Abstract
As growing digitization and evolving consumer demand rapidly change the marketplace, enterprises must find new ways to innovate. Leveraging digital technologies—cloud computing, social business, analytics, and mobility (the SMAC stack)—can help enterprises to capitalize on new opportunities and optimize existing operations to deliver superior customer experience. However, to transform themselves completely, enterprises must create a “Digital First” strategy and design the right, scalable IT infrastructure to deliver value to customer and business.
The Digital Highway
As enterprise IT systems follow the trend of adopting new digital channels, consumer experiences become increasingly personalized and contextual.

From the way we purchase merchandise to the way we travel, almost all our experiences have been digitized. In this digital world, organizations have to compete not only with established players but also with new-age startups who, in some industries, have introduced disruptive technology-based business models.

Traditional organizations need to unlearn and relearn the new rules of building IT infrastructure, and leverage digital technologies such as cloud, social, analytics, and mobility to deliver an integrated, superior customer experience.

In the new economy, businesses only use technology platforms; Uber owns no vehicles. Airbnb rents out real estate that it does not own. Alibaba owns no inventory. All these companies, however, own communities and have created custom interfaces that are increasingly used by customers to serve their needs faster.

By 2017, 70% of successful digital business models will rely on deliberately unstable processes designed to shift with customer needs. Gartner

The digital era presents one of the biggest ever opportunities for CIOs to create new revenue streams. This, however, requires them to significantly change their leadership practices such that they can embrace the new digital economy. Dave Aron, a vice president and Gartner Fellow in the CIO Research group, says that in the new digital era, “incrementally improving IT performance isn’t enough… Digitalization is no longer a sideshow—it has moved to center stage.”

To take advantage of the opportunities created by the digital era, CIOs must develop a Digital First strategy. This requires a change of mindset: measuring value delivered to customer and business, rather than measuring costs reduced in running IT Operations. For example, mobile and cloud-based technologies have become necessities, and hence applications and infrastructure must be designed keeping in mind these new realities.
Evolution of IT Infrastructure in the SMAC Era

In an on-demand world where SMAC (Social, Mobile, Analytics and Cloud) technologies are ubiquitous, and where business needs are unpredictable, IT infrastructure needs to be accessible from any device—and it must also be more quickly, automatically scalable. For example, as more users start to access the network from their mobile devices, enterprises must be able to increase their load capacity. Their IT infrastructure must be adequately prepared for secure access.

In an era of dynamic business, the data center is transitioning from the traditional virtualized model to an on-demand service-oriented model. From virtualization to self-service IT, data centers have indeed come a long way.

Today, in line with new business realities, organizations are trying to create a scalable IT infrastructure, which can be quickly scaled automatically. This is crucial as business demands are unpredictable, and organizations need to scale up and down.

Underscoring the need for constant evolution in infrastructure models, Arvind Mehrotra, President and Head, Infrastructure Management Services, at Coforge, says: “Earlier, we used to have a bottom-up approach in which before application provisioning, an enterprise only needed to make sure that their infrastructure could handle the load. However, today we follow the topdown approach due to the fast pace of change... Infrastructure is also designed to handle application-related workloads quickly.”

As IT teams become overwhelmed with on-demand routine management tasks where more apps get provisioned and implemented, outsourcing them to specialist managed service providers can help in raising the efficiency bar. Take, for example, the case of the Emirates Group, which has started to segment the areas it can manage, and the areas where they need specialist service providers to do the job in a cost-effective and efficient manner.

Fayyaz Alam, Head - IT Infrastructure at the Emirates Group, says: “In a traditional setup, an email is just an email. However, when you look at it from a future perspective, email is part of a wider collaboration and communication solution for an enterprise. We relook at the whole thing and ask ourselves: Is it an important differentiator for which we need a bespoke solution or would we be better off with a cloud service? The answer is that while enterprise communication and collaboration are important, our needs are similar to global enterprises of our size. So we will be better off with a world-class cloud solution in this space.

The digital economy demands that businesses invest significantly in developing infrastructure that creates long-term value for the enterprise, while simultaneously delivering excellent digital customer experience. Given the pace at which mobile apps are being developed for and applied in diverse business use cases, CIOs need to understand the importance of going mobile first with strategic applications for day-to-day interactions.

Criticality of Application Monitoring

A typical enterprise today has hundreds or thousands of applications supported by an infrastructure that may be on premise or cloud-based. These apps are used for various business contexts—from real time commerce to mission-critical support and decision-making. The user experience may be vastly different depending on the geography in which the user resides, or their device type.

