

HOW TO ACCELERATE DIGITAL TRANSFORMATION

Organizations can take small steps toward big goals while gaining operational and financial benefits.

EXECUTIVE SUMMARY

Most organizational leaders acknowledge the importance of digital transformation to their future effectiveness and competitiveness. But many organizations are still in the earliest stages of their digital transformation efforts, and some leaders struggle to even define the term itself.

In practice, it's typically most helpful for decision-makers to define digital transformation in terms of their own organization's business goals. By identifying opportunities to create value for customers and employees through investments in new technologies and processes, organizations can demystify the concept and achieve concrete benefits. Often, it makes sense to pursue low-risk, high-reward successes to demonstrate the value of digital transformation to skeptical stakeholders before attempting to implement an organizationwide strategy.

While business goals should be at the center of any digital transformation effort, these initiatives will inevitably require new IT investments, potentially including solutions such as Internet of Things (IoT) sensors and gateways, data analytics, automation and increased mobility. A third-party partner can help organizations to deploy, integrate and manage these new technologies — and provide an objective, external eye to make sure they don't slide back into business as usual.

What Is Digital Transformation?

By now, nearly every IT organization and leader has heard the term digital transformation, and many understand the concept will be essential to remaining competitive in the future. Despite this imperative, most organizations are only in the early stages of embracing digital transformation, and a surprisingly high number of people still have trouble even defining the term.

According to 2018 research conducted by CDW, just 13 percent of IT leaders say they "know exactly what digital transformation is all about," while 61 percent claim to have a "rough idea." Astonishingly, 25 percent of IT leaders acknowledge they have "no idea" what the term signifies. This doesn't mean, however, that organizations aren't interested in the operational and financial benefits that digital transformation has to offer. Only 10 percent have no plans at all to pursue a digital transformation strategy. More than three times as many respondents (31 percent) say their organizations already have "significant" transformational initiatives underway. However, most organizations (57 percent) are somewhere in the middle, saying they're currently creating a digital transformation strategy or plan to do so in the next year, or they already have a strategy in place and plan to act within the next few months. Overall, almost 79 percent of respondents say digital transformation is a priority for their organization.

It is, of course, impossible for business and IT leaders to devise and pursue an effective digital transformation strategy without a solid grasp of the term itself. Digital transformation

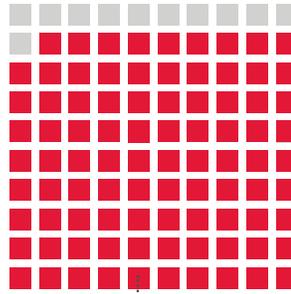
can be defined as: the realignment of, or new investment in, technology, business models and processes to drive new value for customers and employees and more effectively compete in an ever-changing digital economy. This new value can include operational efficiencies, financial benefits and improvements to the customer experience.

This definition aligns with what organizations are saying about the goals of their own current or planned digital transformation efforts — which almost universally emphasize business outcomes over technology itself. CDW research indicates that, by far, the most important objective for organizations pursuing digital transformation is "innovating to drive operational efficiency," with 56 percent of respondents naming the outcome as one of their goals. Meanwhile, 36 percent list "creating competitive advantage through improved customer experiences" as one of their objectives. Just 11 percent have their eye on "disrupting the market by introducing new ways of doing business."

Eyes on the Prize

It is important to note that both of the top two goals for digital transformation strategies are financially motivated and are tied to measurable outcomes. Improving operational

efficiency lowers costs, and improving the customer experience should increase revenue. In short, while some business and IT leaders may still have trouble with definitions, their goals are crystal clear: They want their digital transformation efforts to boost the bottom line.



