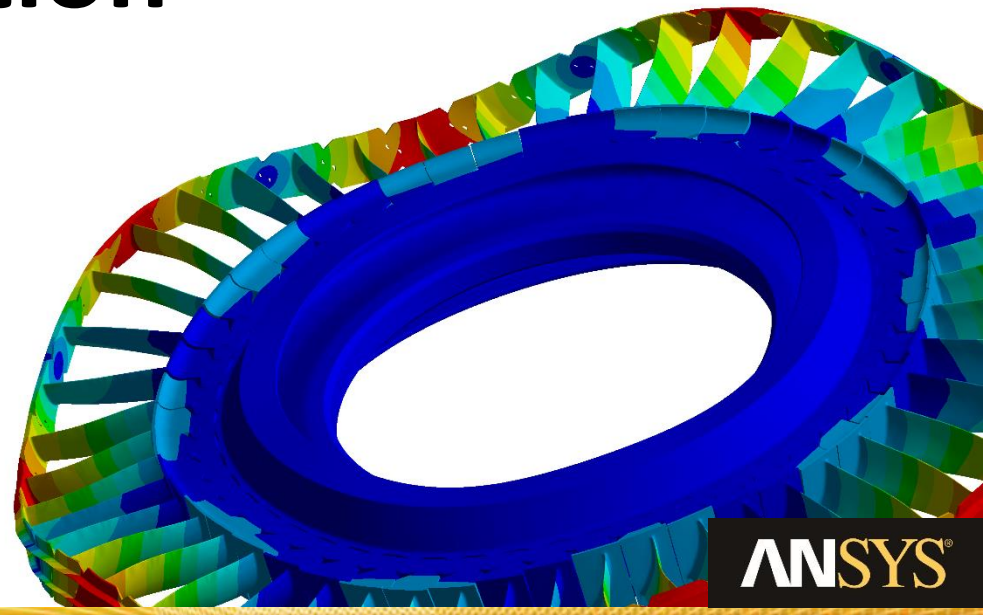
*Innovation Through Pervasive Engineering Simulation*

# Investor Presentation

## Third Quarter 2018



**NASDAQ: ANSS**

# Safe Harbor

**Certain statements contained in this presentation regarding matters that are not historical facts, including, but not limited to, statements regarding our projections for the fourth quarter of 2018 and fiscal year 2018 (both ASC 606 and ASC 605, as well as both GAAP and non-GAAP to exclude acquisition accounting adjustments to deferred revenue, acquisition-related amortization, stock-based compensation expense and acquisition-related transaction costs with related tax impacts); statements regarding management's use of non-GAAP financial measures; statements regarding investing in the business; statements regarding the Tax Cuts and Jobs Act; and statements regarding the intent to integrate ANSYS Discovery Live within PTC's Creo 3D CAD software are "forward-looking" statements (as defined in the Private Securities Litigation Reform Act of 1995). Because such statements are subject to risks and uncertainties, actual results may differ materially from those expressed or implied by such forward-looking statements. All forward-looking statements in this press release are subject to risks and uncertainties, including, but not limited to, the risk that adverse conditions in the global and domestic markets will significantly affect ANSYS' customers' ability to purchase products from the Company at the same level as prior periods or to pay for the Company's products and services; the risk that declines in ANSYS' customers' business may lengthen customer sales cycles; the risk of declines in the economy of one or more of ANSYS' primary geographic regions; the risk that ANSYS' revenues and operating results will be adversely affected by changes in currency exchange rates or economic declines in any of the countries in which ANSYS conducts transactions; the risk that the assumptions underlying ANSYS' anticipated revenues and expenditures will change or prove inaccurate; the risk that ANSYS has overestimated its ability to maintain growth and profitability, and control costs; uncertainties regarding the demand for ANSYS' products and services in future periods; uncertainties regarding customer acceptance of new products; the risk of ANSYS' products' future compliance with industry quality standards and its potential impact on the Company's financial results; the risk that the Company may need to change its pricing models due to competition and its potential impact on the Company's financial results; the risk that ANSYS' operating results will be adversely affected by possible delays in developing, completing or shipping new or enhanced products; the risk that enhancements to the Company's products or products acquired in acquisitions may not produce anticipated sales; the risk that the Company may not be able to recruit and retain key executives and technical personnel; the risk that third parties may misappropriate the Company's proprietary technology or develop similar technology independently; the risk of unauthorized access to and distribution of the Company's source code; the risk of the Company's implementation of its new IT systems; the risk of difficulties in the relationship with ANSYS' independent regional channel partners; the risk of ANSYS' reliance on perpetual licenses and the result that any change in customer licensing behavior may have on the Company's financial results; the risk that ANSYS may not achieve the anticipated benefits of its acquisitions or that the integration of the acquired technologies or products with the Company's existing product lines may not be successful; the risk of periodic reorganizations and changes within ANSYS' sales organization; the risk of industry consolidation and the impact it may have on customer purchasing decisions; and other factors that are detailed from time to time in reports filed by ANSYS, Inc. with the Securities and Exchange Commission, including ANSYS, Inc.'s 2017 Annual Report on Form 10-K. We undertake no obligation to publicly update or revise any forward-looking statements, whether changes occur as a result of new information or future events, after the date they were made.**

# ANSYS is the simulation leader

## FOCUSED

**This is all we do.**
Leading product technologies in all physics areas. Largest development team focused on simulation

## TRUSTED

**97** of the FORTUNE **100** industrials

More than **45,000** customers worldwide

**ISO 9001-2015** CERTIFIED

## PROVEN

Member of the prestigious STANDARD &POOR'S 500

**$13B+** market capitalization

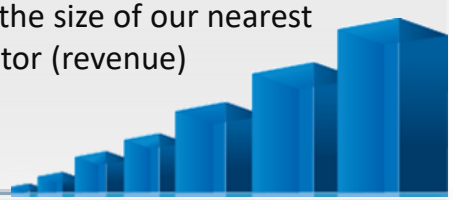
## GLOBAL

**3,300+** employees globally

**75** offices in **40** countries

## LARGEST

**3x** the size of our nearest competitor (revenue)



## INDEPENDENT

Long-term financial stability

**CAD agnostic**

## COMMITTED

Overall customer satisfaction globally is at **87.8%** in 2017

## DRIVEN

Helping customers address new market challenges: **digital exploration, additive manufacturing** and **digital twins**

# World-class companies leveraging our platform









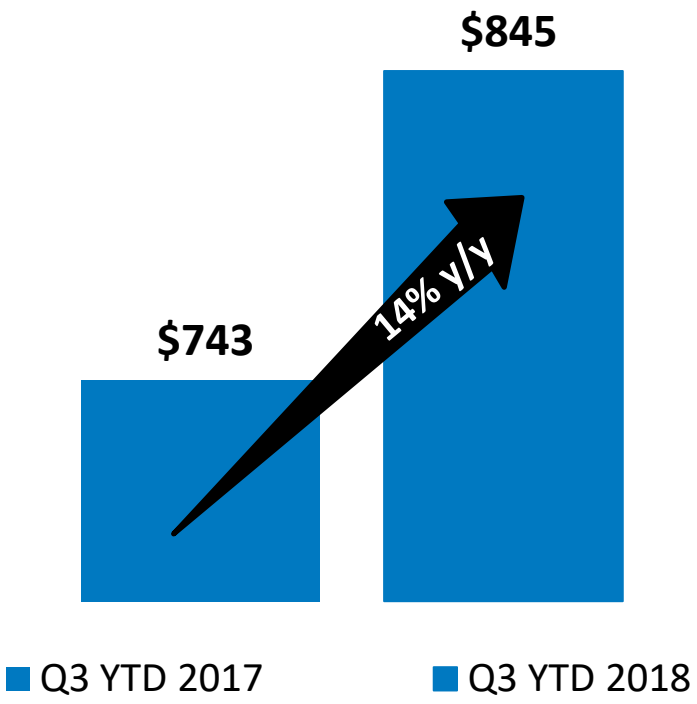

ANSYS®

# Key 2017 achievements

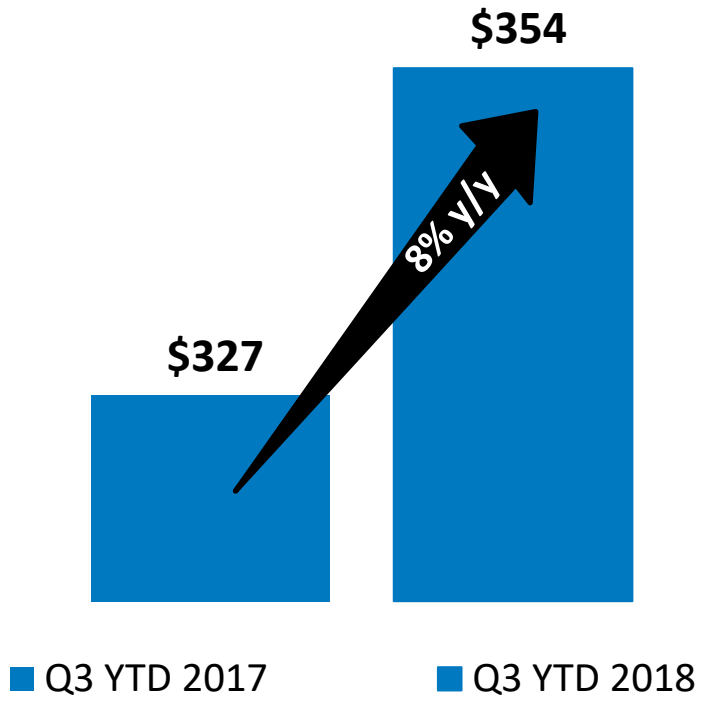
- Reported $1.1 billion in revenue at double-digit growth
- Added to the S&P 500 Index
- Maintained industry-leading margins for sector and software vertical
- Provided long-term financial objectives
- Executed on capital allocation strategy through acquisitions and share repurchases
- Established our Pervasive Engineering Simulation strategy
- Outlined our next generation technology roadmap

# Key Financial Metrics – Q3 YTD

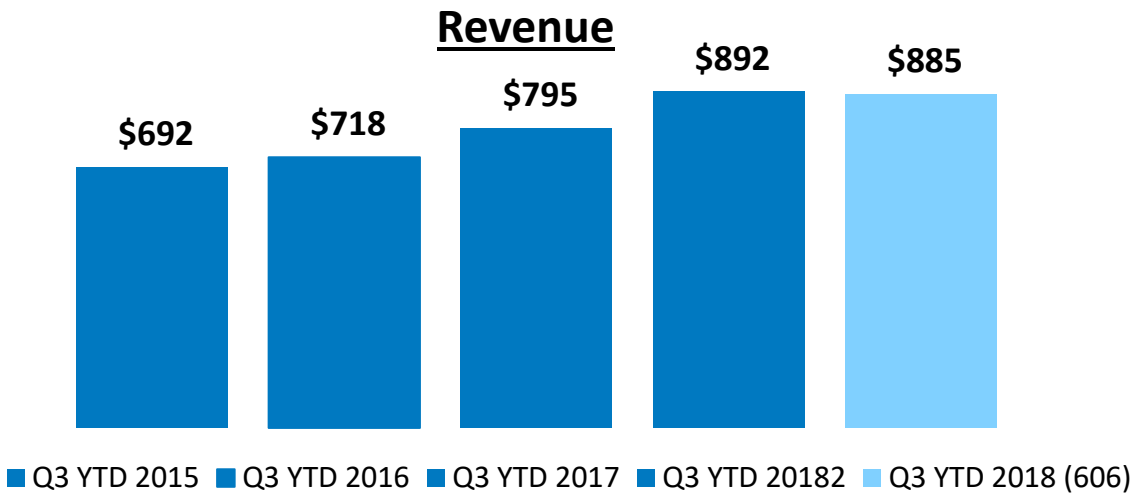
## Annual Contract Value (ACV)

