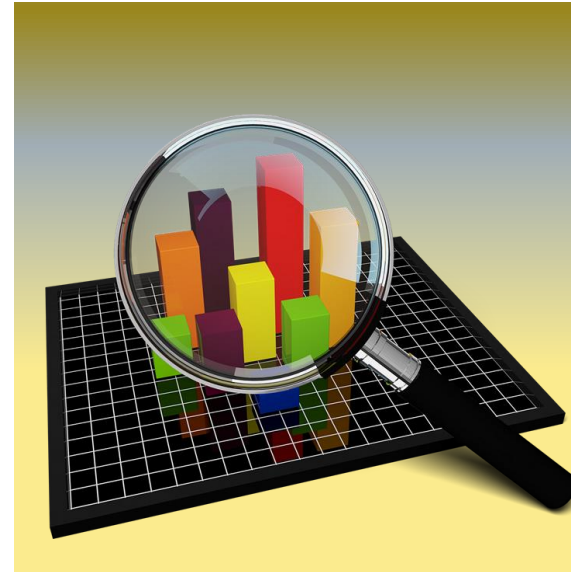
# Executing on our Growth Strategy



**Performance  
across key metrics**



**Diversified and  
resilient business**



**Capital allocation**



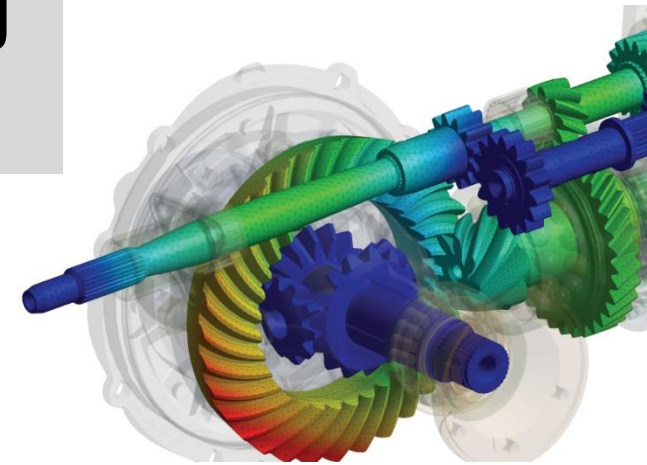
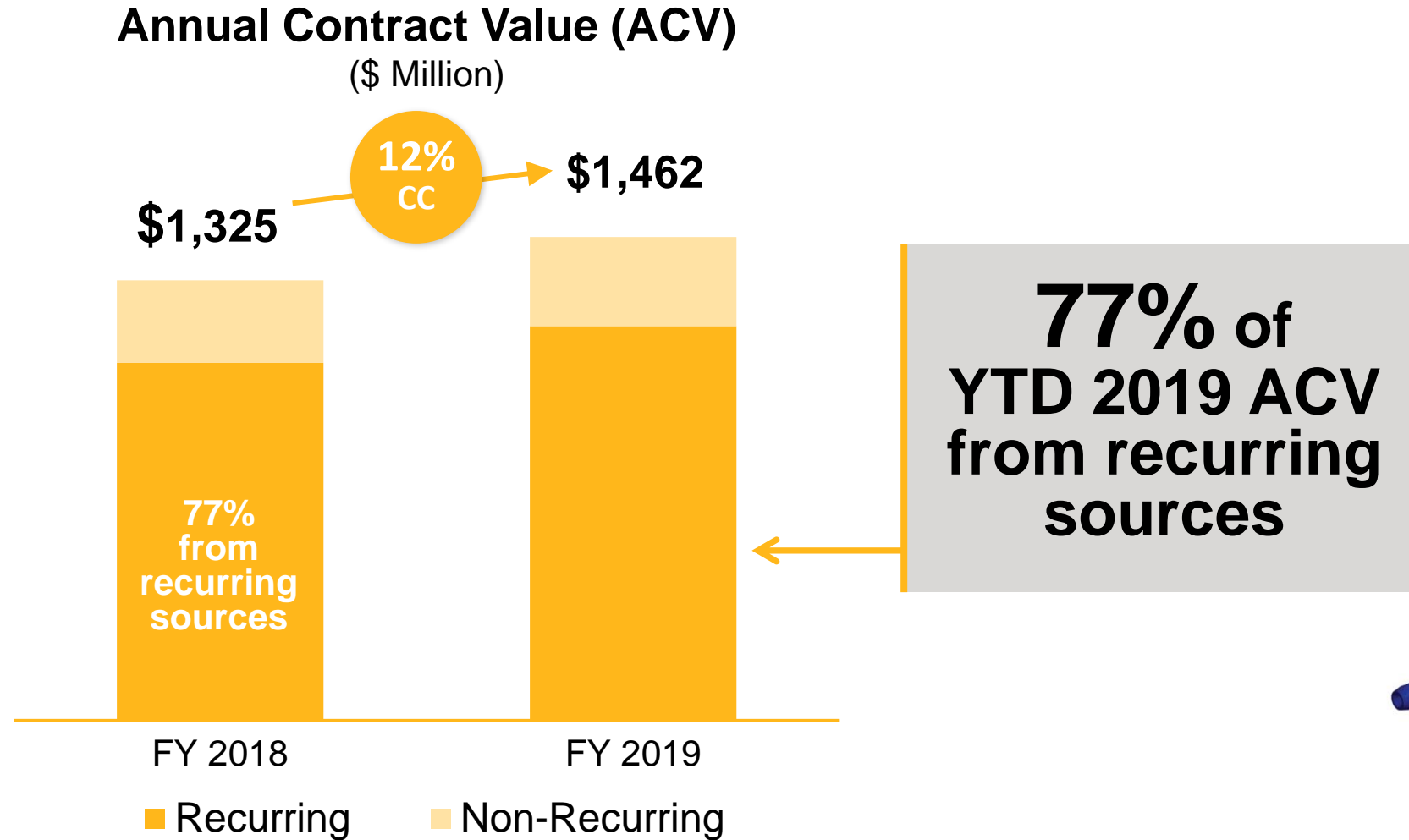
**Financial outlook**

