

IT Blueprint

Digital Business Transformation

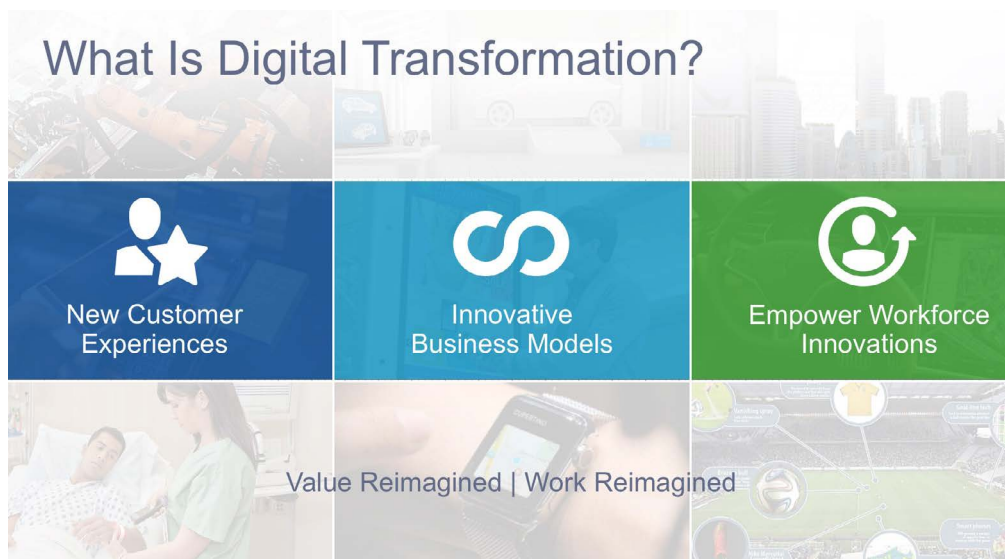
Digital transformation is disrupting business in every industry. Smart organizations are applying technology to build new business models, processes, software, and systems that bring connectivity and visibility into every aspect of their organization. They're harnessing these new connections and insights to optimize internal processes, enhance customer experiences, and empower employees.

At Cisco, we've been working to weave together all aspects of technology, solutions, and strategy to successfully navigate the journey to a digital business. We provide a technology foundation that integrates connectivity, security, automation, collaboration, and analytics across the entire business value chain. With this foundation in place, we're building a new generation of outcome-oriented digital solutions. And we're creating a developer environment that drives faster innovation, supported by a global ecosystem of partners.

All of these efforts serve to not only deliver new value for our customers, but to drive digital transformation in our own organization. Our initiatives will unlock billions in trapped value in the form of new revenue and cost savings.

Our digital transformation strategy at Cisco focuses on three broad areas:

- **New Customer Experiences:** In a world of always-on digital services at your fingertips, customer expectations are soaring. By providing a seamless omni-channel experience to each customer, across every channel of interaction, Cisco aims to strengthen customer loyalty. At the same time, we're gaining deeper insight into our customers and their behavior, so we can improve our products and services, and predict future purchases.
- **Innovative Business Models:** As more and more devices get connected, companies have the potential to connect to and collect data from every extremity of their value chain. This sets the stage for new ways of doing business at Cisco, enabling us to disruptively transform our existing business models. The result is faster time-to-market, leaner operations, and greater agility to respond to market changes.
- **Empowering Workforce Innovation:** We are giving Cisco employees the tools to be more connected, engaged, and mobile. Our digital workforce requires nonstop connectivity, rich collaboration to support deeper engagement, and security everywhere. With these capabilities in place, we can increase productivity and improve our ability to attract and retain the best people.



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Accelerating Value Exchange

Every business transaction requires a mutual exchange of value. Cisco is focused on providing superior value and enabling customers to apply it to their business faster. As Cisco accelerates and increases this value exchange, all of our constituents benefit—customers, employees, partners, and shareholders.