Cost of Application Downtime

<table>
<thead>
<tr>
<th>USD 1.25 billion to 2.5 billion</th>
<th>Average total cost of unplanned application downtime per year</th>
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</thead>
<tbody>
<tr>
<td>USD 100,000 per hour</td>
<td>Average hourly cost of an infrastructure failure</td>
</tr>
<tr>
<td>USD 500,000 to hour</td>
<td>Average cost of a critical application failure per year</td>
</tr>
<tr>
<td>25 percent</td>
<td>Average cost per year (in percentage) of development, testing, deployment, and operations lifecycle for a single application considered wasteful and unnecessary</td>
</tr>
</tbody>
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Source: IDC-App Dynamics report, DevOps and the Cost of Downtime: Fortune 1000 Best Practice Metrics Quantified
In many cases, apps randomly crash due to a number of reasons, and app developers struggle to find the root cause. With a limited view of the end-user experience, most enterprises do not know if the issue is with the infrastructure or the application. The resulting loss of revenue or engagement can even hurt an organization’s existence as their industry gets disrupted by smarter players.

Keven Jai Kumar, GSP, App Dynamics says that most CIOs today face the same problem. "As a CIO, an organization is looking at you as a single pane of glass, or a single window. They are not really worried about whether you are five vendors or fourteen. For the business, you are still delivering SLAs but internally you do not have the visibility of how each of your services is performing with your vendors."

Application monitoring can help organizations evaluate the end user perspective of application execution and assist with tactical troubleshooting while harnessing the same data and governance mechanisms to provide insights into the performance and usage of the applications.

In an application-driven economy, user requirements change dynamically. This means that by the time a traditional IT team comes up with a solution, the requirement will have changed completely. Integrated continuous development or DevOps can address this issue with a continuous, simultaneous approach where code is automatically tested and deployed. Based on the feedback received, the developer improves the product through rapid releases that allow the software to be more rigorously tested—ultimately leading to better quality.

The Future is Software-driven

Enterprises looking at digital transformation will need an agile infrastructure environment to succeed. Emerging technologies around the software-defined data center (SDDC) will be crucial for successful long-term evolution of digital business. Gartner defines SDDC as a data center in which every infrastructure component is virtualized and delivered “as-a-service.” This means that every part of the data center—storage, networking, and security—can be provisioned virtually. This increases the level of automation and flexibility that will underpin business agility through the increased adoption of cloud services and modern IT approaches such as DevOps.

It is estimated that by 2020, more than seven billion people and businesses, and close to 35 billion devices, will be connected to the Internet. CIOs will need to rethink the way they plan for infrastructure because the sheer volume, velocity, and diversity of IoT (Internet of Things) data can create immense challenges for data center administrators.

Gartner estimates that the magnitude of network connections and data associated with the IoT will accelerate a distributed data center management approach that calls for providers to offer efficient system management platforms. This is because existing data center WAN links, according to Gartner, are sized for the moderate-bandwidth requirements generated by human interactions with applications. The IoT promises to dramatically change these patterns by transferring massive amounts of message sensor data to the data center for processing — vastly increasing inbound data center bandwidth requirements.
The Coforge Thought Board: Leading the Digital Change: A CIO Perspective

What is Needed to Grasp the Digital Opportunity?

According to a Gartner Report, the three prerequisites are vision, digital information and technology mindset, and platforms that can deal with rapid changes and uncertainty.

What is the Single Biggest Shift in the Mindset of CIOs Today?

A Digital First mindset that focuses on value delivered to clients and businesses instead of measuring cost-savings in running IT operations.

What can Create Humongous Challenges for Data Center Administrators?

Volume of IoT Data
Velocity of IoT Data
Diversity of IoT Data

How can Application Monitoring Help Majority of Businesses?

It can help:

Evaluate end user perspective of application execution
Assist with Tactical Troubleshooting
Provide Performance and Usage Insights
Leading a Digital Future
The digital future belongs to organizations that can quickly adapt their business processes to match changing customer priorities, and who can overhaul their IT infrastructures to keep pace with new digital technologies.

The next battle between enterprises will not be about who has the best supply chain. It will be about customer experience. This has been demonstrated by firms such as Apple and Uber, who have simplified the way in which customers interact with devices or consume services.

Only one thing can ensure an organization’s success today—delivering exceptional customer experience. Everything else has become a commodity.
Coforge is a leading global IT solutions and services organization which believes that real transformation cannot be driven by thinking in technology terms alone. With a mission to “Transform at the Intersect” it aims to bring both deep domain and deep emerging technologies expertise to achieve real-world business impact. A focus on very select industries, a detailed understanding of the underlying processes of those industries and partnerships with leading platforms provides us a distinct vantage. We leverage AI, Cloud and Insight driven technologies, allied with our industry expertise, to transform client businesses into intelligent, high growth enterprises.

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