Providing Visibility to Make Digital Transformation Work
Organizations are increasingly reliant on connected applications to do business. These applications support internal efforts related to things like enterprise resource planning, human resources, and much more. Connected applications are also now a common way through which businesses interface and support transactions with their customers.

These connected applications can provide customers with better experiences and businesses with greater value. And, as you’re probably already aware, that is a key part of the digital transformation movement.

Because applications and the underlying networks that support them have become so important for organizations and their customers, application performance and visibility are key to business success. So IT teams need to make sure they have visibility to ensure applications perform as expected.

This holds true whether the application lives in the public cloud, in a private cloud, in the legacy world, or in a hybrid environment.

NETSCOUT® Systems Inc.’s Russ Currie recently spoke with Cloud Computing magazine about the growing importance of IT and applications to business, how the cloud and virtualization are creating new challenges for organizations, and how NETSCOUT is enabling IT teams to address those challenges head on with advanced and cloud-capable visibility solutions.

Here’s an excerpt of that conversation with Currie, the vice president of enterprise strategy at NETSCOUT.

**What does digital transformation mean to you? And what implications does it have for businesses and their IT teams?**

Digital transformation is really all about how IT can partner with the business to offer new or improved services to their users and customers. Today’s businesses – aided by IT – can now introduce new offerings, adjust to market conditions, and leverage data in ways that were once impossible.

However, this need for speed comes with risks. In the drive to introduce new services, we sometimes exceed our ability to manage them. When services fail or are compromised, the failures are often very visible and costly.

It’s like driving at night on a country road. You can be going very very fast – so fast that you don't see a curve approaching.

Often, IT teams are moving so quickly that they can’t see what’s coming at them. And they may have some significant challenges in ensuring that they don’t crash and burn.

**What might be coming at them?**

Most people deploying applications into the cloud rely on databases in their on-prem legacy infrastructure. That connectivity back into those databases may or may not be as robust as they think it is. So that's one of the ways they may find themselves challenged.

Or the challenge may be with connections back to other services that are necessary for delivering that application. For example, you may want to build an Exchange server. But to build one you may need a bunch of other things, like a client access server, a hub transport server, and other servers – along with a DNS, an Active Directory, and DHCP. So it ends up requiring this big complex environment. Complex hybrid cloud deployments can be very similar.

The point is that often organizations don't understand everything that's interconnected and involved in delivering things via the cloud.
What happens if you don’t have that kind of visibility?
A lack of visibility can slow a company’s cloud migration, result in great expense, and adversely impact application performance and user experience.

One major company we’re working with is in the midst of a cloud migration. It had planned to move 35 applications to the cloud in 2017. That was about 10 percent of the workload that was core to its business.

When I met with them late last year, however, the company said it actually only moved five of its applications to the cloud in 2017. That’s because it didn’t plan for the kind of visibility it needed in the cloud. So now it wants to make sure that visibility is there.

Then there’s the cost factor.

As customers transition to cloud they may find they’re spending more than they thought they would. That’s because some behaviors in the cloud allow you to expand a little too easily. So it’s really important that you measure, and that you’re working within some kind of acceptable operating band.

What about the application performance and user experience part?
How does visibility relate to service assurance?
Service assurance is really about being able to measure the user experience and ensure that you’re continually performing at the expectation of the business.

We talk about availability as a key metric. It is fairly straightforward to measure in that it’s up or down. But you also have to understand the user experience and the performance of that service you’re delivering.

I might have an application that’s up all the time. But if people can’t stay connected to it, it might as well be down.

So you want an approach that allows you to continuously monitor that environment and provides visibility into the services you’re delivering. That way you can measure and report back to the business about how well IT is doing in delivering that service, and then restore performance when there is a degradation or outage.

How do you get visibility in cloud and hybrid cloud environments?
There’s no one clear answer to this question. Nor is there one clear product or technology. The cloud is a very big word. It encompasses all of IT.

Private and public clouds are blending. Multicloud implementations are beginning to pop up. And there is still a huge dependency on legacy infrastructure. So, as much as these environments are blended, a blended model will be needed.

The one common thread throughout the cloud is traffic. The connectivity between public and private clouds and legacy IT is all driven by IP traffic or wire data.

Wire data provides incredible insight into how the service is built, the dependencies on computing platforms, the performance of the service, and the user experience. Solutions that add a wire data perspective are crucial to understanding the impact of digital transformation initiatives.

You also use the term traffic-based intelligence. What does that mean?
Traffic-based intelligence allows you to understand how it all comes together. We can take a look at understanding the individual piece parts themselves and make some reference.

But as you start to put it all together – and as you start to see the connectivity that exists for delivering these services – you can understand where to invest, and where to spend more time and energy on extending the services to your user base.
How are solutions that employ wire data and traffic-based intelligence different than traditional application performance management?

There’s the overall DevOps value proposition – the idea that I will deliver new services, embrace a fail-fast mentality, and be able to leverage agile development methodologies to greatly reduce the time it takes me to introduce new offerings in my portfolio. Those are all great things. And our customers are availing themselves to them as much as they can.

