Five-Star End-User Experiences Require Unified Digital Experience Management

Why traditional network and application performance management needs to evolve to support today’s digital enterprise.
Introduction

To deliver five-star digital experiences, organizations employ various systems, methodologies, and tools in dev/test, deployment, and production environments. As digital channels and services become more and more vital to business growth, enterprises must embrace unified Digital Experience Management (DEM).

We live in a digital world where end users—be they customers, employees, partners or suppliers—expect applications and digital services to be fast, reliable and always-on, no matter what device they are on or where they are located. To deliver five-star experiences, organizations employ various systems, methodologies, and tools in dev/test, deployment, and production environments.

But where companies differentiate themselves is in how effectively they do this. Are they using the proper tools within each environment to provide a seamless and solid end-user experience? Do they have insights into each and every step, or every infrastructure or network component, to prevent or fix performance issues? And can they manage and optimize IT systems and processes quickly and easily to improve the digital experience?

This white paper focuses on the following topics:

- Drivers of digital transformation
- Digital experience challenges
- Components of effective DEM
- Expected outcomes and results

Intended Audience

This white paper is addressed to the four main roles that are typically responsible for managing digital experience for an enterprise, and is relevant to the C-suite and any other roles who understand the importance of digital experience to the business:

**LoB & IT Executive** – Responsible for ensuring that IT supports business goals—revenue, customer satisfaction and workforce productivity, as well as cost-justifying and ensuring the success of digital transformation initiatives.

**Architect** – Responsible for designing and optimizing the architecture of the network, infrastructure, and data center/cloud. The goal is to optimize capacity to minimize cost and ensure high-quality and reliable user experiences.

**Application Developer/Owner** – Responsible for developing, delivering, supporting and optimizing business-critical apps, including voice communications. Includes both developers and product owners who interface between development and the business.

**IT Ops/Network Ops** – Responsible for providing end-to-end service management and problem resolution for apps and the network and infrastructure over which they run. Includes groups adopting DevOps practices, which fosters stronger collaborations between these teams and application developers.

*According to EMA¹, the IT Executive Suite is primarily responsible for driving Digital Experience Management, and the Director/VP of Enterprise Marketing/Digital Services is the executive most likely to be in charge.*

Important Definitions

**Digital Business** - people, businesses, and things (machines) digitally communicating, transacting, and negotiating with each other.

**Digital Transformation** – the application of digital technologies to fundamentally impact all aspects of a business.

**Digital Experience** - the human experience when interacting with digital apps and services.

**Digital Experience Management** - the analysis and optimization of application service delivery to end users/consumers in support of business outcomes, service performance, and application design.²

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¹ EMA: User, Customer, and Digital Experience: Where Service and Business Performance Come Together, Dennis Drogseth, Julie Craig, Feb 2017
² Ibid
Growing Importance of DEM

Digital Experience Management has evolved from traditional monitoring and network/application performance management to become a catalyst for business and IT alignment. In fact, as shown below, a leading use case for DEM is communicating the business impact of IT services to Lines of Business (LoB)

![Figure 1 DEM Use Cases](image)

Despite the growing importance of DEM, companies struggle to support its many dimensions and interdependencies. More often than not, organizations rely on cobbled-together point solutions that force IT teams into siloes and take their sights away from what should be their unifying goal—to deliver the best digital experiences. Fewer than 5% of global enterprises have strategically implemented digital experience monitoring, a fundamental component of DEM. Moreover, 51% of companies indicate that lack of technology infrastructure and IT systems is a significant challenge to meeting digital priorities.

Digital Transformation is Here

Market trends and analysts are predicting an increased focus on digitalization, driven largely by the massively growing number of connected devices, the adoption of cloud computing, and the desire to differentiate customer experiences from the competition.

According to a 2016 Gartner CIO survey, two-thirds of enterprises are investing in digital business today. In fact, digital capabilities and IT were the top two CEO investments in 2016 according to the same survey.

- By 2020, at least 30 billion end-user devices will be connected to the Internet.
- CEOs expect their digital revenue to increase by more than 80% by 2020.
- Digital will drive 58% of all retail sales by 2020.
- 89% of businesses expect to compete mainly on customer experience.

As companies push bits and bytes globally, everything has turned digital. And while new technologies, business models, and processes can transform businesses, make no mistake: the true driver of digital transformation is the end user and their desire to have better, richer, reliable, and more powerful experiences.

Digital Experience Challenges

Digital transformation changes the way businesses engage and interact with their end users. It also alters how the business itself must operate and how it sets goals for and utilizes IT to help achieve competitive differentiation. In order to succeed, businesses must address the following challenges along their digital journey.

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8 Ibid.
9 Ibid.
Problematic Application Lifecycle

Applications are becoming increasingly central to business revenue generation and operational efficiency. As such, more and more companies are embracing DevOps practices and Agile methodologies for continuous innovation and rapid development and deployment of new applications and IT-related services.

Typically, an application lifecycle consists of these stages: assess → design → develop → test → deploy → manage. Often, IT organizations implement digital experience practices within these stages distinctly, with different approaches, teams, timelines, and tools.

This potentially creates problems throughout the lifecycle. Without unifying insight and performance analytics, companies have difficulty understanding current performance levels for end users, applications, networks, and infrastructure; they are challenged to determine the underlying root cause of issues that impact performance; and they are unable to determine areas that require new development or application acceleration.

Ineffective Tools and Instrumentation

According to an EMA study\(^\text{11}\), many organizations are struggling with their digital initiatives due mainly to ineffective DEM tools and instrumentation. As shown below, DEM solutions were least effective in: root cause analysis, communicating business impact, capturing usage, and understanding third-party service impacts.

