



Better Connected Enterprises

YOUR DIGITAL TRANSFORMATION STARTS HERE



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Enterprises need digital transformation to survive. Find out the best approach to starting this journey.

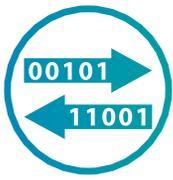
A ccording to IDC, by 2019 enterprises across the globe will have spent over US\$2.1 billion on tech-based services to implement and manage digital transformation initiatives. By 2020, over two-thirds of enterprise IT spend will go on cloud-based offerings. But let's back up and start at the beginning.

What is digital transformation?

Digital transformation is defined as the “profound and accelerating transformation of business activities, processes, competencies and models to fully leverage the changes and opportunities of digital technologies and their impact.” What

does this mean to your business and to technology in general? Is your infrastructure ready for this transformation and how are you planning to handle this dynamic environment in the future? We look at some of the trends that are coming, how to plan for them, and some of the high level items you should consider before digital transformation becomes a disruptive force in your business.





Did you know that in 2017, 34 percent of all technology will be on digital transformation projects? IDC states that this is mainly because IT with the help of digital transformation is becoming more of a cost center than ever before and is now, on average, responsible for 6.5 percent of revenue growth. That means IT infrastructure is no longer just an expense but a money maker. Not only that, but organizations with digital-ready networks are seeing double or triple the revenue growth compared to those without. IDC goes on to show that companies that have linked their distributed enterprises have increased profits by between 30 and 50 percent.

The reasons to move towards digital transformation are simple. With a more distributed and dynamic infrastructure, building a flexible and scalable IT environment is a money maker – rather than an expense – that's not only needed, but mandatory. Making your IT serve as your best sales person or your hardest working employee may be a foreign concept, but think of the alternative. If your IT department and environment is not performing up to expectations, every part of your business suffers.

A well-thought-out strategy and execution plan for digital transformation can actually deliver a competitive advantage. If your systems are faster, more flexible,

and more affordable than those of your competitors, you'll increase your market share and drive more business. A great example of this is online advertising, where ads are served to hundreds of millions of people a day. These ads are a very large income driver for online marketing companies, but competition is fierce. The most successful companies have completely digitalized so that the process to bid, approve, and serve an ad to an end user takes less than a second. The kicker is that if it takes longer than that in today's online market, the user will dismiss the ad and the company responsible for serving it loses an opportunity.

How to get there: Cloud

Now the question is how do you get ready for digital transformation? How do you set a plan in motion to get where you are today to where you want to be? Well, it begins with cloud technology and a cloud infrastructure. Cloud computing is a type of online-based computing that provides shared IT resources and data to computers and other devices on demand.

First, let's assume that your IT stack is a traditional setup with multiple vendors' servers, storage, and networking solutions. In this infrastructure, an application like

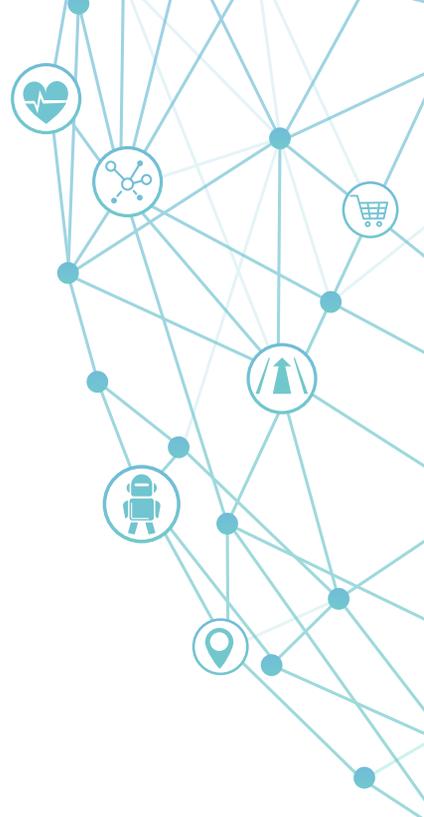
SAP/Oracle would have its own dedicated resources. The database and applications would all sit on a physical server with dedicated physical storage and, usually, semi-dedicated (zoned) networking. The database administrator would be limited to those resources. Adding resources would involve scheduled downtime. The standard setup also creates operation silos and bottlenecks in administration and information flow.

The first step is virtualization. You must virtualize the foundations of your environment before you can start providing services. There are three basic building blocks of any given infrastructure: servers, storage, and networking.

Storage and servers

Take storage as an example. If you're an average business, you have at least three storage vendors and, usually, a combination of two different technologies such as SAN and NAS. This provides you with very little flexibility. But, virtualizing storage is a key feature for monitoring, managing, and distributing storage according to its properties rather than vendor or type.

Let's say you need a very fast disk for a new production database. In legacy infrastructures, that disk would exist inside a single vendor's disk array. However, if virtualized, the disk



could exist across multiple vendors' storage – even in different cities.

Products like VMware and ZEN are now used to virtualize servers. This blurs the lines between physical resources and the actual places where applications live, unfortunately creating a point at which more complexity could choke an organization. This physical versus virtual relationship must be proactively managed to avoid further complicating the IT infrastructure.

You'll need a policy-driven control layer to control and coordinate all virtualization in the IT environment. This layer is also known as software-defined and is the basis of a hyper-converged infrastructure. It makes the server, network, and storage virtualization from different vendors speak the same language and work together as one large, well-oiled machine.