89%

The percentage of decision-makers who say that connecting employees across departments with real-time communication technology would be effective to overcome departmental silos that hamper efforts to integrate IT into business strategy¹

Obstacles to Digital Transformation

While the benefits of digital transformation are attractive, organizations must overcome some common hurdles:²

Cost: Large IT investments can be expensive, and 31 percent of organizations cite a lack of resources as one of the greatest inhibitors of their digital transformation progress. However, well-planned digital transformation efforts can result in financial savings, which organizations can use to fund future purchases. Forty-eight percent of organizations reapply cost savings for digital transformation investments.

Security: Security is also cited by 31 percent of organizations as one of their digital transformation

challenges. In particular, businesses create new endpoints — and, potentially, new vulnerabilities — when they deploy IoT sensors and systems at the edge of their networks.

Staffing: At many organizations, in-house IT staffers lack the time or experience necessary to orchestrate digital transformation initiatives. Twenty-nine percent of organizations list time-consuming data migration as a major barrier, while 28 percent say integrating legacy systems with new applications is a challenge.

Culture: Digital transformation requires organizations to break down silos and embrace a culture that encourages risk taking. Twenty-one percent of organizations cite siloed operations as a hindrance to digital transformation.



The reason digital transformation still feels like a slippery concept for some business leaders is it looks different from one organization to another and from one industry to another. The goals of a research university have little in common with those of a manufacturing plant or a global financial services firm, but all of these organizations can accelerate the path to their individual objectives via a well-crafted digital transformation strategy.

It's a mistake to think of digital transformation primarily in terms of IT. Simply looking at another organization's IT investments will likely tell business or technology leaders very little about what sort of initiatives will help them solve problems or create value in their own environment. If a manufacturing company is seeing its brick-and-mortar retail partners wiped out and needs to find a way to shift more of its sales online, that's one conversation. If a financial institution needs to modernize its consumer-facing online and mobile tools to keep up with the competition, that's another. And if an enterprise needs to replace legacy systems with seamless collaboration tools to improve user experience, that's a different discussion entirely.

One could argue the conversation around digital transformation is inherently an industry conversation, as the term is meaningful only when it relates to a particular organization's business goals. In fact, the genesis of many organizations' modernization efforts lies with lines of business, as opposed to IT leaders. Depending on the culture of an organization, this could be seen as a threat to IT departments.

As with mobile applications and cloud tools in the recent past, business units are likely to seek out their own digital transformation solutions if their needs aren't being met by their IT department. Instead, IT leaders should view the current moment as an opportunity to break down silos and integrate technology departments with business units to an unprecedented degree. For years, IT decision-makers pushed for their shops to be seen as business enablers, rather than mere cost centers. Digital transformation presents a new opportunity to make that vision a reality.

Achieving Quick Wins

Digital transformation should be thought of as a journey, rather than a destination. Before an organization can begin its digital transformation, it must establish the goals it hopes to achieve through the process, and then build a strategy to achieve those goals. One helpful mantra for organizations pursuing digital transformation is: Think big, act small, move fast. Thinking big means setting a long-term vision for achieving ambitious goals. Moving fast entails building upon lessons from early efforts to tackle progressively larger and more transformative projects that will fulfill the think-big strategic vision.

But everything starts with acting small: taking manageable, concrete steps to put modernization into action — often through the implementation of proven technologies that will help reduce

the perceived risk of digital transformation for skeptical internal stakeholders. It's critical that these initial, small steps help an organization achieve concrete, measurable business value. Then, with these quick wins in hand, business and IT leaders can rally their organization around continued transformation efforts.

These real-world examples help to illustrate how organizations can take relatively small — and safe — steps to set their digital transformation efforts on the right track.

State and local government: Digital transformation holds great promise for government agencies. IoT sensors and analytics have the potential to produce insights that power futuristic use cases, such as connected traffic lights that automatically dispatch public safety personnel to motor vehicle accidents. Today, though, many cities are realizing immediate benefits through IP-enabled LED streetlights.