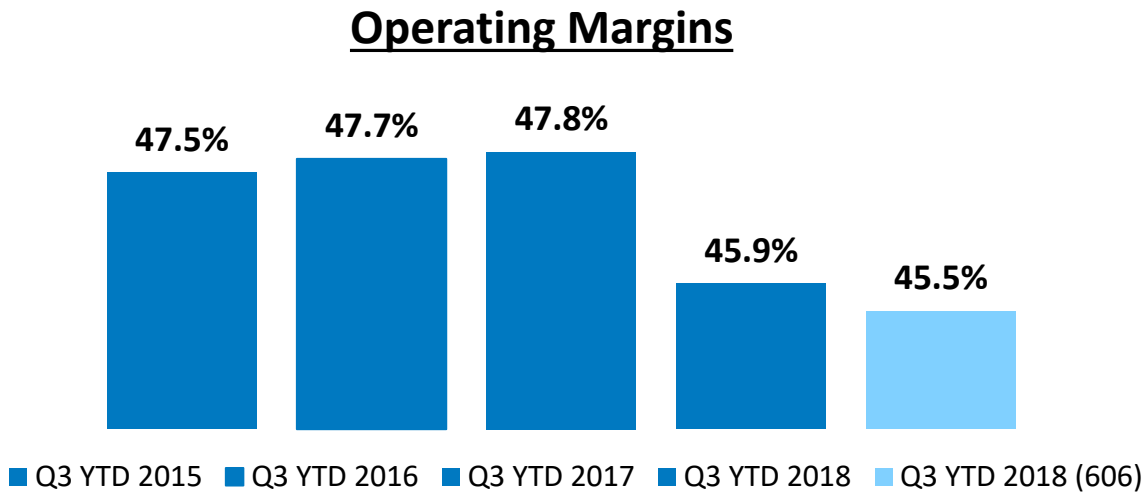


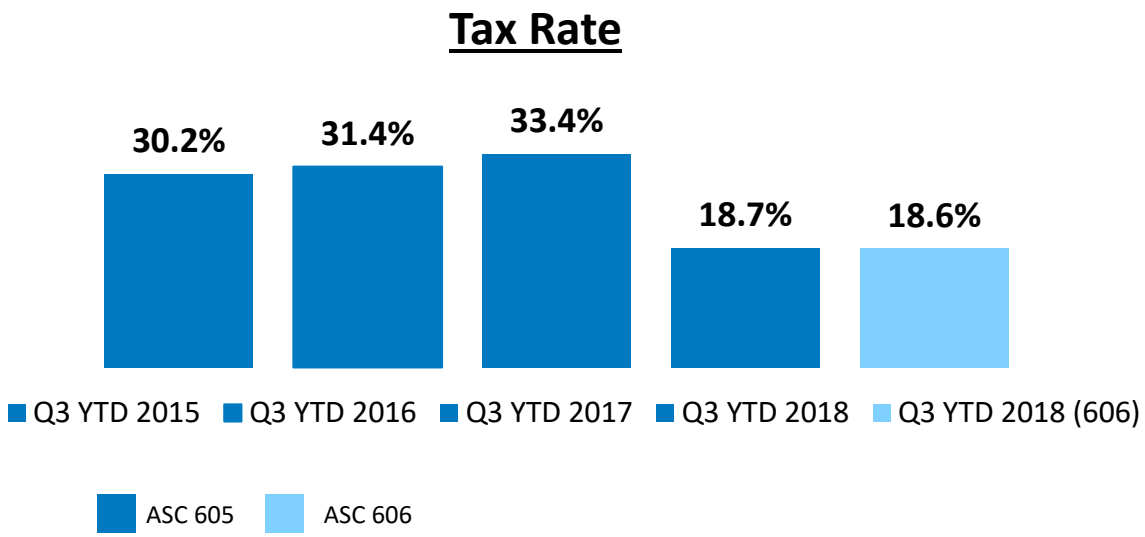

## Operating Cash Flows

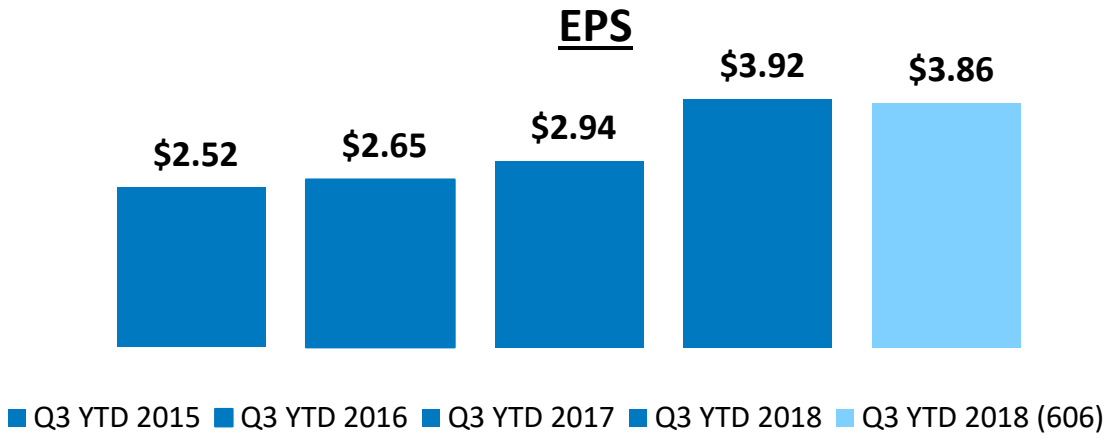


# (Non-GAAP) – Q3 YTD



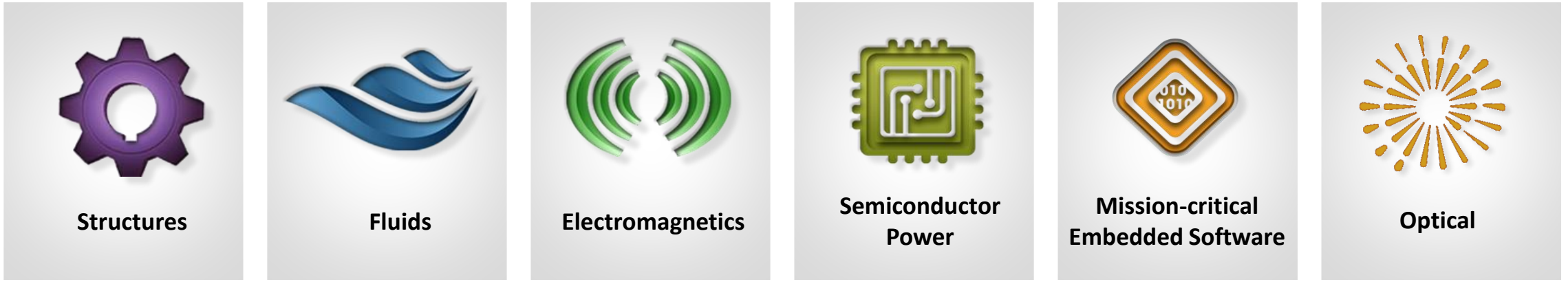



# (Non-GAAP) – Q3 2018

| | ASC 606 | ASC 605 |
|---|---|---|
| Revenue | $293M | $308M |
| Operating Margin | 44.0% | 46.7% |
| Tax rate | 13.9% | 14.1% |
| EPS | $1.31 | $1.46 |

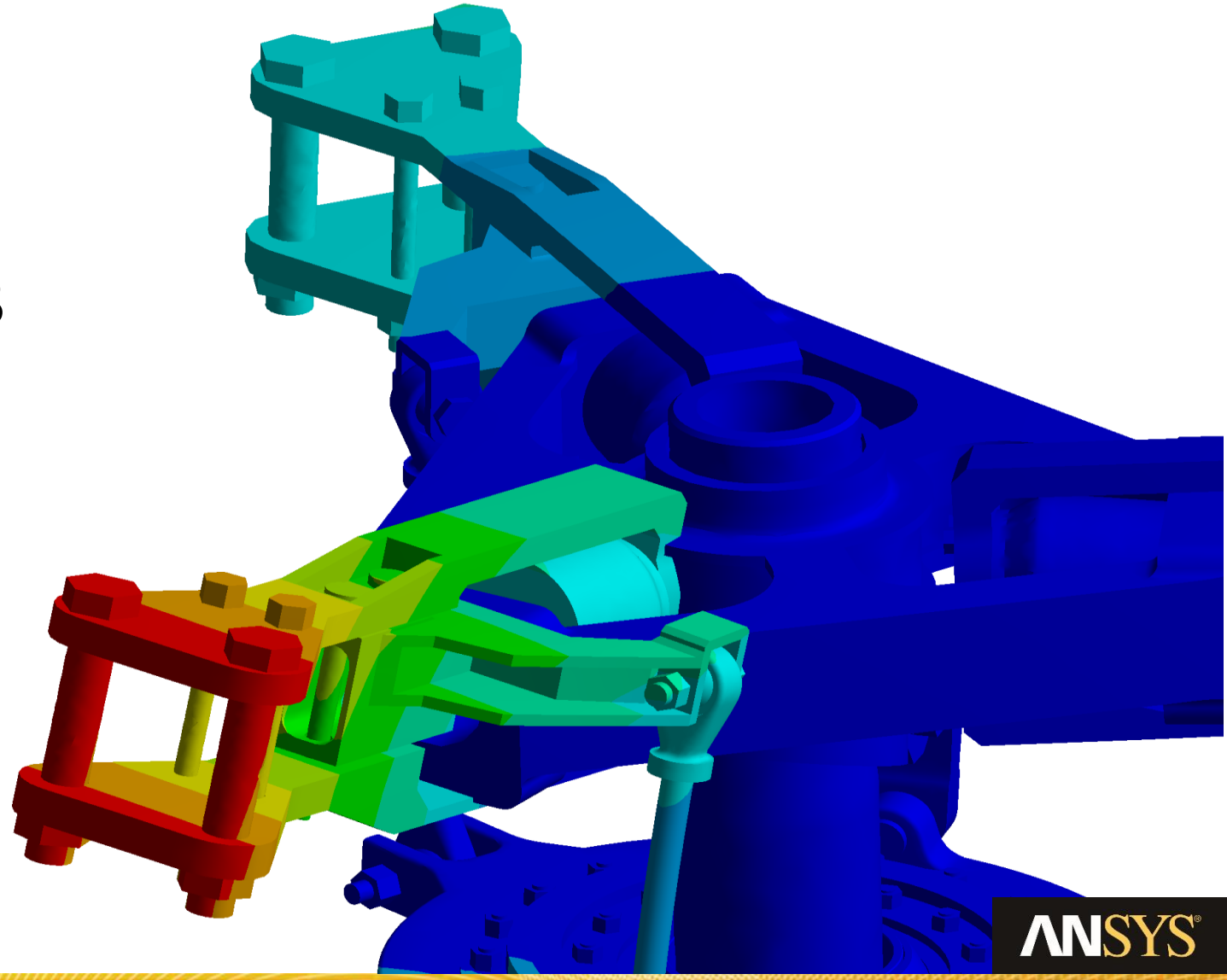
# ANSYS offers the only true simulation platform with best-of-breed simulation across all major physics

## Market Leader Across Individual Physics with Industry-Leading Platform



## OUR MISSION

# EMPOWER OUR CUSTOMERS TO DESIGN AND DELIVER TRANSFORMATIONAL PRODUCTS



# Our long-term vision: PERVASIVE ENGINEERING SIMULATION

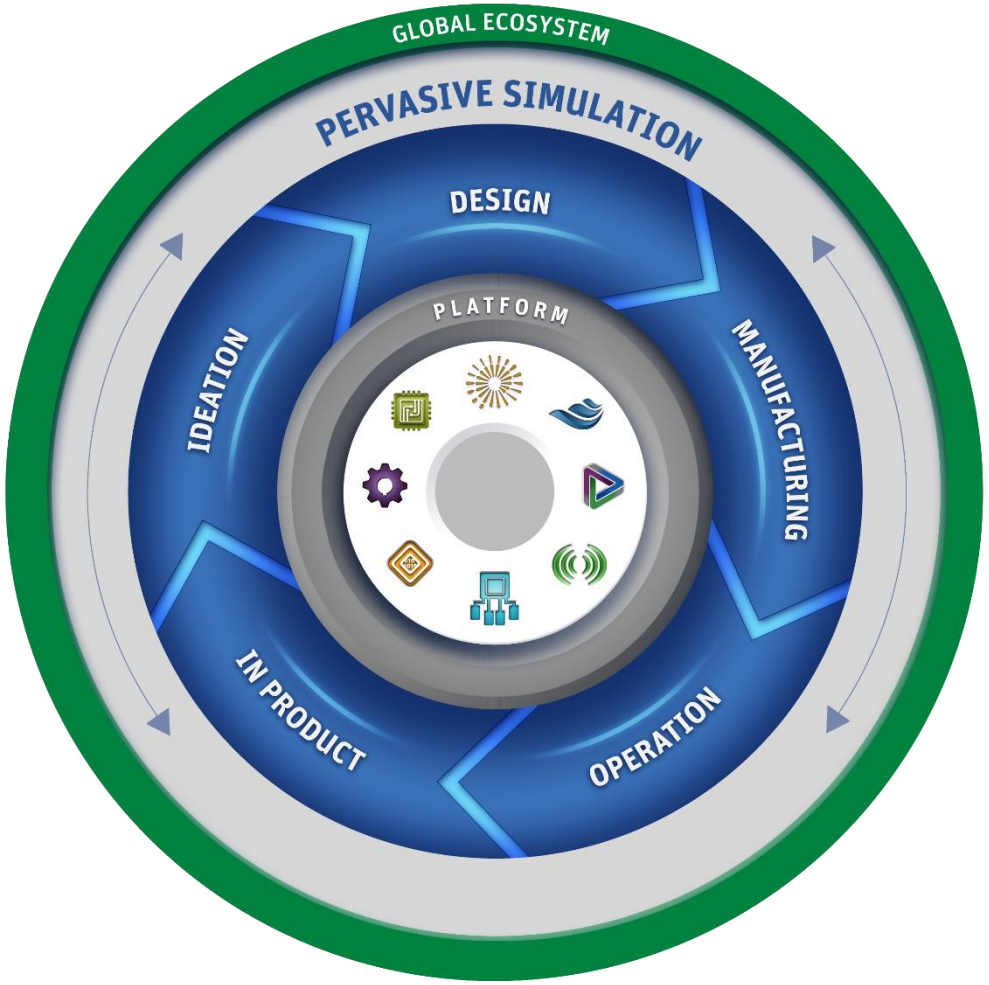
## … integration across the product lifecycle on a single platform

### IDEATION

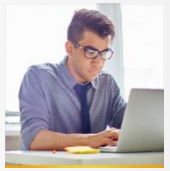
80% of costs locked in early in the design phase

### IN PRODUCT

Reduce time needed to validate autonomous vehicles from 10,000 years to 2-3 years




### DESIGN

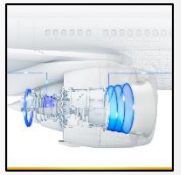


Reduce development time 9X while warranty costs 89% more likely to decrease

### MANUFACTURING

Reduce weight of part by 25% through topology optimization and additive manufacturing

### OPERATIONS

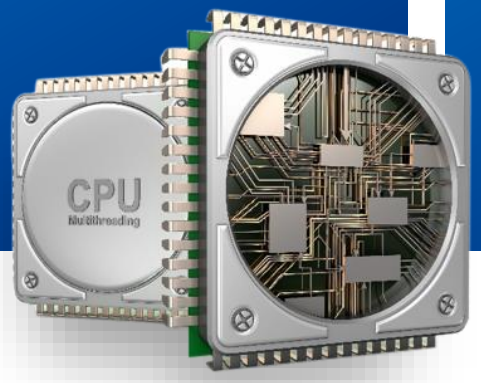


Increased performance with 10-20% reduction in maintenance costs

# Our customers face increased pressure to deliver on the classic challenges

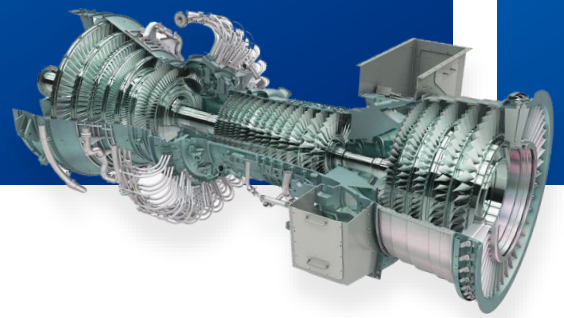
## Time-to-market

↓ 30%




## Cycle Times

↓ 2 years



## New Product Rollouts

↑ 66%

# The digital revolution is making the problem even harder

Chips are ever more complex and sophisticated

Every product will soon be connected (and smart)

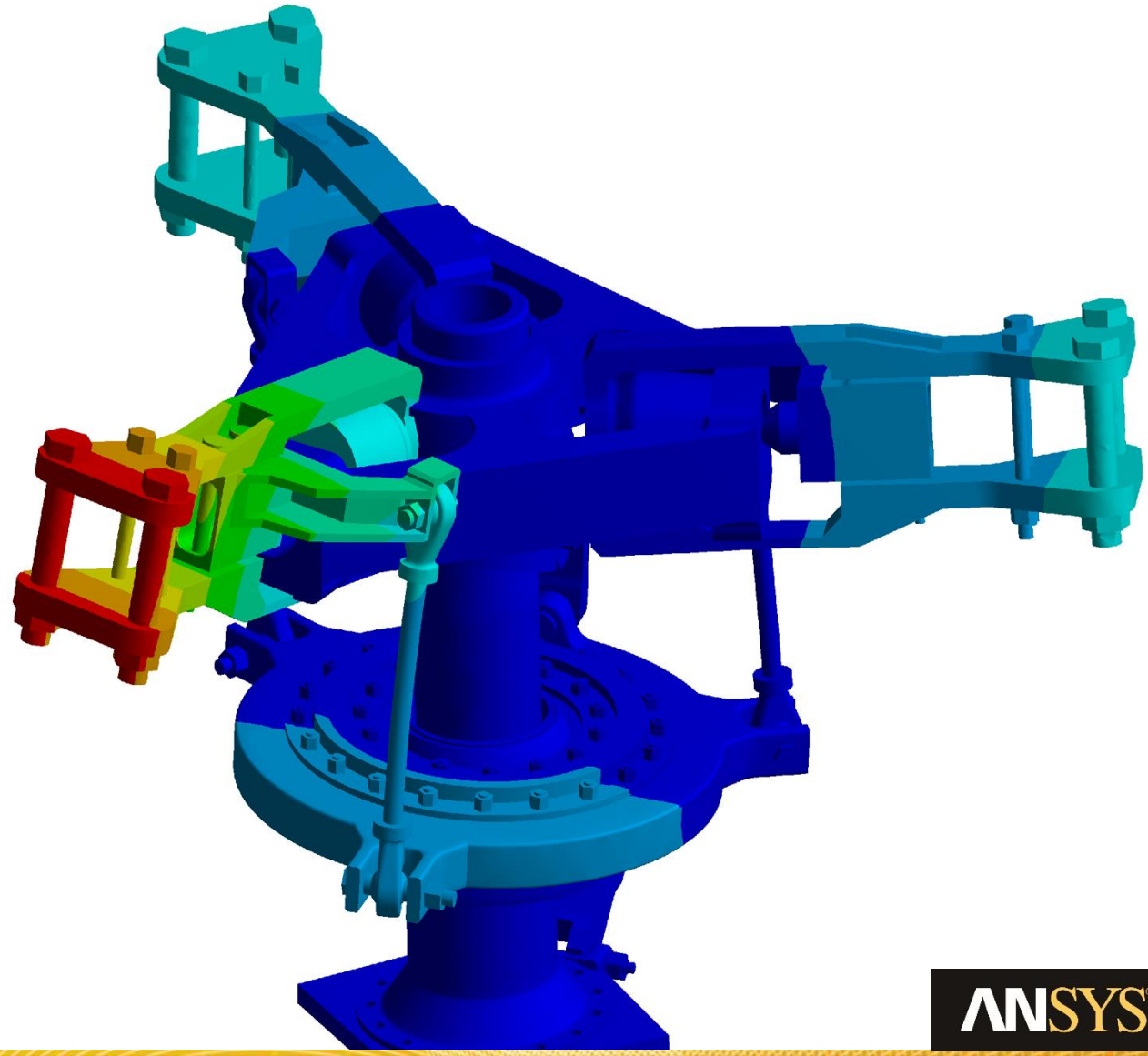
Electronics are everywhere

Additive manufacturing is transforming manufacturing

Products are made of increasingly complex composite materials

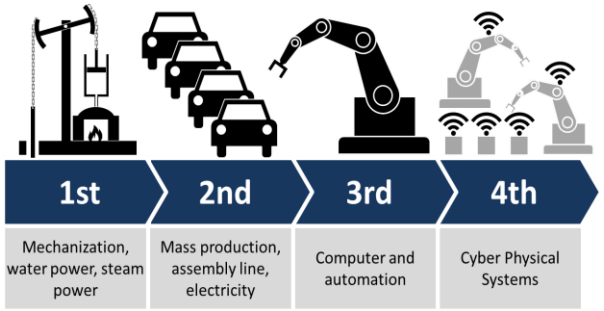
The Internet of Things is changing the way products are delivered and maintained