Cisco customers are looking to apply technology to build new business models, processes, software and systems. By doing so, they expect to achieve more profitable revenue, greater competitive advantage, and higher efficiency. Cisco customers are creating value through:

- **New Customer Experiences:** Delivering delightful customer experiences is key to winning and retaining business, strengthening loyalty, and maintaining credible sustained differentiation.
- **New Business Models:** New business and operating models, enabled by data flows and analytics, allow companies to reimagine the value they generate for customers and themselves.
- **Employee Empowerment:** Transforming the workplace into a flexible, collaborative environment empowers a digital workforce. This increases employee engagement and productivity, while enhancing innovation. Digital businesses are giving employees the tools to be more connected, engaged, and mobile.
- **Security Everywhere:** No digital initiative can succeed if businesses can't keep business-critical assets and communications safe. As a foundation for transformation, businesses are securing everything and providing continuous policy-based threat protection across devices at the edge of the network, across the infrastructure, and through the data center and the cloud.



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Cisco provides the products, solutions, and services needed to transform our customers' business. Our product portfolio brings together critical capabilities needed to connect people, business, and things, while our solutions and services help accelerate digital transformation. This delivered value includes:

- **Insights:** The value you realize from digital transformation is directly tied to your ability to collect more data from more places and analyze it consistently. Cisco provides data flows from devices, networks, users, applications, and threats that can be converted into actionable insights.
- **Simplicity and Agility:** Cisco is removing complexity from its solutions, making it easier for our partners and customers to adopt digital business technology.
- **Risk Mitigation:** Cisco offers digital solutions – specially created packages of hardware, software, and services – that deliver business outcomes like increasing revenue, improving customer experiences, engaging employees, lowering costs, and mitigating risk.
- **Continuous Innovation:** Cisco has adopted continuous delivery methodologies in our software development. As a result, we've doubled delivered capabilities, reduced vulnerabilities by 60 percent, and increased quality by 92 percent.



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Digital Transformation is Enabled by Technology

Driving digital transformation in a company is not easy. Line of business leaders are looking to transform their business processes and achieve tangible business outcomes. To do this, they need to collaborate closely with IT leaders to develop the environment, resources, and technology solutions required for digital business.

To enable new business models, Cisco aligned its internal IT processes by focusing on five key areas:

- **Security:** Deploy an end-to-end, policy-driven security approach to better secure every aspect of our value chain.
- **Simplification:** Simplify everything and deliver IT as-a-service. Moving to a simplified, automated supply chain improves productivity, efficiency, and visibility. It enables more accurate demand planning, real-time inventory management, and reliable fulfillment.
- **Automation:** Leverage modular IT and automate processes from the network edge to the data center and cloud, to reduce costs and accelerate speed of change.
- **Monitor and Adapt:** Bring data closer to decision-makers, self-service and in business language, to enhance insight and support better real-time business decisions.
- **Continuous Innovation:** Accelerate continuous delivery to bring our stakeholders more capabilities, reduced vulnerabilities, and better quality tied to business value.