Los Angeles, for example, equipped 80 percent of its streets with connected lights that have LED bulbs and 4G LTE wireless technology. The move slashed LA's energy bill by 63 percent, while also giving city officials a ready-made IoT network to test out additional use cases

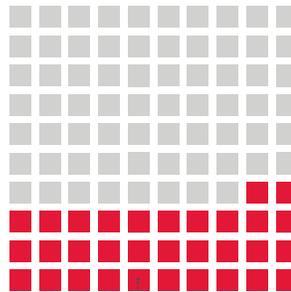
— including sensors to detect gunshots and other loud noises that pose a potential public safety threat.

Healthcare: Wearable health trackers and predictive analytics may soon revolutionize healthcare delivery, giving clinicians a steady stream of patient data and alerting both patients and providers to signs of potential danger. But for now, hospitals and other healthcare organizations can improve their operations and perhaps cut costs by using IoT technologies to track their physical assets.

According to some estimates, up to 25 percent of hospital staffers' time is wasted attempting to locate items such as IV pumps and heart defibrillators. By tracking these assets through Bluetooth Low Energy (BLE) or other real-time location technologies, healthcare organizations can improve patient care and increase staff efficiency. Additionally, a well-designed pilot program may lead to an optimization of asset allocation and demonstrate that a hospital can serve its patients with fewer physical assets (once those assets are managed and tracked with care, making them available when clinicians need them).

Manufacturing: The maxim time is money may be truer in manufacturing than in any other industry. For example, a single hour of unexpected downtime can cost an auto manufacturer \$1.3 million in production losses. And if unexpected downtime is a chronic problem, the losses can be even larger, as unreliable productivity can lead to clients taking their business elsewhere. IoT can maximize uptime by catching hidden problems before they result in equipment failure, helping to keep factories humming.

A typical system puts IoT sensors on equipment to measure such things as voltage fluctuations, temperature, vibration and other factors. This data is then fed into a platform for real-time monitoring and analytics. In addition to providing real-time alerts, IoT



32%

The percentage of IT decision-makers who say that digital business has already helped their organization achieve revenue growth³

can help manufacturing companies build a historical database that shows which pumps, motors and other equipment are highly reliable, and which are prone to breakdowns — information that helps companies make decisions about future purchases. Energy monitoring is another area where IoT investments can pay rapid dividends for manufacturers.

Education: With a large number of high-profile tragedies making headlines in recent years, K–12 school districts and higher education institutions are understandably seeking new ways to improve campus safety. Video surveillance remains the foundation of a comprehensive school security strategy. Connected video cameras help officials keep track of who is coming into their schools in real time (as opposed to providing a mere forensic tool), and advanced features such as facial recognition can give schools even more information. Safety also may be improved through potential IoT applications for drone technologies and student tracking systems.

Schools leverage IoT to make their facilities more energy efficient, and student wearable devices may one day provide classroom teachers with real-time indicators of student engagement.

Retail: Brick-and-mortar stores must deliver a superior customer experience to compete with online retailers that offer one-click shopping, often at lower prices. One of their main competitive advantages is their staff, who can answer questions and offer opinions for shoppers. Many stores are improving the efficiency of their floor employees by equipping them with mobile devices that provide product and inventory information and often tie into point-of-sale systems.

Stores are using IoT technologies to improve their inventory management — an investment that can prevent lost sales and unhappy customers due to stock shortages.

What Does Digital Transformation Mean to You?

CDW asked IT professionals from a variety of organizations for their thoughts about digital transformation.⁴

“Complete overhaul of how we work. Paperless offices, smartphones and tablets, telecommuting, Wi-Fi everywhere. Take everything we do and make it digital.”

– IT staff member, midsized/large engineering firm

“Turning manual processes into processes done on a computer — such as document management and communication.”

– IT manager, small manufacturing company

“Migrating all business practices and processes to digital technology.”

– IT executive, midsized/large financial institution

“Taking a business from paper to electronic, introducing mobile computing and other web-based tools to perform the same job more efficiently and effectively.”