# Key Highlights – Q4 2019

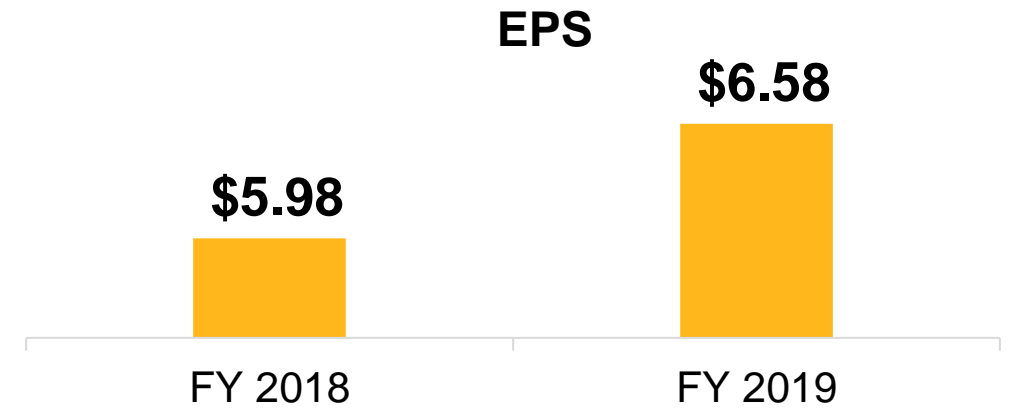
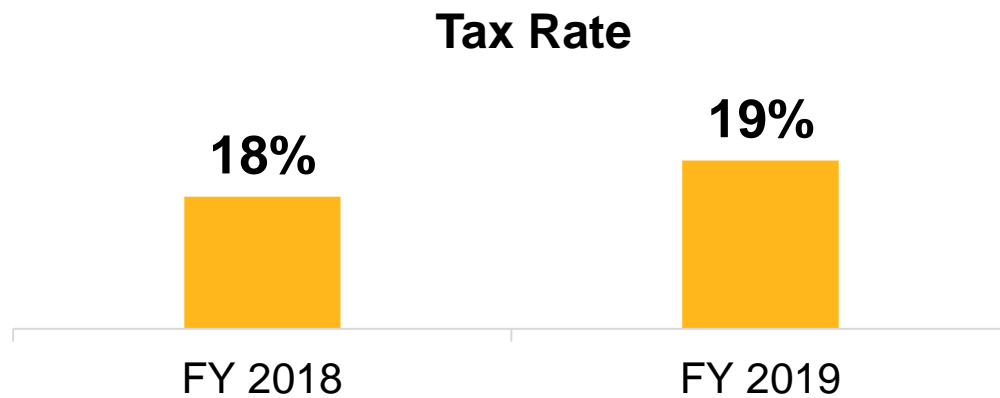
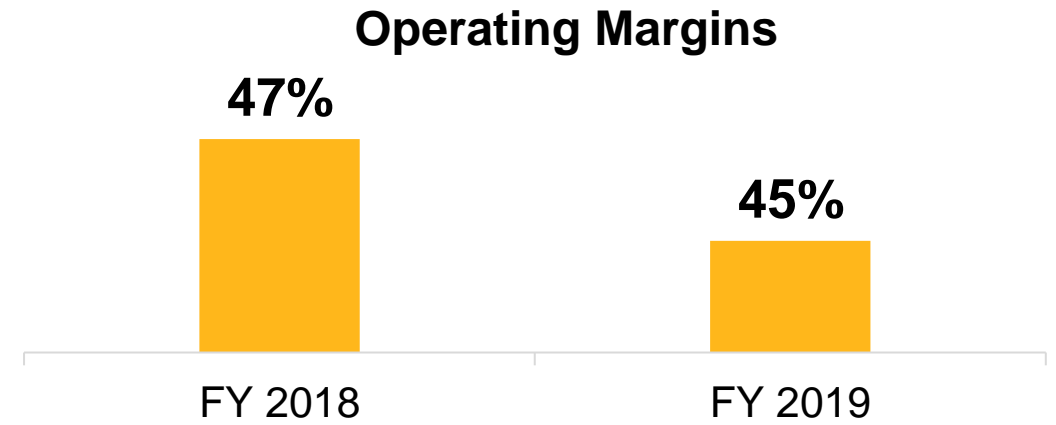
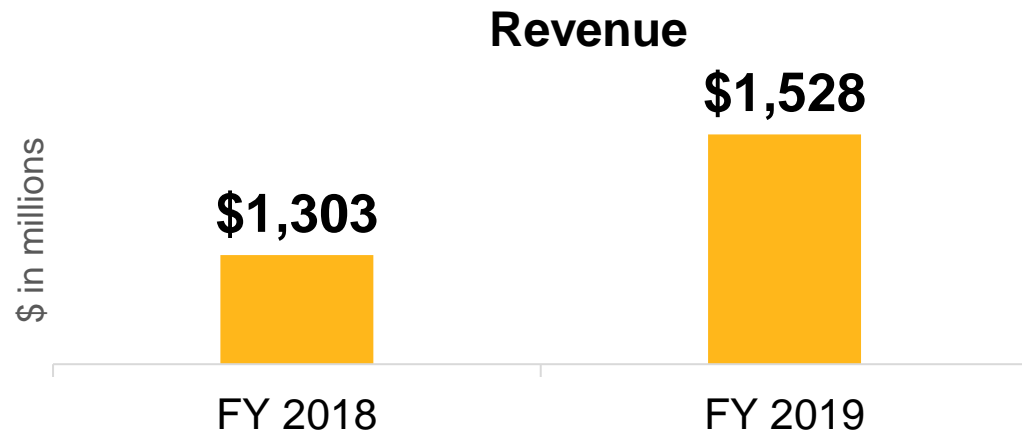
## Non-GAAP Financial Highlights

