White Paper

Prevent Outages from Becoming the Bane of the Digital Economy

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As enterprise digital transformations proceed, organizations' technology landscapes become increasingly complex – while the importance of keeping everything up and running becomes mission-critical.

As a result, organizational resiliency has become a key performance indicator for the IT organization. It must focus on resolving outages, ideally before they adversely impact the user experience.

Avoiding outages, therefore, becomes technical operations' number one priority – even though the modern IT landscape is increasingly hybrid, and technology innovation is driving an inexorable increase in the pace of change.

Traditional approaches to dealing with problems in the operational environment are simply not up to the challenge.

Instead, AIOps, with its application of AI to massive quantities of operational data, has become the primary tool for eliminating and preventing outages in the face of increasingly complex and dynamic digital environments.

Bridging the Digital Transformation Technology Gap

More than a decade since digital transformation became a top priority for the C-suite, enterprises across the globe still struggle to make such transformation a reality.

There are several reasons for such failures, but perhaps the most significant is a mistaken belief that digital transformation is about technology.

It's not. It's about the *customer* – and how companies must reorganize to better meet customer needs.

Technology, of course, plays an important supporting role in this story. We like to say digital transformation is *software-powered*, but *customer-driven*.

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Innovation, however, doesn't happen in a vacuum. Enterprises have existing systems, processes, bureaucracies, and all the other layers of detritus from their years of existence.

Innovation – including the innovation necessary to meet digital transformation goals – must take place in this context of existing, often legacy assets.

The Rise of Operational Resiliency

Technology leaders at such organizations, therefore, have competing priorities. On the one hand, they must support the innovation necessary to meet changing customer demands as part of their digital strategy.

On the other hand, they must keep existing systems and processes up and running, meeting the ongoing needs of the business – what we snidely refer to as 'keeping the lights on.'

The result of these competing priorities is both increased complexity and deployment velocity – a clear recipe for more frequent technology failures that impact the customer experience. In other words, outages.

Every technology executive realizes that outages can be appallingly expensive. Every minute that a web site is down, say, might cost the organization millions of dollars.

IT leadership, therefore, faces a conundrum: customer expectations for digital capabilities are exploding, while simultaneously, IT environments are becoming increasingly complex and dynamic.

The result is an increased focus on *operational resiliency* as a key performance indicator.

Operational resiliency is a measure of the ability for an organization to recover quickly from outages and to prevent outages from adversely impacting the user experience (including both customers and employees).

Operational resiliency shields an enterprise's digital efforts from both internal and external disruptions, preparing the company's entire IT landscape to bounce back stronger in the face of change.

The first step in improving operational resiliency is to reduce the number and severity of outages. Outages, however, are *effects*. Something has gone wrong somewhere in this enormously complex mix of innovative new technology and

steadfast legacy – and the technology team needs to know what the underlying problem is and how to fix it. Right now.

This is no time for trial and error. No time for a war room of stressed incident responders and SMEs pointing fingers at each other.

Enterprises must close this gap with AIOps: automated, intelligent outage prevention and resolution. AIOps resolves and ideally prevents outages – outages that impact customers and the bottom line.

How to Answer 'What Changed' if Everything's Changing

It's no coincidence that the increased focus on operational resiliency has driven the development and deployment of AIOps.

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AIOps platforms cut through this noise, helping operators answer the fundamental question behind preventing outages: *What changed?*

That's the question ops personnel have been asking for decades whenever something goes wrong in the production IT environment.

Everything was working before, so the reasoning goes, and now it's not. We have an outage. And to figure out what caused the outage – and hence, to have any idea how to fix it – we must know what changed.

In the modern digital context, however everything is subject to change, all the time. In today's increasingly fast-paced, digital world, change is both constant and ubiquitous, as both the velocity of change and the sheer volume of changes continue without end.

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Other factors also work to obscure the root causes of outages. Hybrid IT environments are usually fragmented, as enterprises adopt multi-cloud strategies while they also maintain on-premises infrastructure.

An organization might leverage different monitoring and management tools for each of these environments – and the on-premises tools (both monitoring and configuration management databases, or CMDBs) are likely to be several generations old.

This fragmentation, therefore, leads to limited visibility – both within each environment as well as across environments.

For some companies, this fragmentation isn't a severe problem, as the applications running in each environment are separate from one another. This pattern was common a generation ago, as enterprises launched their first web sites, largely separate from their corporate systems of record.

For most organizations, however, such separation doesn't meet modern customer-facing digital needs. What were yesterday's web sites are now today's multi-device customer experience strategies – and the full diversity of on-premises, cloud-based, and third-party systems of record and engagement support that each customer (and employee) experiences.

The fragmentation of technologies across environments, therefore, is becoming an increasingly urgent problem for most organizations.

Finding the Needles in the Haystack of Needles

The underlying cause of an outage may be anywhere – front-end, content delivery infrastructure, on-premises or cloud-based systems of engagement, iPaaS or other middleware, back-end application infrastructure, systems of record, or third-party services.

Traditional tools simply cannot keep up. Every modern organization with such complex IT environments requires more intelligence and automation in their IT operations tooling. AIOps is a must-have.

In spite of its name, AIOps means more than the combination of AI with IT operations. AIOps is a fundamental capability that brings together people, processes, and technology, leveraging an awareness and understanding of all their systems and data to improve operational resiliency.

A comprehensive AIOps strategy should be a central part of every organization's operational resiliency effort, especially those organizations that are proceeding with digital transformation. Digital success depends upon ensuring a flawless experience across the IT landscape, from new customer-facing application functionality to legacy systems of record.

AIOps is so critical to digital success because modern IT environments generate a tsunami of IT noise. This noise slows down problem detection, leading to outages.

