

**Realize Your Product Promise™**

**ANSYS®**

**Fluid Dynamics**

**Structural Mechanics**

**Electromagnetics**

**Systems & Multiphysics**

# At ANSYS, we bring clarity and insight to your most complex phenomena through fast, accurate and reliable simulation.

## Every Product is a Promise

*Every product you make is a promise to your customer. A promise to be functional and efficient. To be safe and reliable. To perform better than any other design on the market. At the end of the day, your products are all that matter.*

ANSYS provides the engineering and design process insight to help you be first to market with products that realize their promise and revolutionize your business. We develop, market and support engineering simulation software used to predict how products will behave and how manufacturing processes will operate in real-world environments. We offer the most comprehensive suite of simulation solvers in the world so that you can confidently predict your product's success. ANSYS simulation software, coupled with our team of applications experts and global support network, is the key to:

- **Lower Development Costs**  
We'll help you get to an accurate answer faster, so you can do more in less time while using fewer resources than ever before
- **Reduce Time to Market**  
Our software drastically shortens development time and prototype iterations so you can be first to market with tomorrow's products, today
- **Optimize Product Performance**  
As the world leader in engineering simulation software, we enable our customers to consistently perfect product reliability, performance and safety
- **Outperform the Competition**  
Using simulation early and often, our customers gain an unrivaled advantage in today's competitive market



“Without simulation results on components, there's a chance that these components can have shortcomings. This can be very damaging to a company's reputation. It's very costly. An entire market for that component goes away. The airlines aren't going to install a turbine blade that is known to crack. Having ANSYS and the ability to evaluate whether our components will perform is extremely valuable.”

**Page Strohl**  
Senior Structures Engineer  
Chromalloy Gas Turbine



## 40 Years of Innovation

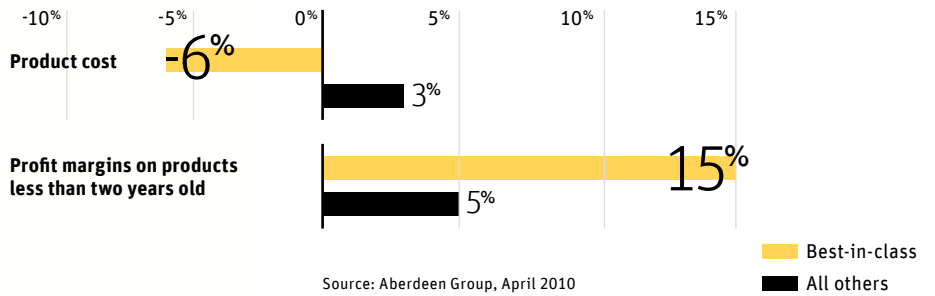
We are the largest engineering simulation company in the world, serving more than 40,000 customers. Our steady growth and financial strength reflect our commitment to innovation and R&D. We reinvest 15 percent of our revenues each year into research to continually refine our software. That's why more leading organizations trust ANSYS with their most difficult product design challenges.



## Performance Improvements Achieved through Simulation

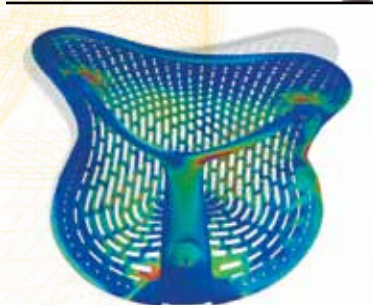
ANSYS technology helps drive dramatic improvements across our customers' product development processes, from reduced costs and shorter development times to improved quality and reliability. Nearly half of all best-in-class companies use simulation deliberately throughout the design process. These leading manufacturers realize significantly lower product costs and up to three times higher profitability than companies that use simulation only occasionally.

### Performance Improvements Achieved Percent Change over Past 24 Months



## Award-Winning Design

One of the most respected names in American design, Herman Miller, used ANSYS structural mechanics software to meet the complex requirements of designing the Mirra® chair for a wide range of body types and postures.



The Mirra's TriFlex backrest, which automatically adjusts to each user, was developed as a single composite plastic structure using ANSYS software to determine the coupled response of the back and supporting spine.



### 1970

- Swanson Analysis Systems Inc. is founded. Westinghouse becomes our first client.

### 1971

- ANSYS 2.0 is released, revolutionizing simulation in materials, contact dynamics and thermal effects.

### 1975

- ANSYS introduces geometric and thermoelectric elements—once again leading the field in advanced technologies.