Revenue	<b>\$493M</b>
Operating Margin	<b>48.0%</b>
Tax rate	<b>17.3%</b>
Diluted EPS	<b>\$2.24</b>
Annual Contract Value (ACV)	<b>\$541M</b>

# / Growing Annual Contract Value

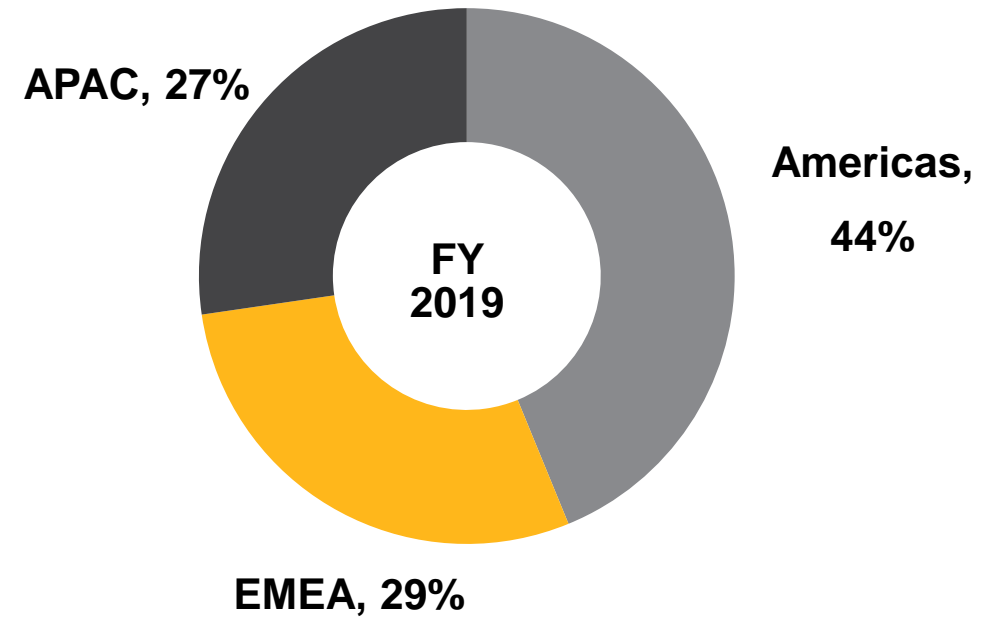
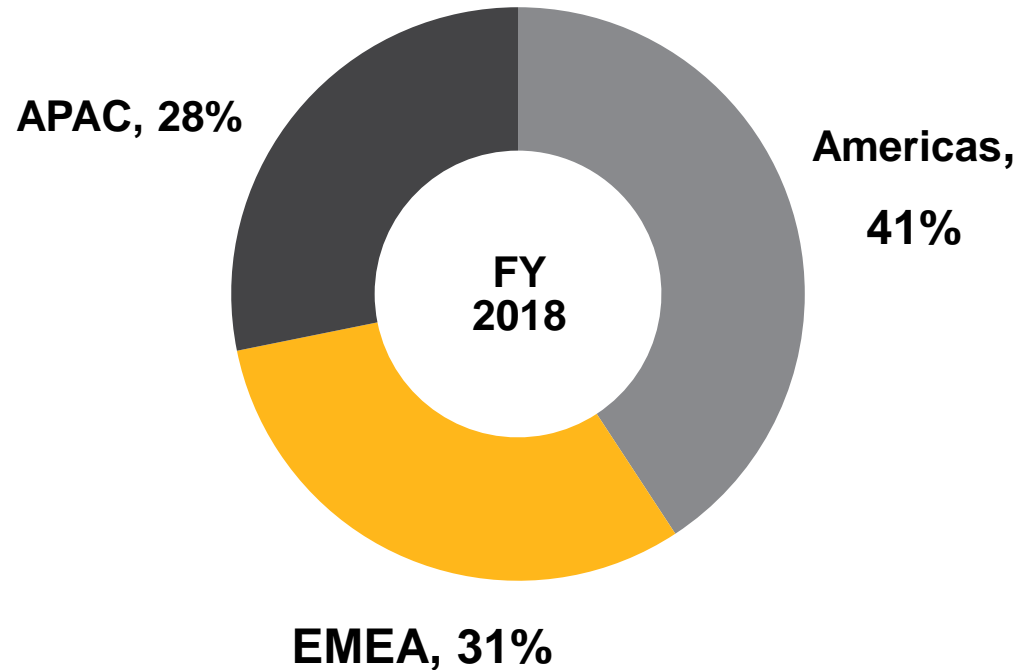


