



DIGITAL TRANSFORMATION AND ITS IMPACT ON APP DEVELOPMENT: A CTO'S PERSPECTIVE

By Paul Barrett, CTO for Enterprise, NETSCOUT

The digital transformation that is underway today is impacting customer engagement in profound ways, increasing the touch points between customers and organizations. The digital transformation is driving the trend of utilizing more information and digital assets in the corporate value chain, and agile development of applications is required to support new business models. Chief technology officers (CTOs) are at the center of this growing impetus to develop new applications that can deliver on the promise of successfully navigating and thriving in the age of the digital economy.

Paul Barrett, CTO for Enterprise at NETSCOUT, ponders some of the pressing questions around the impact of this digital transformation on application development and how forward-thinking organizations can position themselves for success. In particular he puts himself in the shoes of a CTO responsible for the delivery of applications.

Q. Are CIOs and CTOs typically on the same page when it comes to the critical requirements needed for taking advantage of the digital transformation?

A. As CTOs are engaged to develop new, innovative applications for lines-of-business, one of their first concerns is whether the in-house information infrastructure will be sufficient to support the development operation team's efforts. The reality is that today's CIO's are under siege. They are facing CAPEX and OPEX pressures to do more with less, yet at the same time having to maintain legacy systems. While not unsympathetic to this challenge, CTO's remain focused on having a hosting environment that meets industry standards and has sufficient elasticity to support the development of new applications at the speed the business unit needs, as cost effectively as possible.

Such CTOs are primarily concerned with whether or not the infrastructure will run reliably and scale elegantly to meet the

waxing and waning requirements of the business and its customers. Essentially, they want a service level agreement that works for them. While there may be compelling reasons to outsource to a cloud-based infrastructure rather than utilizing the internal IT organization, there are also many advantages for keeping applications on premise. As a result, the development of new services may involve a hybrid mix of both on premise and cloud-based infrastructure that best meet the specific needs of the initiative depending on the complexity of the application.

To secure the CTO's business, CIO's will, at the very least, need to present a roadmap that shows there is a plan in place to adopt the latest and greatest technologies. CTOs need to know the infrastructure will be elastic and robust enough to support multiple interdependencies. In short, the CIO must have a solid business assurance strategy integrated into his or her offering – both for performance management and security.

Q. Are there any significant advantages that an in-house approach holds over out-sourced hosting that might sway the CTO?

A. One of the big advantages of an internally managed solution over something in the public cloud is the superior visibility into the broader environment. Today's applications are not only dependent on enabling services such as authentication, they are highly dependent on other applications too, hence when something goes wrong it is imperative to have critical insights into the performance of the entire network. Better visibility leads to reduced mean-time-to-knowledge (MTTK) and faster mean-time-to-repair (MTTR).

In working with the CIO and IT to troubleshoot an issue, the more visibility that exists, the less finger pointing there will be, and the more likely it is that the CTO can get his or her hands on accurate, up-to-date information. The CTO's team will be looking for intelligence about dependencies, the enabling services underneath and the connections going in and out of the platform, so they can rapidly identify whether it's a problem with the application code or if it's a problem with the platform.

Perhaps the biggest reason for using an in-house approach is the fact that any SLA is going to be far more meaningful. Let's face it, the CIO for your own organization will be considerably more accountable, which from the CTO's perspective is a very big plus.

Q. Should IT organizations be making new investments in analytics to support testing and to monitor the success of new digital initiatives?

A. The short answer is yes. The more analytic information available to the CTO's team, both during the development process and after, the better prepared they can be for troubleshooting anything that arises. These insights are invaluable when it comes to reliably predicting how demands on service are going to grow, so you're ready to scale, if needed.

In the case of an application that relies on multiple tiers, e.g. a web front end, application servers and a central database, any bottlenecks revealed by the analytics may expose a fundamental architectural flaw. That's why analytics are so important, because they allow the CTO to predict the uptake, which allows architectural decisions to be factored in when the service is built.

Q. How is the digital transformation influencing how apps are being created today and will be in the future?

A. In the past, apps were typically developed in silos, perhaps with some backend data feeds integrated. Today, the trend is towards more integration across the applications. Let me share an example from the world of communications. It used to be that everyone just had a VoIP phone on their desk with the only other components of the system being a call-manager and a PSTN gateway, and of course the network itself. Such a system could essentially be managed in isolation. Now compare that with a unified communications system that must integrate multiple services, such as VoIP, Video conferencing, calendar and other presence information, e-mail, shared desktop applications, etc, to work successfully. There may be as many as 10 different application servers involved, not to mention the enablement services.

The challenge posed by the digital transformation is the cross-connectivity, which compels CTO's to gain a better understanding of how information is exchanged between all these services. In addition, how do I bring in data from the outside world, whether it's from social media or the Internet of Things (IoT)? This means new applications must talk to a much larger number of, and more disparate set of, data sources than was required in the past. This trend is most assuredly going to continue into the future and will drive the need for a holistic visibility and service assurance across all services and their infrastructure.

Q. From the CTO's perspective, is the digital transformation a blessing or a curse?

A. At the heart of this transformation is the expectation that new technologies will reshape the customer experience. As information traverses seamlessly across networks and applications and transformed into service which are consumed by the end-users, it becomes a more valuable component of the corporate offerings to customer. And CTO's will be at the forefront of this evolution, which is very exciting. But managing all the interdependencies of new applications will be particularly challenging. Potential points of failure or bottlenecks can creep up with no warning.

Gaining deep insights into your network and application environment will be critically important. NETSCOUT enables CTOs, CIOs, and the entire IT organization to examine all networking elements, servers, databases and applications to gain actionable performance monitoring insights. This is the intelligence needed to achieve service assurance and security on the road to digital transformation success.



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