# Our technology enables you to predict with confidence that your products will thrive in the real world.

## Fluid Dynamics

Our CFD portfolio, which includes ANSYS Fluent® and ANSYS CFX®, is the most trusted and widely used simulation suite the world over. With the industry's most advanced solvers, ANSYS fluid dynamics technology delivers the fast, reliable simulations our customers require to design with confidence.

### Applications

- Improve aerodynamics and ventilation in aircraft, cars and buildings; cut energy costs and improve comfort and safety
- Design more-efficient and longer-lasting turbines, from huge hydroturbines to turbochargers and heart pumps
- Create better-functioning solutions in alternative energy such as wave power, wind turbines and fuel cells
- Improve drug delivery for faster-to-market pharmaceuticals



### Dyson Drastically Improves Fan Design

Dyson needed to boost the performance of their Air Multiplier™ fan. ANSYS enabled 10 times the design variation analysis, resulting in a 250 percent improvement over the original design. The end result: Dyson met its product deadline schedule and won international recognition.

## Structural Mechanics

ANSYS structural mechanics software brings together the largest elements library with the most advanced structural simulation capabilities available. This unified engineering environment helps you streamline processes to optimize product reliability, safety and functionality. Leveraging user-friendly tools in industry-standard products, including ANSYS Mechanical,™ ANSYS Autodyn® and others, your team will increase productivity, minimize physical prototyping, and deliver better products in less time.

### Applications

- Improve durability and decrease failure in automobile and airplane components
- Improve longevity and reliability of civil engineering projects such as dams, bridges and high-rises
- Reduce weight while maintaining integrity of air and spacecraft; test reliability before failure, in fields in which failure is not an option
- Improve the accuracy and durability of scientific instruments such as observatories and hadron colliders
- Create better and more reliable marine and offshore equipment; ensure functionality throughout the lifespan of household appliances



### Lufthansa Saves Time, Reduces Costs

Lufthansa Technik AG leverages ANSYS simulation software to gauge wear and tear of aircraft components. This prolongs service intervals, saving time and maintenance costs. The results are safer, less expensive flights for consumers and a more profitable business for Lufthansa.

#### 1981

- We become the first provider to introduce workstations as an alternative to mainframes, resulting in outstanding usability for our customers.

#### 1983

- With the introduction of electromagnetic capabilities, we add to our growing reputation as the world leader in simulation.

#### 1985

- As the first provider to offer online help, as well as the first to support parametric analysis and structured optimization, we dramatically improve the potential of simulation.

## Electromagnetics

Our software enables you to predict the behavior of complex electrical and electromechanical systems – from mobile communication and internet devices to automotive components and electronics equipment. The industry-leading ANSYS HFSS™ and ANSYS Maxwell® solvers eliminate prototype iterations and deliver your products to market faster.

### Applications

- Improve equipment performance of smartphones, satellites, batteries and hybrid vehicles
- Design more-effective MRI machines, implantable defibrillators and other medical devices
- Create better electromechanical components for automobiles, generators, transformers, power electronics and magnet design
- Ensure the highest speed of computer chip and board design, and optimize functionality of anything that uses a chip or circuit
- Improve signal integrity for high-frequency technology such as antennas, RF and microwave devices



### Panasonic Eyes Faster Development Cycles

Using ANSYS electromagnetics simulation software, Panasonic improved signal integrity for its remote surveillance camera. By adopting a circuit and 3-D electromagnetic cosimulation approach, the design team saved almost three months in development time.


## Systems & Multiphysics

In today's competitive marketplace, it is crucial to consider all physical phenomena when designing a new product. Leading manufacturers are increasing the fidelity of their simulation models by coupling two or more physics in their investigations. ANSYS expertise in multiphysics gives you the power to solve complex, system-level challenges. Our unified engineering environment seamlessly integrates systems, product teams and third-party technology.

### A Systems-Level Approach

Our collaborative simulation environment provides modeling scalability specifically for evaluating entire systems that include 3-D high-fidelity models, circuit reduced-order models or any combination of these:

- Accurate tracking of the interactive effects of components and detailing how they will perform as a whole
- The ability to address different dimensions of a system – from physics, fidelity and state to scale and users
- Modeling scalability for evaluating entire systems that include any combination of high-fidelity 3-D and reduced-order models
- Best-in-class core server technology coupled with an integrated development environment
- A collaborative environment for defining, executing and storing results of system-level simulation projects for multiple users



*At ANSYS, we're seeing dramatic improvements across our customers' development processes, from reduced costs and development time to improved quality. We're listening to our customers and responding to their needs for efficiency, robustness and accuracy.*

#### 1987

- We introduce the first layered composite solid element and become the first to simulate electromagnetic phenomena.