# Non-GAAP – Fiscal Year



# Geographic Diversity

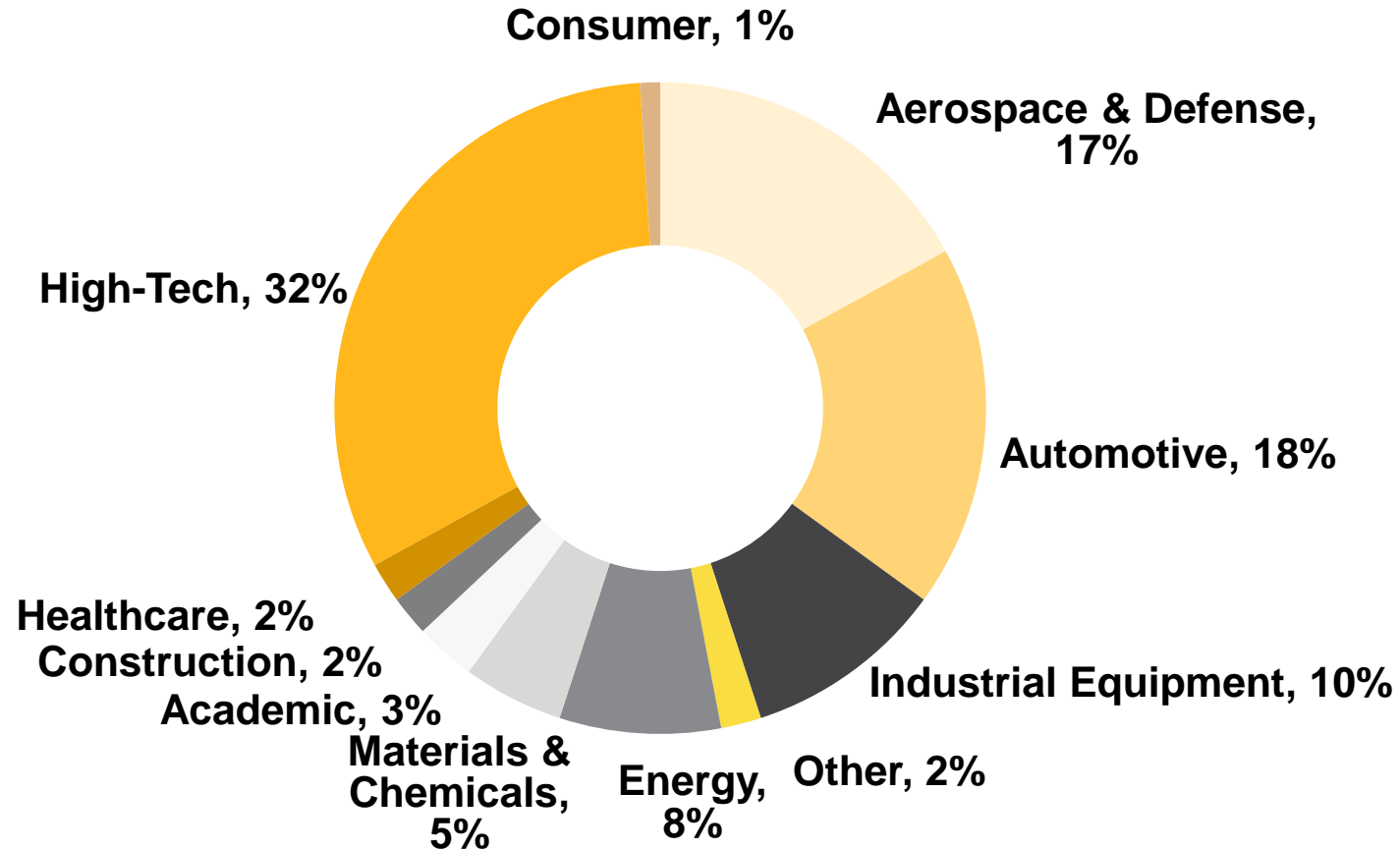
## Revenue by Geography - Non-GAAP



See Reconciliation of Non-GAAP financial metrics in Appendix.

# Diverse Customer Base

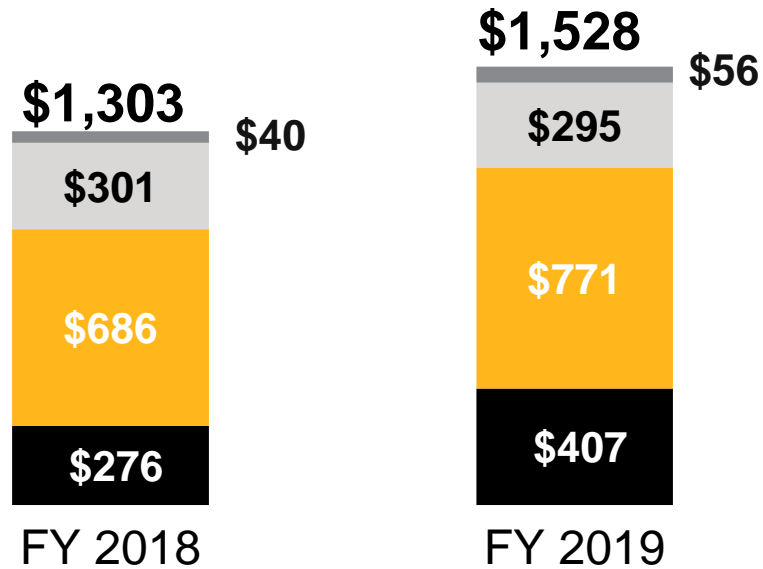
## % Total Trailing Twelve-Month ACV by Industry



# Diverse Revenue Sources

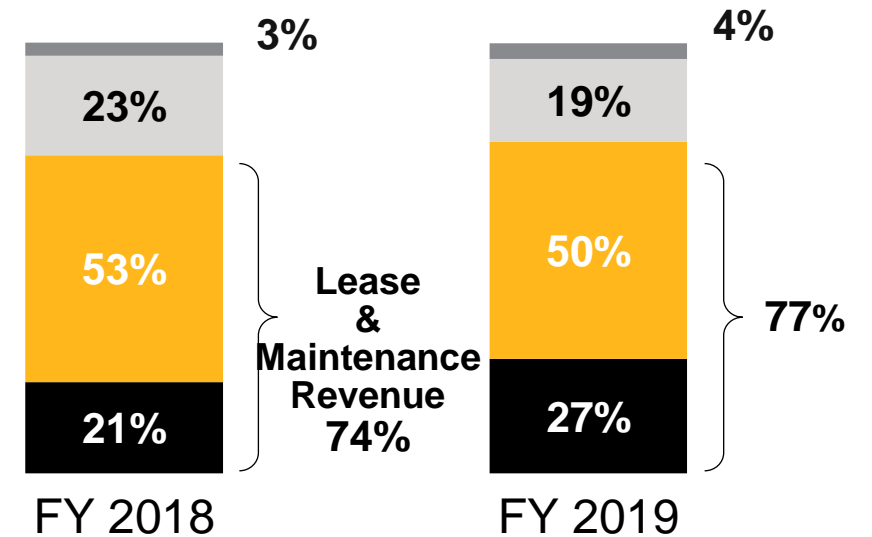
## Strong Growth in Lease & Maintenance Revenue