# SIMULATION IS THE ANSWER



# A time of profound industry transformation

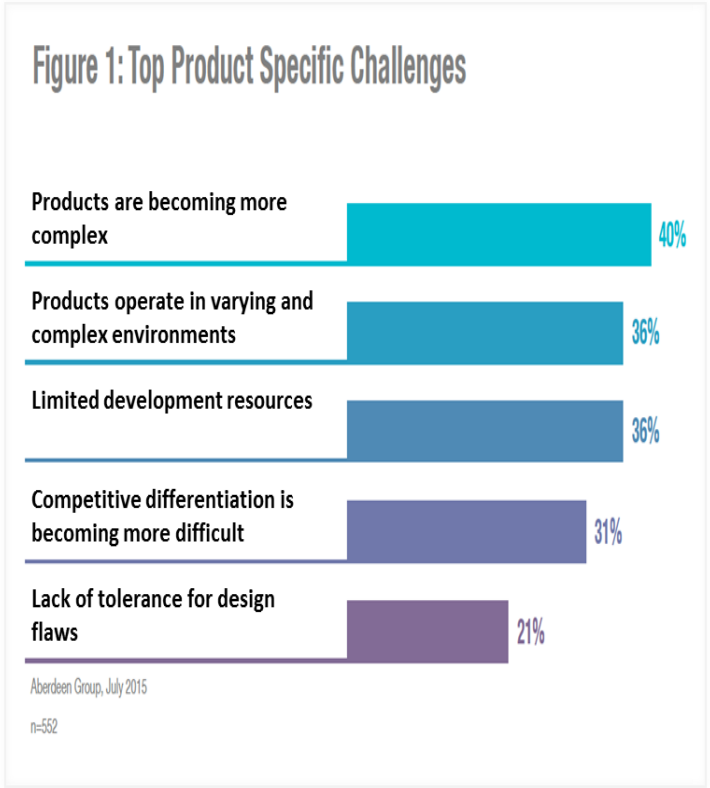
1 Greatest value creation since the industrial revolution




UBER dyson nebia TESLA tsmc Honeywell HYPERLOOP

**+$11 trillion potential by 2025**

2 Product complexity is increasing dramatically




3 Engineering simulation critical to the products of tomorrow

**Top 3 technologies that will have the biggest impact on product design and development over the next 5 years?**

1. **Additive Manufacturing**
2. **Engineering Simulation**
3. **Advanced Materials**

**SIMULATION vs NO SIMULATION**
**Simulated Environments Experience:**

| | |
|---|---|
| **Length of Development Time** | ▼ **9x** reduction |
| **Overall Product Cost** | ▼ **4x** reduction |

# Simulation enables product managers to…

- Drive **INNOVATION**
- Manage **COMPLEXITY**

+

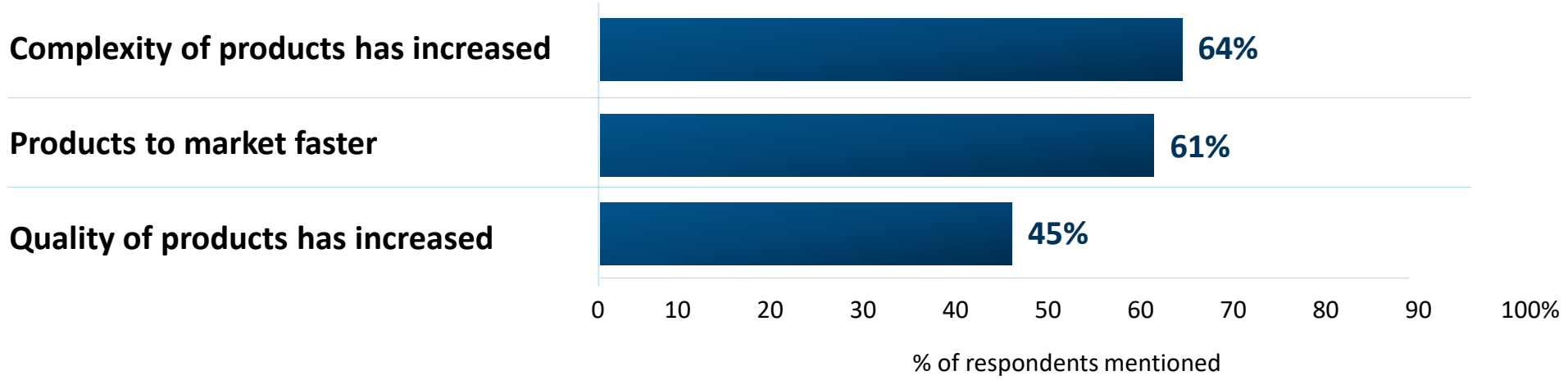
- Lower **CYCLE TIME**
- Reduce **COSTS**

+

- Increase **QUALITY**
- Eliminate **RISK**

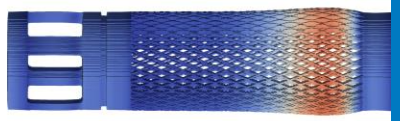
# …which is driving simulation usage

***Top 3 responses to: Which of the following are driving your company to use more simulation?***




Source: ANSYS customer survey April 2017 (N = 582).

# Additive Manufacturing Simulation Reduces Time to Market



**Warpage was a problem in additive manufacturing of a filter**

- In the past, trial and error methods were used to address warpage problems.
- It typically took four weeks to achieve a satisfactory part.
- Considerable costs were expended in producing many prototypes.

## ANSYS Solution

- Croft engineers simulated the build in ANSYS Additive Print to diagnose problem.
- Engineers added supports to filtration mesh which reduced distortion.
- They used the automatic compensation in Additive Print to adjust the geometry to compensate for remaining distortion.

## Key Results

- Simulation enabled Croft to move quickly to optimize the design while minimizing number of prototypes.
- Engineers avoided many prototypes that would have been needed with traditional method.
- Design of the part has been finalized and it is moving to product launch.

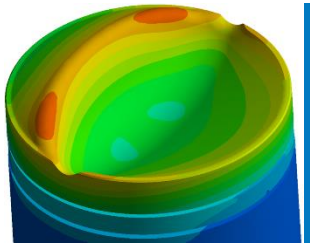
*"By leveraging ANSYS Additive Print in their design-to-print workflow, engineers were able to quickly generate a printable design and avoid multiple build failures, thus reducing time to market and prototyping expenses by 50 percent."*

***Louise Geekie***
*Project Manager*
***Croft Filters, Ltd.***

**Time to market reduced 50%**

**Prototyping expenses reduced 50%**

# Shortening Time to Design Automotive Engines



**Two-stroke, opposed piston engines improve powertrain**

- Achates Power's new engine is 50 percent more fuel efficient than today's gas engines.
- Eliminating cylinder head reduces waste heat, providing fuel economy savings.
- But piston and cylinder liner must absorb more heat, creating engineering challenge.

## ANSYS Solution

- Achates engineers used ANSYS conjugate heat transfer simulation to calculate temperature of cylinder liner.
- Metal temperatures used by an ANSYS Mechanical FEA model that calculates thermal stress on cylinder liner.
- Another ANSYS Mechanical simulation predicted piston crown temperatures and thermal stress on piston.

## Key Results

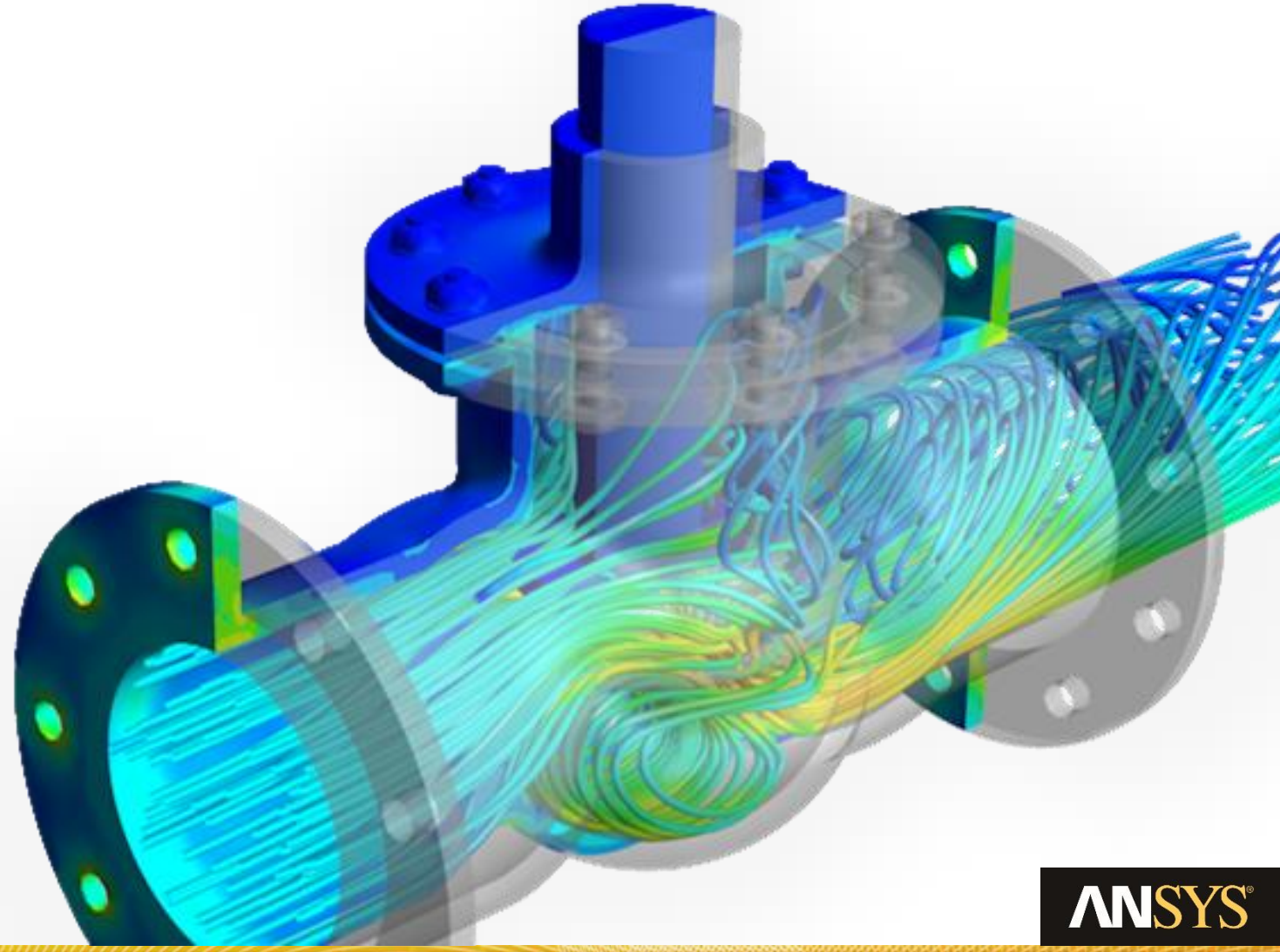
- Achates Power engineers evaluated design iterations in days instead of months using traditional design process.
- The number of hardware prototypes required to develop new engines has been reduced.
- Engineers have significantly improved engine durability.

*"Intensive use of ANSYS simulation tools has enabled Achates Power to rapidly eliminate failure modes by iterating designs in days as opposed to the months that would be required if they were using a traditional design process primarily based on physical prototypes."*

**Dnyanesh Sapkal**
*Vice President, Mechanical Systems Engineering*
**Achates Power, Inc.**

**Time to develop new engines has been reduced by 50%.**

# WHERE DOES SIMULATION GO FROM HERE?



# Focusing our investments on highest priority initiatives

## FOCUSED INVESTMENT

### ~80% of investment on core technology

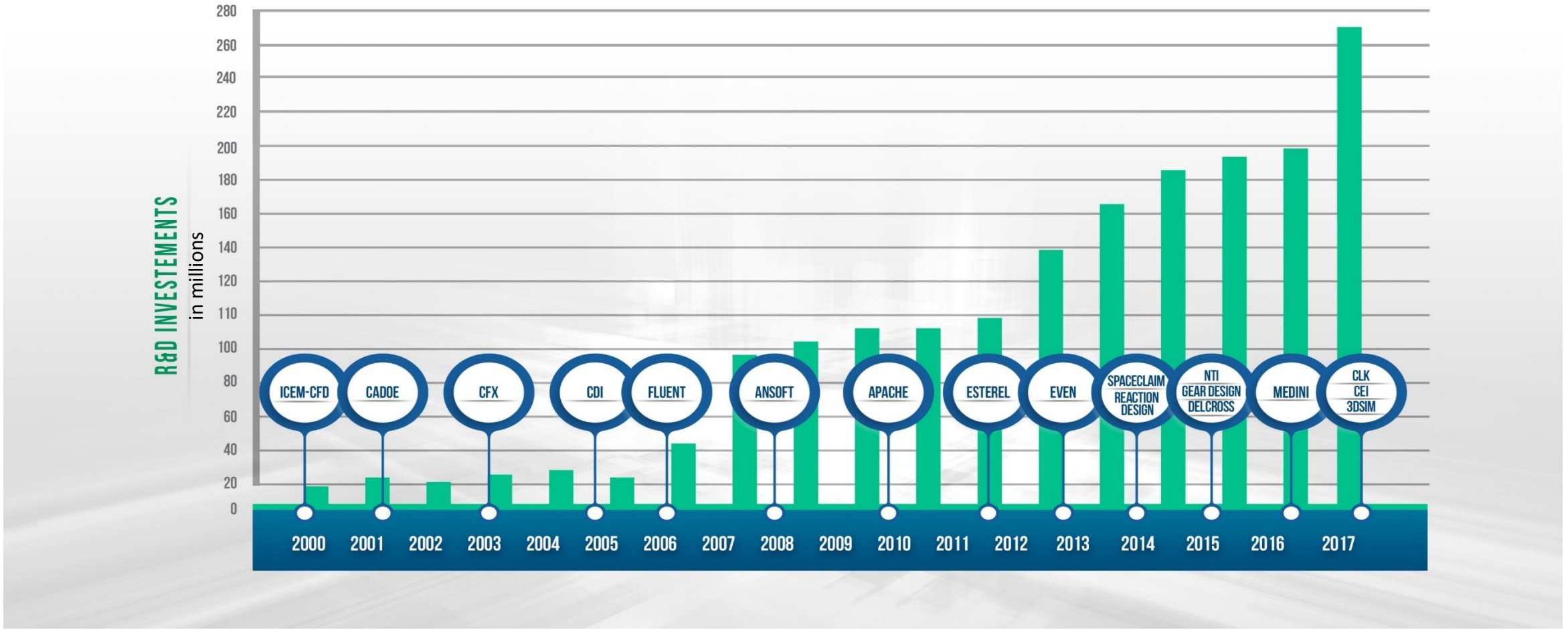
- Unparalleled & unquestioned accuracy
- Usability of broadest/deepest physics
- Unique & powerful multiphysics
- Common platform from cloud to edge

### ~20% of investment on next-generation technology

- Digital exploration
- Additive manufacturing
- Digital Twin/IOT
- Autonomous vehicles

**ENHANCING OUR CORE TECHNOLOGY WHILE DRIVING NEXT-GENERATION INNOVATION**

# Our ongoing commitment to invest in R&D



# OPTIS Acquired in Q2 2018

OPTIS is the leading provider of software for scientific simulation of light, human vision and physics-based visualization.  With OPTIS, ANSYS capabilities now span the simulation of all sensors, including lidar, cameras and radar; the multi-physics simulation of physical and electronic components; the analysis of systems functional safety; as well as the automated development of safety-certified embedded software.

Since 1989, OPTIS' physics-based optical simulation solutions have helped companies around the world improve the look and ensure the safety of their designs, reduce their ecological footprint and bring products to market faster.

The acquisition is a significant milestone as ANSYS now delivers the industry's most comprehensive solution for simulating autonomous vehicles – offering the broadest toolset for validating the safety and reliability of autonomous vehicles – mitigating the need for billions of miles of road testing.

OPTIS

More than 2400 clients in over 50 countries, including Audi, Bentley, Ford, Toyota, Honda, Boeing, Airbus, Sony, Nikon Canon, GE, Swarovski and L'Oréal.

