



Addressing the challenges of digitization in the pandemic world through a Journey-based AIOps Platform



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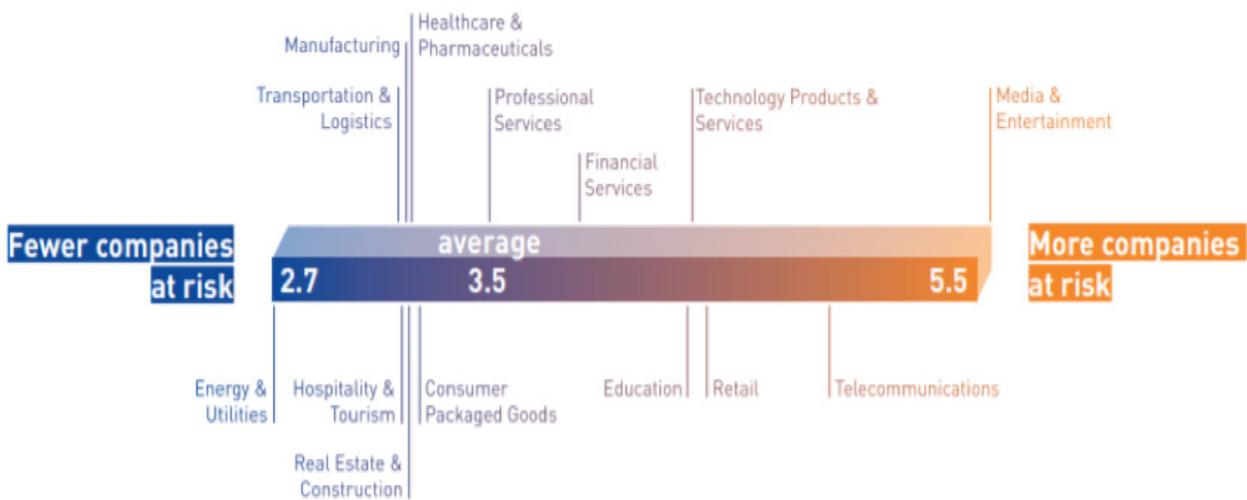
Challenges of digitization in the pandemic world



The COVID-19 virus is sweeping across the world, leaving a trail of economic and social damage in its wake. COVID-19 has accelerated a surge in the development and usage of new digital technologies across the globe. Everyone can think of at least one well-known brand that went bankrupt recently because it severely underestimated the impact of digital on its business.

According to a research by imd.org, digital disruption is in full swing, with over 88% of their respondents reporting that digital disruption will have a major or transformative impact on their industries. There is a widespread belief that more than one-third of the top 10 incumbents in each industry will be displaced by digital disruption in the next five years.

In your industry, how many companies will lose their place in the top 10 due to digital disruption over the next five years?



As per **Gartner Top Strategic Technology Trends for 2021**, “an anywhere operations model will be vital for businesses to emerge successfully from COVID-19. At its core, this operating model allows for business to be accessed, delivered and enabled anywhere – where customers, employers and business partners operate in physically remote environments. The model for anywhere operations is “**digital first, remote first**,” for example, banks that are mobile-only, but handle everything from transferring funds to opening accounts with no physical interaction. Digital should be the default at all times. That’s not to say physical space doesn’t have its place, but it should be digitally enhanced, for example, contactless check-out at a physical store, regardless of whether its physical or digital capabilities should be seamlessly delivered.”

However, anywhere operations model forced by COVID-19, and today’s digital transformation projects demand a pace, scale and volume of data generation that IT Operations just can’t manage with old technologies. Today, the average enterprise uses as many as 5 clouds and over 1,200 cloud services. Last year, Australia’s two largest supermarket chains suffered nationwide technical issues, forcing the companies to close stores until the issues were fixed. The reality is that IT teams are dealing with increasing amounts of data and a variety of tools to monitor that data, which can mean significant delays in identifying and solving issues. The result: Lost revenue and frustrated customers.

A single hour of downtime can now cost enterprises up to \$5 million, exclusive of any legal fees, fines or penalties.



What is AIOps?