Cisco Operating Model Enabled by Cisco IT



Simplification

IT as a Service
Simplify Everything



Automation

Modular IT
Extend the Cloud



Security



Monitor &
Adapt

Insightful Data
Self Service



Continuous
Innovation

Continuous
Delivery

Enable New Business Model

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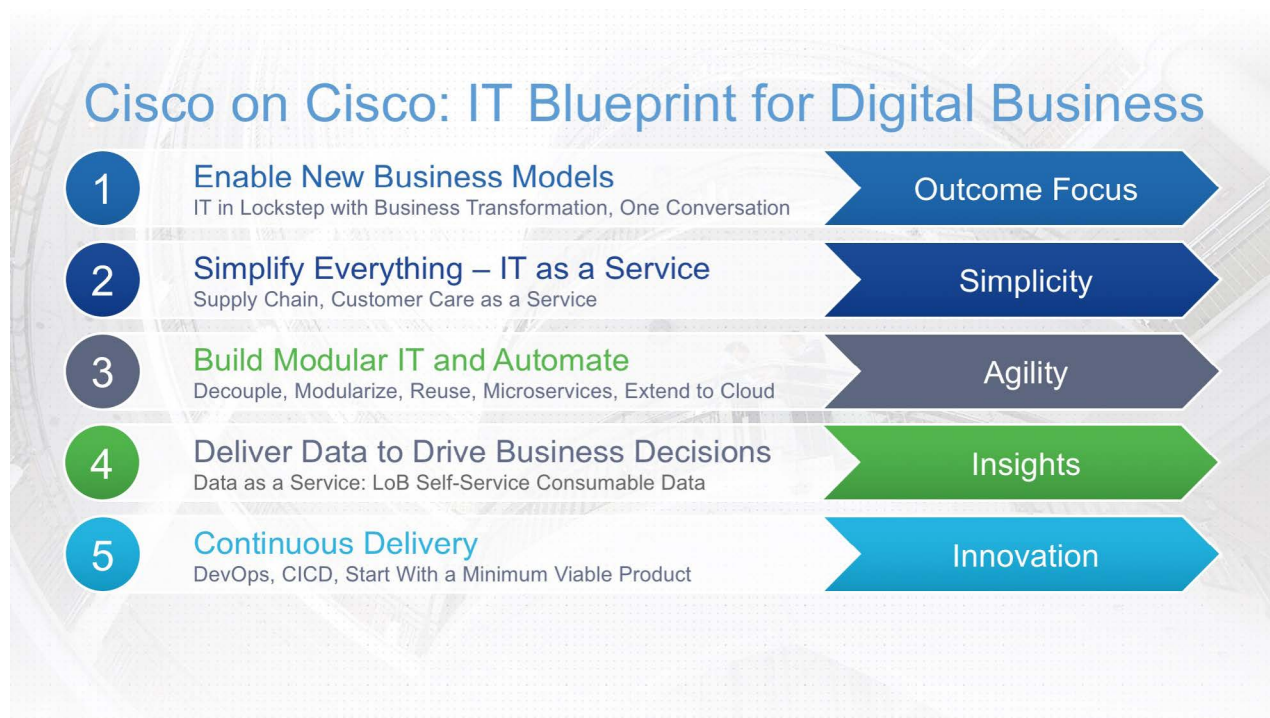
IT Blueprint

As Cisco transforms into a digital company, business and IT conversations are turning into a single conversation—as it should be. Our vision is to power the #1 IT company. We aim to lead the way in digital business, using our technology to create new ways of delivering value to customers.

Along the way, Cisco IT is sharing our experiences with customers to help them transform their own businesses and IT. We're following a blueprint to partner with Cisco business leaders to enable digital business. It starts with business objectives and ends with business outcomes.

Cisco IT is focusing on five key considerations to unlock digital business transformation:

- **Enable New Business Models:** Align IT around business outcomes, focusing on closer partnerships between IT and lines of business to execute on business transformation.
- **Simplify Everything:** Deliver simplicity across the organization, with IT as a Service and a services-based approach to everything from supply chain to customer service.
- **Build Modular IT and Automate:** Decouple and modularize code for reuse across multiple services, and leverage cloud services when possible.
- **Deliver Data to Drive Business Decisions:** Provide data as a service to support lines of business in a self-service, easily consumable way, using natural business language.
- **Continuous Delivery:** Adopt agile software development along with continuous integration and continuous deployment to increase feature delivery.



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Enable New Business Models

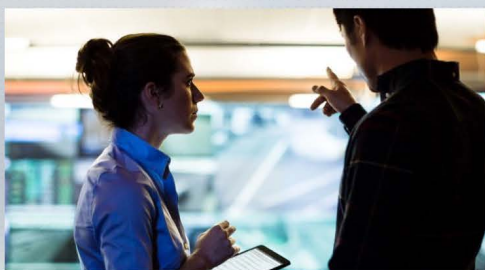
Digital business changes a company's operating model to make money in new ways. Digital – that is, technology – enables new data flows, insights, and capabilities. But to convert digital into new growth opportunities, companies must converge fragmented business processes and rethink how work gets done. This may include revamping a company's entire operating model.

Our customers are looking for new routes to market – to develop innovative offerings and revenue models – through digital business. They see that Cisco is listening to the market by shifting away from products toward holistic solutions and flexible consumption models. That is Cisco's digital business journey. Customers also know that Cisco can help them to become digital, both with our technology and with the example we're setting.

Cisco has shifted its own internal IT efforts to be more supportive of line-of-business requirements. This has resulted in a cultural shift, with IT and the LoB working closely and iterating together through a shared conversation, focused on delivering business outcomes.

By digitally transforming our own operations, Cisco is changing how we go to market and maximizing the value of our installed base. Cisco's new monetization framework addresses this and helps customers capture the digital business opportunity by driving standards for policy, processes, and procedures. Cisco will go to market with greater discipline, and help our customers leverage the entire Cisco portfolio to compete more effectively in the digital era.