**Headquarters:** La Farlede, France

**Offices:** China, Germany, India, Italy, South Korea, Sweden, the United Kingdom and the United States

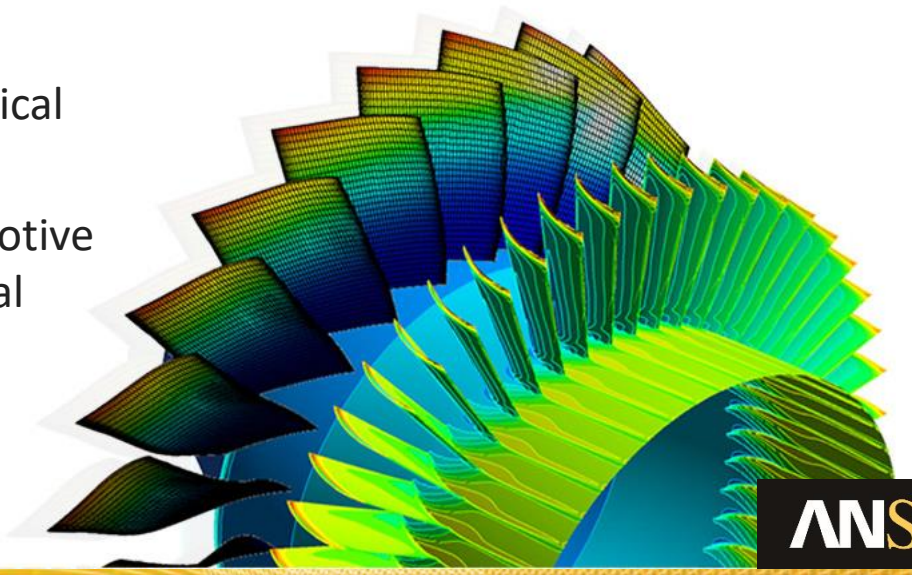
**Employees:** ~240 globally

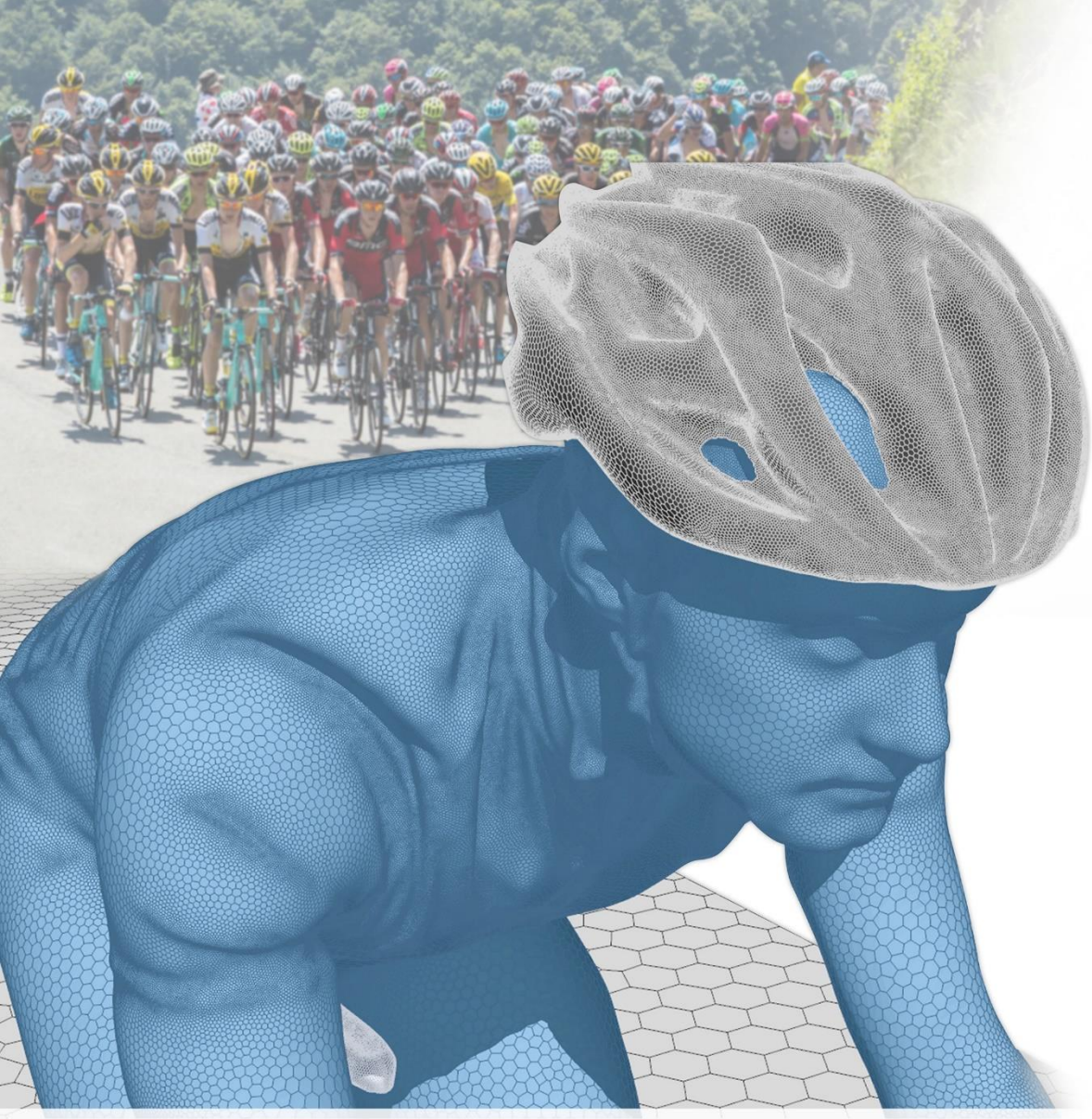
ANSYS

# Faster Problem-Solving Across the Entire Portfolio

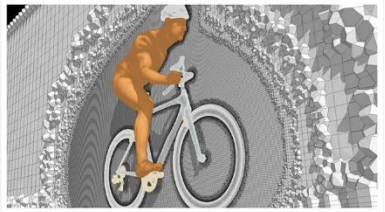
## ANSYS 19.2

- Trends such as additive manufacturing, autonomous vehicles, electrification and 5G connectivity pressure companies to develop and deliver next-generation products faster and at lower cost.
- With ANSYS 19.2, companies can confidently make critical product decisions, push the boundaries of innovation and accelerate time to market – without sacrificing quality.
    - Revolutionary task-based workflow with Mosaic meshing technology accelerates Fluent computational fluid dynamics (CFD) simulations, requiring less hands-on time
    - New processes for developing embedded software for safety-critical applications
    - Dramatic speed-up and better user experience for solving automotive radar scenarios, digital twins, 3D design exploration and structural modeling

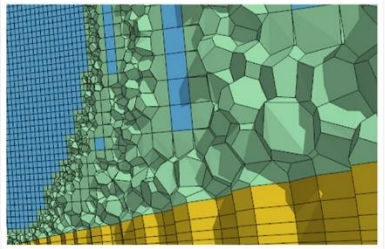




# Introducing Mosaic Meshing Technology



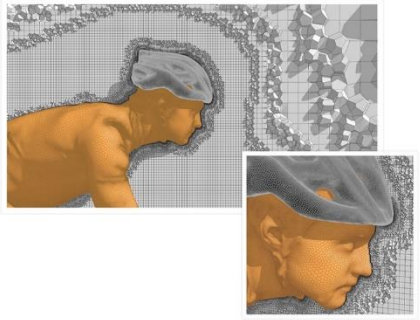
ANSYS Fluent meshing now includes a completely automated, patent-pending technology that delivers higher quality results at faster speeds. In a benchmark simulation, the Mosaic mesh had fewer, better quality cells and delivered a solution twice as fast.



- **POLY-PRISM Mesh**
- **HEXCORE Mesh**
- ***NEW*: MOSAIC TECHNOLOGY**

## Mosaic-enabled Poly-Hexcore meshing available in ANSYS 19.2

Accuracy and solution time are critical CFD simulations, and both are highly dependent on the characteristics of the mesh. Different types of meshing elements are needed to resolve various geometries and flow regimes. Transitioning between different types of elements has been a challenge. Engineers were forced to compromise on a common element type to minimize mesh transitions.



ANSYS Mosaic technology automatically connects different types of meshes with general polyhedral elements. Mosaic mesh-connecting technology has the potential to deliver exciting new combinations of meshing elements for solving increasingly complex parts with greater accuracy and speed.

# ANSYS Discovery family of products

*A new paradigm in 3D design exploration, bringing real time simulation into the hands of every engineer.*

**Features:**

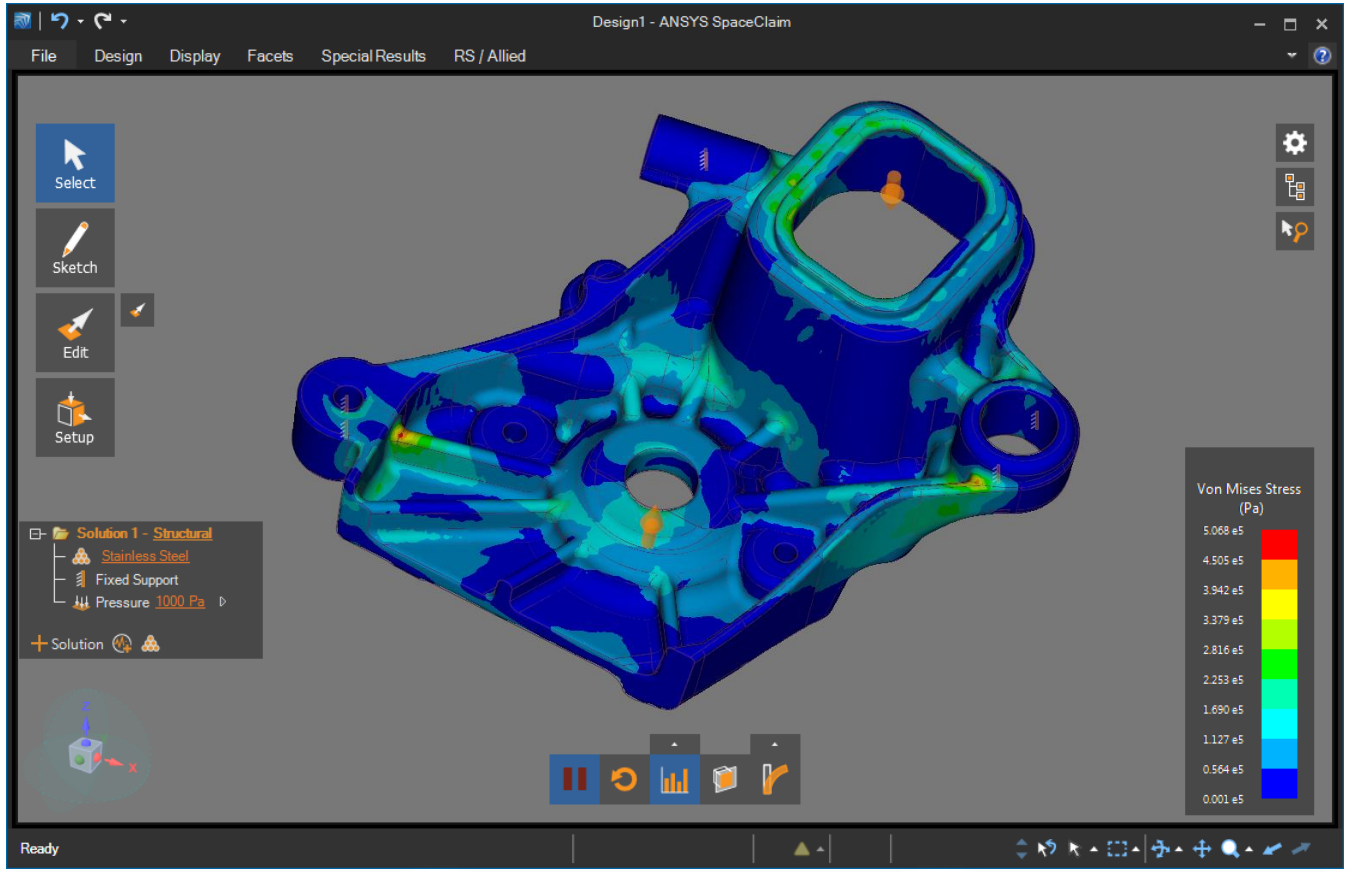
- **Speed** – Instantaneous simulation experience
- **Ease of use** – Run 1st simulation in minutes.
- **Geometry Enabled** – Edit geometry from any CAD source.
- **Interactive** – Edit physics inputs, geometry, or alter display characteristics, and simulations update in real-time.

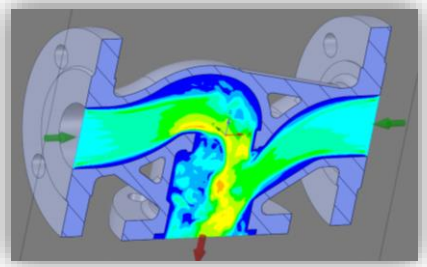
**Technology**

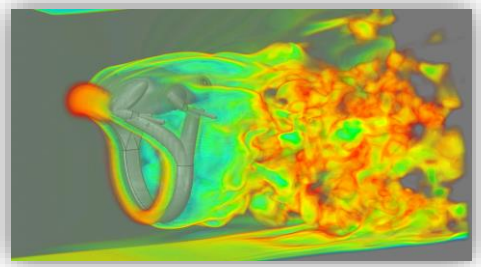
- Massively parallel solvers and post-processing running on GPUs
- Fast, flexible, CAD-neutral geometry platform (SpaceClaim)
- Volumetric simulation approach

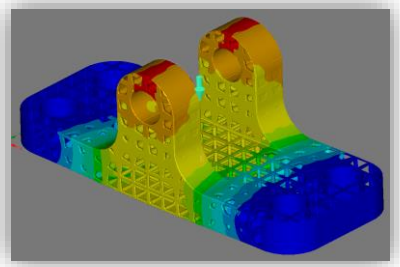
**Benefits:**

- Quickly create & test multiple design variations
- Minimal learning curve
- Negligible setup time (no meshing/time step) choices
- Robust - no failed simulations
- Scales with future compute advances

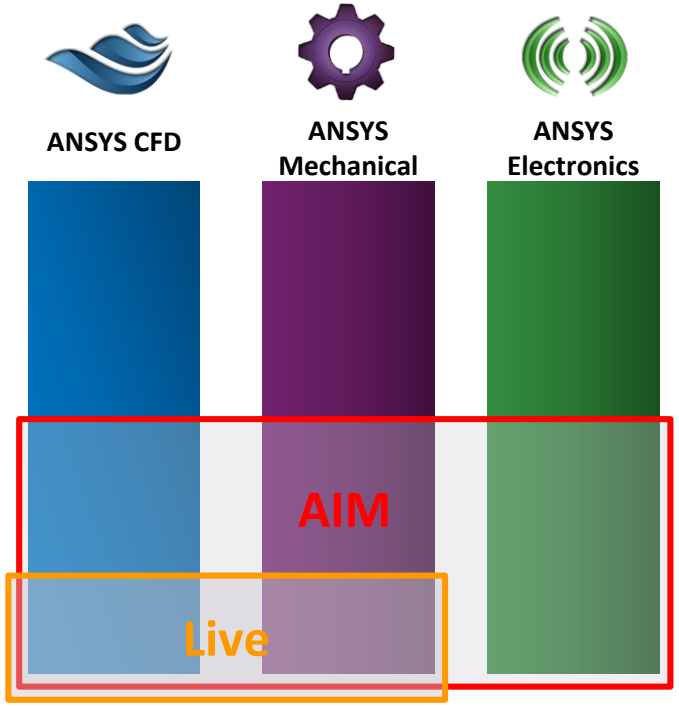






# ANSYS Discovery Product Line




## 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

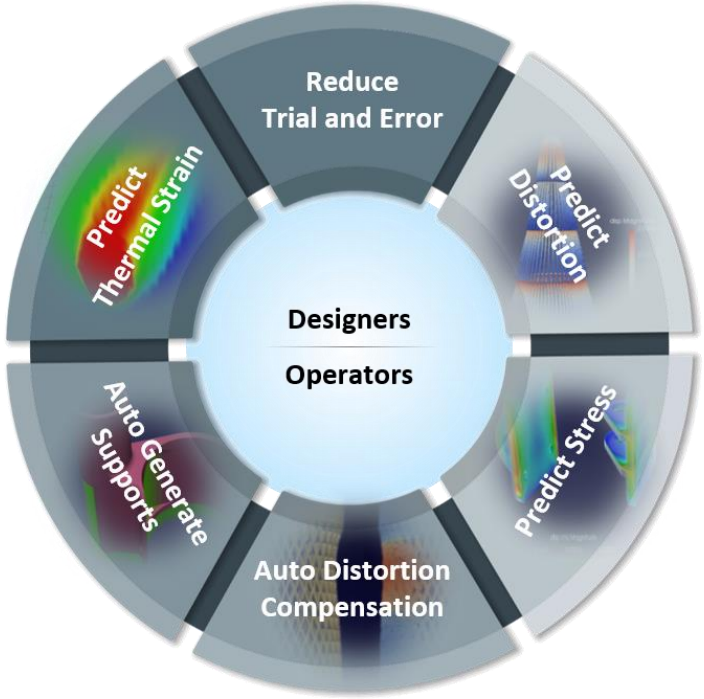
## Discovery SpaceClaim

- 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. See Appendix for additional product information.