#### 1991

- ANSYS introduces the first CFD solver for unstructured grids and becomes the first simulation provider to release tetrahedral meshing.

# ANSYS expert training, services and support help to ensure your success.

Whether you are new to engineering simulation or are a highly-skilled specialist, ANSYS provides the training, services and support you need to create the next must-have product. Live phone support and the customer web portal make it easy for you to submit requests and concerns. So you have available services when and where you need them most, and in the form that is most useful to your team.


## Comprehensive Consulting Services

Our full suite of consulting services is designed to help customers realize the return on every investment in ANSYS technology. We'll help you maximize the value of our tools by working with your team to develop and document methodologies and best practices. And we'll customize our simulation software to better fit into your specific design processes. This enables you to be more efficient by reducing the time spent performing simulations, and it gives you the ability to extend the software to non-expert users.


## Training Delivers Better Insight

ANSYS training solutions are designed to give you the best insight for quickly solving your most difficult engineering problems – from classroom training on basic physical concepts to online courses and customized training at your own site.

This wide range of training opportunities helps you to design the ideal methodologies for addressing specific process or application challenges, while also driving simulation use throughout your organization.



“ANSYS enables us to understand not only what can be done in a product in terms of features and performance, but what should be done in the product to design for reliability and manufacturability.”



**Scott Parent**  
Vice President of Technology  
Baker Hughes

### 1994

- SASI becomes ANSYS, Inc.
- ANSYS creates the world's first iterative solver for large structural problems.

### 1996

- ANSYS launches DesignSpace with ANSYS Workbench as its environment.
- We create the first commercial CFD with parallel processing as a standard feature.

### 1999

- By adding multiphysics modeling to our list of capabilities, ANSYS yet again raises the bar – resulting in vastly more accurate, effective simulation.

*At ANSYS, we focus on digitally simulating performance across all physics of complete systems and in their real-world environments. We're helping manufacturers worldwide streamline processes to accelerate innovation. When simulation drives product development, anything is possible.*



## Cummins Puts Green Initiative into Overdrive

Cummins uses ANSYS software to design and test radical improvements in its engines – reducing weight, improving fuel economy and cutting emissions.



“The ANSYS Workbench environment provides access to the best multiphysics tools we need to conduct many types of simulation and analysis. Whether our need is thermal, structural, dynamic or static engineering analysis, ANSYS Workbench provides the flexibility and versatility to accommodate our needs – as well as the multiphysics capabilities to link the results of our various simulations.”

**Bob Tickle**  
Director of Structural & Dynamic Analysis  
Cummins Inc.

## ST Ericsson Answers the Call to Lead

As a leading global provider for the wireless market, ST Ericsson relies on ANSYS for comprehensive electromagnetics simulation to stay competitive in the ever-changing field of smartphones. With our tools, they reduce risk in their designs, shorten lead times in development, and get successful products to market faster.

“Today we're working with ANSYS. We have a much more efficient design flow, we know what part our components play in the design, and we know before producing our boards that they will be functional. It's a much better starting point for our platform validation.”

**Jonas Persson**  
Technical Manager  
ST Ericsson



### 2001

- We added design exploration to expand the suite's capabilities.

### 2003

- ANSYS acquires CFX, cementing our place as the industry leader in CFD tools.

### 2004

- ANSYS becomes the first simulation company to solve 100 million structural degrees of freedom.

# Our global reach, expert people and proven strengths help you realize your product promise.

Every product is a promise to live up to and surpass customer expectations. A promise to be better than the competition. By simulating early and often with ANSYS software, you can become faster, more cost-effective and more innovative. We are dedicated to providing simulation solutions that enable our customers to excel in today's competitive market. We are the world's most trusted and successful engineering simulation partner. We'll help you realize your product promise.

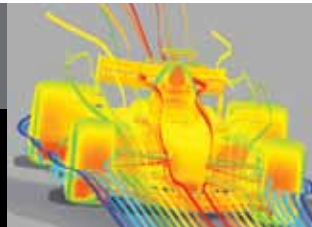
## Red Bull Passes Competition

Using ANSYS CFD simulation, Red Bull Racing Team achieved reliable, accurate analyses in record time – as well as a competitive edge in performance before hitting the track.