But, how does this work together and lay a better foundation on which to build your digital transformation project? Good question. Let's look at an example of how the layers of virtualization make your IT work for you instead of you working for your IT.

If the SAP/Oracle Instance that your development and operations group needs to start testing its new application, the software control

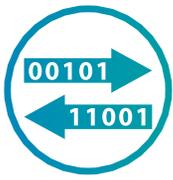
plane would use its policies to create a workflow that would find and allocate storage that matches the agreed service level agreement (SLA), regardless of vendor. It would then use the best practices of the database and storage vendors to allocate the correct number of disks, file systems, and servers. Next, it would find and allocate proper networking with the correct level of backup, recovery, and – if needed – active/active failover. After that it would automatically create virtual machines and install all the appropriate software using the vendor's best practices. Finally, it would apply the policy for monitoring, business continuity and disaster recovery, and grant users access to the new environment.

In the past, this would have taken weeks of planning and meetings. Change requests and testing had to be done every step of the way. However, with the software control plane and the ability to create pre-tested workflows, that is no longer necessary.

3rd Platform

Once your foundation is built on solid virtualization principles and a robust policy control plane, you're ready to start digital transformation. IDC calls this the 3rd Platform and it's where the cloud combines with a mobile platform and a social platform that interfaces into your cloud environment.

A well-thought-out strategy and execution plan for digital transformation can deliver a competitive advantage. If your systems are faster, more flexible, and more affordable than those of your competitors, you'll increase your market share and drive more business.



Intelligent Industry Solutions



3rd Platform



Mobile



Social



Big Data



Cloud

Big data functionality must stretch across all aspects of your environment, even those parts you may not own.

Industry transformation

There are many industries whose futures depend on digital transformation and its many benefits, including the promise to turn traditional IT infrastructure into a cost center that allows a company to make money easier and faster. Telcos and banks now depend on mobile technology and the dynamic applications that allow business to be done anywhere at any time. Financial Technology (Fintech) is talked about in every trade publication around the world, and all the newest technology claims to have a huge impact on Fintech and other industries.

Agriculture is another great example of how digital transformation will revolutionize the way farming and food supply will change over the next 10 to 15 years. The UN states that the world's population is expected to exceed 8.5 billion people by 2030, the scale of activity required to provide food for everyone is driving the environment to breaking point. Using precision farming, smart irrigation and an overall smart farm management system will enable tech solutions deployed on robust digital infrastructure to streamline processes, minimize waste, maximize output, and let us once again walk the path to sustainability.

The energy industry requires smart grids and smart power distribution to prepare for upcoming demands. Smart government depends on digital

technology to bring government closer to the people, and the health and education industries require digital solutions to reach more population – more efficiently and at cheaper cost.

Any industry that wants to do more than just survive will need digital transformation. To thrive, the underlying technology that industries utilize must morph into an environment that promotes the rapid deployment of new services and the ability to serve customers cost effectively.

However, according to Forrester, only 27 percent of today's businesses have a coherent digital strategy that sets out how the firm will create customer value as a digital business. Conversely, Gartner says that 125,000 large organizations are launching digital business initiatives now and that CEOs expect their digital revenue to increase by more than 80 percent by 2020. IDC expects that the percentage of enterprises creating advanced digital transformation initiatives will more than double by 2020, from today's 22 percent to almost 50 percent.

IDC predicts the emergence of the "digital transformation economy," Gartner talks about the rise of the "algorithmic business" and "programmable economy," and Forrester charts a roadmap for



companies responding to digitally savvy customers and consumers. Based on their predictions, digital transformation will become the key strategic thrust for most CEOs.

Big data and IoT

Big data analytics will serve as the foundation of digital transformation because, with all the increased business and traffic to your online applications, collating and predicting your customers' needs becomes mandatory as they can buy or get services from hundreds of online providers. Big data directly affects the customer experience, and the better the experience the more likely a customer will become a repeat customer.

IoT will also catalyze the expansion of digital transformation to all corners of the economy. Gartner states that, by 2018, there will be 22 billion IoT devices installed, driving the development of over 200,000 new IoT apps and services. Also in 2018, 6 billion connected things will be requesting support and responding to service requests from things, creating new service businesses. By 2022, 1 million new devices will come online every hour. IoT devices and solutions have the potential to redefine competitive

125,000

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80%



22 BILLION

IoT devices will be connected by 2018

100%

of enterprises will be connected by cloud by

2020

advantages in every type of economic activity, and fundamentally alter how consumers interact with enterprises and how enterprises interact with their supply chain and distribution partners.

Huawei and industry experts predict that, by 2020, 85 percent of enterprise applications will be cloud-based and that going to cloud is inevitable for enterprises that want to thrive with their digital transformation.

Every enterprise wants to deploy applications more efficiently and at lower cost. Every enterprise requires powerful and convenient platform services, smarter resource sharing, and the benefits of the “pay as you go” cloud model. In fact, Huawei and industry experts predict that by 2020, 100 percent of enterprises will be connected to the cloud in some manner, which then begs the question: Is your digital transformation plan vetted and viable?

If so, this is where your digital transformation begins. You have built a foundation that is solid and robust, which is able to scale and ready to take on the role of business catalyst. Your digital transformation starts with cloud and big data, but must be ready to tackle the coming tsunami of IoT. Your digital transformation starts now. **UUM**