– IT director, midsized/large real estate organization

“Changing processes to digital. Eliminating manual steps and automating as much as possible.”

– IT manager, midsized/large manufacturing company

“Digital transformation is the conversion of business processes and activities to digital processes, to take advantage of new strategic computer technologies.”

– IT manager, midsized/large company

According to the International Council of Shopping Centers, 41 percent of shoppers want stores to provide interactive shelves that give product information, and 36 percent are interested in in-store tablets that show a larger offering of products to purchase.

Energy: Gas, oil and utility companies are using data in new ways to improve decision-making, as well as to simplify reporting and other tasks. For instance, the North Dakota energy supplier Basin Electric Power Cooperative is automating its reporting processes with IBM Cognos solutions, resulting in 85 percent time savings and allowing staff to focus on critical activities. Houston-based CenterPoint Energy utilizes HPE technology to support its smart grid, which allows the organization to read power meters remotely and analyze the data to prevent and respond to outages.

The use cases for different digital transformation projects vary widely from industry to industry. Some use cases, such as location tracking or smart buildings, have the potential to span many industries. But, for many organizations in different sectors, early digital transformation efforts have one essential element in common: They're able to provide tangible value today.

Enabling Digital Transformation

It's one thing to brainstorm digital transformation goals. It's another to put plans into action.

Typically, digital transformation requires organizations to invest in multiple new technologies. And unlike infrastructure refreshes or device rollouts, digital transformation efforts are likely to require the implementation and integration of solutions with which internal IT staff may be unfamiliar. Because of this, it is often beneficial for organizations to work with a trusted partner that can help design solutions, implement new systems

and integrate disparate technologies. A partner can also provide advice and assistance around an emerging set of IoT platforms than can help organizations achieve digital transformation liftoff.

Find a Partner

In addition to working with external partners, IT teams must link up with internal line-of-business stakeholders to ensure digital transformation success. First of all, the goals of a digital transformation initiative are inherently business-based, and an initiative will fall flat if business executives and IT leaders aren't in alignment on expected outcomes. If business units feel that the IT department isn't addressing their concerns, they may search for their own solutions, bringing shadow IT, along with vulnerabilities and inefficiencies, into the organization. But, the IoT systems that enable digital transformation require the convergence of IT and OT — operational technology.

Some observers compared IoT to the human body, with analytics and data center computing representing the brain (where the processing takes place) and IoT sensors representing the senses of sight, smell, hearing, touch and taste. While the brain is powerful, the body can't function effectively without its senses — or, in the case of an IoT solution, without sensors.

Historically, IT and OT lived in different parts of an organization's structure, with little interaction between the units responsible for managing them. In manufacturing, for example, floor equipment is often connected to an industrial network over which IT lacks control and visibility. Breaking down these silos is hugely important for digital transformation. In order to support a successful initiative, IT shops will need access to the data generated by operational technology they don't own. And to get that access, they need to partner effectively with business units.

Transformation Underway

Many organizations are already taking concrete steps, deploying new tools and exploring emerging technologies to bring their digital transformation strategies to life.⁵

Top Five Digital Technologies Already Implemented

Big Data/analytics	59%
Mobile technology	59%
Private cloud	53%
Public cloud	45%
APIs/embeddables	40%

Top Five Technologies in the Works

Artificial intelligence	56%
Machine learning	55%
Internet of Things	50%
Software-defined networking	45%
Software-defined storage	44%

Which of the following steps has your organization completed on its journey to becoming a digital business?

