

謀
木

RESEARCH

Influence and insight
through social media

April 2016

Cisco Enables
Businesses
to Fulfill
Their Vision of

DIGITAL TRANSFORMATION

WHITE PAPER

Prepared by
Zeus Kerravala

ABOUT THE AUTHOR

Zeus Kerravala is the founder and principal analyst with ZK Research. Kerravala provides tactical advice and strategic guidance to help his clients in both the current business climate and the long term. He delivers research and insight to the following constituents: end-user IT and network managers; vendors of IT hardware, software and services; and members of the financial community looking to invest in the companies that he covers.

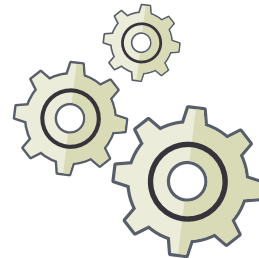
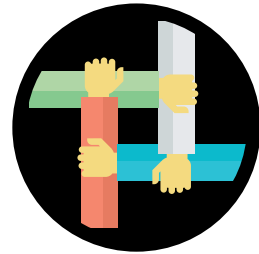


TABLE OF CONTENTS

Executive Summary **3**

 Primary Drivers and Steps to Becoming a Digital Organization..... **3**

Introduction: Become Digital or Be Disrupted..... **4**

 Digital Transformation Accelerates Business Churn..... **4**

Section II: Digital Transformation Leads to Business Reimagined **5**

 Digital Banking **5**

 Digital Retail..... **6**

 Digital Manufacturing..... **6**

Section III: Building a Digital Strategy **7**

 Critical Capabilities of Digital Organizations..... **7**

 Six Steps to Becoming a Digital Organization **8**

Section IV: Cisco – Your Foundation for Digital Transformation **9**

 Cisco’s Portfolio..... **9**

 Case Studies..... **11**

Section V: Conclusion and Recommendations..... **12**

EXECUTIVE SUMMARY

Digital business is the application of technology to build new operating models, processes, software and systems by leveraging the convergence of people, business and things. These advances are creating new product and service opportunities as well as transforming business operations, enabling companies to generate more revenue, gain greater competitive advantage and achieve higher efficiency.

Competitive advantage in this era of business is based on capturing new opportunities by rapidly making changes in an organization. Those that can achieve this level of agility will leapfrog the competition, while those that cannot will struggle to survive. Thus digital transformation—the process of becoming a digital business—needs to be at the top of every IT and business leader’s priority list.

Today, there are three primary drivers of digital transformation (Exhibit 1):

>**Create** new customer experiences for customer intimacy.

>**Transform** business models to remain competitive and thrive in a changing environment.

>**Empower** workforce innovation for employee productivity and retention.

Although initiated by a line of business, digital transformation needs to be led by IT because technology is the key enabler of business transformation. ZK Research has identified the six steps every organization must take to become a digital business:

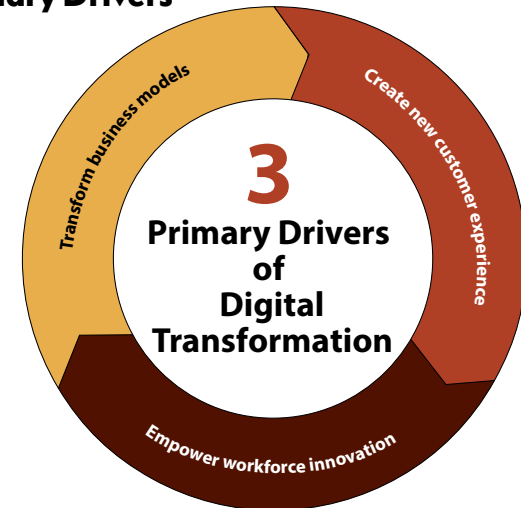
1. Identify business outcomes to achieve.
2. Build a digital-first culture.
3. Connect everything touching the outcome.
4. Shift to a network-centric security strategy.
5. Automate processes.
6. Analyze data to gain new insights.