The challenge is that the toolsets that most DevOps folks are using focus heavily on the Dev part, but the Ops part is an afterthought. So development organizations are using a variety of tools to ensure as they develop and drop off applications, they have a good understanding of the application.

But that doesn’t necessarily translate well into the operations organization. Because operations is really looking at the broader deployment and how it fits into the IT environment.

That disconnect is really problematic. Because the development team thinks it has a good tool that tells whether their application is working right. And they do – to some extent. But once you get into an operational environment you really need to look at things from the perspective of how does this whole thing come together. It’s not as simple as rolling out a specific instance of a code base and making it work.

Wire data and traffic-based intelligence also help organizations spot and understand unexpected trends that may occur once an application is up and running, correct?

Yes. That’s important because often organizations find that there are unexpected behaviors once users get in and start to leverage a new service.

It’s not always just “I’m going to implement a contact center that allows me put my mortgage brokers all at one location. And I’ll use video tellers in the branches.” That may drive a whole new set of interests and behaviors from bank customers in how and when they visit the bank, how they interact, and whether do they do more once they’re there.

Businesses find as they deliver new services, customers and the user community find new and exciting ways to use those services. And often developers will build on that to create things we never expected that extend the overall business proposition.

Many businesses now rely on multiple public cloud providers. And some use a combination of on-premises and public clouds.

How do multicloud and hybrid cloud strategies affect the visibility equation?

The fact that many organizations are employing various types of cloud environments and often use a combination of new cloud and legacy architectures adds complexity for organizations. Containers, Microservices, and virtual machines only add to that complexity, because they mean there are even more moving parts to consider.

So NETSCOUT and others have been working to minimize that complexity for customers.

Just look at what VMware has done. Its implementation of native VMware implementations in the AWS cloud means customers now have a mechanism to deploy AWS and their private cloud environments in a seamless fashion.

Organizations want that same measure of control from a visibility perspective. That will enable them to see that traffic and to understand how things are shifting and changing – because it’s going to be changing and becoming more dynamic.

Also, businesses with multicloud strategies will find that what works in Azure probably isn’t the same as what you get in AWS. They both have their own unique sets of tools.
But the great thing about traffic data is that really brings it all together – and it’s the same regardless of public cloud, private cloud, or second public cloud. IT connectivity is IT connectivity. And our ability to transform that into something that’s meaningful in how you deliver services is really the impact that we can provide.

How and where does NETSCOUT collect the data? And how does it transform that data into something that’s meaningful?

Wire data is well structured in terms of format. But as you’re bringing it together in a network perspective it’s really vastly unstructured data. So if you were to analyze a stream of traffic from a network perspective, that can really be arduous at best.

You could use a tool like Wireshark to look at packet data and to apply filters for analysis. But that’s like by wading through tons of sand to find a single pearl.

NETSCOUT has a much more efficient and effective approach to data collection and analysis. And it involves two layers of analytics.

The NETSCOUT Adaptive Service Intelligence™ or ASI, technology collects data at the source. At the point of collection we transform that data into something that is representative of the application, the status of the application, the user experience, and the kind of errors that may exist. And we do that in each instance in real time. So at the time we collect that data, we’re also transforming it into useful information.

NETSCOUT’s nGeniusONE® system can then aggregate ASI information to provide broader visibility related to the services perspective.

NETSCOUT’s product portfolio also includes vSCOUT and vSTREAM. How do these solutions come into play?

Traditionally, network visibility tools have come in the form of hardware. But in cloud and virtualized environments you need to be able to get wire data where there are no wires.

So NETSCOUT transformed its solution set into components that can be deployed right on the instance.

NETSCOUT’s vSCOUT can look at all the traffic going in and out of a workload. We only recover costs for it when we turn it on to collect data into nGeniusONE.

As for vSTREAM, that is the software implementation of NETSCOUT’s InfiniStream® technology. It can be used in virtualized environments and deployed against any hypervisor.

We can direct packets to it from a vSCOUT in public clouds. If you’re in a private environment, you can take a span or mirror out of the hypervisor directly into the vSTREAM.

So now you can see all the traffic and collect the session record and the packet data associated with that. Key performance indicators, that’s what vSCOUT is really built around – user experience, error conditions, things of that nature.

How does that relate back to nGeniusONE?

We take that information, and we bring that to nGeniusONE. NETSCOUT’s nGeniusONE understands and provides visibility of that service. And it provides the tools to identify whether and where there may be problems.

It also provides the ability to verify when everything is running as expected. And sometimes that’s just as important – showing the value of IT to business, and illustrating that IT is a value center and not just a cost center.

It’s all about getting the right information to the right person at the right time so they can solve the right problem.
NETSCOUT has always been focused on understanding the business applications and services that are delivered by the network.

We provide IT teams with the ability to partner with the larger business to ensure digital transformation success.

NETSCOUT is a trusted supplier in the enterprise environment. And as enterprises have migrated to the cloud, NETSCOUT is moving with them to provide application and service assurance whatever the environment.

To learn more about how you can get the visibility to ensure a successful digital transformation, click here.

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NETSCOUT offers sales, support, and services in over 32 countries. Global addresses, and international numbers are listed on the NETSCOUT website at: www.netscout.com/company/contact-us