

National Instruments

Equipping You to Engineer a Better World





AT A GLANCE

Corporate headquarters: *Austin, Texas*

Year established: *1976*

Global operations: *offices in more than 40 countries*

Customers served: *30,000 companies annually*

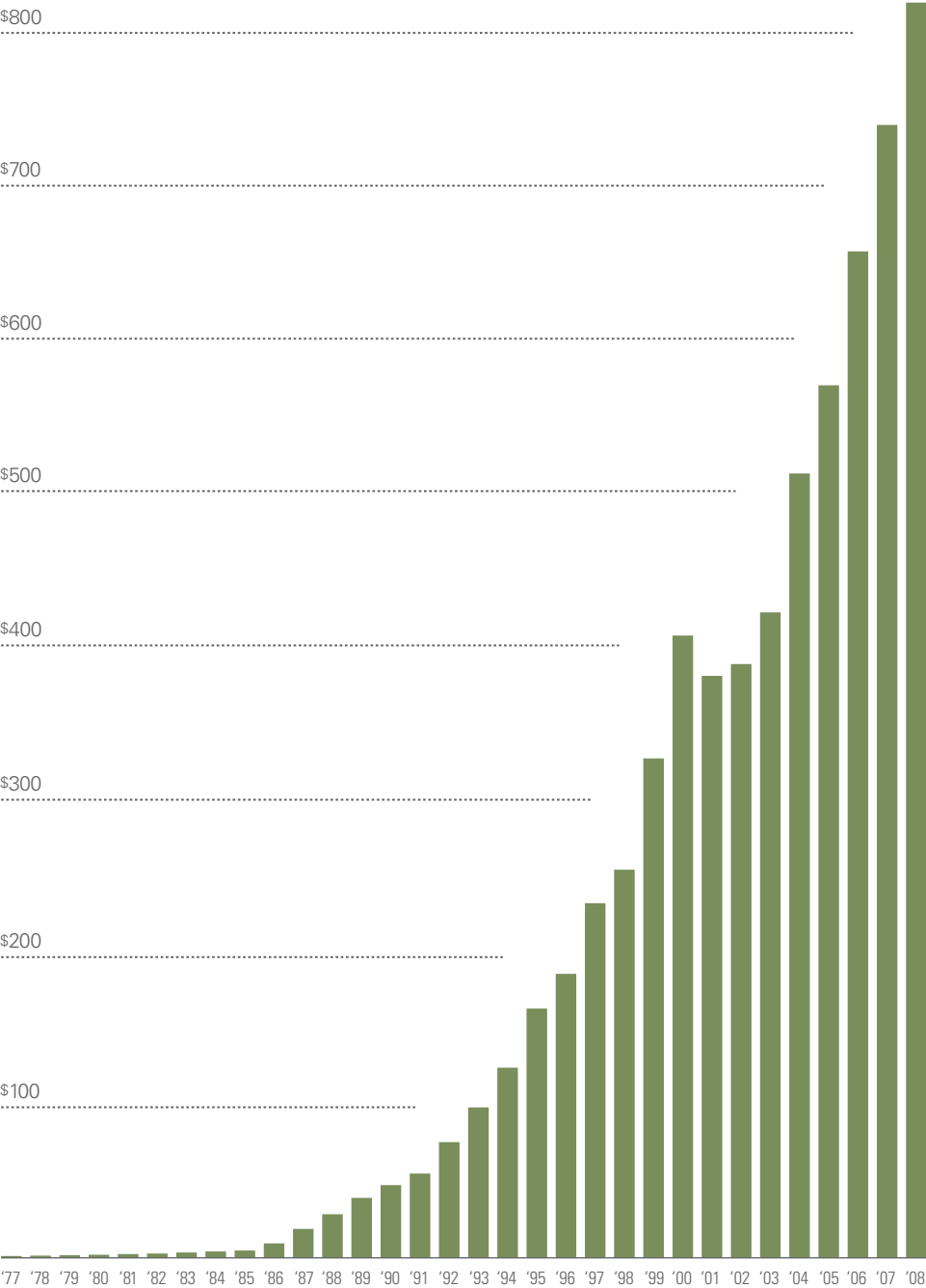
Diversity: *no industry makes up more than 10% of revenue*

Investment in R&D: *16% of annual revenue*

COMPANY OVERVIEW

National Instruments equips engineers and scientists with tools to meet the world’s most pressing engineering challenges and create technologies that improve the lives of millions of people. For more than 30 years, the company’s software-centric approach to test, control, and design has helped customers get their innovations to market on time and under budget. NI has seen steady growth by putting customer success first.