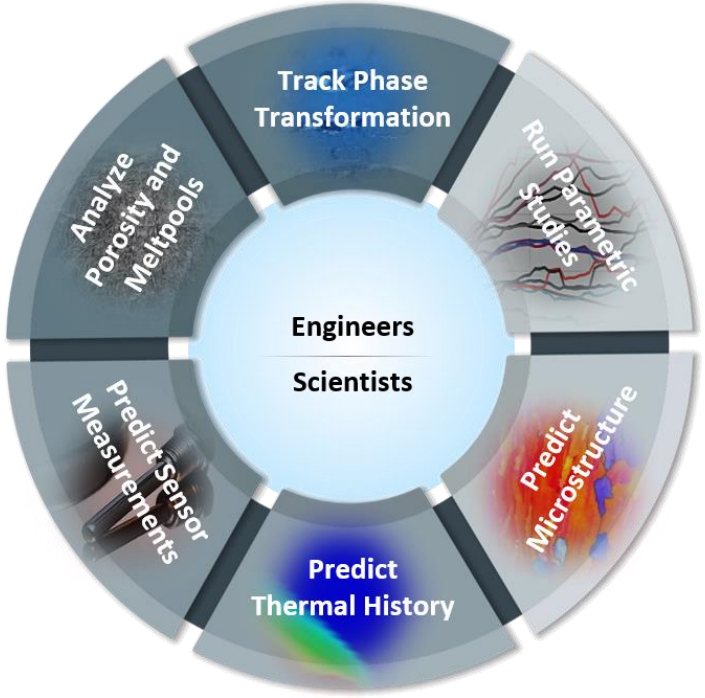
# Additive - Two distinct customer groups – Two products

## *ANSYS Additive Print*




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

## *ANSYS Additive Suite*

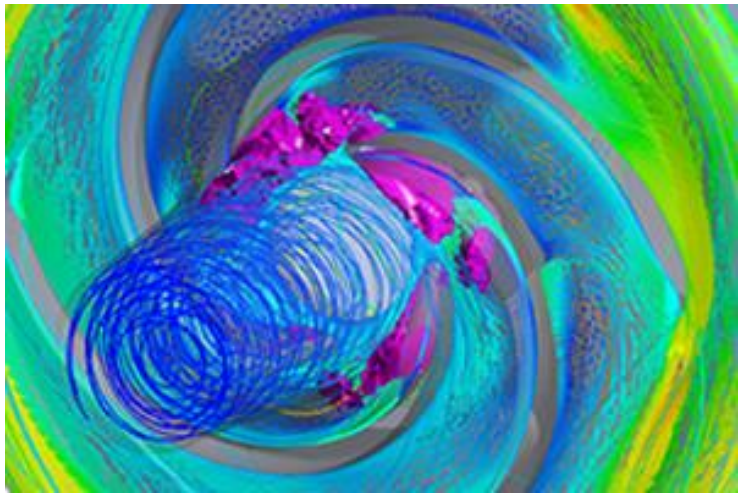



- *FEA analysts in aerospace, defense, auto OEMs & medical*
- *Owners of "part qualification" within OEMs*
- *Materials/manufacturing researchers*

Additional information located at www.ansys.com/products/structures/additive-discovery-manufacturing. See Appendix for additional information.

# 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.

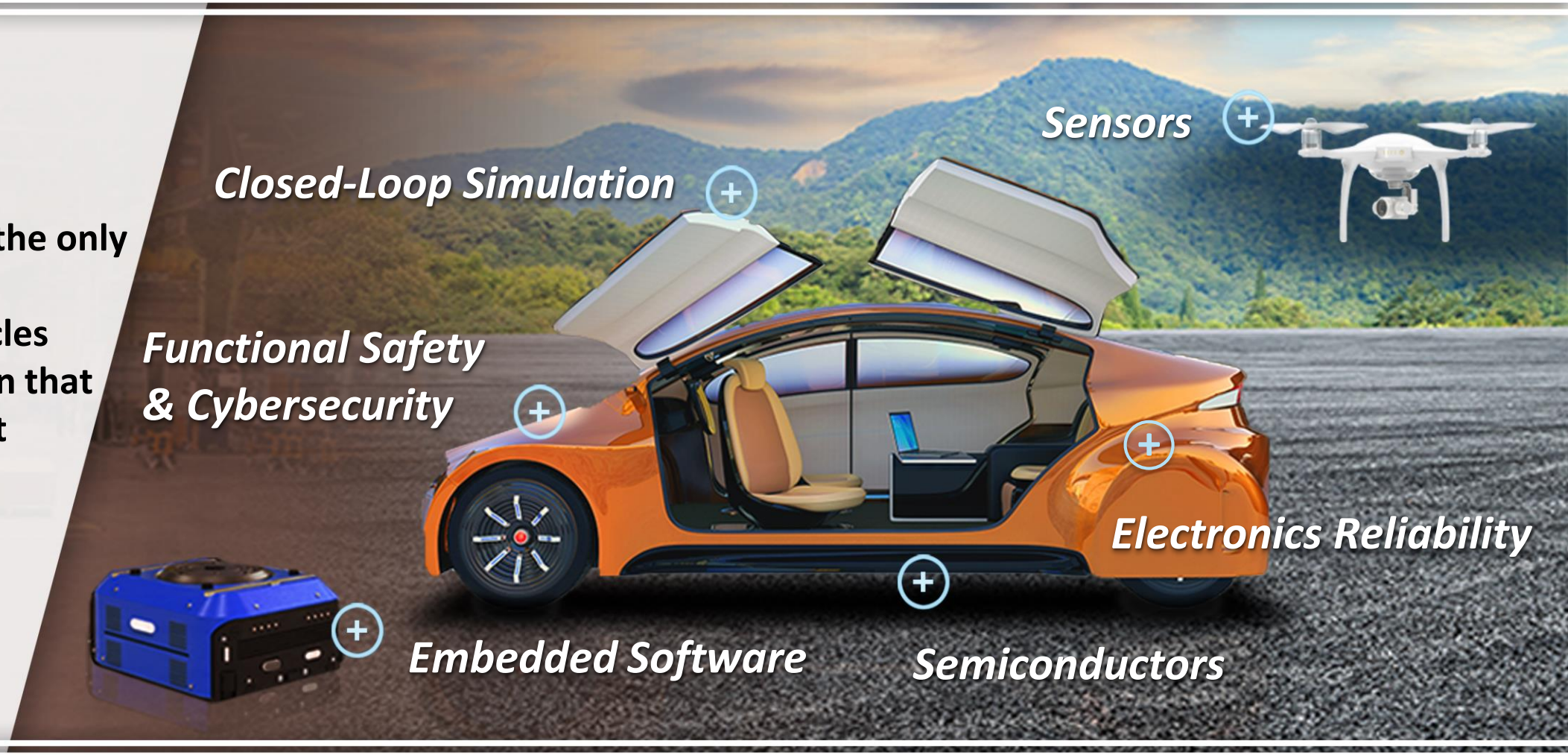


- With the emergence of the Industrial Internet of Things (IIoT), simulation is expanding into operations.
- The IIoT enables engineers to communicate with sensors and actuators on an operating product to capture data and monitor operating parameters.
- The  digital twin can be used to monitor prescriptive analytics and test predictive maintenance to optimize asset performance.

Additional information located at www.ansys.com/products/systems/digital-twin. See Appendix for additional information.

# Autonomous Vehicle Simulation

**ANSYS is building the only comprehensive autonomous vehicles simulation solution that can accurately test millions of driving scenarios**




Additional information located at www.ansys.com/products/systems/adas

# Expanding the ANSYS ecosystem through partnerships

- SAP incorporating ANSYS Twin Builder in cloud-based Predictive Engineering Insights
- Replace time-based maintenance of industrial assets with predictive and prescriptive maintenance
- Will help sell flagship products to R&D groups

- PTC embedding ANSYS Discovery Live and AIM within Creo for CAD-embedded simulation
- Improve ideation and enable designers to develop better, lower-cost products
- Will create opportunities to sell flagship products to experts / analysts

- Synopsys integrating ANSYS RedHawk with Synopsys IC Compiler for earlier signoff accuracy
- Accelerate time to market of next generation of high-performance computing, mobile and automotive products