“ANSYS simulation software is incredibly reliable and accurate. Simulation enables us to drastically reduce lead times and get solutions to the circuit much, much quicker so that we are more competitive race-to-race.”

**Steve Nevey**  
Business Development Manager  
Red Bull Technology



### 2005

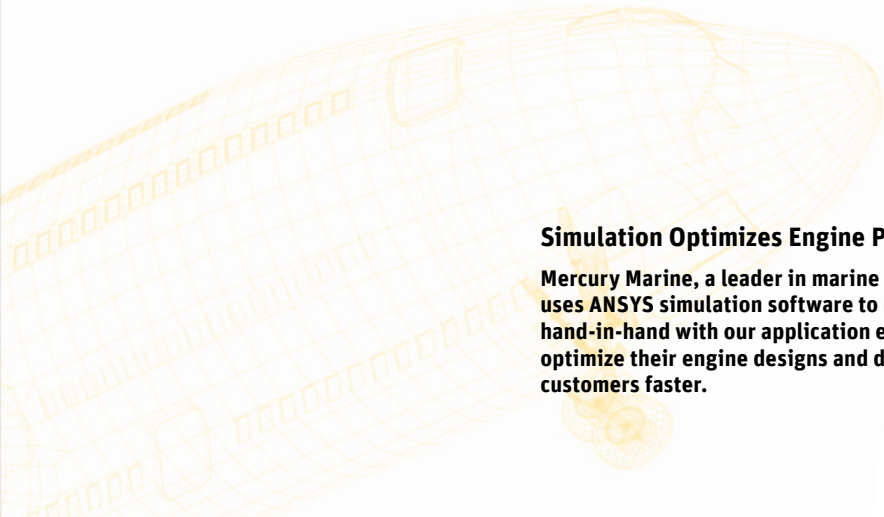
- ANSYS adds cutting-edge electronics, hydrodynamic and offshore structural assessment capabilities.

### 2006

- ANSYS reaches another milestone, becoming the No. 1 CAE company in R&D investment. By acquiring Fluent, ANSYS gains unmatched capabilities in fluid dynamics simulation.

### 2008

- ANSYS acquires Ansoft, adding high-performance electronics and electromagnetics software to our repertoire of simulation solutions.



### Simulation Optimizes Engine Performance

Mercury Marine, a leader in marine propulsion and pleasure boating, uses ANSYS simulation software to develop new engines. Working hand-in-hand with our application experts, Mercury Marine engineers optimize their engine designs and deliver the best products to their customers faster.

### Our Reach

We have a presence in more than 40 countries and a powerful network of partners that provide local, value-added service and support. So whether you're a customer in Germany, Brazil or South Korea, we have the global expertise and reach to meet your challenges and speak your language. And we'll deliver the resources to help you rapidly deploy and efficiently manage your simulation processes and data.



### Our People

We employ more than 2,000 professionals, including more master's- and PhD-level engineers in our service organization than any other simulation provider. Our team of simulation experts will guide you on how to more effectively use our software tools and maximize ROI. We're a recognized leader in all physics areas in addition to simulation. And our team has extensive training in fields such as finite element analysis, computational fluid dynamics, electronics and electromagnetics, and design optimization.

*At ANSYS, we're relentlessly committed to your product development success. We're passionate about developing and delivering world-class engineering simulation software to address your current and future product development needs.*



### Our Strengths

#### Focused

- Simulation is all we do
- Leading product technologies in all physics areas
- Largest development team focused on simulation

#### Capable

- 2,000 employees
- 60 locations, 40 countries

#### Trusted

- 96 of top 100 *FORTUNE* 500 industrials use our software
- ISO 9001 and NQA-1 certified

#### Proven

- Recognized as one of the world's most innovative and fastest-growing companies\*

\*BusinessWeek, *FORTUNE*

#### Independent

- Long-term financial stability
- CAD agnostic

#### 2009

- ANSYS launches its next generation of Workbench and completes the world's first commercial simulation of more than 1 billion computational cells. *FORTUNE* magazine names ANSYS on its list of "Fastest Growing Companies."