Enable New Business Models



Business Outcome Focus

One Conversation Between
IT and Business
Cultural Shift



Business Transformation for Cisco

Solutions and Software
New Consumption Models
Traditional Portfolio

IT and LOB work Together and Iterate Together

IT Blueprint

Simplify Everything, Deliver IT as a Service

To support digital business, IT needs to establish itself as a services-based organization. Cisco has created a whole new culture of running IT as a business. For example, the service owner for email and calendaring effectively runs email and calendaring as a business. They take on the responsibility to deliver that service to the enterprise—making sure that it runs well, delivers the right user experience, meets cost targets, that it manages security risks, and more. Everything about that service is owned by that service owner and team. This ownership model is reinforced through regular reviews with IT management to track KPI service metrics such as delivery, costs, quality, user experience, risk, and leverage on a service-by-service basis. These insights help management make better decisions and weigh tradeoffs based on business goals.

Cisco has developed a costing methodology to communicate costs back to the business unit. This was accomplished by pulling budget back in-house to enable IT to make decisions and establish a show-back model. When delivering services for Sales, for example, IT communicates back what it costs to run that service. This model has removed application bloating and redundancies. Additionally, Cisco was able to consolidate many disparate SaaS instances being utilized across the company, and we've fine-tuned SLAs and contracts with our vendors.

Every service being offered by IT is expected to drive out 5 percent of cost on an annual basis. This savings is, in turn, reinvested in the service in the form of an innovation budget. By allocating these funds to innovation, IT can expand its focus beyond day-to-day work, and bring innovation to every project and big initiative. Innovation investment requires centralized governance and the commitment of IT leadership.



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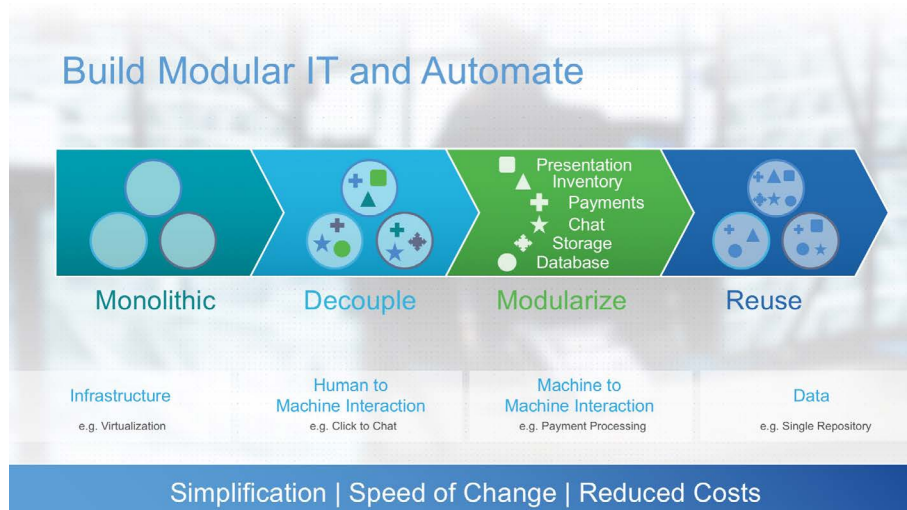
Build Modular IT and Automate

Modular IT is all about breaking code into reusable chunks, simplifying and reusing code whenever possible for greater efficiency and cost control. This modular approach supports digital business by speeding time to capabilities that can be continually developed and redeployed to support any service.

We considered four areas of modularization:

- **Modularize the Infrastructure:** Cisco UCS and virtualization in the data center are examples of infrastructure modularization. In the past, custom operating systems and custom applications were deployed onto specified hardware in a physical rack. Now, everything runs on the virtualized layer on a hypervisor in OpenStack. We use common storage services and APIs to engage the infrastructure with Cisco Application Centric Infrastructure (ACI), exposing network capabilities to applications.
- **Modularize Human-to-Machine Interaction:** An example of this is the integration Cisco has done with Spark collaboration and Cisco TAC technical support service. Each new support case, opens a Spark room that allows the technical support agent to bring in appropriate subject matter experts to collaborate to solve problems. We also leverage “click-to-x” capabilities, so that, as an example, any reference to an employee, in any application, can lead to immediate contact and collaboration. Whenever a developer refers to an employee in an application, they can simply wrap it with a piece of code that links the name to the company directory or launches a call with Jabber.
- **Modularize Machine-to-Machine Interaction:** One example involves credit card processing at Cisco, which was ripe for modularization. We had this capability written into many systems, from Cisco Services to the Cisco Cafeteria. Now, payment processing is handled via a single processor, with a single approach across the company that is far simpler to manage and ensure PCI regulatory compliance. Another example is that Cisco has also integrated Spark collaboration rooms into the developer process to record both human conversations and machine interactions that take place. When code is pushed into a repository, it is immediately built and scanned for security and quality. The results from the process, including how machines are interacting, are posted to the Spark room for feedback and status across development teams.
- **Modularize Data:** Cisco has modularized its customer data to a single customer master. At one point in time, we had 18 different repositories of customer data with 18 different opportunities to get someone’s name and address wrong in our systems. Previously, we had to do custom development in order to access this data. Now, we can standardize around data access from a single data set.

All of these initiatives have simplified processes, increased the speed of change, and reduced costs across business units.



IT Blueprint

Deliver Data to Drive business Decisions

Digital business generates and leverages a greater volume, velocity, and variety of data than ever before. This powers amazing insights, innovation, and business value. But it can be difficult to know where to go to get right data to solve specific business problems. Many large enterprises do not know what data they have, where it is, or who has it. Instead, data is broken up in silos and functional areas across the organization. The result is that different departments use disparate spreadsheets with fragmented data sets and insights—impeding the end-to-end digital journey. A successful digital business needs to break these silos down, so data elements can be connected and made to act as one.

Digital business requires a data management strategy that looks at common measures and common data elements. It should leverage shared technology platforms that can scale across the enterprise to move away from siloed, departmental solutions. Data also needs to be presented to support the natural motion of the business. Business leaders should be able to immediately understand the insights in their data.

At Cisco, we've moved our data into a single, consolidated and unified view across the entire company. The enormity of this task is hard to comprehend, especially when first starting out. It cannot be done all at once.

We took an architectural approach, starting with shared platforms powered by Cisco UCS and ACI. Then, brick-by-brick, we collected and brought together cleaned datasets to provide a single source of truth to empower our digital business. We broke down functional silos into a common data platform to connect the unconnected, leveraging Hadoop and SAP HANA, and providing a seamless platform for business users to access data.



IT Blueprint

Continuous Delivery

The recipe for faster innovation at Cisco entails continuous integration of incremental, small-value developer code, with continuous delivery for more frequent delivery. We drove adoption of continuous delivery across Cisco IT by training all software developers in agile fundamentals, with scaled agile framework and additional scrum master certifications. Over the course of 18 months, we have expanded this continuous delivery model from 23 percent to 73 percent of our services.

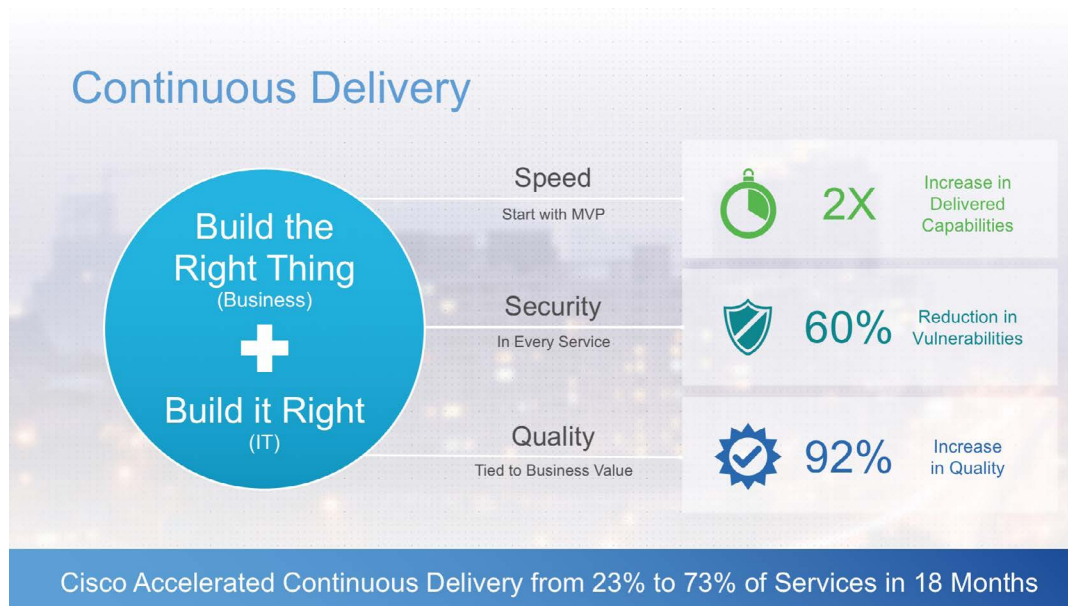
When working together, Business leaders will say to IT, “Go build me the right things and ensure that the right business outcomes are created.” It is then IT’s role to take these requirements and determine how to build services in the right way. When we merge business and IT together, we have an opportunity to take advantage of a mindset change we adopted that resulted in increased speed, security, and quality.