Once the decision to become a digital business has been made, the company must choose a strategic technology partner. Some organizations choose to use multiple point-product vendors and integrate them manually; however, this approach is highly complex and will likely lead to security vulnerabilities and poorly performing applications. A better approach is to use an end-to-end solution provider.

ZK Research believes that Cisco—the market leader in technology—provides the foundation for digital transformation. It offers a robust and integrated product portfolio that enables an organization to become digital without the associated risk involved in integrating multiple point products.

Exhibit 1:

Primary Drivers



Steps to Becoming a Digital Organization



ZK Research, 2016

“It is not the strongest of the species that survives, nor the most intelligent that survives. It is the **one that is most adaptable to change.”** —From an analysis of Charles Darwin’s *The Origin of Species*

INTRODUCTION: BECOME DIGITAL OR BE DISRUPTED

According to a famous quote summarizing Charles Darwin’s *The Origin of Species*, “It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is most adaptable to change.” Never has this statement been truer in the business world than it is today. Sustaining market leadership is no longer about having the best product, the lowest prices or even the best people. Becoming a leader in any industry is now based on being able to capture new opportunities as a result of changes in the marketplace.

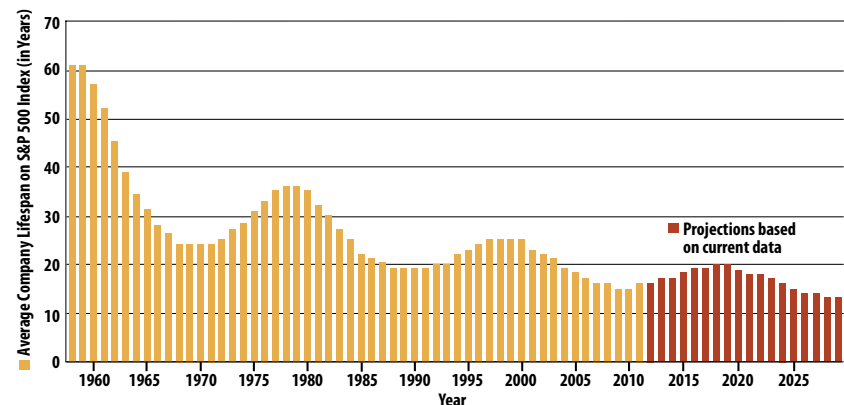
In actuality, this has always been true, but changes in market leadership used to take decades to occur. For example, in the 1980s, Walmart completely redefined how retail organizations managed inventory, and it became one of the largest

companies in the world; meanwhile, retailers that could not follow suit faced significant financial consequences. However, it took nearly two decades for Walmart’s impact to be fully realized.

Today, natively digital organizations are having a similar impact in fewer than five years. Exhibit 2 shows that in 1960, on average, businesses remained on the S&P 500 Index for 50 to 60 years; by 1980, the rate of change was cut in half. Based on these trends, by 2025, businesses are forecast to stay on the index for an average of only 12 years. Leveraging this economic data, ZK Research predicts that 75% of the index will turn over in the next 10 years. New market leaders will emerge, and established organizations will struggle to survive.

Exhibit 2:

Digital Transformation Accelerates Business Churn



Note: Each data point represents a rolling 7-year average of the average lifespan.

Innosight, Richard N. Foster, Standard & Poor’s

SECTION II: DIGITAL TRANSFORMATION LEADS TO BUSINESS REIMAGINED

Unlocking the power of digital transformation requires new ways of doing business that are fundamentally different from previous methods. The challenge with evolving the business to take advantage of digital trends is that it's often impossible to understand what can be done without having seen it first. This situation is similar to the evolutionary process of businesses in the early days of the Internet. Traditional brick-and-mortar organizations had no idea how to create an online experience to develop new business models. Organizations that were born in the Internet era such as Amazon and eBay disrupted their markets. Some organizations

adapted quickly and remained competitive, while others did not and struggled to remain viable. Today, the Internet is pervasive and integrated into everything we do. Digital transformation will follow a similar path and eventually become woven into the fabric of our daily lives. The first step in this journey is to understand what's possible. To help businesses get started, ZK Research has developed scenarios for several verticals, which are presented at right and on the next page.