The fact is, nearly 78% of all organizations are experiencing some inconsistency with their digital experience quality\(^\text{12}\), which can have serious impacts on the business:

- 60% of business leaders indicate poor digital experience quality leads to a noticeable drop in productivity of at least 31%.\(^\text{13}\)
- An e-commerce site slowing down by just one second can cost up to $1.6 billion in annual sales.\(^\text{14}\)
- 89% of executives say that application performance negatively impacts their business.\(^\text{15}\)

Complex Application Delivery Architectures

At the heart of every digital experience is an app that must be developed and delivered to users. An app is not just software code on a server, but in reality, a complex chain of interactions that includes many moving parts. Should any of these parts suffer issues or failure, the quality of the digital experience, in turn, suffers.

Failures or slowdowns span IT domains and can be impacted by:

- Multiple services called by the app client,
- Data in multiple databases and locations,
- Application servers with intricate, multi-tier, and distributed software architectures,
- Physical and virtual servers hosted in on-premises data centers as well as in the cloud,
- Multiple networks connecting the data and service with each other and with end users, and,
- End users accessing the application from many device types and locations.

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\(^{13}\) Ibid.


\(^{15}\) EMA, “Application Performance Management in the Age of Hybrid Cloud,” December 2013
Enterprises frequently rely on a mishmash of monitoring tools to oversee each "link" in the application delivery chain: network, infrastructure, application, servers, etc. According to Forrester Research, 64% of organizations use a fragmented approach to technology monitoring. A typical enterprise has 6-10 network monitoring and troubleshooting tools in use, while 10% of large enterprises have more than 25 tools.

A fragmented approach only provides domain-specific insights that make it more difficult for IT teams to pinpoint what is causing end-user performance problems. Essentially, each team may report that everything is “OK” with their area of responsibility even as end users continue to complain.

Many enterprises adopt a “war room” approach in an attempt to encourage cross-team collaboration by bringing network, application, and end-user experience engineers together. Unfortunately, these activities frequently result in finger-pointing and blame-games instead of collaborative and rapid resolution of issues.

These organizations lack the tools to holistically manage the digital experience of their end users and are unable to understand how each domain (infrastructure, network, applications, and even the end-user device) impacts the overall experience. This lack of understanding hampers their ability to rapidly troubleshoot and resolve issues and to identify areas for strategic improvement and acceleration.

Unified Digital Experience Management is Required

A single, unified digital experience management solution that provides end-to-end monitoring and proactive performance insights allows companies to innovate more quickly with fewer problems along the development and application delivery lifecycle. It also enables organizations to easily share analytics across domains while providing actionable results to all lines of business. An effective DEM solution should:

- **Capture all types of data and transactions** from all end-user devices, networks, infrastructure, and applications at a granular level for faster and more effective root-cause analysis. Devices and applications can vary widely, yet everything in the environment must be supported by the system.

- **Provide deep insights into application and network performance**, blending and correlating analysis from all domains to provide a one-stop solution for managing performance. Performance monitoring and analysis solutions use built-in “big data” analytics to turn high-volume packet, flow, app, and transaction metrics into actionable intelligence. Network planning and configuration solution(s) should integrate the physical map with application and logical network maps to give a view of changes to the infrastructure and device configurations that can be blended with network and application performance views.

- **Enable proactive problem detection and resolution** with performance insights designed to guide fixing, optimizing, and prioritizing application and network performance for hybrid networks and SD-WAN architectures.

- **Measure all steps**, including pre-digital conversion, to understand the impact of poor app performance which, in turn, leads to poor digital experiences.
• Provide performance diagnostics and controlled feedback loops at every stage of the software development lifecycle, empowering businesses to embrace DevOps for faster business innovation and continuous application improvement.

• Deliver common, high-definition data sets to empower IT teams to collaborate effectively to resolve digital experience issues quickly and proactively.

Successful Outcomes and Results

Through a successful implementation of Digital Experience Management, companies can expect several benefits, including:

• More rapid development and deployment of applications and digital services
  - Identify and resolve bugs early in the development lifecycle
  - Understand application behavior in physical, cloud and containerized environments
  - Quickly validate production SLAs

• Faster problem resolution
  - Remove visibility blind spots from application development to delivery
  - Drill-down to problems across the entire digital experience
  - Unify analytics to reduce finger-pointing and develop cross-team collaboration

• Delivery of better digital services to all end users
  - Monitor user satisfaction, response times, adoption, and usage trends
  - Proactively identify problems prior to users complaining
  - Identify areas where network automation and application acceleration (e.g., SD-WAN, WANOP) can benefit performance
  - Integrate performance insights into the build-tool chain, including incident management and collaboration tools

• Assessment of the impact of digital performance
  - Measure the cost and impact of IT change on end-user digital experiences
  - Verify that desired business outcomes have been achieved
  - Improve communication of business results to all digital experience stakeholders

Conclusion

For digital transformation initiatives to be successfully implemented, it must also be successfully managed. This means putting an end to siloed teams with compartmentalized tools; limited performance insights within development processes and cycles; and blind spots that impede IT’s ability to see and drill down into all components of the digital experience to truly understand the end user’s experience.

As digital channels and services become more and more vital to business growth, enterprises must embrace unified Digital Experience Management. By doing so, businesses can accelerate their digital initiatives, ensure quality end-user experiences, and optimize business outcomes.

About Riverbed
Riverbed enables organizations to modernize their networks and applications with industry-leading SD-WAN, application acceleration, and digital experience management solutions. Riverbed’s platform allows enterprises to transform application and cloud performance into a competitive advantage by maximizing employee productivity and leveraging IT to create new forms of operational agility. At more than $1 billion in annual revenue, Riverbed’s 28,000+ customers include 97% of the Fortune 100 and 98% of the Forbes Global 100. Learn more at riverbed.com.