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Volume 17, Issue 6

The Advent of Digital Transformation-as-a-Service (DTaaS)

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The concept of Digital Transformation (DT) has been the subject of a great deal of hype. The excessive focus on DT, which is sometimes called DX, can make it a little confusing to sort out what it actually means for businesses and their IT organizations. And, while it can be tempting to dismiss such a hyped tech paradigm, this one is real and it's happening now. In fact, DT is coming more rapidly than most people would have predicted. This article looks at some of the drivers of the DT trend and offers insights into what it will take to make the most of it—including DT's impact on the network and data center as well as the potential for DT-as-a-Service (DTaaS).

DT as a strategy

DT can mean more than one thing. At this point, however, two basic types of transformation are taking place. One is a deliberate, strategic process that leads to deep, well-planned changes in the way a business functions. The other is by necessity, driven by last year's move to a remote workforce, and all the related IT implications of the COVID economy.

DT as a strategy can take a wide variety of forms. In almost every iteration, the intention is the same: to leverage the latest digital technologies to transform the relationship between a business and its customers. This might mean using Internet of Things (IoT) devices and mobile apps to create an omnichannel customer experience. In such a scenario, a customer might be able to place a product in an e-commerce shopping cart, call the company to discuss the item, move the shopping cart to a mobile app, pay for it while driving in a car and then pick up the product in a store—all in a single seamless experience. A company that can deliver an omnichannel

experience will have transformed itself into a digital business and gained a significant competitive advantage.

DT as a necessity

Many, if not all, businesses today have had some degree of digital transformation forced upon them due to the COVID-19 pandemic. Impacts included a shift to widespread remote working environments and a jump in contactless e-commerce transactions. In some cases, organizations had to shift thousands of workers to home-based locations in a matter of days. Remote education also became a fact of life for millions of students and their families. Everyone had to adapt with extreme speed.

Even as things start to return to normal, a sizable group of employees are likely to remain remote. Harvard Business School research estimates that 16 percent or more of workers will continue to work remotely after the pandemic winds down.

DT as an IT challenge

DT presents many challenges to businesses as well as their IT departments, some of which have nothing to do with technology at all. Getting a business to do things differently involves organizational and human-level change management. Communicating about what's happening is another significant success factor for DT that is not about IT.

In IT terms, however, DT is complicated. Whether DT is happening by necessity or for a strategic purpose, the change process drives major shifts in the way networks, end users, and infrastructures interact. The demands of the process can stress out an IT organization as well as its strategic partners, device vendors, and external service providers.

Consider the impact of DT on networks. An enterprise undergoing DT will typically want connections from its data center space to the cloud as well as to an increasingly relevant edge compute infrastructure. End users are outside the traditional network today more than ever. Companies thus want to minimize backhaul—while reducing latency—and bolster security. They need network and access management systems that can handle a vastly bigger set of remote logins and remote sessions than they've ever had to deal with before. Traditional on-premise data centers and legacy wide area networks (WANs) are not well set up for these new requirements.

DT-as-a-Service

Solving these challenges will require transformation in thinking as much as in technology. To reach the objectives of DT, it will be necessary to contemplate new approaches to delivering applications and other digital experiences to end users. The process calls for new ways of designing and operating both networks and data centers.

In some cases, success may come through working with selected external partners. Given the pressure for transformation, it may also not be feasible to design and build the entire transformed environment on one's own. Rather, a vendor that can provide an on-demand DT-as-a-Service could be a wise choice.

Here's how such a DTaaS offering might work. At its core, it would rely on software-defined infrastructure and software-defined networks (SDNs). The agility needed for DT is simply too great for hard-wired, hardware-dependent compute, storage and network. DTaaS also necessitates a reimagining of the data center itself. Rather than thinking of a data center facility as simply a provider of power, cooling and rack space, IT managers who are engaged in DT should consider the network connectivity opportunities that the data center provides.

Even without a DT project, companies are migrating away from excessive dependence on in-house data centers. They are undertaking programs to support more distributed network architectures. As IT workloads shift to the cloud, hybrid clouds and the edge, this trend is all the more relevant. As on-premise data centers shrink or shut down completely, companies might find colocation providers to be an attractive alternative. They offer enhanced security, redundancy and connectivity by utilizing economies of scale.

With SDNs, a company can harness the compute, storage and heterogeneous networking capabilities of on-premise data centers, colocation data center facilities, cloud platforms and edge infrastructure. These are the building blocks of DTaaS. SDN enables the disparate types of networks required for DT as one holistic concept. Customers can access the network and infrastructure components they need to execute a DT plan on a virtual basis—on demand.

This approach delivers a number of advantages compared to undertaking DT on an in-house or do-it-yourself-in-the-cloud basis. For the customer, the underlying physical layer no longer matters. It could be a circuit that goes to their office, or a transit connection that's bridging them to the cloud or providing general Internet service. They're effectively all just wires that go into a centralized network processing system allowing them to interconnect seamlessly between all these environments.

This new way of utilizing the data center became evident during the early stages of the COVID-19 pandemic. As people started working from home, their organizations needed a lot more bandwidth. This led to everyone becoming more comfortable with the data center network being a company's centralized network location. Everybody could plug into it remotely, whether it was through a virtual private network (VPN) or through cloud authentication services.

In practical terms, the network architecture for DT could comprise a point-to-point service dedicated to network locations they already had. Alternatively, they could leverage the DTaaS offerings just as a basic transit service that allowed people to connect in—with the option of adding a VPN as needed, on-demand.

The underlying reality is that most organizations don't want complicated networks. They want their network topology to be simple because it's easier for their people to understand and

manage. The SDN enables the simplicity and flexibility that companies need for DT. This is why SDN is such a critical element of DTaaS. With this approach, a company can have the simple network they want, but with a complex, heterogeneous network underneath it to actually make it work.

A large company might use DTaaS to establish dedicated point-to-point access out to their branches or to their offices. With SDN, it can be a smooth and seamless implementation process, one that makes it seem as if everyone is effectively working in a single office location. The reimagined, colocated data center is part of making that happen.

For a smaller organization in the early stages of DT, there is a need for simpler and more complete access for their networks. The benefit of the DTaaS approach is that it can easily flex and scale as requirements change. Today's small business is tomorrow's mid-sized business. Indeed, if DT does what it's supposed to do, a small company may quickly grow into a full-scale enterprise. The network and infrastructure will have to keep up. A virtual, adaptable DTaaS will help ensure that all goes as planned in that regard.

It's all happening right now

Some companies are being compelled to undertake DT as a fast adaptation to a new reality of remote work. However, even businesses that are not facing these pressures are well-advised to get moving along the path to DT. In most industry sectors, someone or some group of companies is doing DT. Those that don't could be at a competitive disadvantage relatively soon.

Barriers to DT, such as the complexity of dealing with the network and infrastructure challenges inherent in the paradigm, are less of an issue now that DTaaS is available. And DTaaS offers an incremental, scalable mode of transformation. It is possible to start small and expand the use of DTaaS as the broader business undergoes the necessary changes to become a true digital enterprise.