Digital Banking

Banking will be radically different in the future. The biggest change is that cash will likely be obsolete. In fact, several European countries are leading the charge to eradicate cash. Currently, 95% of retail sales in Sweden are cashless, and hundreds of bank branches no longer accept or dispense cash. In Denmark, the government has articulated a goal of eliminating cash by 2030. **Spain has banned cash transactions for purchases greater than €2,500.** France and Italy have similar restrictions, but with a limit of only €1,000.

The shift to digital banking will create unprecedented opportunities for banks to make more money, as they can charge fees on every credit card and debit card transaction. Also, as a result of the shift away from cash, banks will not need to store as much cash in each branch and ATM. **In Sweden, banks store 60% less cash than they did in 2010.**

Of course, becoming a digital bank has its challenges. This evolutionary step will require banks to link millions of endpoints that are always on and connected. Also, **the networks must be dynamic, scalable and secure** as well as offer insights, as every transaction will traverse them. In addition, new digital payment companies, such as Google Wallet and Apple Pay, can disrupt current business models, so the infrastructure must be agile to enable banks to capitalize on new opportunities.

A digital bank also dispels the common notion that physical branches with on-site employees are a necessity. Today, branches can be anywhere and everywhere. Virtual teller ATMs advance the concept of an ATM by allowing human interactions through video when a customer desires. This obviates the need for a human bank teller to be present. In this scenario, customers can still make loan and credit card payments and access information by scanning a government ID, even if they do not have a bank card. The virtual model creates new business models, enabling banking services to be conducted in more locations.



Digital Retail

Retail will be among the verticals that experience the biggest impact from digital transformation. One digital technology that will change the shopping experience is 3D virtual reality, which creates an endless “aisle” for shoppers. It also provides them with a personalized shopper to customize the experience and answer any question.

The digital retail experience enables customers to

quickly find more products that satisfy their needs, leading to a better shopping experience as well as higher-value sales and more transactions for the retailer.

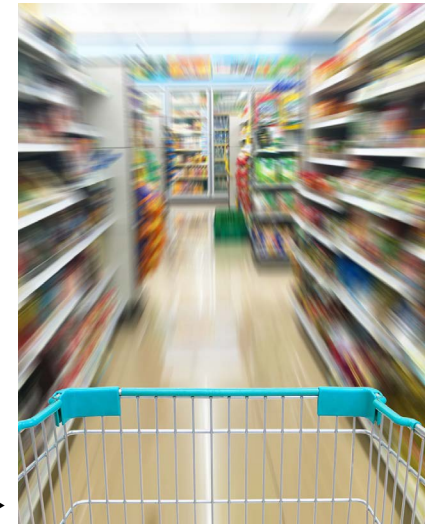
Another example of digital retail is the use of augmented reality (AR) to bring the shopping experience into the home. For consumers, this means no more fighting traffic or wandering through aisles to

find what they are looking for. 3D glasses will change the shopping experience. A device such as the Microsoft HoloLens will enable online retailers like Amazon to create an augmented reality experience in the home, allowing them to compete more effectively with the in-store shopping experience.

At the same time, augmented reality will give omnichannel retailers an

in-home extension of their physical stores. The AR shopping experience has the potential to reduce online shopping return rates while also increasing online purchases of products that customers usually prefer to experience before buying.

3D virtual reality will create an endless “aisle” for shoppers. ▶



Digital Manufacturing

The manufacturing vertical will undergo radical changes following digital transformation. One of the biggest changes in manufacturing is that consumers will become part of the manufacturing process. In addition, the process will be faster and cheaper than ever before.