Net Revenue in Millions (USD)

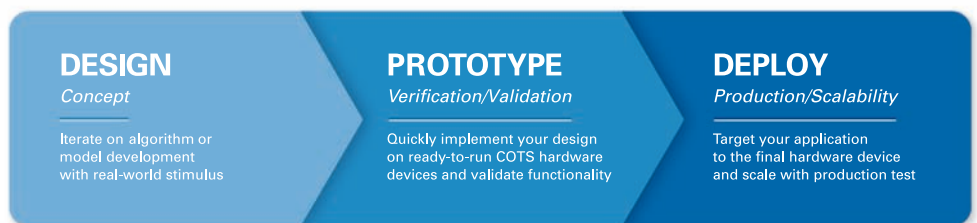


NI has a solid track record of revenue growth and strong performance on Wall Street.



FROM DESIGN TO DEPLOYMENT

Competing in today's global economy requires new products to reach the market faster than ever before. Consumers demand that these products have greater functionality and operate flawlessly. Designing and testing increasingly complex products in a fraction of the time requires a highly efficient, tightly integrated platform. By using the graphical system design approach for test, control, and embedded design applications, you can dramatically increase efficiency and improve your bottom line with a unified platform that spans the entire product design cycle.



Standardizing on Graphical System Design

The graphical system design approach empowers your development team to integrate real-world signals into your design sooner for earlier error detection, reuse code for maximum efficiency, and easily incorporate the latest computing technologies such as multicore and field-programmable gate arrays (FPGAs) for optimal performance. From software-defined radios to hardware-in-the-loop simulation to mechatronics, graphical system design gives your engineers a unified development platform for designing, prototyping, and deploying systems that outpaces traditional design methodologies.

NI Platform Benefits

- Reduced time to market
- Quick design iteration
- Optimal system scalability
- Increased performance at lower costs

PRODUCT PLATFORMS



NI LabVIEW



NI CompactRIO



NI PXI



NI CompactDAQ

INCREASING EFFICIENCY WITH THE NI PLATFORM

Harris Corporation, a \$5.4 billion communications company, recently experienced a dramatic increase in demand for its Falcon line of high-performance military radios. To meet this demand while maintaining quality and reliability, Harris required a more efficient testing methodology.

Harris previously relied on test stations that tested only one radio at a time. To increase throughput, Harris incorporated parallel testing on each station using NI TestStand, LabVIEW, and PXI hardware. The new system tests eight radios simultaneously, increasing production test throughput 400 percent and reducing test costs 74 percent per radio. By standardizing on the NI platform, Harris was able to automate its test equipment. In the future, the company expects the benefits of this streamlined approach to continue by extending the efficiencies of the system into the verification and validation phases of product design.

BUSINESS BENEFITS

74% decrease in cost of test

83% reduction in required manufacturing floor space

400% increase in production testing throughput

185% projected return on investment

3-month payback period

INCREASED TEST THROUGHPUT

By standardizing on the NI platform, Harris increased radio testing efficiency while reducing costs.



ADDRESSING TODAY'S CHALLENGES

Around the world, customers are using National Instruments open, intuitive software and modular commercial off-the-shelf (COTS) hardware to develop applications that address today's critical business needs. Using NI products, your engineers can quickly develop flexible, user-defined applications by integrating the latest technologies into their equipment to optimize operational efficiency while reducing costs.

Doing More with Less

Visteon saved \$13 million and reduced facility floor space by more than 1,300 square feet by standardizing on LabVIEW, NI LabWindows™/CVI, and NI TestStand software and replacing traditional rack-and-stack hardware with NI modular hardware.

Reducing Time to Market

With FPGA hardware as opposed to a fixed ASIC chip, OptiMedica reduced development time by 30 percent for its retinal-disease treatment device.

Managing Global Operations

By standardizing on a single PXI test platform, Honeywell Aerospace unified its test groups globally, increasing productivity and decreasing ownership costs.

Minimizing Environmental Footprint

Data Science Automation developed a portable sampling system using the LabVIEW Mobile Module and NI Compact FieldPoint hardware to monitor mercury emissions from coal-fired power plants to comply with federal clean air regulations.

Maximizing Operational Efficiency

To reduce downtime and identify production-line inefficiencies, Kraft Foods uses a remote fault-detection diagnostic and servicing tool based on LabVIEW and COTS hardware components from NI.

Protecting Your Investments

I²S optimized its PLC-based control architecture for steel production by integrating an FPGA-based CompactRIO system into its control unit to perform I/O and signal processing in real time.

Nucor Steel drastically reduced its energy consumption, resulting in a tenfold increase in efficiency.