As the urgency of digital transformation initiatives grows, IT leaders face mounting pressure from both internal and external audiences to do more – optimize performance, reduce costs, and deliver innovative services – with fewer resources and less time. Put simply, AIOps is the application of artificial intelligence and data science for IT operations problems.

AIOps platforms combine big data and machine learning functionality to enhance and partially replace all primary IT operations functions, including availability and performance monitoring, event correlation and analysis, and IT service management and automation.

Successful digital transformation initiatives rely on AIOps to enable IT to operate at the speed that modern business requires.

AIOps platforms consume and analyse the ever-increasing volume, variety and velocity of data generated by IT and present it in a useful way. Many organisations are (or soon will be) finding themselves in desperate need of a pragmatic AIOps adoption path, and shift in mindset.

AIOps and a data-driven culture can:

- Augment the capabilities of IT practitioners and facilitate their job
- Solve business problems before they occur
- Assist root-cause analysis by separating the signal from the noise

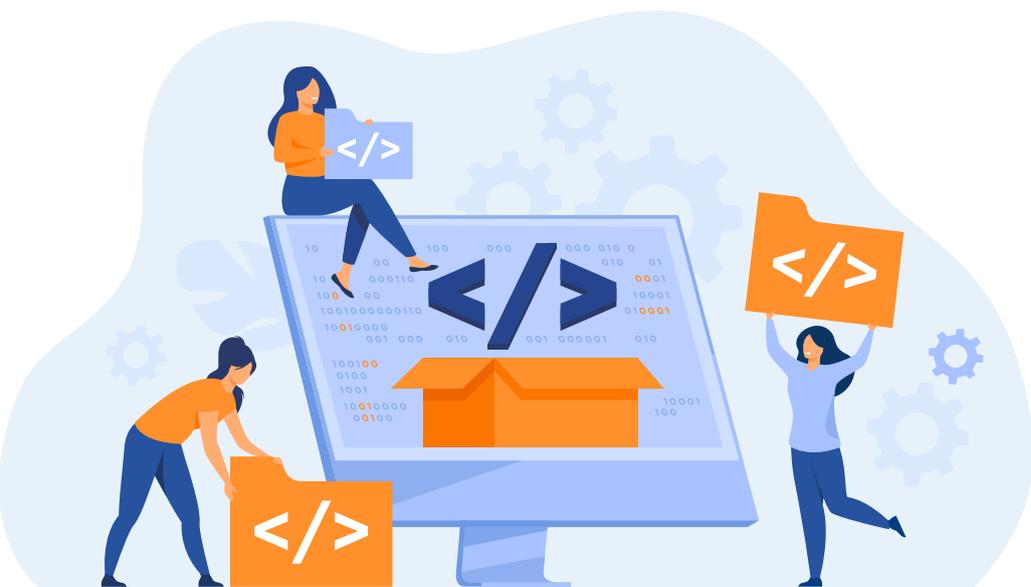
What is a digital platform and what an ideal AIOps platform should have?

Successful digital transformation is dependent on AIOps to enable IT to operate at the speed that modern business requires. These days everyone is building a 'platform' to speed up delivery of digital products at scale. But what makes an effective digital platform? Evan Bottcher's definition of platform is helpful here:

A digital platform is a foundation of self-service APIs, tools, services, knowledge and support which are arranged as a compelling internal product. Autonomous delivery teams can make use of the platform to deliver product features at a higher pace, with reduced co-ordination.

At an organisational level a 'digital platform' has similar characteristics - an operating environment which teams can build upon to deliver product features to customers more quickly, supported by reusable capabilities.

The "**digital platform**" definition applies to AIOps platform enabling the operations monitoring as well. As per the 2020 State of DevOps Report (published by Puppet), "if you have hundreds of products or services, dedicating a product team to each one is both inefficient and expensive. Imagine 10 teams, each with its own technology stack, toolchain and processes. You're going to have all these teams trying to solve similar problems, spending way too much time on evaluating technologies, integrating them, maintaining the infrastructure and more. That's time that could be better spent building and improving the actual products your teams are responsible for."