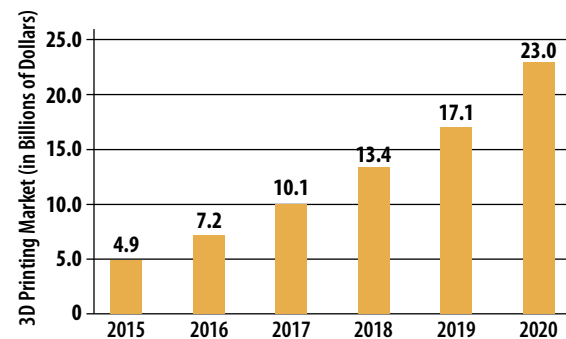
Consumers can customize products or even design their own products and receive them the next day using a combination of additive manufacturing (AM) and 3D printing. Additive manufacturing is the process of joining materials to make objects based on 3D model data, usually layer upon layer. Juxtapose this with traditional subtractive manufacturing methods that start with an abundance of material, assemble products and discard the waste, and it's easy to see why additive manufacturing has

significant cost benefits.

Additive manufacturing will be widely used to

Exhibit 3:

3D Printing Is Set to Explode



ZK Research Global 3D Printing Forecast

produce small batches of customized products. The benefits include shorter lead times, improved quality and reduced waste, flexibility and significant cost savings.

One company taking advantage of this digital technology is General Electric (GE). The company has announced its plans to mass produce 25,000 LEAP engine nozzles with AM and already has \$22 billion in order commitments. According to GE, the company's aviation division will produce 100,000 parts using AM by 2020.

3D printing is one of the core technologies that will redefine manufacturing. This is one reason why ZK Research expects the market for this technology to grow from \$4.9 billion in 2015 to \$23 billion in 2020 (Exhibit 3), for a compounded annual growth rate of more than 36%.

SECTION III: BUILDING A DIGITAL STRATEGY

Evolving into a digital business must be a top initiative for all corporate and IT leaders. In fact, for many organizations, the board of directors drives the digital initiatives. This is because boards are responsible for the long-term suc-

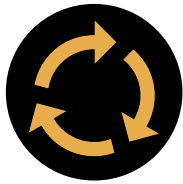
cess of a business, and digital transformation can create an agile foundation that enables the company to quickly adapt to business trends.

However, there is no “Easy Button” when it comes to digital transformation. Organiza-

tions need to develop the critical capabilities presented in [Exhibit 4](#).

Exhibit 4:

Critical Capabilities of Digital Organizations



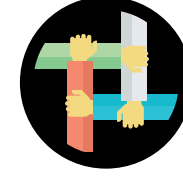
TRANSFORM BUSINESS MODELS

Doing so leads to faster time to market and leaner operations. Business model transformation helps organizations to thrive in the competitive environment rather than just surviving or becoming extinct. In manufacturing, new product introduction cycle time is reduced by 23% with digital processes according to SCM World.



CREATE NEW EXPERIENCES FOR CUSTOMERS, WORKERS AND CITIZENS

Doing so can lead to increased customer loyalty and better insight to enable predictive business models. The Accenture 2013 Global Consumer Pulse Survey found that **66% of consumers switched providers as a result of the customer experience**. The industry is rapidly moving into an era when customer experience will be the most significant factor in gaining new customers or losing them.



EMPOWER WORKFORCE INNOVATION FOR EMPLOYEE PRODUCTIVITY AND RETENTION

Doing so leads to unprecedented levels of productivity and increased employee retention. In 2013, Gallup surveyed more than 1,000 employees in 142 countries, creating a pool of respondents representing about 98% of the world. The survey found that **87% of employees are disengaged**. Businesses that can lower this rate to 10% can increase their earnings per share by 50%.

ZK Research, 2016

As the potential of digital business technologies to profoundly bring about transformation is huge, boards of companies in all industries are worried about the impact these technologies might create; they might disrupt the way companies do business and force them into survival mode. If businesses cannot keep up with the pace of

change, they might become extinct. The boards must decide how they can adopt these technologies to ensure business relevancy and enable continuous innovation so that they can thrive.

This digital transformation cannot be implemented only by IT. Business and IT leaders must

collaborate to create an environment in which employees can usher in the new era of digital transformation for their organization. ZK Research has identified six steps in the journey toward becoming a digital organization, which are detailed in [Exhibit 5](#).