#### 2010

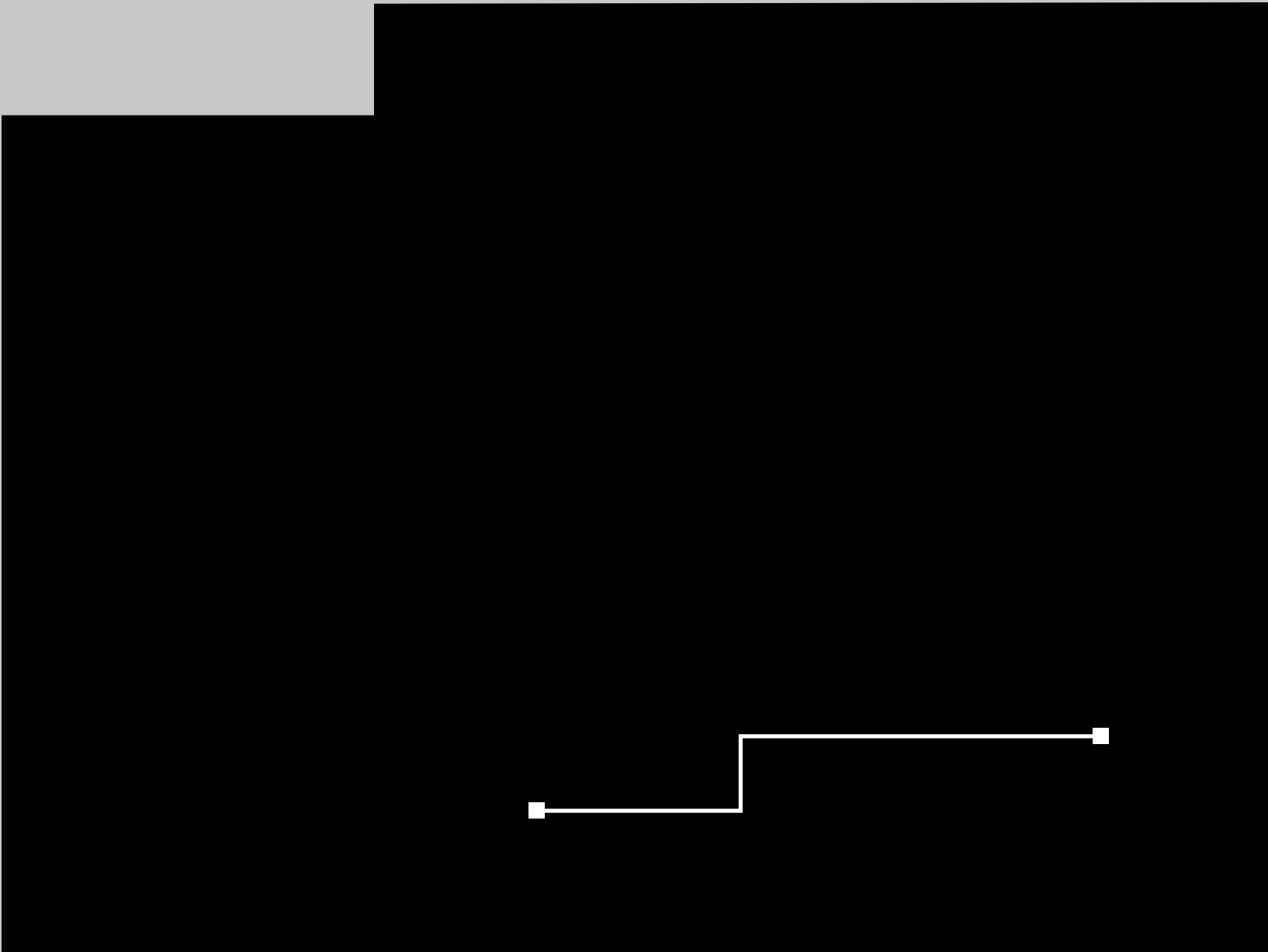
- ANSYS celebrates its 40th anniversary as the world leader in engineering simulation.

#### 2011

- ANSYS acquires Apache, adding power analysis and optimization platforms for electronics applications.

Customers trust ANSYS simulation software to help ensure the integrity of their products and drive business success through innovation.

**We'll help you realize your product promise.**



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**ANSYS, Inc.**  
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ANSYS is dedicated exclusively to developing engineering simulation software that fosters rapid and innovative product design. Our technology enables you to predict with confidence that your product will thrive in the real world. For more than 40 years, customers in the most demanding markets have trusted our solutions to help ensure the integrity of their products and drive business success through innovation.

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