

The background of the entire image is a photograph of two female engineers in white lab coats and safety glasses working in a laboratory. They are focused on a robotic arm that is part of a larger industrial machine. The robotic arm is white with blue joints. Overlaid on this scene is a semi-transparent, glowing cyan wireframe model of the same robotic arm, showing its internal structure and joints. Several thin, curved lines in cyan and orange connect the physical arm to the digital wireframe, symbolizing the integration of physical and digital manufacturing. In the top left corner, there is a white rectangular box containing the Siemens logo and tagline. In the bottom right, there is a large cyan rectangle containing the event title and location. At the very bottom, a white bar contains the website URL.

SIEMENS

Ingenuity for life

Siemens Digital Enterprise Customer Experience Center

MxD - Chicago, IL

[siemens.com/digitalenterprise](https://www.siemens.com/digitalenterprise)



"Digital is the main reason just over half of the companies on the Fortune 500 have disappeared since the year 2000."

Pierre Nanterme, CEO Accenture



Transforming American manufacturing

Manufacturing x Digital (MxD), previously known as The Digital Manufacturing and Design Innovation Institute (DMDII) is a first-of-its kind research institute for applying digital technologies. This manufacturing hub in Chicago, IL provides a unique space for collaboration with universities, customers and other industry leaders. MxD was established through a five-year cooperative agreement with federal government funding and matching funding from industry, academia, local government and community partners.

MxD is a 94,000 square-foot facility located on Goose Island, and includes manufacturing cells, and space for demonstrations, training, meetings, showcases and projects. The facility enables Siemens to drive digital transformation and Digital Enterprise initiatives, and helps us facilitate our customers' success.

Siemens is committed to the mission of propelling American manufacturing forward by helping to usher in the digital revolution. MxD and its partners collaborate to foster the development and implementation of digital manufacturing technology for American industry. Industry, academia and government could not accomplish this goal by working separately; however, by working together we are making it happen.

"The pace of change has never been this fast ...
... and yet it will never be this slow again"

Justin Trudeau | Davos 2018

Leveraging digitalization



A variety of technology trends are transforming industry. Digitalization is changing how products come to life, evolve and are realized.

To fully leverage these technologies, companies must integrate software and hardware solutions across the entire value chain, from initial conceptual design, manufacturing planning and execution through service and support of both the products and the plants that produce them.

By using a common digital thread the entire process is optimized. This thread also permits the creation of a powerful digital twin of the entire enterprise. In combination, these compress the innovation lifecycle and enable continuous business transformation, enabling manufacturers to:

- Optimize thousands of iterations before committing real resources
- Simulate products, people, processes and resources interacting in the virtual world
- Run what-if scenarios in seconds to identify and resolve future inefficiencies

“All firms are on the digitalization path, because eventually they will all need to digitalize. The question is, how fast will they get there?”

Walt Boyes
Principal
Spitzer and Boyes
Source: 2017 Longitude Research

Providing a unique space for collaboration



Siemens is investing in solutions to realize and power our customers' Digital Enterprise. We have the unique capability to offer a comprehensive portfolio of product lifecycle management (PLM), manufacturing execution system (MES), manufacturing operations management (MOM), data analytics, and Totally Integrated Automation (TIA) solutions.

Importance of digitalization

If the American manufacturing sector seizes the opportunities presented by digitalization, the expected impact on both efficiency and innovation would be enormous. According to McKinsey & Company, digitalization offers the United States an opportunity to boost GDP by up to \$2.2 trillion by 2025, and industry would be a huge contributor to that growth.

A 2017 Longitude Research study indicates that American manufacturers believe digital manufacturing will be an important factor in future success. The research also indicates that to be truly transformative, digitalization must be driven through a bold, enterprise-wide strategy that encompasses – and goes beyond – productivity and efficiency gains.

Moving to digitalization, a Digital Enterprise is not simply a matter of transforming the technology platform; it is also about adopting a new digital mindset. This can mean many things: designing processes with automation in mind; developing a wide range of individualized products; structuring business units in a modular way for agile reaction to local or market trends; designing management structures and responsibilities that fit the new digital world; incentivizing collaboration and recruiting and regularly upgrading digital talent.

Digital Enterprise showcase

At MxD we enable you to explore the life of a product and facility in the Siemens Digital Enterprise with a mix of multimedia and live software spread out among more than 12 stations. We have assembled a one-of-a-kind environment to display Siemens' ability to be a holistic provider for Digital Enterprises. With a live mock-manufacturing environment, we offer a unique window into the opportunities provided by Siemens' Digital Enterprise technology, merging the virtual and physical worlds into one manufacturing environment.

This living environment is constantly being enhanced to show off more of the IoT or Industry 4.0 story.

The conveyor

You can see a fully integrated demonstration of SIMATIC IT (MES software) using a wide range of Siemens automation hardware.

Some of the partnered technologies showcased are:

- Light guide systems
- Augmented reality (AR)

MindSphere

MindSphere is the open, cloud-based IoT operating system from Siemens that lets companies connect their machines and physical infrastructure to the digital world. It offers a cost-effective, scalable platform as a service (PAAS) that enables manufacturers to uncover transformational insights across the entire business.



Providing a learning laboratory

Despite the high level of importance of digitalization, less than one out of every four companies surveyed have plans in place that are communicated across the entire organization.

Source: DMDII Survey, July 2015, including more than 200 participants from industry, academia and the federal government



The Digital Enterprise suite showcase session is a high-level tour enabling guests to see Siemens' investment and commitment to the Digital Enterprise, workforce development and American manufacturing. The one-hour tour of the Digital Enterprise suite showcase includes a walk-through display with live technology demonstrations.

The Solution deep dive session expands to involve a half to full day with a customer at MxD. In this experience, guests will have the opportunity to watch an overview of the Internet of Things (IOT) or Industry 4.0, complete a full Digital Enterprise suite showcase tour, hear more about key technologies they may be interested in, and discuss how Siemens can help their companies become Digital Enterprises.

A Digital Enterprise lifecycle workshop includes the Solution deep dive session, and then provides the opportunity to do more in-depth learning and discuss key digitalization modules, such as networking and virtual commissioning. This is an interactive workshop that enables the customer staff to work closely with the MxD Digital Enterprise team and their account team to start to strategize how to understand and investigate the technologies and create a road map for them to become a more complete Digital Enterprise. The workshop experience can be augmented with specific one- or two-day solution template-focused workshops to provide hands-on experience in one to three module areas with the Siemens technical staff. This enables the customer to gain experience with the chosen digitalization modules to take back to their company to help them create a customized road map for their journey to becoming a Digital Enterprise.