“Our team was able to save tens of thousands of dollars and months of development time by creating a holographic digital data storage system using CompactRIO, high-speed FPGA technology, and LabVIEW.”

– Byoungbok Kang, design engineer,
Daewoo Electronics

REDUCED DEVELOPMENT TIME

Using LabVIEW and CompactRIO, Sanarus designed and prototyped its minimally invasive breast tumor treatment device in less than four months.

IMPROVING TUMOR TREATMENT

Sanarus Medical created an embedded control system and GUI for a medical device that gives patients a nonsurgical option for breast tumor removal, dramatically reducing emotional and physical discomfort. Using flexible, COTS CompactRIO hardware and open, intuitive LabVIEW software, Sanarus engineers designed and prototyped the device in house in less than four months, which is half the time it would have taken using custom hardware.

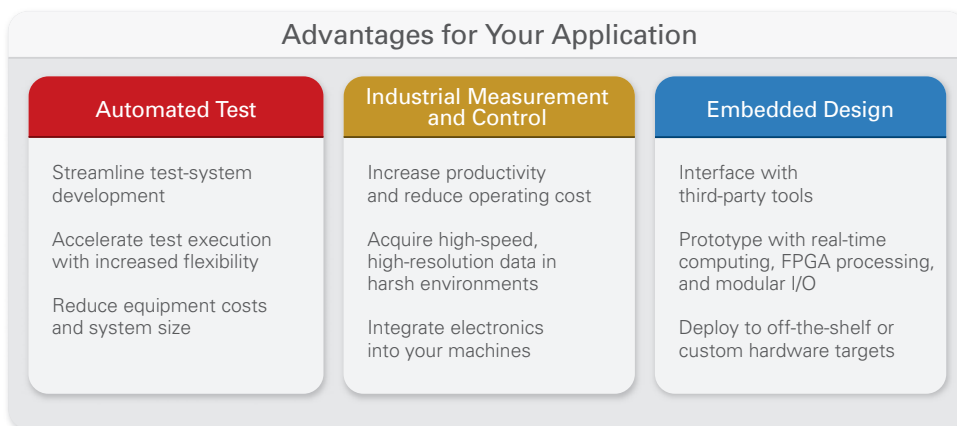


The Visica 2 from Sanarus has transformed benign breast tumor treatment, providing a nonsurgical option for patients.

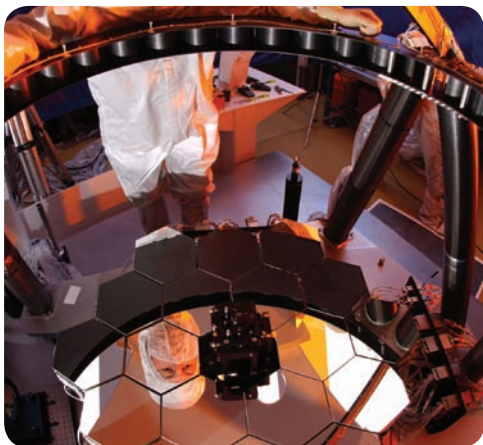
Because of the programmability and integrated I/O development of CompactRIO, Sanarus engineers easily revised code during development to design and prototype a highly reliable system in a fraction of the time. As a result, Sanarus entered the market with an FDA-approved tumor treatment device that uses cryoblation technology to freeze and destroy benign breast tumors. According to Sanarus, long-term studies have shown the Visica 2 (V2) to be a highly effective tumor treatment system.

INNOVATION FOR TEST, CONTROL, AND DESIGN

Each year more than 30,000 companies integrate National Instruments products into their systems to maximize efficiency and reduce development costs. In hundreds of industries and thousands of applications, the world's most innovative companies use the NI graphical system design platform to create next-generation automated test systems, control critical machine operations, and quickly design sophisticated embedded systems.



Testing NASA's Next-Generation Space Telescope



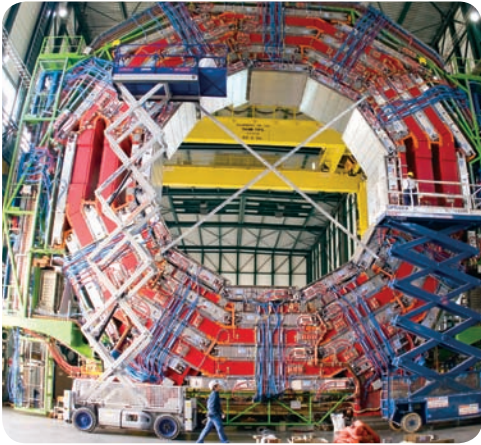
A critical component of the James Webb Space Telescope, NASA's successor to Hubble, is the Near Infrared Spectrograph, a programmable transmission mask equipped with 250,000 microshutters designed to observe distant galaxies. Flawless operation in harsh conditions is paramount to the success of the telescope. To ensure system longevity

and reliability during space deployment, NASA contracted Mink Hollow Systems to develop a custom test and control algorithm using LabVIEW FPGA software and PXI reconfigurable I/O devices that synchronously opens and closes the microshutters 240 times per minute while providing design feedback and estimating the life of each unit. Using NI products, NASA engineers can easily change test parameters and iterate on designs.