Continuous delivery will not be successful if it is wholly focused on IT. Success requires that IT’s direct customers get as close as they can with the business that they are developing for. That means working with true business teams to change the way they operate as product business owners. Traditionally, we developed big capabilities with a 3-6 month rollout.

Now, we ask from the beginning about the smallest value we can deliver, come back, and test it out. This shift in asking for and delivering things smaller and faster is a key concept for Cisco. The collective team—business together with IT—determines the minimum viable product, and takes on responsibility for its delivery and success. In this way, we ensure that we are building the right thing to support the business, and that IT is building it the right way.

A common concern for continuous delivery is that quality and security will be sacrificed to achieve speed. At Cisco, we ensure quality from day one based on acceptance criteria. Test cases are automated, and checks are embedded into the release process, including vulnerability and security scans against the code.

Through these efforts, we have achieved a 2x increase in our delivered capabilities, while reducing vulnerabilities by 60 percent and increasing quality by 92 percent. Additionally, we have achieved a 32 percent overall increase in developer productivity by leveraging continuous delivery and adoption of an end-to-end integrated workflow (plan, develop and build, regression, progression, deploy and release).



IT Blueprint

Key Takeaways

Through our work with customers around the world, we have identified five principles that accompany successful digital business initiatives.

1. **Listen to Customers:** It is extremely important to listen to customers, and to capture insights about their successes, and failures, as they proceed along their digital business journeys.
2. **Rewrite the Rules:** In this era of digital disruption, no business process or operating model is sacred. Digital business will require that the rules of business be re-written, and this will largely be driven by technology. This is because, today, technology is leading business strategy.
3. **Digital and Operational Partnership:** In order to drive the process-level change that is required as part of digital business initiatives, it is critical for Chief Digital Officers (CDOs) to closely partner with their operational counterparts, often the COO. For example, Cisco's CDO partners closely with Cisco's Senior Vice President of Operations, and the teams work together to drive progress on Cisco's digital business initiatives.
4. **Leadership Driven:** Without leadership commitment, digital business transformation will not happen. A company's leadership team must buy into the digital vision for the company and agree to support the efforts to make it a reality. At Cisco, all the members of our Executive Leadership Team are aligned with and support our digital business strategy.
5. **Speed and Endurance:** Given the rapid pace of technology-driven business change today, it is important to have urgency. At the same time, in large organizations, reinventing the digital operating model may take years, so it is important to have patience and endurance.

Key Takeaways

Listen to Customers

Rewrite the Rules

Cross Functional Transformation

Invest to the Future

Speed and Endurance





IT Blueprint

Cisco Can Help You Transform Your Business

Cisco has accomplished much on its digital business journey, and is continuing to build new capabilities every day. We're ready to apply the lessons we have learned to help our customers transform their own organizations.

No matter where you are in your digital transformation journey, Cisco can help you build a smarter, faster, more competitive business. Our solutions and services provide connectivity, security, collaboration, automation, and analytics across your entire value-chain. Let Cisco help you reimagine your business and accelerate your organization's digital business transformation.

Take the next step in your digital journey today, ask your Cisco account representative for a personal briefing.

Visit <http://www.cisco.com/go/digital> to learn more.



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