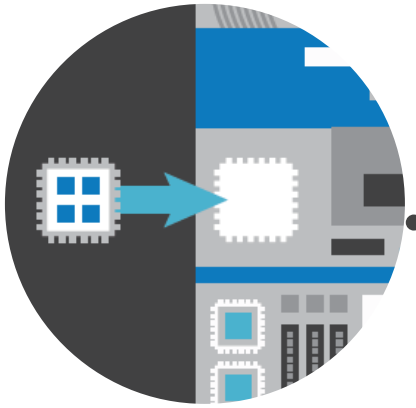
# The cloud opportunity for simulation

***Product complexity, and need for agility and collaboration driving cloud adoption***

## REDUCED TURNAROUD

ENHANCE ENGINEERING PRODUCTIVITY BY REMOVING HARDWARE RESOURCE CONSTRAINTS AND INCREASING SIMULATION THROUGHPUT

## MORE ACCURATE RESULTS



MAKE MORE ACCURATE DESIGN DECISIONS BY INCORPORATING FINER MESHES, HIGHER FIDELITY PHYSICS AND COMPLETE SYSTEMS

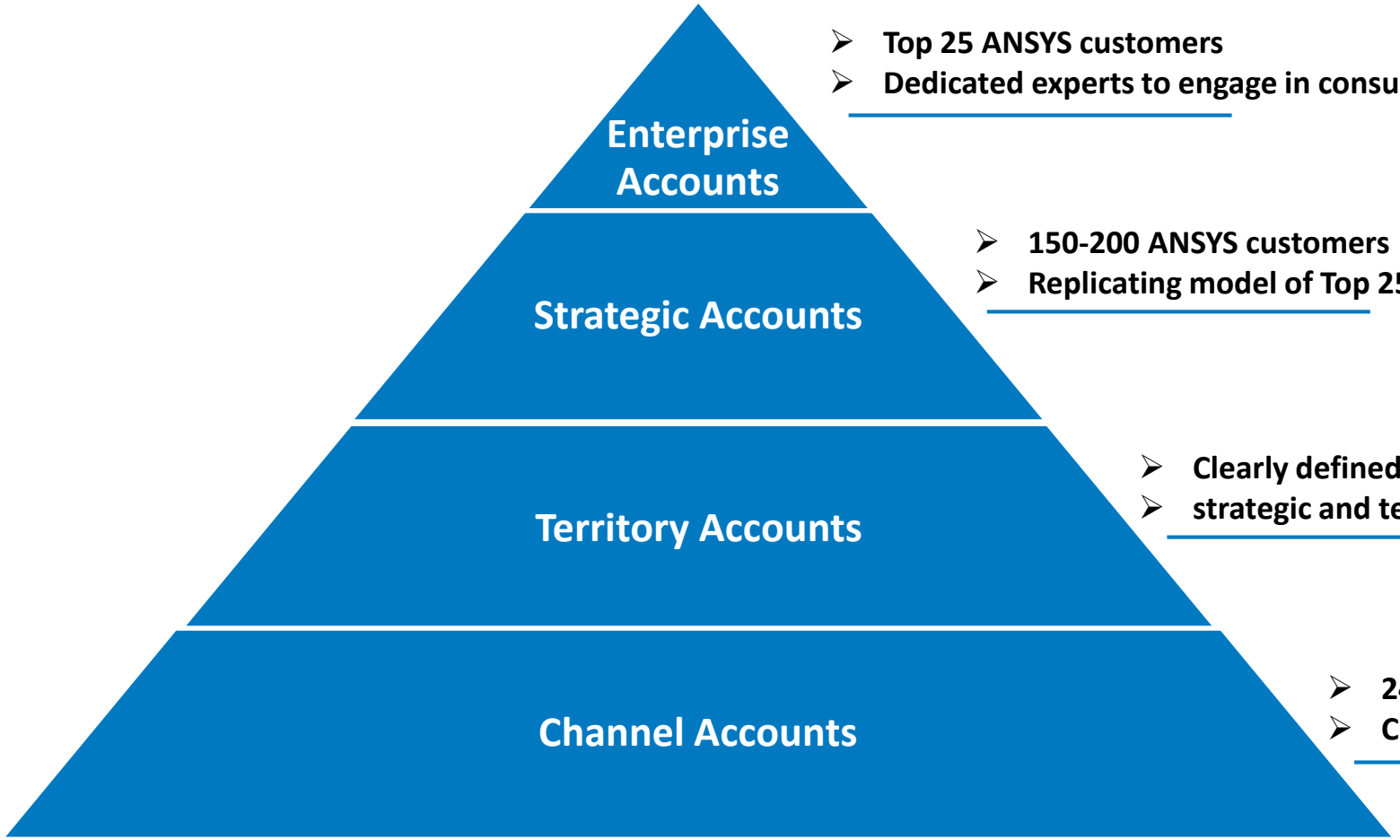
## BETTER DESIGN TRADEOFFS

INNOVATE FASTER BY ENABLING USERS TO CONSIDER MORE DESIGN IDEAS AND SHARE RESULTS WITH MORE ENGINEERS

## NEW MARKETS & APPLICATIONS

EXPAND SIMULATION THROUGHOUT PRODUCT LIFECYCLE AND DEPLOY FOR NON-TRADITIONAL APPLICATIONS AND USERS

# Our go-to-market strategy



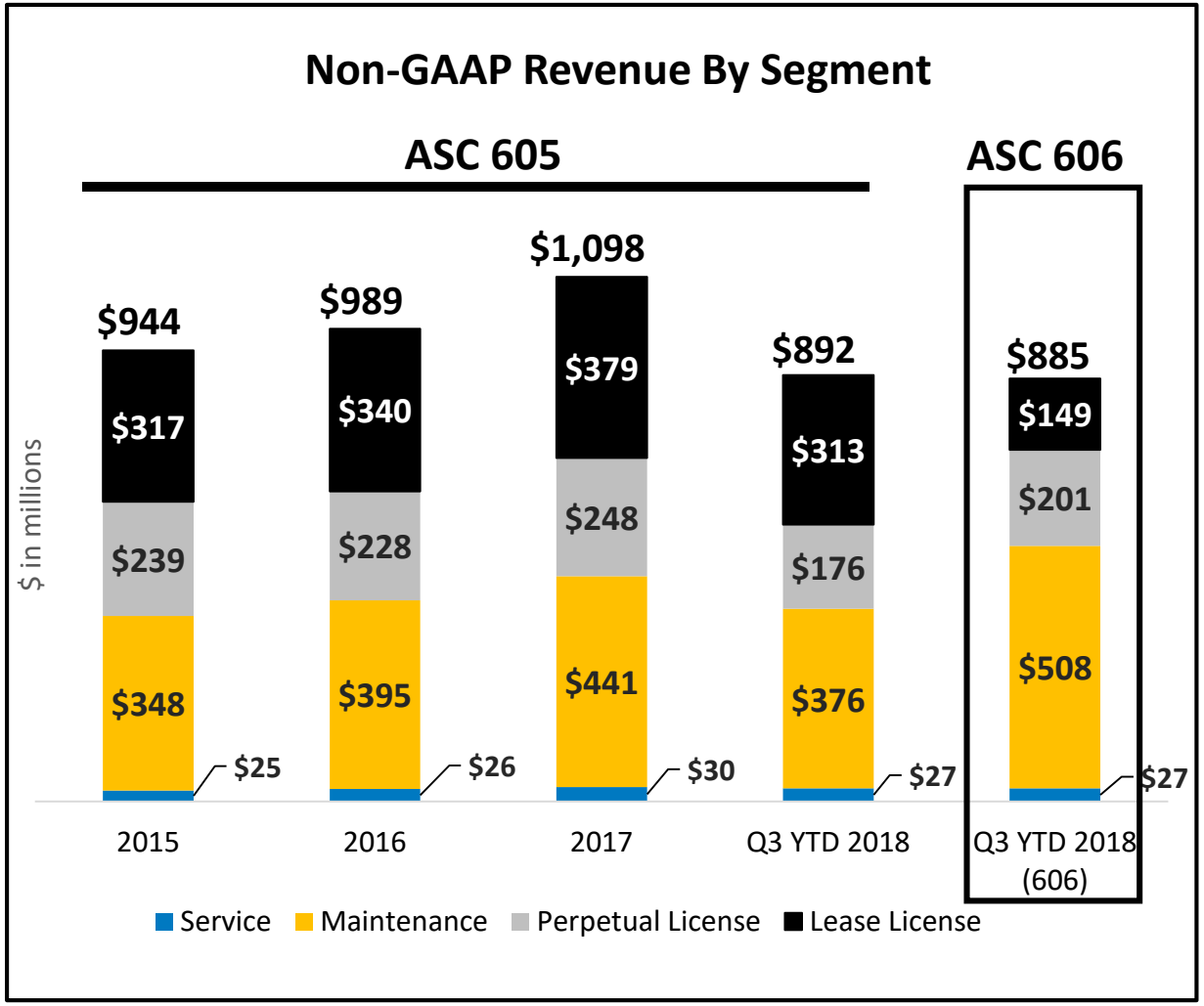

- Top 25 ANSYS customers
- Dedicated experts to engage in consultative selling

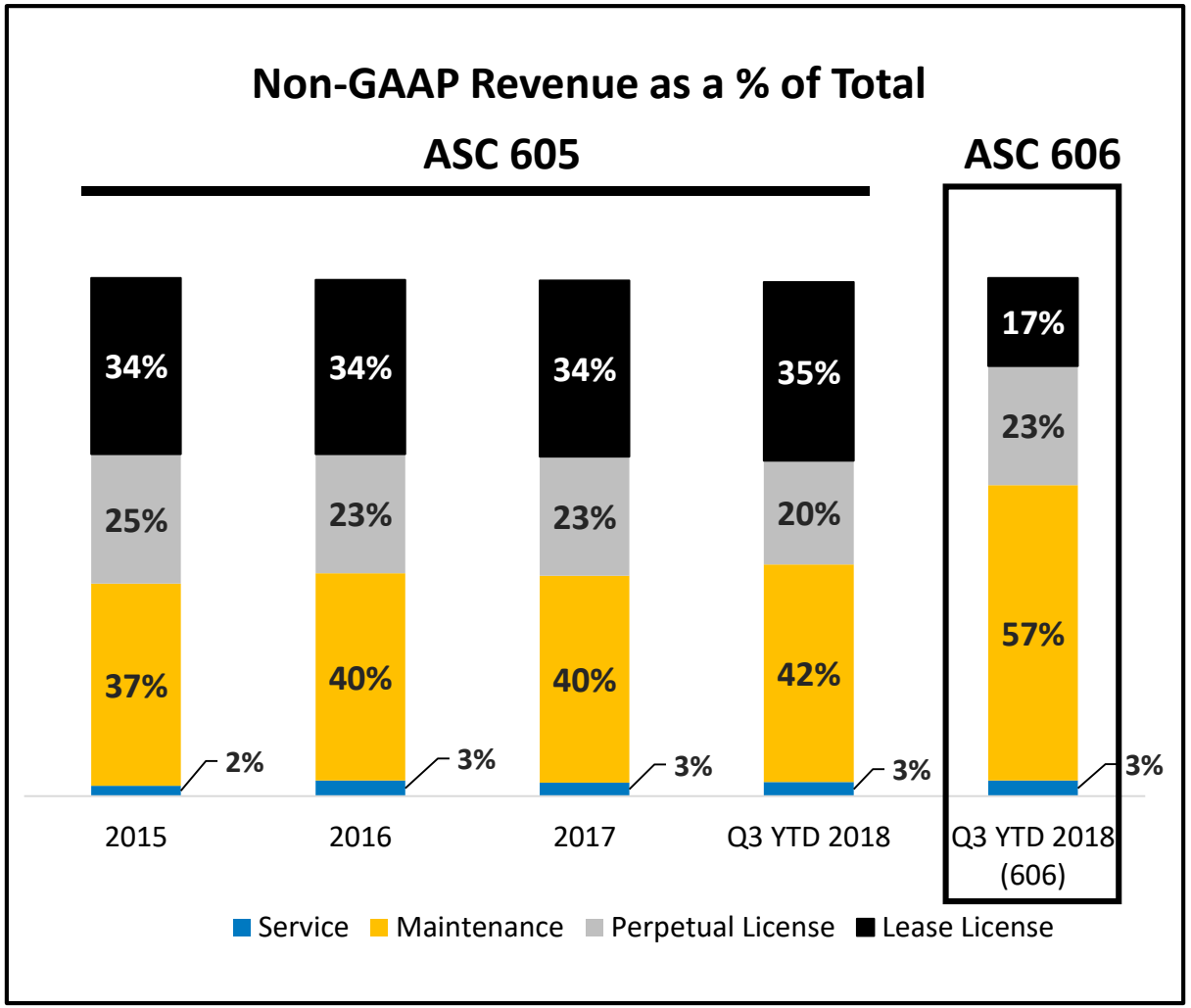
- 150-200 ANSYS customers
- Replicating model of Top 25

- Clearly defined resources between
- strategic and territory accounts

- 24% of revenue (ASC 606)
- Customers <$500mn

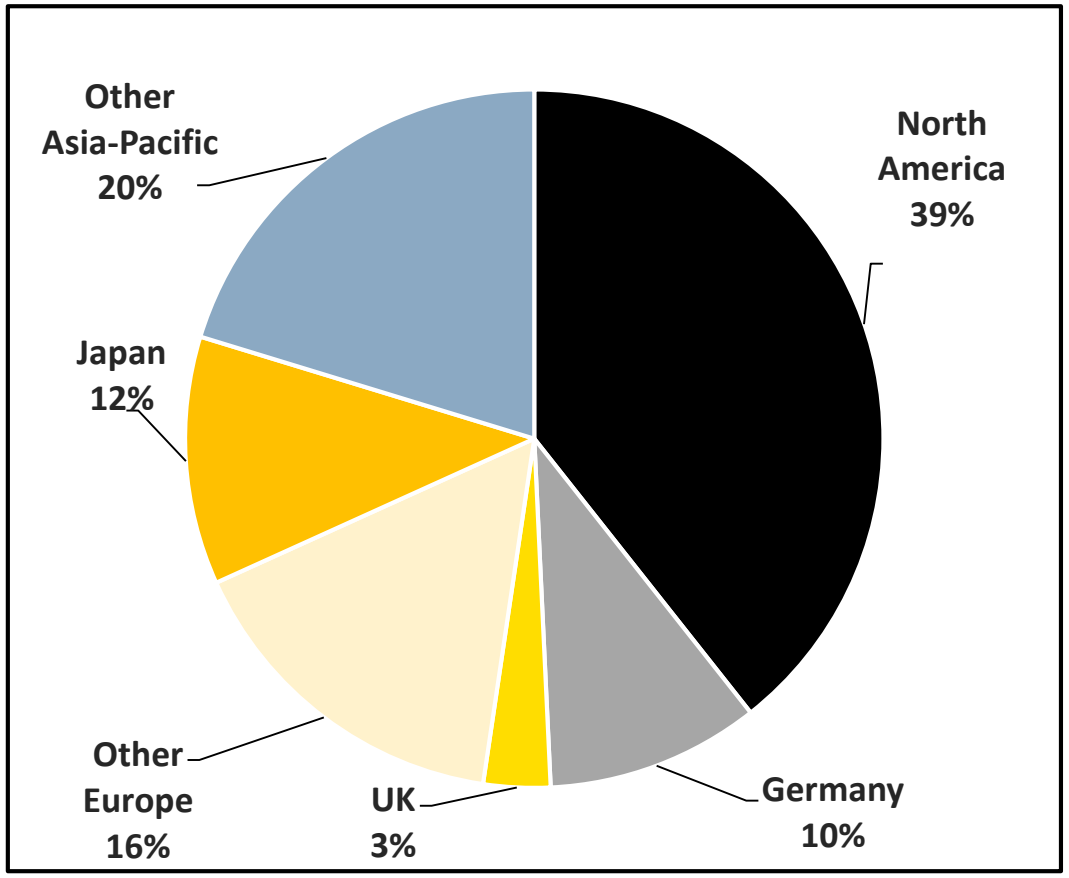
# Diverse revenue sources



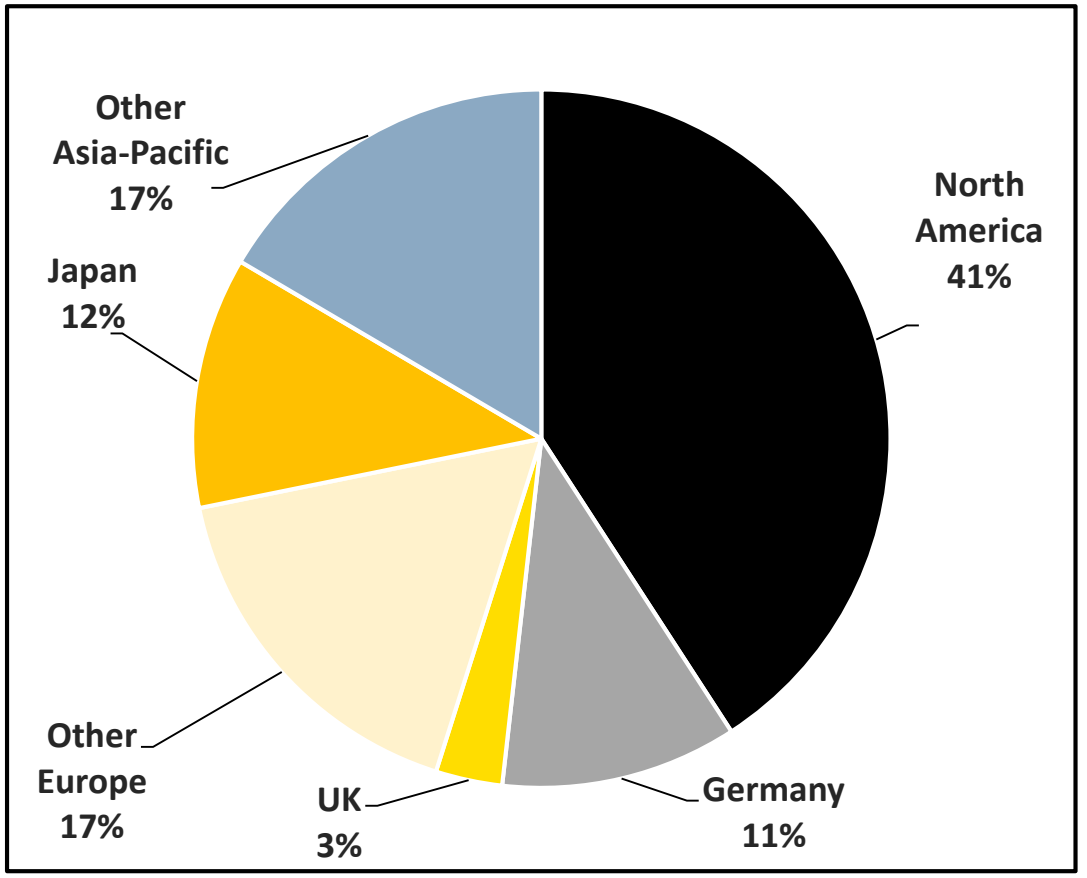



# Diverse geography mix

## FY 2017 Revenue By Geography




## Q3 YTD 2018 Revenue By Geography

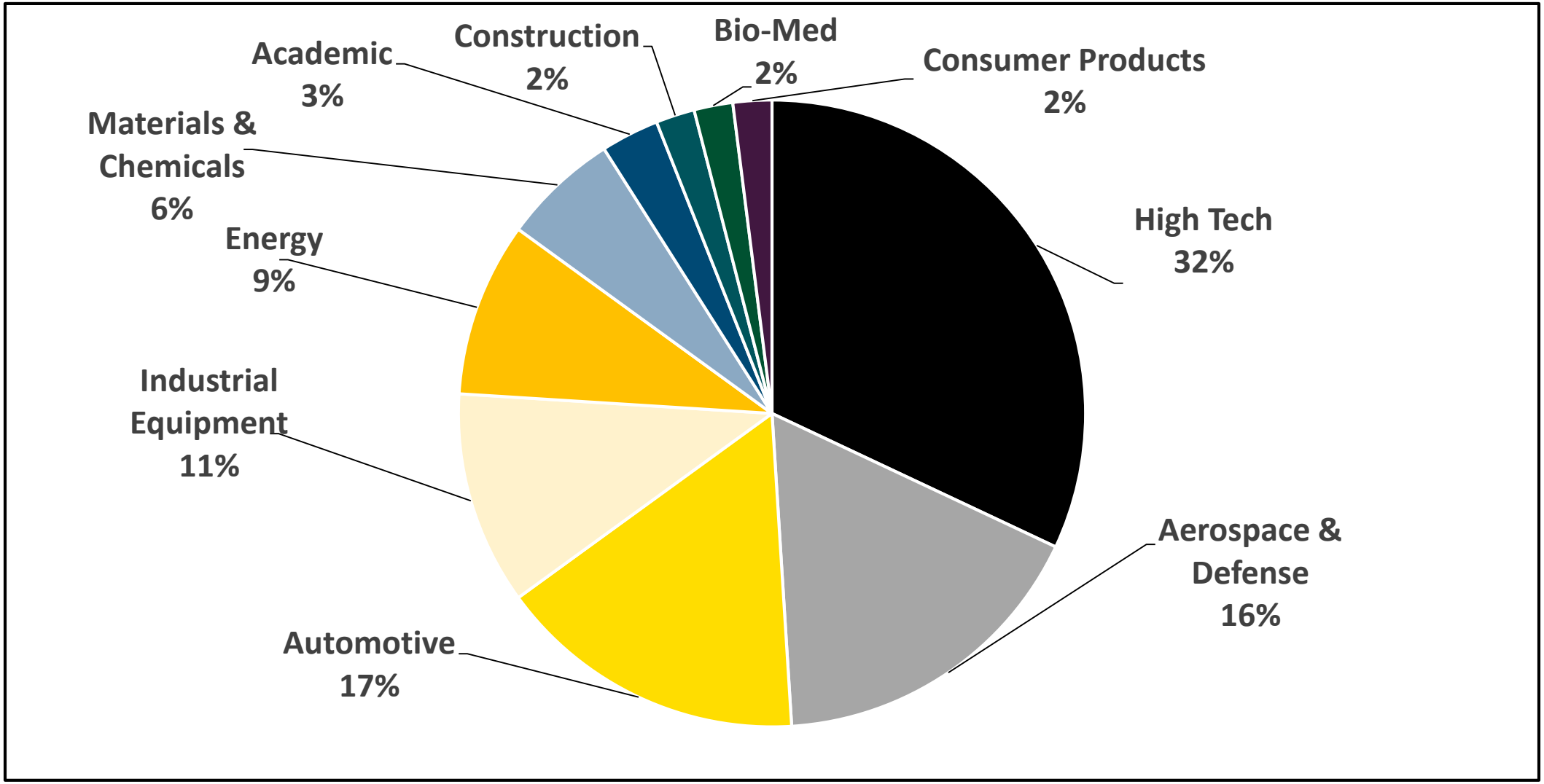



ASC 605/606

Note: Non-GAAP revenue mix by geography for the Q3 YTD 2018 period are similar under both ASC 606 and 605, except for North America mix which is 39% under 606 and 41% under 605.