Teams experience thousands of changes every week as the result of infrastructure changes, code changes, configuration changes, app and system changes, and more – any one of which might impact the customer experience.

AIOps eliminates most of this noise. It is especially useful in understanding changes in the IT environment, especially when changes are highly fragmented and spread across change management, CI/CD, orchestration, and change audit tools, including legacy tools like CMDBs.

Without AIOps, enterprises must manually sift through thousands of changes in several different tools to identify the offending change, which takes too much time – and every second of downtime impacts customers and other users as well as the business at large.

Instead, AIOps applies artificial intelligence (machine learning in particular) to reduce or eliminate noise, uncover anomalies, determine correlations among incidents, and single out the root causes of outages. AIOps processes vast quantities of operational data to uncover important patterns – patterns that rise above the noise.

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The BigPanda Approach

BigPanda is a leader in the AIOps marketplace with its AIOps Event Correlation and Automation platform. The BigPanda platform consumes massive quantities of data from every monitoring tool on premises, in private clouds, or in a public cloud.

The platform then uses machine learning to correlate these IT alert data into a small number of actionable incidents, and in the process eliminates most IT noise. Technical operations teams can quickly take action and resolve the incidents before they escalate into outages.

BigPanda also connects to every tool that deals with changes, including development tools, change management tools, CI/CD tools, and others. It then gathers change data from these tools in real-time and aggregates them.

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Once BigPanda identifies the root cause of an outage, it gives technical operations teams the ability to fix or roll back the problematic change quickly – in many cases before the outage affects the end-user experience. In the process, BigPanda reduces an organization's mean time to resolution (MTTR).

In addition to the machine learning, BigPanda's combines its event enrichment engine and its real-time topology mesh that enable contextual enrichment and

impact mapping across diverse and dynamic environments, both on-premises and in the cloud.

This ability to correlate data across dynamic environments is especially useful, as CMDBs drop the ball when environments change too often – whereas BigPanda excels in hybrid environments that have both static and dynamic elements.

BigPanda also shares its incident data bidirectionally with other collaboration tools, such as ITSM or ticketing systems and on-call notification tools, helping both centralized IT operations teams and distributed DevOps and SRE teams collaborate on incidents to prevent and resolve outages.

The Intellyx Take

Operational resiliency is a core success factor of digital transformation.

Organizations should ideally architect every mission-critical business application to support a modern hybrid IT delivery environment which includes responsive user interfaces, microservices-based cloud resources, integration middleware, and back-end systems of record.

In reality, however, most enterprises have a mix of old and new technologies, some of which support modern architectures, while many do not.

Expecting IT Ops teams to chase down alerts once they make it into production in such complex environments is no longer adequate. Companies must strive to become more resilient to survive in an increasingly dynamic hybrid IT landscape.

The goal for the technical ops team should be to make resilience a way of life. Change is constant, outages can occur at any time, and the underlying causes of such outages might be anywhere. With AIOps, dealing with such problems is simply a part of the day-to-day work of a team focused on resilience.

This focus on resilience, in fact, is one part of the broader, enterprisewide digital transformation. Because resilience requires thinking beyond technical silos to the end-to-end technology landscape, it supports the organization's strategic efforts to align with customer needs. And what customer need is more important than dealing with outages?

Today's digital organizations, in fact, are facing disruptions from opposing forces. On the one hand, operational resilience is becoming more important as digital transformation efforts proceed.

On the other, the increasing complexity and dynamic nature of modern technology necessarily faces more problems – which might lead to more outages.

In the end, the more important fixing and preventing outages becomes, the more likely they are to occur.

IT operations – and in fact, the entire organization – must rise to this challenge, even though many elements of modern technology actually increase complexity, including remote operations, cloud computing, DevOps, system reliability engineering, and modern applications generally.

This careful balance between complexity and resilience drives urgency and importance for all IT – and traditional approaches to addressing outages simply will not suffice.

Because AIOps thrives on complexity – the more data from the more sources, the better – platforms like BigPanda's are an increasingly critical enabler of any organization's digital transformation success.

About the Author: Jason Bloomberg

Jason Bloomberg is a leading IT industry analyst, author, keynote speaker, and globally recognized expert on multiple disruptive trends in enterprise technology and digital transformation.

He is founder and president of Digital Transformation analyst firm Intellyx. He is ranked #5 on Thinkers360's Top 50 Global Thought Leaders and Influencers on Cloud Computing for 2020, among the top low-code analysts on the Influencer50 Low-Code50 Study for 2019, #5 on Onalytica's list of top Digital Transformation influencers for 2018, and #15 on Jax's list of top DevOps influencers for 2017.

Mr. Bloomberg is the author or coauthor of five books, including *Low-Code for Dummies*, published in October 2019.

About BigPanda

BigPanda keeps businesses running with AIOps that transform IT data into insight and action. With BigPanda's AIOps platform, businesses prevent IT outages, improve incident management and deliver extraordinary customer experiences. Without BigPanda, IT Ops, NOC, and DevOps teams struggle with a tsunami of data and highly-manual, reactive incident response processes that are poorly suited for the scale, complexity and velocity of modern IT environments. This results in painful outages, unhappy customers, growing IT headcount and the inability to focus on innovation.

BigPanda's AIOps Event Correlation and Automation platform helps Fortune 500 enterprises such as Intel, Cisco, United, Abbott, Marriott and Expedia take a giant step towards Autonomous IT Operations. BigPanda is backed by Advent International, Insight Partners, Sequoia Capital, Mayfield, Battery Ventures, Glynn Capital, Mayfield, Greenfield Partners and Pelion. Visit www.bigpanda.io for more information.