Data security/protection strategy	27%
IT skills assessment	24%
Developing a business case or roadmap for digital strategy	23%
Technology needs assessment	23%
Workforce strategy	19%
Change management	18%
Data management strategy	17%
Determining the metrics of success	15%
Persona development	14%

Invest Wisely

The specific components of a digital transformation initiative will depend on goals, project scope and existing infrastructure. However, the list of technologies that power digital transformation includes:

- IoT sensors
- IoT gateways
- Wired and wireless networking
- Real-time location systems
- Mobility
- Enhanced video surveillance
- Building automation systems
- Data analytics
- Cybersecurity and physical security

Organizations may have already made investments in some of these areas. [According to CDW](#), 33 percent of organizations have already made process, operational or technology changes on an enterprise scale to support digital transformation. Another 33 percent made these changes or investments within one or more business units, and 20 percent are currently piloting digital technologies. The top technologies already in production among respondents who made enterprise digital changes include:

- Mobile (52%)
- Software-defined storage (51%)
- Infrastructure as a Service (50%)
- Software-defined networking (49%)
- Artificial intelligence (45%)

Emerging solutions such as machine learning and edge computing also hold promise for IoT solutions. Additionally, the cloud has become an essential resource for digital transformation and IoT implementations, as it provides the scalability and manageability that eases some of the obstacles to IoT success.

Integrate Solutions

Simply buying new technologies doesn't take any great talent. But the effective integration of unfamiliar solutions into a cohesive system can be what makes or breaks a digital

transformation effort. Several vendors have created IoT platforms to help streamline this process.

- **Cisco Kinetic IoT Platform:** This platform is designed to handle data from, and integrate with, a wide variety of applications. For example, Kinetic can be integrated with a building automation system to enforce energy use policies and enable more complex use cases.
- **Azure IoT Hub:** This open and flexible platform is delivered as a cloud service that supports open-source software developer's kits and multiple protocols. Organizations utilize cloud-to-device messages to reliably send commands and notifications to connected devices and track message delivery with acknowledgement receipts.

- **Intel IoT Platform:** This platform works with third-party solutions to provide a foundation for seamlessly and securely connecting devices, delivering data to the cloud and delivering value through analytics.
- **Splunk Industrial Asset Intelligence:** Built on Splunk Enterprise, IAI delivers real-time analytics that help industrial organizations identify and diagnose problems, helping to improve availability and performance. By taking small steps to make digital transformation more manageable, organizations can create new value immediately, obtain buy-in from executives and other stakeholders and accelerate movement toward their long-term business goals.

CDW: A Digital Transformation Partner that Gets IT (and OT)

Although most senior executives (63 percent) are confident in their ability to support a digital transformation strategy, nearly all organizations (92 percent) plan to engage a third-party partner for help in one or more areas, according to CDW research. Common areas of need include data migration, infrastructure upgrades, analytics and the integration of legacy systems with new applications.

CDW's solution architects take a business-first approach to digital transformation. They bring decades of experience helping organizations to design systems and processes that reduce costs, boost revenues and enhance the experience of users and customers.

Additionally, CDW offers engagements specifically designed for organizations in the early stages of digital transformation. For example, in an IoT Envisioning Workshop, IT and line-of-business stakeholders are brought together to build a consensus on an organization's vision for a digital transformation initiative.

For organizations ready to test and implement digital transformation solutions, CDW offers proof-of-value (POV) engagements to conduct the rapid evaluation of a solution under real-world conditions. As opposed to a proof-of-concept, a POV demonstrates whether a technology can deliver a measurable business outcome in a customer's environment.

To learn more about how you can map your path to digital transformation, request a CDW IoT Envisioning Workshop.

The CDW Approach



ASSESS

Evaluate business objectives, technology environments and processes; identify opportunities for performance improvements and cost savings.



DESIGN

Recommend relevant technologies and services, document technical architecture, deployment plans, "measures of success," budgets and timelines.



MANAGE

Proactively monitor systems to ensure technology is running as intended and provide support when and how you need it.



DEPLOY

Assist with product fulfillment, configuration, broad-scale implementation, integration and training.

To learn more about how CDW can help you achieve digital transformation, visit [CDW.com/](https://www.cdw.com) IoT or schedule a consultation with a CDW expert at 800.800.4239.

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