The Future is Now for the Health Care Industry to Maximize Its Opportunities in the Digital Age

OVERVIEW

DX Challenges to Health Care

- Manage increased service delivery complexities
- Monitor EHR HL-7 protocol transactions
- Harness zettabytes of data across the health care value chain
- Make informed real-time decisions in highly automated environments
- Maintain an evolving service delivery infrastructure

NETSCOUT Advantages and Benefits

- Service assurance for today and tomorrow
- Improve HL7-based, application-transaction performance
- Help deliver 24/7/365 availability of clinical applications
- Enable a contextual end-to-end view of the entire IT infrastructure at any scale
- Quickly identify the root cause of performance problems and anomalous behavior
- Reduce time spent in the war room
- Empower IT groups to gain a shared situational awareness across all health care services

Digital Transformation Challenges and Solutions for the Health Care Industry

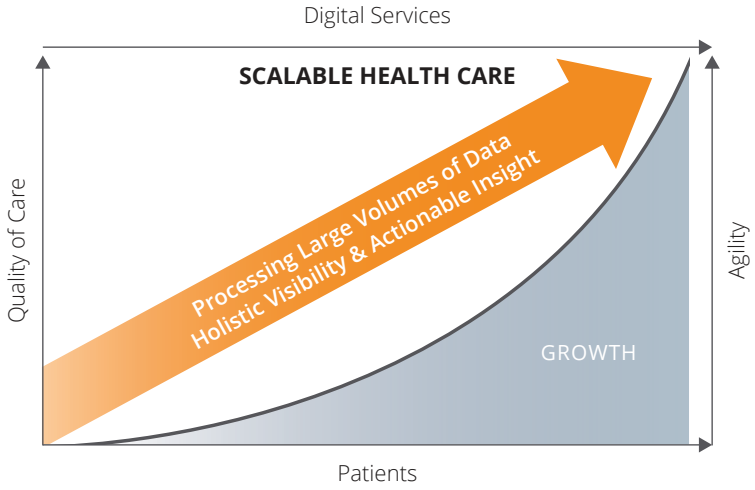
The health care industry is facing the third evolutionary wave of IT with implications so profound analysts believe it is a new era of global computing. Indeed, for all organizations, Digital Transformation (DX) will be galvanized by foundational technologies such as mobility, Internet of Things (IoT), Web 3.0, PaaS/SaaS, Big Data and Unified Communications (UC). During the next 10 years, a "digital thread" will unleash a seamless flow of data ranging from health care records and systems to patients interacting with care teams at any time and from anywhere. With the advent of the Internet as the bulwark of our modern economy, and mobile usage growing exponentially, all industries, including health care, are poised to benefit from the ubiquitous and real-time access to contextual information facilitated by the new technologies that are driving the DX narrative.

What is the promise of DX? It can transform operations, reduce costs and improve the quality of patient services and care. Health care organizations that leverage mobility, Big Data, UC and IoT will enhance the entire health care service-delivery chain from diagnosis to post-care while improving the relationship between patients, caregivers and other leveraged partners. Processes will be more automated, efficient – and mobile.

The shift from relying on physical assets to digital assets in the industry's value chain is happening now, and its impact in the future will have more significance – and opportunities – than ever before. In addition, there are practical challenges to achieving a robust and functioning digital future as outlined in the table below:

Dimension	Today	Tomorrow
Manage complexity	Understand current IT infrastructure and quality of services	New pillars of innovation and accelerators increase service delivery complexity
Design for large scale traffic	Visibility everywhere	Scale to support millions of users and zettabytes of data
Build for speed and agility	Informed real-time decisions in highly competitive, agile environments	Informed real-time decisions in highly automated environments in which development cycles are measured in days, hours or even minutes

Table 1: Service assurance for today and tomorrow.



The Impact of DX upon the Health Care Industry

Why are the mandates of DX so vital to the health care industry? The short answer is that this digital revolution will impact how health care providers diagnose, monitor, manage and track patient health. But how? What are the elements at work that have caused, and will cause, such quantum shifts that will impact an entire industry? The essential purpose of DX is to provide "agility" that will enhance and refine operational processes, and improve patient experience while reducing costs. The digital services so integral to health care include electronic medical records (EMR), electronic health records (EHR) and enterprise resource planning (ERP) systems. Also, Oracle® databases, Microsoft Exchange® email services, UC, bring-your-own-device (BYOD) initiatives and Voice over IP (VoIP) coupled with telemedicine are indispensable as well and are taxing networks, servers and databases like never before.

These digital services are inextricably linked in the health care service-delivery chain. Everything from portable medical imaging to wellness to portable diagnostic tools to crowd-sourcing, genomic applications like decoding one's DNA on a portable device – are revolutionizing the industry. The end result will ultimately be better patient care.

DX velocity and its myriad number of digital services are driving health care, but risk is everywhere from infrastructure and application integration to disaster recovery and provisioning of services.

As such, improving network visibility and understanding the interrelationships of service delivery components with actionable intelligence are vital.

Moreover, maintaining an evolving service delivery infrastructure is important but service performance issues can extend mean time to knowledge (MTTK) and mean time to repair (MTTR), potentially costing millions.

Patient Demands and Expectations

Health care organizations can't ignore the new digital reality. Delays in EMR performance tasks, for example, which are initiated literally millions of times a day from opening charts to scheduling clinical tests to administering medication to reviewing and updating patient records, can diminish clinical efficiency. That undermines patient care.

