

# DIGITAL TRANSFORMATION THROUGH CONVERGENCE OF IT & OT

Digital transformation through the convergence of IT (Information Technology) and OT (Operational Technology) refers to the integration of these two distinct technology

domains within an organization to achieve enhanced operational efficiency, improved decision-making, and innovative business models. Here's how this convergence facilitates digital transformation:

- **Industrial Automation:** Companies like Siemens and GE have combined IT and OT to streamline manufacturing processes. This convergence allows for real-time monitoring of equipment (OT)

through networked infrastructure (IT), enables predictive maintenance, and significantly reduces downtime

- **Smart Grids:** Companies like Duke Energy benefit from IT/OT convergence to better manage power distribution. This integration allows for better network management, load balance, and quick response

to outages, increasing overall reliability and customer satisfaction

- **Healthcare:** Hospitals are embracing IT/OT convergence to improve patient care. The integration of medical devices (OTs) with electronic health records (ITs)

enables faster diagnosis, personalized treatment planning, and improved outcomes in patients.

## Challenges:

- **Cultural and Organizational Challenges:** IT and OT teams often have different priorities, skill sets, and ways of working,

requiring cultural alignment and organizational change management.

- **technology Integration:** Integrating legacy OT systems with modern IT infrastructure can be complex and costly,

requiring careful planning and execution.

- **Security Risks:** Converged environments create new attack surfaces and cybersecurity risks that must be adequately managed

to protect sensitive data and critical operations.

## Digital Transformation Success Stories

## Domino's Pizza

- Domino's successful implementation of technology-driven transformation helped the pizza giant evolve into "an e-commerce company that sells pizza," according to Dennis Maloney, the company's former chief digital officer who led the effort.
- After the company's stock price plummeted in 2008, Domino's implemented an initiative aimed at revamping its menu and at using digital technology to increase agility.

As part of its effort to deliver better products and services to customers, the company launched Domino's Tracker, a next-generation delivery technology that let customers follow the progress of their order online.

Today, Domino's Any Ware technology lets customers order in more ways on more devices.

- The company has touted its use of artificial intelligence and machine learning technology to improve product quality as well as boost store and online operations.

The company's multi-year experimentation with autonomous vehicles and drones for pizza delivery has kept Domino's in the vanguard of companies that push the boundaries of digital delivery.

- Experts who have studied the company's success in infusing digital innovation into its business agreed that its new profile as the "pizza experience company" depended heavily on strong executive support.

Creating an extensive and empowered IT department that collaborates with marketing counterparts to attract new and existing customers was also critical to the company's digital transformation.

- "Domino's is an example of getting the infrastructure right," Edwards said. "They have put some fantastic infrastructure in place to make sure that whatever channel you want to go through, you can order food from them. That makes for a seamless experience across different devices."

## How technology has impacted digital transformation

- Data Accessibility and Analytics: Technology has enabled organizations to collect vast amounts of data from various sources, including customer interactions, operations, and market trends. Advanced analytics tools and technologies like AI and machine learning help businesses derive valuable insights from this data, enabling data-driven decision-making and personalized customer experiences.

- **Connectivity and Collaboration:** Technologies such as cloud computing, collaboration tools, and unified communications have transformed how teams collaborate and communicate internally and externally. Remote work capabilities have been accelerated, allowing for global teamwork and improving operational efficiencies.
- **Customer Experience:** Digital technologies have revolutionized customer interactions and service delivery. From personalized marketing campaigns based on data analytics to seamless omni-channel experiences, businesses can now better understand and meet customer expectations in real-time.
- **Operational Efficiency:** Automation technologies, robotic process automation (RPA), and IoT devices have streamlined business processes and improved operational efficiency. Tasks that were once manual and time-consuming can now be automated, reducing errors and costs while enhancing productivity.

## Case study: Digital transformation through IT/OT convergence

### Amazon Case Study

*Did you know that Amazon started off as an online bookseller? Originating in 1994, the multinational corporation has grown to become the leading global ecommerce retailer, worth over \$500 billion in 2022.*

*During its initial stages, Amazon struggled with fierce competition in the online retail space, making it difficult to earn profits. As digital customer expectations changed quickly, Amazon scaled up its ecommerce practices to meet expectations, establishing business agility. In 2015, the company launched Amazon Business: a marketplace tailored to B2B businesses, featuring over 250 million products ranging across a broad spectrum of uses.*

As Amazon took advantage of the technological changes, it also prioritized customer-focused goals, using digital transformation to deliver top-notch customer service. Amazon also introduced new features to better serve its customers, such as free two-day shipping on orders of \$49 or more and shared payment methods. Without scaling up its ecommerce practices to serve changing buyer demands, Amazon could have easily fallen behind its competitors by failing to stand out in the marketplace