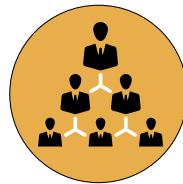
Exhibit 5:

Six Steps to Becoming a Digital Organization



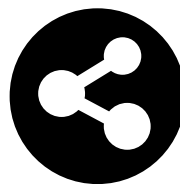
IDENTIFY BUSINESS OUTCOMES TO ACHIEVE

Choose specific outcomes such as improving customer experience, workforce experience, process efficiency and business operations.



BUILD A DIGITAL-FIRST CULTURE

This needs to start at the executive level and permeate the entire organization. Changing the culture of an entire company may require hiring new talent to bring different skills to the organization.



CONNECT EVERYTHING TOUCHING THE OUTCOME AND COLLECT DATA

A digital company is hyper distributed and has every part of the value chain connected to enable on-demand scaling, and every connected point becomes a data source that collects data.



SHIFT TO A THREAT-CENTRIC SECURITY STRATEGY

Once everything is connected, the number of attack surfaces will increase by an order of magnitude; traditional security methods will no longer be sufficient. A threat-centric security model is pervasive and can quickly locate threats and contain them before they cripple the business.



AUTOMATE AS MANY PROCESSES AS POSSIBLE

A digital organization has exponentially more connected endpoints than a traditional organization, making IT more complex than ever before. The only way to effectively manage IT is by automating the entire system through a single pane of glass that provides visibility across all systems.



ANALYZE DATA AND GAIN NEW INSIGHTS

Businesses will have a wealth of data available to them. Long-term competitive advantage is created by continually harnessing the information, analyzing it, gaining new insights and adapting the business quickly.

SECTION IV: CISCO – YOUR FOUNDATION FOR DIGITAL TRANSFORMATION

Digital transformation must be technology led because the IT infrastructure is what enables the new capabilities that transform the business. Organizations that wish to pursue a digital strategy have two choices:

> Bring together products from multiple vendors and manually integrate the technologies. This can be a very complex task and leave the organization open to security breaches and performance issues if the products are not tightly integrated.

> Choose a single vendor that can offer an end-to-end solution. A single solution can bring all of the elements together and enable them to work seamlessly so the value of the system is greater than that of its individual components.

Digital transformation has a lot of

moving parts. ZK Research believes that Cisco provides a strong technology foundation that brings everything together for digital transformation. It offers a robust and integrated product portfolio that is capable of connecting people, business and things.

Cisco's technology capabilities are outcome driven and help companies to reimagine their business. It makes the network act like a sensor so that companies can know their customers and workforce. It provides data on where customers spend most of their time and how engaged the workforce is. It helps IT to know what to act on and when a piece of equipment is about to fail. It also helps to automate the response, and it knows what to protect by providing security everywhere.

Exhibit 6:

Cisco's Portfolio



CONNECTIVITY Connectivity is a fundamental requirement for digital transformation. If things can't be connected, then transformation is impossible. However, connectivity is typically handled in silos, creating "islands" of connected endpoints. Cisco's connectivity is built on the concept of openness and delivers distributed intelligence to support a hyper-connected world.



SECURITY According to the ZK Research 2015 Security Survey, the average enterprise employs 32 security vendors. There is simply no conceivable way to build a strategy around 32 vendors that each need to be managed independently. Cisco security can be used to protect everything including operational technology such as oil pumps, medical equipment and vehicles. In addition, Cisco security is threat centric and offers continuous protection before, during and after an attack to ensure the blast radius of a breach is kept as small as possible.



ANALYTICS Digital transformation and analytics go hand in hand. Analytics is where the value is created and involves deriving insights from the data collected. Cisco provides several data sets for companies to use to gather information from every device in the network. Combined with deep infrastructure telemetry and real-time machine learning, this enables organizations to act faster by aggregating

and normalizing data to gain contextual insights, leading to near-real-time decisions being made at the edge.