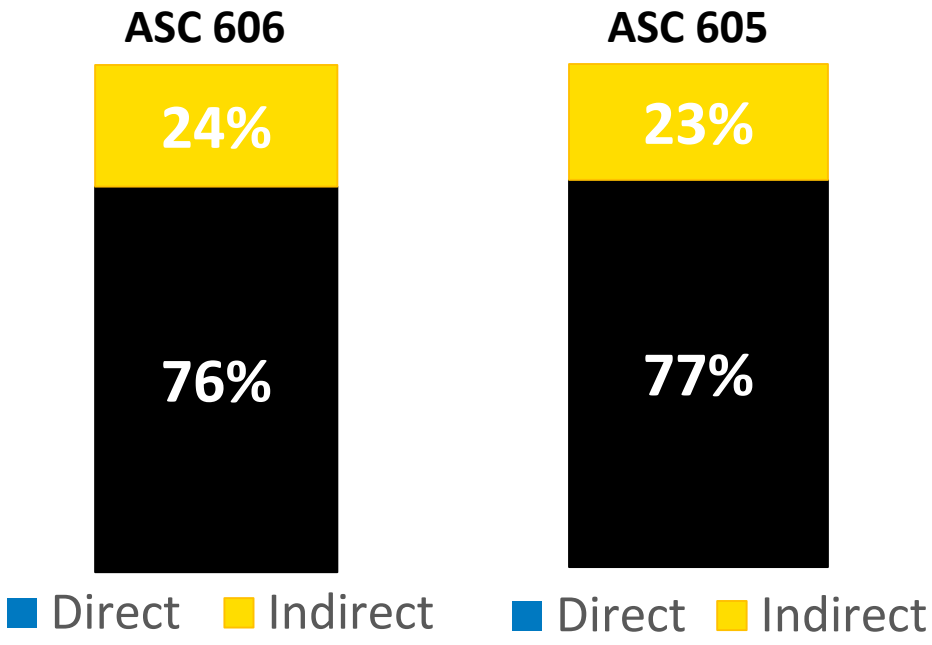
# Diverse industry mix

## Trailing Twelve Months Sales By Industry – Q3 2018

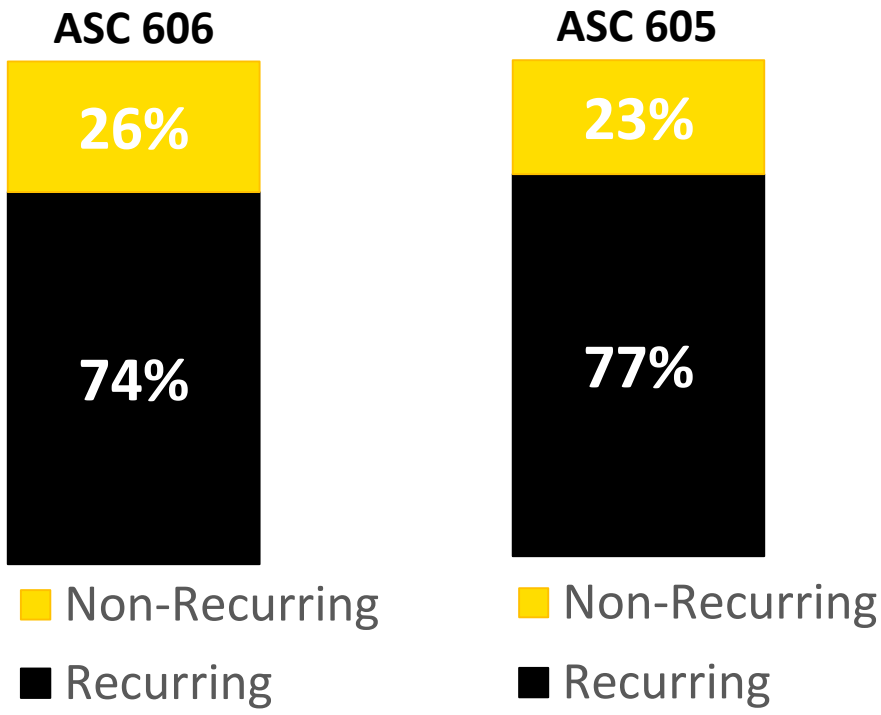


# High diverse and recurring revenue

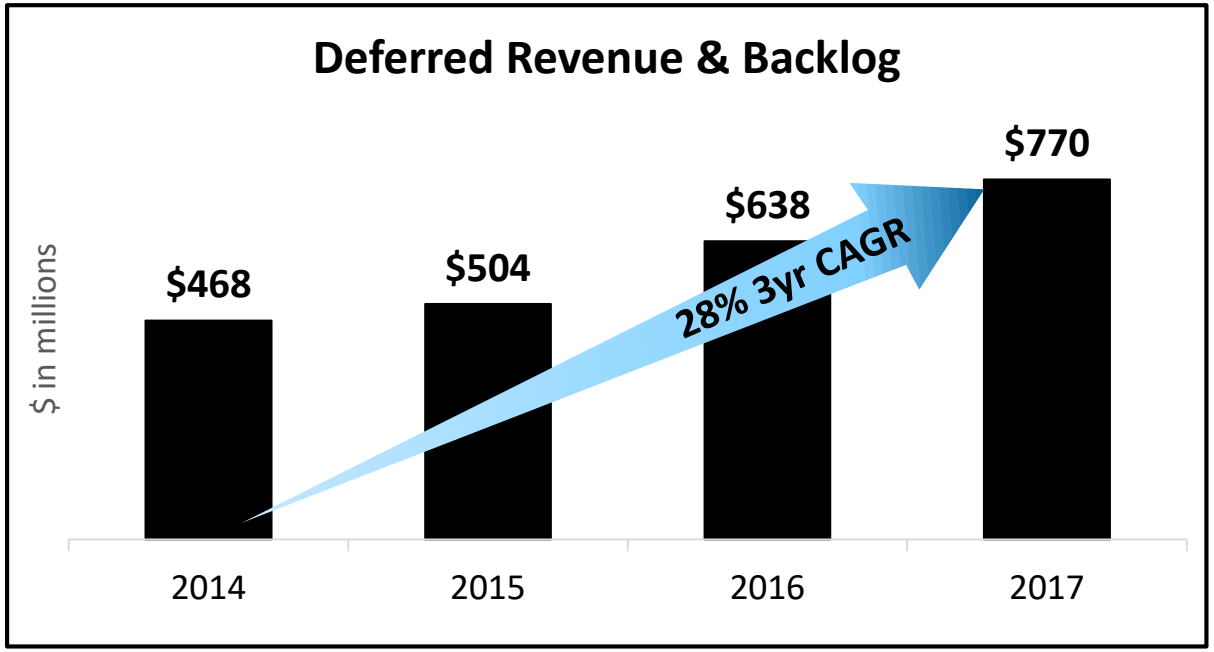
## Q3 2018 Channel Revenue Direct vs. Indirect

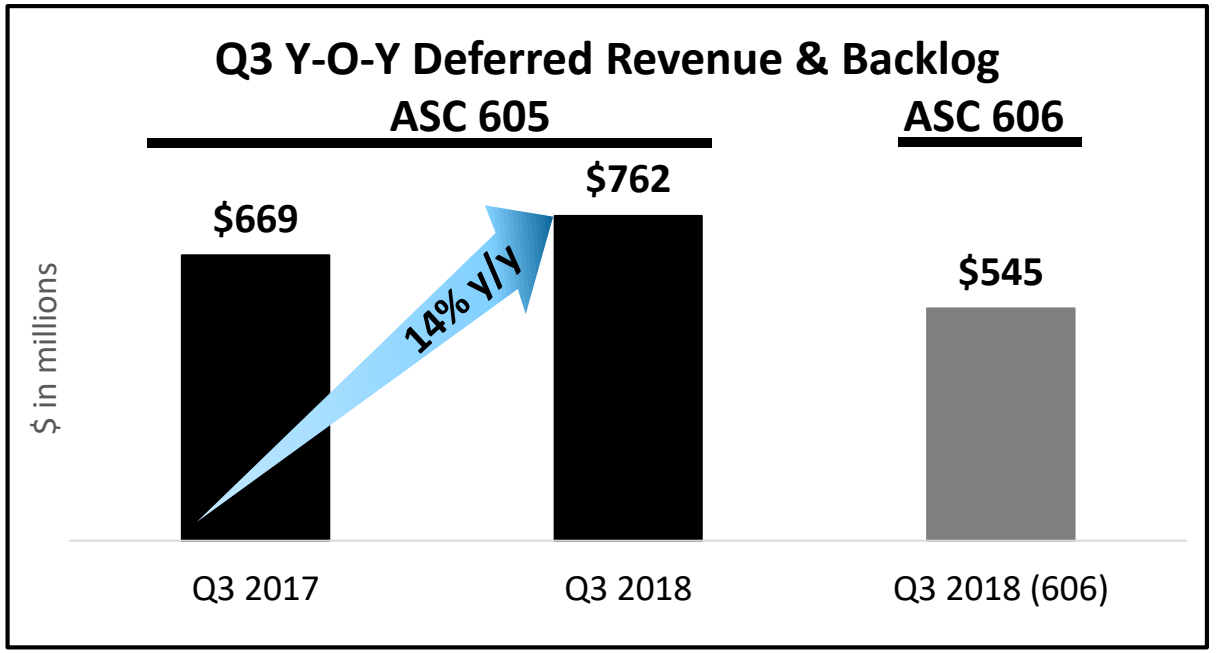



## Q3 2018 Recurring vs. Non-Recurring



# Continuing to build deferred revenue and backlog




Note: Includes long-term deferred revenue and backlog.

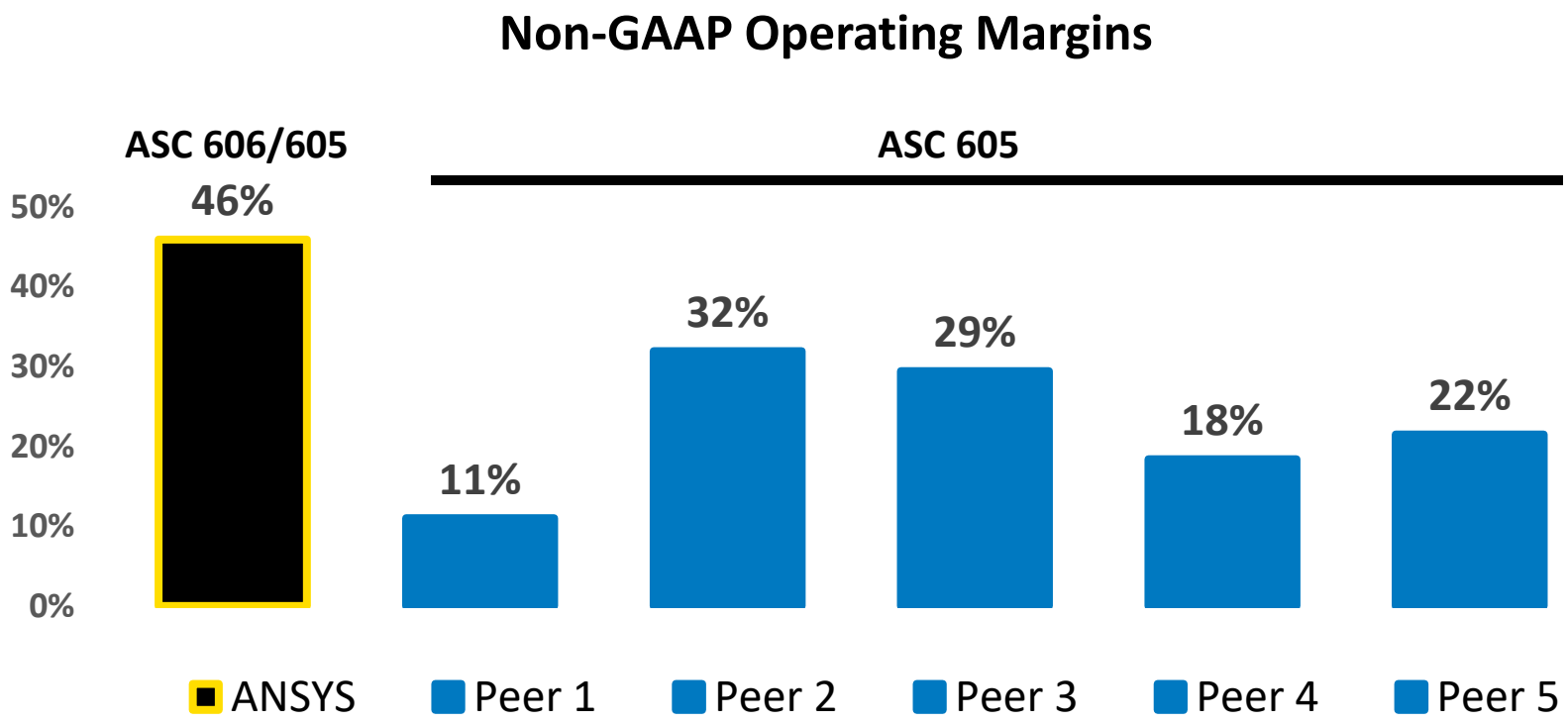
# Strong Balance Sheet

## As of September 30, 2018:

| | |
|---|---|
| Cash & short-term investments | $729M |
| Cash flows from operations | $110M |

# Q3 YTD 2018 Industry-leading margins

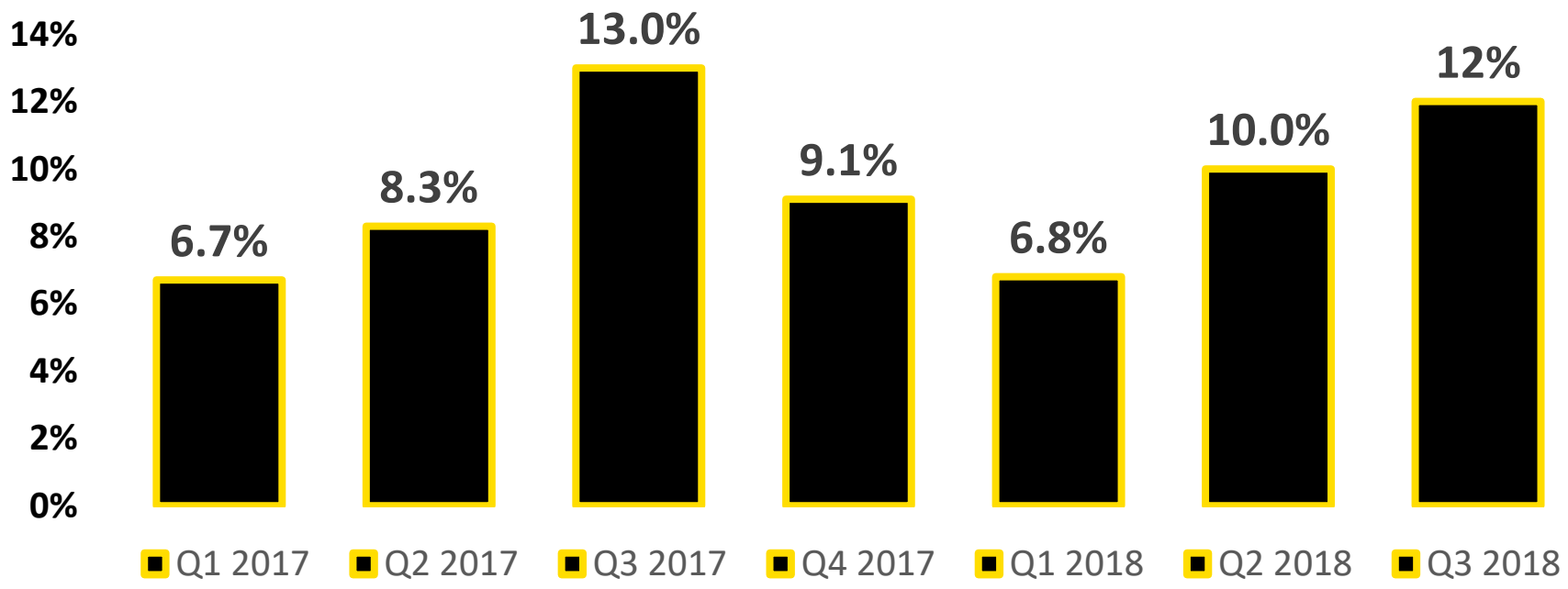
- Our margins remain industry-leading for both our sector and vertical
- We are committed to maintaining our industry-leading margins while investing for long-term growth




ANSYS operating margins are the same under ASC 606 and 605: 45.5% and 45.9%, respectively. ANSYS closest US peers include: Autodesk, Cadence, Dassault, PTC, Synopsys and Altair. ANSYS and Dassault margins reported for Q3 YTD2018. Majority of peers report ASC 605 operating margins. Other peers margins reported for different periods: Cadence for quarter ended September 31, 2018; PTC for fiscal year 2019, ended October 31, 2019; Synopsys for fiscal Q3, ended July 31, 2018. Altair Engineering does not report non-gaap operating margins.