Some of the specific problems IT professionals in the health care industry face with the insurgence of DX include:

- Maintaining an evolving service delivery infrastructure
- Pinpointing service performance issues
- Ensuring 24/7/365 availability of clinical applications

Patient empowerment, too, is driving dramatic change in health care. Today, consumers expect personalized health services to provide diagnoses, cost-effective disease prevention guidance and with all of it underscored by secure, backend record keeping and billing. IoT factors into this trend too as consumer adoption of wearable, health monitoring devices is flourishing with several million utilizing such devices in their daily life.[1] In fact, according to Goldman Sachs, IoT technology alone will save health care providers billions in the near future.[2]

The Solution to Your DX and Service Assurance Needs

Confidence in delivering the best patient care is only possible with timely access to information. That's why continuous monitoring of traffic-based data and real-time analytics is so paramount to determining the best treatment pathways and achieving successful patient outcomes.

One of the critical components for health care providers is the continuous monitoring of EHR transactions. The ability to assess performance metrics and EHR transaction status is crucial for successful clinical practice and health services, and now with the passage of the Affordable Care Act, it is a regulatory requirement.

Health care providers must be able to track Health Level-7 (HL7) protocol transactions as well as measure HL7-based application transaction performance, discover associated error messages and decode HL7 data fields.

To help simplify your DX journey, as well as provide you vital EHR-transaction monitoring and other health care-specific network monitoring needs, is the NETSCOUT nGeniusONE® Service Assurance platform with its patented Adaptive Service

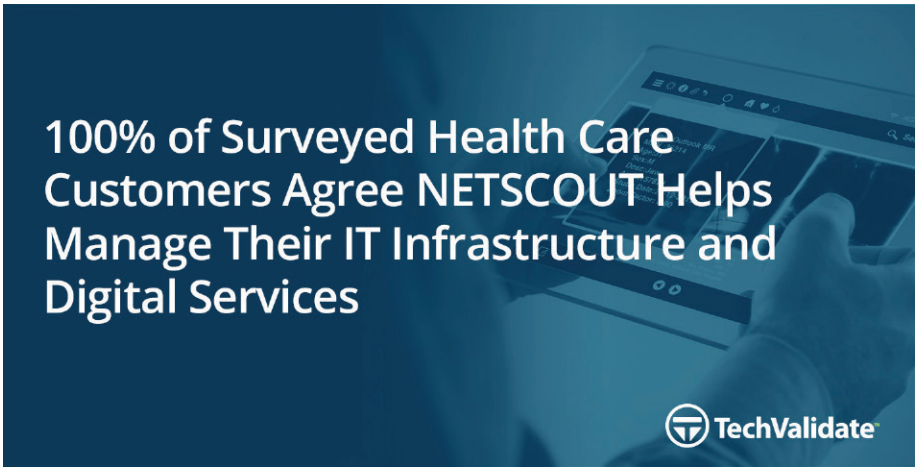
Intelligence™ (ASI) technology. NETSCOUT nGeniusONE's core functionality is pinpointing service performance issues as it combines continuous monitoring and multi-layered, real-time analytics capabilities, providing an integrated performance management solution for the most complex and demanding IT service delivery environments.

The ASI technology continuously converts large volumes of traffic-based data into structured metadata that is optimized for real-time analytics platforms, which in turn is able to maintain an evolving service delivery network infrastructure while ensuring a 24/7/365 availability of patient-critical applications. ASI is able to do this as it delivers actionable insight for business agility, service assurance and risk-mitigation purposes by generating metadata that provides vital metrics like, transaction response times, application error codes, traffic volumes and more.

What are the benefits of such an overarching service performance monitoring solution to health care organizations? Fundamentally, the NETSCOUT solution allows network and application teams to quickly identify and triage service performance issues and reduce risk to both the organization and the patients it ultimately serves.

The benefits health care organizations will derive include:

- Assuring the highest quality user and patient experience
- Slashing MTTK and MTTR times
- Reducing time spent in the war room resolving service problems
- Improving ROI with savings potentially in millions of dollars



NETSCOUT Helps Cleveland Clinic Identify Communication Issue

A real-world example of the power of NETSCOUT solutions was an incident the Cleveland Clinic encountered. The Vocera communication badges used for intra-caregiver communications were not being recognized in the hospital's neonatal clinic. The badges allow instant hands-free communication between nurses and doctors and their inoperability was literally threatening the lives of newborns. A technical malfunction trickled down to the patient proving the indispensable necessity of a smooth-running network to health care providers.

With a few clicks of the mouse the network operations manager identified the problem. The quick diagnosis and resolution of the issue saved the hospital time, money and lives. (To see more NETSCOUT customer use cases, go here.)

Summary

DX is rapidly transforming the health care industry. Patients have transitioned from passive recipients of health care to active value-seeking consumers. As a result of this transition and new government regulations, health care providers have to improve patient care and experience by adopting a variety of custom applications, which rely on trouble-free, real-time access to information in their IT environment. This adoption is driving the health care industry's critical need for service assurance now and in the future.

In conclusion, NETSCOUT solutions provide unmatched operational intelligence of service infrastructure, which is necessary for the optimization of DX initiatives while concurrently assuring critical service performance. Partnering with NETSCOUT empowers health care organizations to safeguard critical health care services and deliver high-quality patient care while simultaneously optimizing its digital value chain. Those health care organizations that fail to utilize their digital assets efficiently will be left behind.

For more information about NETSCOUT, visit our website or call +1-800-309-4804 on how you can enhance your network infrastructure's service assurance today.

1. As the importance of the wireless network edge technologies, such as 802.1ac, increase, NETSCOUT is a firm believer that the handheld network testing business will play a pivotal role in the evolution of IoT and other industries that require ubiquitous reach and mobility.

2. http://www.cio.com/article/2981481/healthcare/how-the-internet-of-things-is-changing-healthcare-and-transportation.html

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