AUTOMATION Cisco offers automation solutions that are policy based and open to drive efficiency, agility and innovation and can lead to the creation of new business models. ZK Research has found that automation can cut operational costs in a data center by as much as 70%. Because of the company's wide reach and end-to-end solution, Cisco can automate every point in the network and do it with scale and consistent policy. Also, its technology enables self-service, further reducing the burden on IT and increasing user satisfaction.



COLLABORATION The pace of change is accelerating. Agile organizations promote the open flow of information, encourage experimentation and function as a network. Collaboration is foundational for being an agile organization. Our collaboration needs are highly varied, and we need to focus on delivering an excellent user experience that provides pervasive, seamless and secure collaboration. Cisco's collaboration portfolio helps you to work better together, build stronger relationships and transform your workplace across every room, every desk and every pocket without compromise.

Cisco and ZK Research, 2016

At the core of the digital business capabilities is Cisco's portfolio consisting of connectivity, security, analytics and automation (Exhibit 6). Sitting on this is the Digital Solutions layer. These solutions enable businesses to deliver predictable outcomes based on the customer experience, the workforce experience and business and city operations. These solutions can be further customized using Cisco's Developer Environment. Lastly, Cisco has an extensive Partner Ecosystem that helps deliver these solutions to the customer.

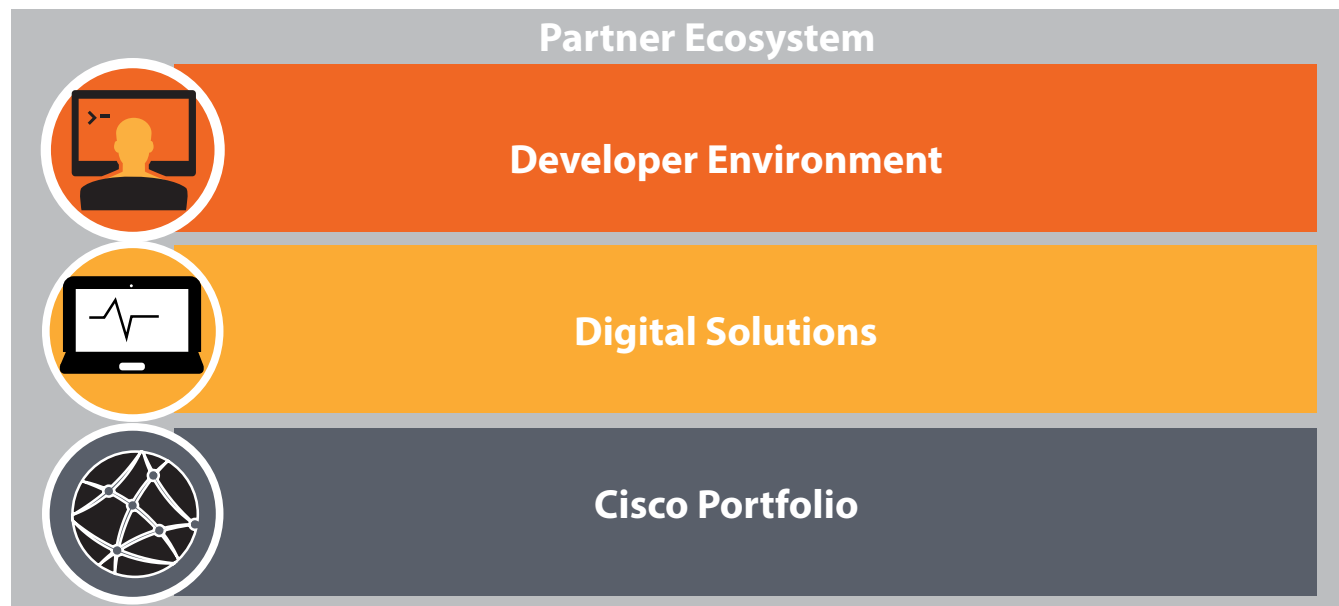
With this products and solutions approach, companies can begin building a digital business by adding vertical layers. For example, a bank could use remote expert capa-

bility to deploy pods in a remote branch to help farmers obtain a crop loan by connecting the farmer to a loan advisor sitting at the bank's headquarters. Or a retailer could use the capabilities to provide information across omnichannels and deliver a personalized experience at points of service.