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



■ Lease ■ Maintenance ■ Perpetual ■ Service

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



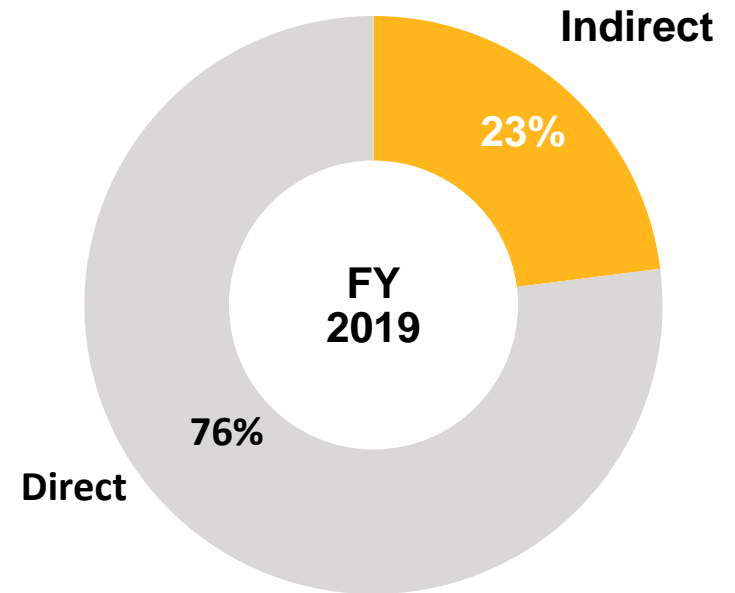
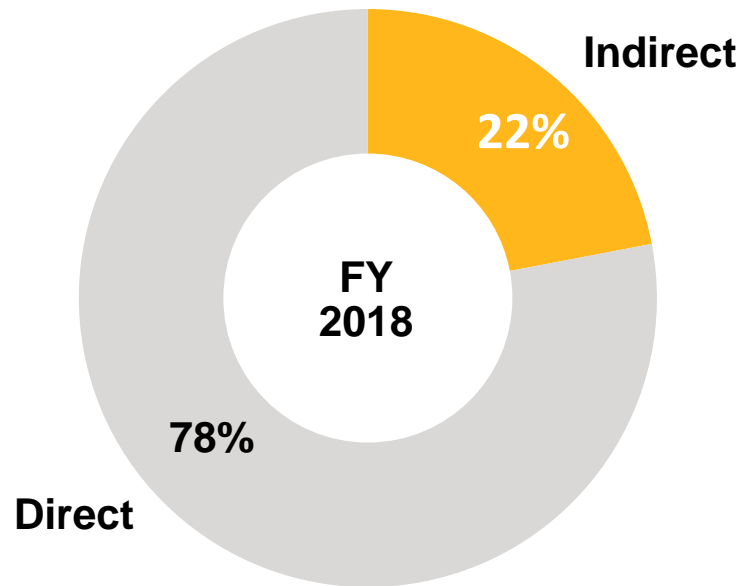
■ Lease ■ Maintenance ■ Perpetual ■ Service

See Reconciliation of Non-GAAP financial metrics in Appendix.



# Diverse Go-to-Market Revenue

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



See Reconciliation of Non-GAAP financial metrics in Appendix.

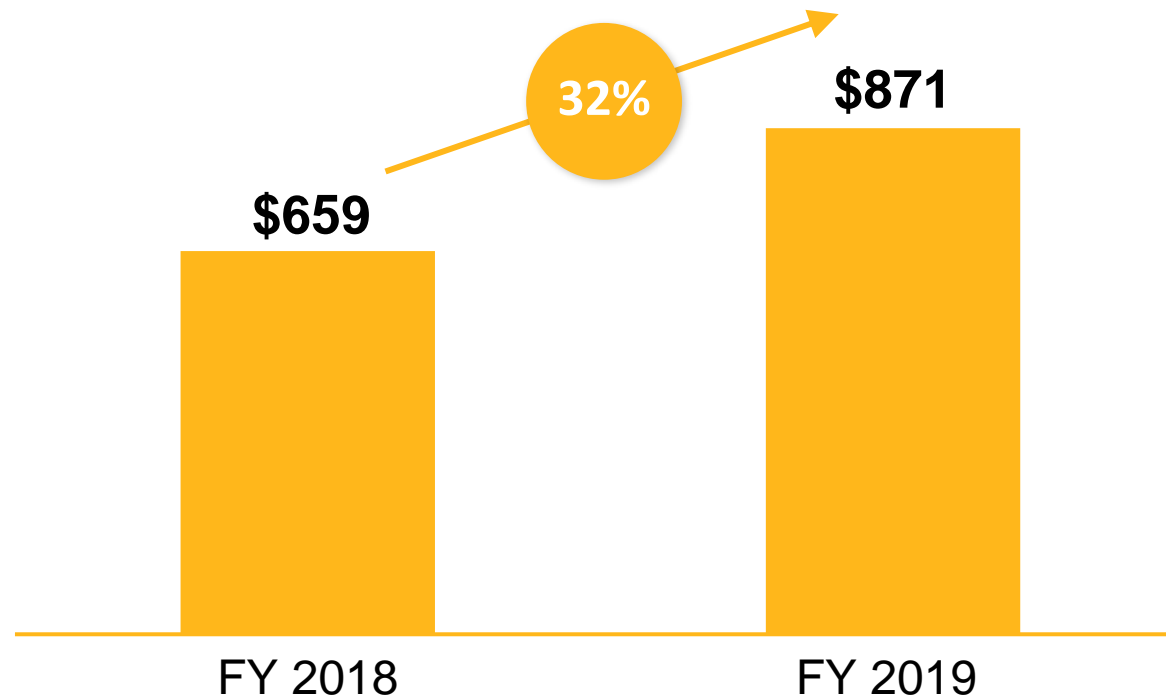
# / Maintaining a Strong Balance Sheet

As of December 31, 2019	
Cash & short-term investments	<b>\$872M</b>
Deferred revenue & backlog	<b>\$871M</b>



# Delivering Strong Deferred Revenue and Backlog Growth

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



Includes both current and long-term deferred revenue and backlog.