# We have generated great momentum

## ANSYS Constant Currency Revenue Growth




Non-GAAP constant currency – ASC 605

# Our long-term targets

**Our 2020 target is sustained double-digit organic revenue growth…**

**…while maintaining financial discipline and best-in-class operating margins**

| Target 2020 Growth & Operating Margin Target (non-GAAP) |
| --- |
| 10%+ |
| 43-45% |

ASC 605

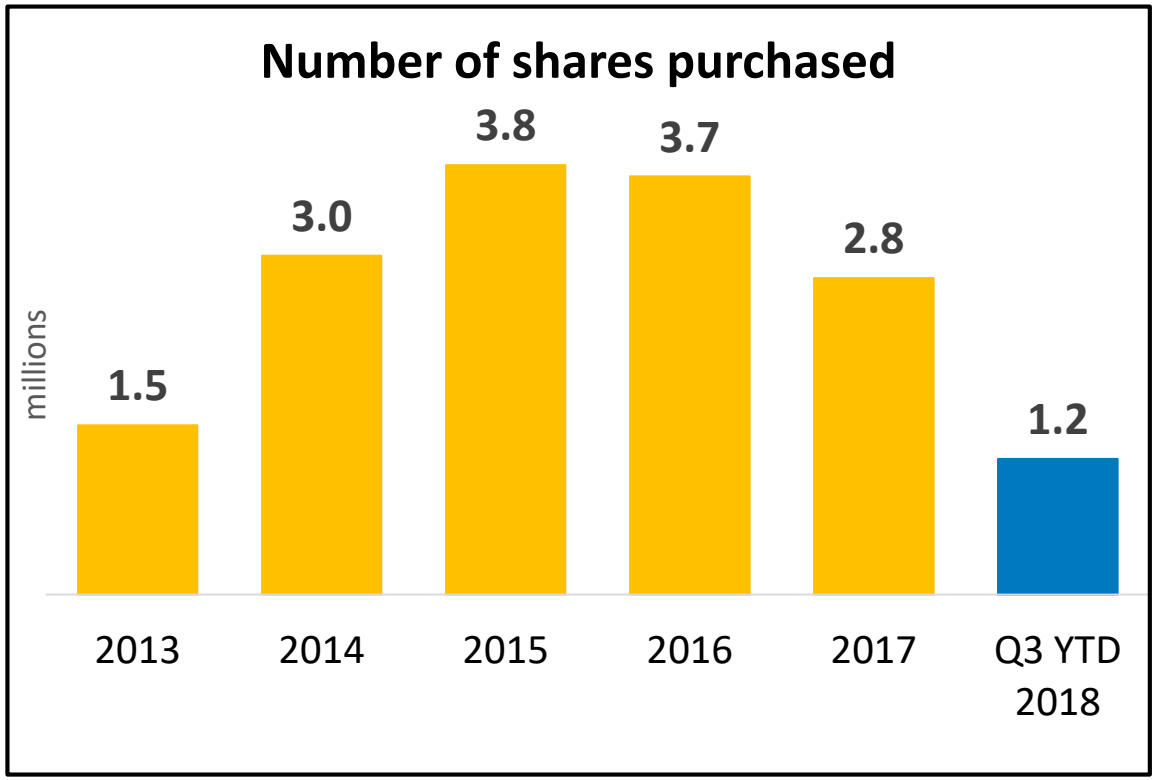
# Further opportunity to drive growth will require incremental investment

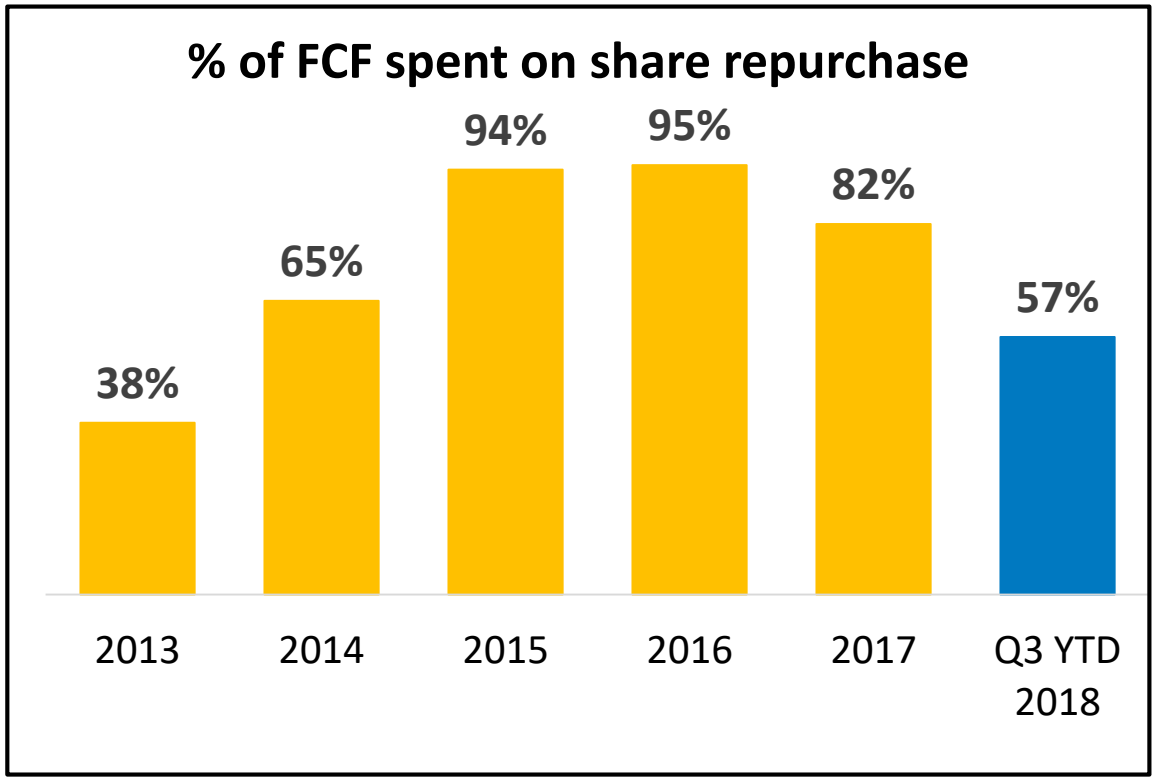

| | |
|---|---|
| **Go-to-market** | • People (increased ratio of field engineers to sales reps, channel expansion and remote sales capability)<br>• Tools/systems (quote-to-cash, low touch renewals)<br>• Processes (customer advisory councils, data-driven planning) |
| **Product** | • Extending core technology leadership (physics, platform)<br>• Investing in next-generation innovation (digital exploration, additive manufacturing, digital twin, IoT) |
| **Scale Infrastructure** | • Tools and systems (CRM, HRIS)<br>• Expand competencies (FP&A, pricing, M&A)<br>• New talent acquisition |
| **Partnerships and Acquisitions** | • Investing to build strategic partnerships<br>  • Customers: GE, Flowserve<br>  • Peers: PTC, Synopsys |

# Capital allocation priorities

- **Investment in organic growth of the core business**
- **M&A to enhance growth**
  - **Size not determining factor – proven technology is key**
  - **Experienced talent**
  - **Synergy with customer base and global channel**
  - **Financially accretive within a reasonable timeframe**
- **Stock repurchase**
  - **Commitment to return excess cash to stockholders**

# Return of excess capital to stockholders




Note: Free Cash Flow (FCF) defined as Operating Cash Flow – Capital Expenditures.

# Q3 2018 (non-GAAP) – as of September 30, 2018 (*$ in millions, except EPS*)

| | |
|---|---|
| **Revenue** | **ASC 606 - $293.0**<br>**ASC 605 - $307.9** |
| **Operating Margin** | **ASC 606 - 44.0%**<br>**ASC 605 - 46.7%** |
| **Tax rate** | **ASC 606 - 13.9%**<br>**ASC 605 - 14.1%** |
| **EPS** | **ASC 606 - $1.31**<br>**ASC 605 - $1.46** |
| **Annual Contract Value (ACV)** | **$257.8** |

| | |
|---|---|
| **Projected ACV – FY 2018** | **$1,262.0 - $1,282.0** |

# Q3 YTD 2018 (non-GAAP) – as of September 30, 2018 ($ *in millions, except EPS*)

| | |
|---|---|
| **Revenue** | **ASC 606 - $885.1**<br>**ASC 605 - $892.0** |
| **Operating Margin** | **ASC 606 - 45.5%**<br>**ASC 605 - 45.9%** |
| **Tax rate** | **ASC 606 - 18.6%**<br>**ASC 605 - 18.7%** |
| **EPS** | **ASC 606 - $3.86**<br>**ASC 605 - $3.92** |

| | |
|---|---|
| **Annual Contract Value** | **$844.7** |

# Why invest?

## 1. Market Leader in Engineering Simulation Positioned For Growth

- We have a 48-year history of technology innovation and commitment to engineering simulation
- ANSYS competitive strength is based on our technology leadership and reputation for simulating products across multiple physics with the highest accuracy
- Building on our technology and market leadership, we are extending our leadership well into the future by investing in our long-term secular growth initiatives

## 2. Long-Term Secular Growth Prospects

Ansys is positioned to benefit from multiple growth dimensions:

- Our pervasive engineering simulation strategy is designed to expand our footprint and drive broader adoption
  - ✓New applications; Additional users; Higher consumption of simulation
- Significant industry trends driving long-term secular growth opportunities
  - ✓Digital revolution making product design and delivery harder
  - ✓Faster, cheaper computing power

## 3. Continued Financial Discipline

- Track record of industry-leading margins for sector and software vertical

## 4. Incredible Financial Strength

- High percentage of growing recurring revenue and deferred revenue
- Diverse revenue sources
- Strong balance sheet

## 5. Strong Cash Generation

- Ability to invest in the core business
- Acquisition of best-in-class technologies extends leadership and supports future growth initiatives
- Returning excess capital to shareholders through share repurchases

# Appendix

# Appendix

**ANSYS, INC. AND SUBSIDIARIES**
**ASC 606 Reconciliation of Non-GAAP Measures**
**(Unaudited)**

| *(in thousands, except percentages and per share data)* | Three Months Ended September 30, 2018 | | | |
|---|---|---|---|---|
| | GAAP Results | Adjustments | | Non-GAAP Results |
| Total revenue | $ 289,418 | $ 3,548 | (1) | $ 292,966 |
| Operating income | 93,024 | 35,889 | (2) | 128,913 |
| Operating profit margin | 32.1 % | | | 44.0 % |
| Net income | $ 89,336 | $ 23,557 | (3) | $ 112,893 |
| Earnings per share – diluted: | | | | |
| Earnings per share | $ 1.04 | | | $ 1.31 |
| Weighted average shares | 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 $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 (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 $11.7 million, a measurement-period adjustment related to the Tax Cuts and Jobs Act of $0.5 million, and rabbi trust income of $0.1 million.

# Appendix

**ANSYS, INC. AND SUBSIDIARIES**
**ASC 606 Reconciliation of Non-GAAP Measures**
**(Unaudited)**

| *(in thousands, except percentages and per share data)* | Nine Months Ended September 30, 2018 | | | |
|---|---|---|---|---|
| | GAAP Results | Adjustments | | Non-GAAP Results |
| Total revenue | $ 878,204 | $ 6,897 | (1) | $ 885,101 |
| Operating income | 296,638 | 105,796 | (2) | 402,434 |
| Operating profit margin | 33.8 % | | | 45.5 % |
| Net income | $ 266,212 | $ 65,591 | (3) | $ 331,803 |
| Earnings per share – diluted: | | | | |
| Earnings per share | $ 3.09 | | | $ 3.86 |
| Weighted average shares | 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 $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 (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 $41.0 million and rabbi trust income of $0.1 million, and increased for a measurement-period adjustment related to the Tax Cuts and Jobs Act of $0.9 million.

# Appendix

**ANSYS, INC. AND SUBSIDIARIES**
**ASC 605 Reconciliation of Non-GAAP Measures**
**(Unaudited)**

| *(in thousands, except percentages and per share data)* | Three Months Ended | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | September 30, 2018 | | | | | September 30, 2017 | | | |
| | GAAP Results | Adjustments | | Non-GAAP Results | | GAAP Results | Adjustments | | Non-GAAP Results |
| Total revenue | **$ 301,956** | **$ 5,972** | **(1)** | **$ 307,928** | | $ 275,585 | $ 1,181 | (4) | $ 276,766 |
| Operating income | **105,562** | **38,313** | **(2)** | **143,875** | | 106,183 | 28,711 | (5) | 134,894 |
| Operating profit margin | **35.0 %** | | | **46.7 %** | | 38.5 % | | | 48.7 % |
| Net income | **$ 100,116** | **$ 25,280** | **(3)** | **$ 125,396** | | $ 73,630 | $ 17,638 | (6) | $ 91,268 |
| Earnings per share – diluted: | | | | | | | | | |
| Earnings per share | **$ 1.16** | | | **$ 1.46** | | $ 0.85 | | | $ 1.05 |
| Weighted average shares | **86,043** | | | **86,043** | | 86,588 | | | 86,588 |

(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 $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 $6.0 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, a measurement-period adjustment related to the Tax Cuts and Jobs Act of $0.5 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 $14.8 million of stock-based compensation expense, $12.3 million of amortization expense associated with intangible assets acquired in business combinations, $0.5 million of restructuring charges, and the $1.2 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, adjusted for the related income tax impact of $11.0 million and rabbi trust income of $0.1 million.

# Appendix

**ANSYS, INC. AND SUBSIDIARIES**
**ASC 605 Reconciliation of Non-GAAP Measures**
**(Unaudited)**

| *(in thousands, except percentages and per share data)* | Nine Months Ended September 30, 2018 GAAP Results | Adjustments | | Non-GAAP Results | Nine Months Ended September 30, 2017 GAAP Results | Adjustments | | Non-GAAP Results |
|---|---|---|---|---|---|---|---|---|
| Total revenue | **$ 880,551** | **$ 11,436** | **(1)** | **$ 891,987** | $ 792,914 | $ 1,748 | (4) | $ 794,662 |
| Operating income | **298,985** | **110,335** | **(2)** | **409,320** | 290,049 | 89,985 | (5) | 380,034 |
| Operating profit margin | **34.0 %** | | | **45.9 %** | 36.6 % | | | 47.8 % |
| Net income | **$ 268,281** | **$ 68,827** | **(3)** | **$ 337,108** | $ 206,666 | $ 48,480 | (6) | $ 255,146 |
| Earnings per share – diluted: | | | | | | | | |
| Earnings per share | **$ 3.12** | | | **$ 3.92** | $ 2.38 | | | $ 2.94 |
| Weighted average shares | **86,060** | | | **86,060** | 86,902 | | | 86,902 |

(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 $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 $11.4 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 $42.3 million and rabbi trust income of $0.1 million, and increased for a measurement-period adjustment related to the Tax Cuts and Jobs Act of $0.9 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 $39.4 million of stock-based compensation expense, $36.4 million of amortization expense associated with intangible assets acquired in business combinations, $11.7 million of restructuring charges, $0.7 million of transaction expenses related to business combinations and the $1.7 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, adjusted for the related income tax impact of $41.4 million and rabbi trust income of $0.1 million.

# ASC 606 requires three primary changes relative to current practice

**Immediate license revenue recognition** (including the license portion embedded in a lease)

1

**Revenue allocation based on estimated selling price rather than Vendor-Specific Objective Evidence (VSOE)**

2

**Increased financial statement disclosures** (including unbilled receivables, and the expected rollout of deferred revenue and backlog)

3

# Overview of ASC 606 impact

## YEAR 1 IMPACT

- Revenue recognition change will accelerate revenue
- Large, multi-year deals will create some volatility depending on timing (minority of the business)
- Modified retrospective implementation approach will provide disclosure of results under current rules for the first year
- Cash-flow impact for tax consequences of accelerated revenue
- No material change in accounting for sales commissions

## GO-FORWARD IMPACT

- Minimal impact on future comparability for the vast majority of business volume
- Large, multi-year deals will create some volatility depending on timing (minority of the business)
- Impact likely to decrease over time as predictability increases
- ACV metric will provide clarity into business health
- No material change in accounting for sales commissions unless plan structure changes

# New 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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**NASDAQ: ANSS**