Cisco enables all of these capabilities through five tightly integrated technologies (Exhibit 7) that give businesses the flexibility to adopt what they need while ensuring everything works.

Exhibit 7:

Cisco – Your Foundation for Digital Transformation



Cisco and ZK Research, 2016

Cisco is the only provider that has an integrated portfolio across the entire technology realm that includes network, data center, cloud, security, collaboration, Internet of Things (IoT), analytics and service providers. The company also has several industry partners to deliver a robust platform that can reach every point in the value chain of the organization from wherever the service/application resides to wherever it may be consumed.

CASE STUDIES

An example of how all of these architectures come together involves **Nationwide Building Society** using Cisco technology to increase profitable wallet share in mortgage lending. The company challenged itself to improve customer satisfaction by providing potential borrowers with enhanced access to its mortgage experts. This goal would also have the benefit of reducing the number of customers lost to competitors.



Its solution was to deploy a Cisco-enabled **“Virtual Advisor”** tool. This customer-facing product enabled the close of mortgage sales in branches by allowing customers to access the company’s mortgage advisors from a central pool. Virtual Advisor could be used for both ad-hoc and scheduled meetings.



Daimler Trucks North America (DTNA) is another example of a business that implemented Cisco technology to become a digital company. The organization was looking to deliver customized vehicles for customers better and faster as well as control costs by boosting manufacturing efficiency and uptime. Another goal was to improve agility and scalability to support future production needs.

DAIMLER

DTNA used a number of Cisco technologies to become a more digital organization. It deployed pervasive, reliable wireless connectivity throughout the factory, which was part of a converged, easier-to-manage, single-plant-to-business network. The network is robust and high capacity, but it also has integrated, standards-based security to help DTNA meet compliance requirements.



SECTION V: CONCLUSION AND RECOMMENDATIONS

The digital era is here, and it's reshaping the business landscape faster than ever before. Competitive advantage in the digital economy is all about speed and the ability to change faster than competitors. Successful organizations are dynamic and are continually gaining new insights to stay ahead of their competition.

The evolution to a digital business must be a top initiative for business and IT leaders. Digital must become part of the very fabric of the organization, and this transformation must be driven from the top down; only once this happens can the transition begin. Virtualization, the cloud, mobility and IoT are all digital building blocks, and they have one thing in common—they are network centric. Digital organizations need to build a digital strategy with the network as the foundation, as the network can connect and secure millions of devices but also provide data to discover new insights.

Now is the time to become a digital business. To help companies with this transformation, ZK Research makes the following recommendations:

Create new business models. The ZK Research 2015 Network Purchase Intention Study found that **83%** of the current IT budget is used just to maintain the status quo—which means only **17%** of the budget is used for innovation. The digital era requires constant innovation and agility, so it's imperative to find a way to cut the cost of “keeping the lights on.” Creating new business models can have a significant impact on operational costs and is the best way to increase the amount of resources available to empower a digital business.

Embrace continuous change. A business's past success has nothing to do with its ability to continue being successful. A digital organization can constantly adapt to new market opportunities. It's time for all businesses to embrace the digital era. Companies that do so will be more profitable, will enjoy higher levels of customer loyalty and will leapfrog their competition.

Leverage the benefits of digital business capabilities. Building and managing technology capabilities based on multiple products from disparate vendors will not deliver the desired results. This approach is fraught with complexity and will lead to security breaches, performance degradation and disgruntled customers and workers. An integrated approach ensures that the end-to-end infrastructure performs well, is secure and agile, and can optimize business applications—but also has the lowest possible total cost of ownership.

CONTACT

zeus@zkresearch.com

Cell: 301-775-7447

Office: 978-252-5314

© 2016 ZK Research:
A Division of Kerravala Consulting
All rights reserved. Reproduction
or redistribution in any form without
the express prior permission of
ZK Research is expressly prohibited.
For questions, comments or further
information, email zeus@zkresearch.com.