# 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

# 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

- We repurchased 0.3 million shares in FY 2019 at an average price of \$179.41 per share
- We spent 13% of free cash flow on share repurchases for the full year 2019
- As of December 31, 2019, there are 3.5 million shares remaining available for repurchase under our authorized share repurchase program

# Financial Outlook – Q1 2020

	<b>Q1 2020 GAAP</b>	<b>Q1 2020 Non-GAAP</b>
<b>Revenue</b>	<b>\$296.1 - \$316.1M</b>	<b>\$300.0 - \$320.0M</b>
<b>Operating Margin</b>	<b>9.0% - 14.5%</b>	<b>27.5% - 30.0%</b>
<b>Effective Tax Rate</b>	<b>(14.0%) – (30.0%)</b>	<b>20.0% - 21.0%</b>
<b>Diluted EPS</b>	<b>\$0.43 - \$0.59</b>	<b>\$0.75 - \$0.88</b>

Guidance as of February 26, 2020. Any usage of slide on a subsequent date does not constitute guidance re-confirmation as of such subsequent date. Refer to Cautionary Statement for a discussion of factors that could cause actual results to differ materially from outlook.

# Financial Outlook - FY 2020

	<b>FY 2020 GAAP</b>	<b>FY 2020 Non-GAAP</b>
<b>Revenue</b>	<b>\$1,632.0 - \$1,692.0M</b>	<b>\$1,640.0 - \$1,700.0M</b>
<b>Operating Margin</b>	<b>28.0% - 31.0%</b>	<b>42.0% - 43.0%</b>
<b>Effective Tax Rate</b>	<b>15.0% - 17.0%</b>	<b>20.0% - 21.0%</b>
<b>Diluted EPS</b>	<b>\$4.36 - \$5.02</b>	<b>\$6.19- \$6.71</b>

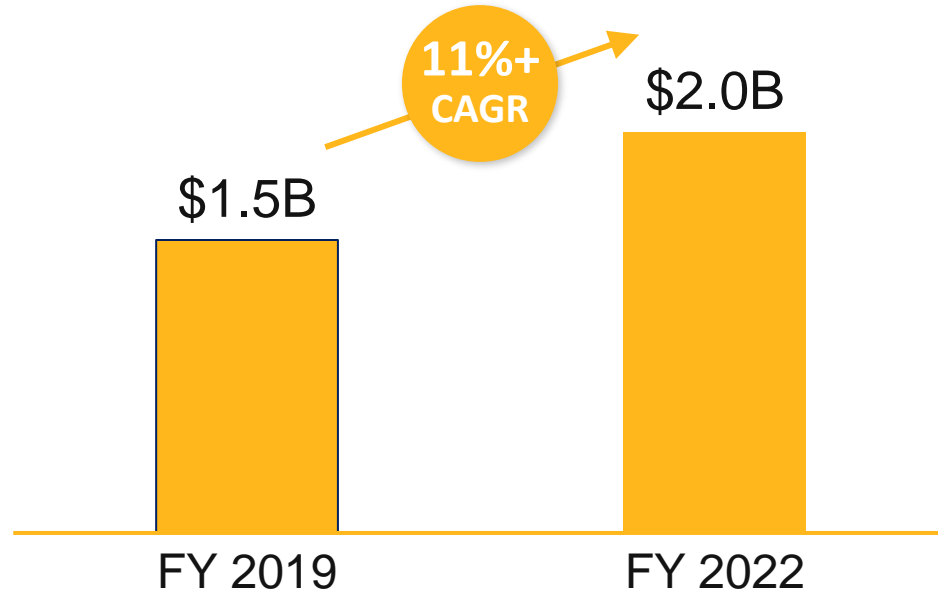
	<b>FY 2020</b>
<b>Annual Contract Value (ACV)</b>	<b>\$1,605.0 - \$1,650.0M</b>
<b>Operating Cash Flows</b>	<b>\$500.0 - \$530.0M</b>

Guidance as of February 26, 2020. Any usage of slide on a subsequent date does not constitute guidance re-confirmation as of such subsequent date. 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

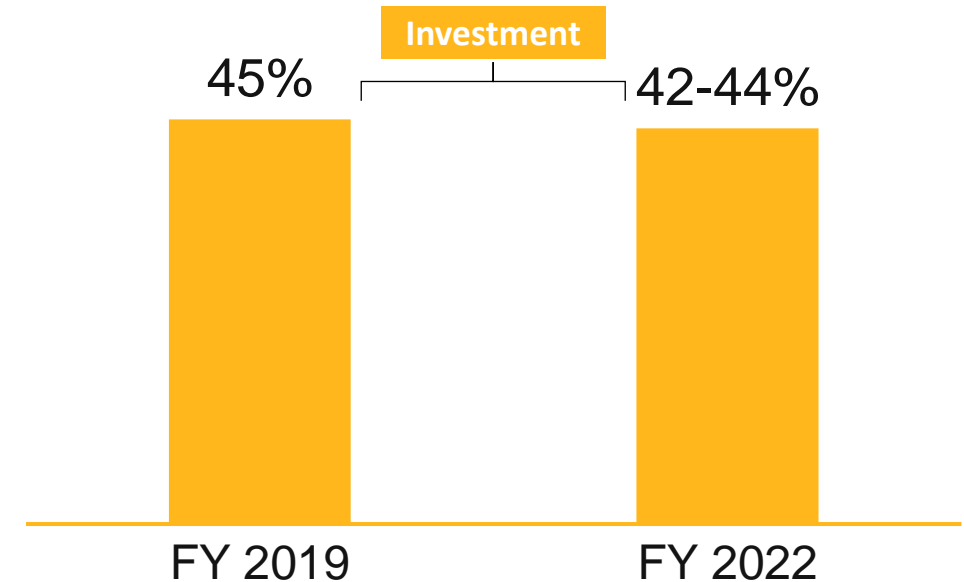
## ACV



### 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

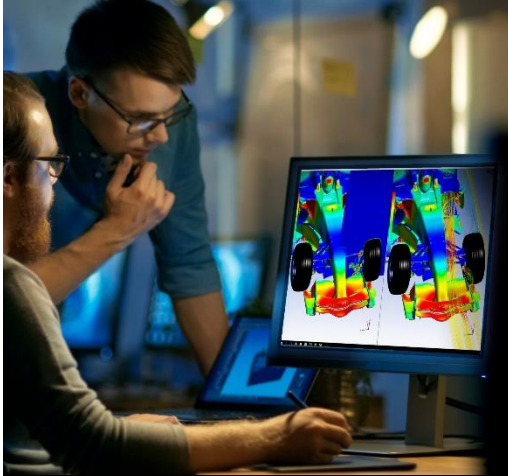
## Operating Margins (Non-GAAP)