“Using LabVIEW FPGA and NI reconfigurable I/O boards, we saved hundreds of man-hours and thousands of dollars over developing a custom chip.”

– Eric Lyness, senior integration engineer,
Mink Hollow Systems

Controlling the World's Largest Particle Accelerator



As scientists at CERN seek to recreate the conditions present during the formation of the universe, they need a fail-safe solution for controlling the world's most powerful particle accelerator. This machine produces head-on collisions between particle beams traveling at nearly the speed of light; a beam that travels off course can cause catastrophic damage. To

ensure precise timing, accuracy, and reliability, CERN installed 110 collimators using PXI FPGA reconfigurable I/O devices, LabVIEW, and NI SoftMotion software.

CERN achieved millisecond synchronization to 600 stepper motors to meet strict application requirements while reducing development costs and time. CERN's researchers hope to discover new information about the origins of the universe.

“We selected a LabVIEW and PXI solution for our deployment platform due to the small size, ruggedness, and cost savings over the traditional VME and PLC-based model.”

– Roberto Losito, engineering manager,
CERN

Performing Underwater Excavation in the North Sea



The harsh conditions of the North Sea challenged engineers developing a method for natural gas extraction from the Ormen Lange gas field. To prepare the sea bed for pipe laying, Nexans developed the Spider, a remote-controlled underwater excavator.

The Spider is deployed up to 1000 m below sea level and is monitored and controlled by engineers on a ship using

LabVIEW and CompactRIO. Through a number of sensors on the Spider, a real-time image of the machine's position is displayed on the LabVIEW front panel for the operator in a 3D ActiveX control model of the seabed. With the consistent programming paradigm for both the human machine interface and embedded control using the LabVIEW platform, Nexans developed an easy-to-maintain system that can reliably function even in extreme conditions.

“The LabVIEW platform helped us develop an easy-to-maintain system due to the consistent programming paradigm for both HMI and embedded control, even in extreme conditions.”

– Halvor Snelling, CAPJET manager,
Nexans

ENSURING SYSTEM SUCCESS

To ensure your success and satisfaction, the NI global team of technical sales consultants works with you to develop the right solutions for your application needs. NI technology specialists offer expert advice on the latest industry trends and can simplify system development by personally guiding you through the NI product line, performing on-site demonstrations, and assisting with reference and application designs.

“NI engineers provide our group with timely and consistent support and have familiarized themselves with our process and needs to tailor a solution that works for us.”

– Marc Martin, acoustic test manager,
Bose Corporation

NI complements its industry-leading software and hardware tools with an extensive collection of services and support solutions. From planning and development through deployment and ongoing maintenance, make the most of your application investments with a range of global services you can tailor to meet your system requirements.



National Instruments Alliance Partner Services



NI collaborates with more than 600 consultants, value-added resellers, systems integrators, and OEMs. Through this network of National Instruments Alliance Partners, NI offers a solution for every customer's needs, from engineers who build it all themselves to the company that requires a turnkey system.

BRINGING ENGINEERS TOGETHER

The extensive NI user network consists of millions of engineers, scientists, and students worldwide. Through partnerships with organizations including *FIRST* robotics, Project Lead The Way, and LEGO® Education, NI begins building its network by engaging students of all ages in science, technology, engineering, and math. NI extends this relationship through hands-on learning programs in 6,400 universities and virtual labs that connect students around the globe. Finally, NI encourages collaboration between engineers in the industry through user groups, conferences, and events, cultivating an active network of current and future engineers.

Increasing Engineering Productivity

To support this global user network and provide a collaborative forum online, the ni.com user community features numerous virtual user groups, instrument drivers, example programs, add-on tools, and forums. This online community helps your development team quickly troubleshoot common application challenges and share ideas.

ONLINE RESOURCES

7,000 instrument drivers from 275 vendors

6,000 example programs and IP components

500 posts per day on NI discussion forums

10,000 tutorials, application videos, and webcasts

400 community-created, add-on products in the LabVIEW Tools Network

COMMUNITY COLLABORATION

More than 600 technical resources are added to the online user community monthly.





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