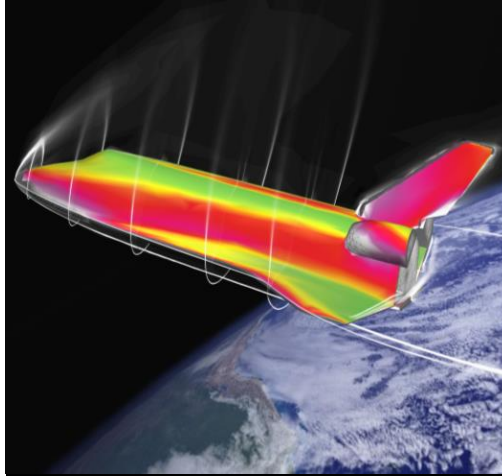
### Investing in the Business

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

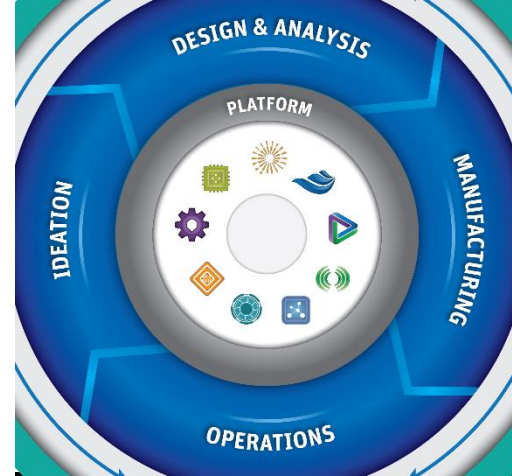
# Executing on our Growth Strategy



**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)

<i>(in thousands, except percentages and per share data)</i>	Three Months Ended					
	December 31, 2019			December 31, 2018		
	GAAP Results	Adjustments	Non-GAAP Results	GAAP Results	Adjustments	Non-GAAP Results
Total revenue	\$ 486,228	\$ 6,265 (1)	\$ 492,493	\$ 415,432	\$ 2,545 (4)	\$ 417,977
Operating income	185,716	50,496 (2)	236,212	179,936	35,646 (5)	215,582
Operating profit margin	38.2%		48.0%	43.3%		51.6%
Net income	\$ 165,852	\$ 28,861 (3)	\$ 194,713	\$ 153,163	\$ 28,919 (6)	\$ 182,082
Earnings per share – diluted:						
Earnings per share	\$ 1.91		\$ 2.24	\$ 1.79		\$ 2.13
Weighted average shares	86,992		86,992	85,472		85,472

- (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 \$31.4 million of stock-based compensation expense, \$0.4 million of excess payroll taxes related to stock-based awards, \$11.5 million of amortization expense associated with intangible assets acquired in business combinations, \$0.9 million of transaction expenses related to business combinations and the \$6.3 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 \$21.5 million and rabbi trust income of \$0.1 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 \$24.5 million of stock-based compensation expense, \$0.5 million of excess payroll taxes related to stock-based awards, \$7.0 million of amortization expense associated with intangible assets acquired in business combinations, \$1.2 million of transaction expenses related to business combinations and the \$2.5 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 \$6.9 million and increased for rabbi trust expense of \$0.2 million.

# Appendix

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

<i>(in thousands, except percentages and per share data)</i>	Twelve Months Ended					
	December 31, 2019			December 31, 2018		
	GAAP Results	Adjustments	Non-GAAP Results	GAAP Results	Adjustments	Non-GAAP Results
Total revenue	\$ 1,515,892	\$ 12,514 (1)	\$ 1,528,406	\$ 1,293,636	\$ 9,442 (4)	\$ 1,303,078
Operating income	515,040	177,093 (2)	692,133	476,574	141,442 (5)	618,016
Operating profit margin	34.0%		45.3%	36.8%		47.4%
Net income	\$ 451,295	\$ 113,702 (3)	\$ 564,997	\$ 419,375	\$ 94,510 (6)	\$ 513,885
Earnings per share – diluted:						
Earnings per share	\$ 5.25		\$ 6.58	\$ 4.88		\$ 5.98
Weighted average shares	85,925		85,925	85,913		85,913

- (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 \$116.2 million of stock-based compensation expense, \$4.9 million of excess payroll taxes related to stock-based awards, \$36.9 million of amortization expense associated with intangible assets acquired in business combinations, \$6.6 million of transaction expenses related to business combinations and the \$12.5 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 \$61.2 million, adjustments related to the transition tax associated with the Tax Cuts and Jobs Act of \$1.8 million, and rabbi trust income of \$0.4 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 \$83.3 million of stock-based compensation expense, \$4.3 million of excess payroll taxes related to stock-based awards, \$40.8 million of amortization expense associated with intangible assets acquired in business combinations, \$3.5 million of transaction expenses related to business combinations and the \$9.4 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 \$47.9 million and increased for a measurement-period adjustment related to the Tax Cuts and Jobs Act of \$0.9 million and rabbi trust expense of \$0.1 million.

**ANSYS, INC. AND SUBSIDIARIES**  
Reconciliation of Forward-Looking Guidance  
Quarter Ending Mar 31, 2020

	Operating Margin	Earnings Per Share - Diluted
U.S. GAAP expectation	9.0% - 14.5%	\$0.43 - \$0.59
Adjustment to exclude acquisition adjustments to deferred revenue	1.2% - 1.3%	\$0.03
Adjustment to exclude acquisition-related amortization	4.1% - 4.8%	\$0.12 - \$0.13
Adjustment to exclude stock-based compensation	10.2% - 12.4%	\$0.14 - \$0.16
Non-GAAP expectation	27.5% - 30.0%	\$0.75 - \$0.88

**ANSYS, INC. AND SUBSIDIARIES**  
Reconciliation of Forward-Looking Guidance  
Year Ending December 31, 2020

	Operating Margin	Earnings Per Share - Diluted
U.S. GAAP expectation	28.0% - 31.0%	\$4.36 - \$5.02
Adjustment to exclude acquisition adjustments to deferred revenue	0.5%	\$0.07
Adjustment to exclude acquisition-related amortization	3.1% - 3.4%	\$0.48 - \$0.51
Adjustment to exclude stock-based compensation	8.4% - 10.1%	\$1.14 - \$1.25
Non-GAAP expectation	42.0% - 43.0%	\$6.19 - \$6.71

## 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.

# Appendix - Reconciliations Of GAAP To Non-GAAP Financial Information

## Revenue by Geography FY 2018

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	\$529	40.9%	\$2	\$531	40.8%
APAC	\$363	28.1%	\$4	\$367	28.2%
EMEA	\$402	31.0%	\$3	\$405	31.1%
<b>Total Revenue</b>	<b>\$1,294</b>		<b>\$9</b>	<b>\$1,303</b>	

## Revenue by Geography FY 2019

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	\$663	43.7%	\$6	\$669	43.8%
APAC	\$414	27.3%	\$3	\$417	27.3%
EMEA	\$439	28.9%	\$3	\$442	28.9%
<b>Total Revenue</b>	<b>\$1,516</b>		<b>\$12</b>	<b>\$1,528</b>	

# Appendix - Reconciliations Of GAAP To Non-GAAP Financial Information

## Revenue by Source

<b>in millions</b>	<b>FY 2018 (\$ in millions)</b>	<b>FY 2018 (%)</b>	<b>FY 2019 (\$ in millions)</b>	<b>FY 2019 (%)</b>
<b>Lease Revenue (GAAP)</b>	\$276	21%	\$406	27%
<b>Acquisition adjustments to deferred revenue</b>	-		\$1	
<b>Total Lease Revenue (Non-GAAP)</b>	\$276	21%	\$407	27%
<b>Maintenance Revenue (GAAP)</b>	\$677	52%	\$761	50%
<b>Acquisition adjustments to deferred revenue</b>	\$9		\$9	
<b>Total Maintenance Revenue (Non-GAAP)</b>	\$686	53%	\$770	50%
<b>Perpetual Revenue (GAAP)</b>	\$301	23%	\$293	19%
<b>Acquisition adjustments to deferred revenue</b>	-		\$2	
<b>Total Perpetual Revenue (Non-GAAP)</b>	\$301	23%	\$295	19%
<b>Service Revenue (GAAP)</b>	\$40	3%	\$56	4%
<b>Acquisition adjustments to deferred revenue</b>	-		-	
<b>Total Service Revenue (Non-GAAP)</b>	\$40	3%	\$56	4%



# Appendix - Reconciliations Of GAAP To Non-GAAP Financial Information

## Revenue by Channel FY 2018

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	\$1004	77.6%	\$9	\$1,013	77.8%
Indirect	\$290	22.4%	-	\$290	22.2%
<b>Total Revenue</b>	<b>\$1,294</b>		<b>\$9</b>	<b>\$1,303</b>	

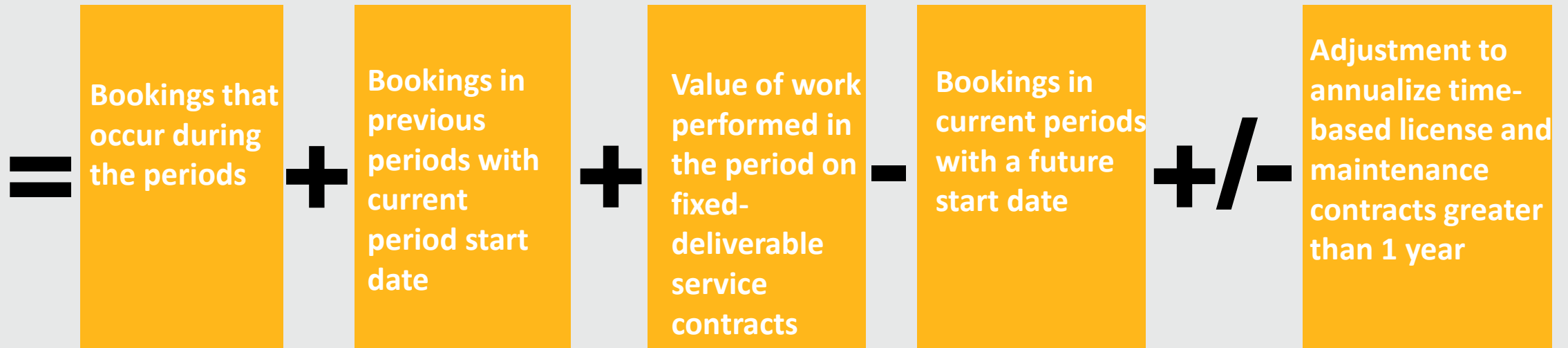
## Revenue by Channel FY 2019

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	\$1,169	77.1%	\$10	\$1,179	77.2%
Indirect	\$347	22.9%	\$2	\$349	22.8%
<b>Total Revenue</b>	<b>\$1,516</b>		<b>\$12</b>	<b>\$1,528</b>	

# ACV metric will provide increased clarity into business health

## NEW ANNUALIZED CONTRACT VALUE (ACV) METRIC



- 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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