Hence an ideal AIOps platform should have the following four critical building blocks driven by platform enablers for each building block:

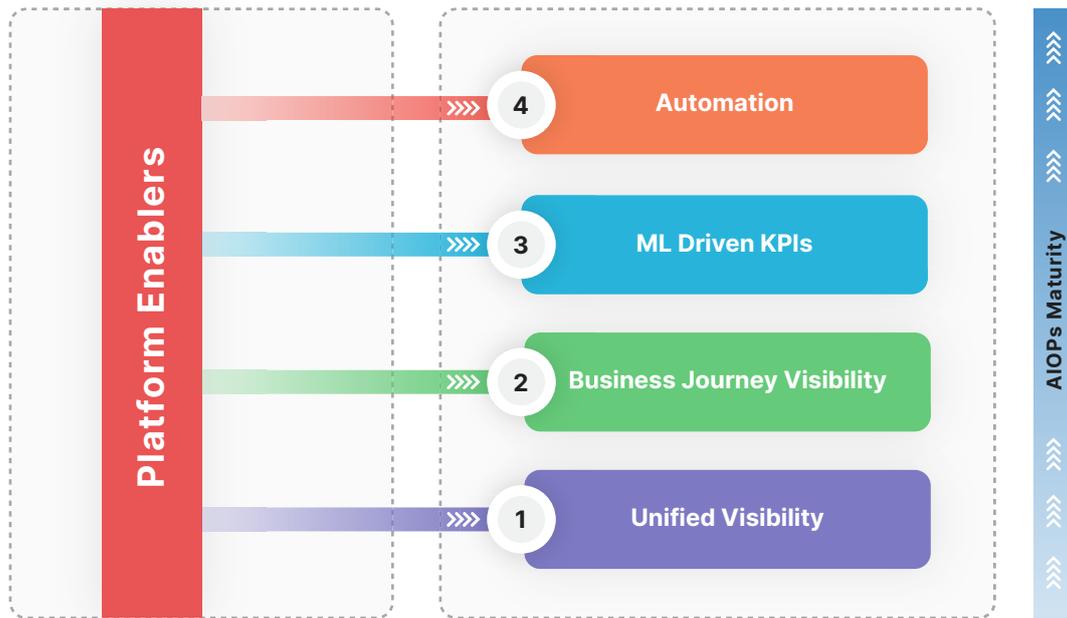


Figure 1 - AIOps Platform Building Blocks

- | | |
|---|--|
| 1 Unified Visibility across infrastructure, applications and business transactions for IT Operations | 3 ML Driven KPIs for business and IT decision makers |
| 2 Business Journey Visibility to business users and IT | 4 Automation for overall user experience and reduce IT operations costs |

A seamless integration of AIOps platform building blocks can help an organisation increase their AIOps maturity step by step and meet their digitization goals and metrics.

The key characteristic of a platform product is self-service capabilities consumed via an API. This includes infrastructure, test environments, deployment pipelines, monitoring, and more. The platform provides an interface between the underlying infrastructure and tooling and the teams consuming those services, enabling application teams to focus on building their products instead of nitty-gritty implementation or operational details. The challenge of any AIOps platform is how do they integrate with an heterogenous existing IT environment consisting of a variety of infrastructure, business applications, logs mechanisms, monitoring, service desk, alerts, workflow, CI/CD and orchestration tools. An AIOps platform needs to sit at the intersection of the different transactional and distributed systems/logs, consuming and integrating information across all of them.

Key Building Blocks of an AIOps Platform

1 Unified Visibility

An ideal AIOps platform should provide unified visibility across infrastructure (compute, network, storage, database, on-prem/public cloud) and applications in the context of a customer journey and business journey. Unified visibility help reduce noise (for example, in the form of false alarms or redundant-events) and provide better causality, which helps identify the probable cause of incidents. Having unified visibility and deep insights into your whole technology stack, the digital experience delivered to your users and the business impact helps technologists to address many of today's challenges.

2 Business Journey Visibility

As customer demands for flawless services rise, application teams need to evaluate the success of a business process holistically. An ideal AIOps platform has to deliver an efficient, unified view to both business users (who want a 10,000-foot view) and IT (who want granular code-level information) for an entire business process that spans multiple applications, services, infrastructure or transactions.

3 ML-driven KPIs

Every successful digital transformation depends on enabling world class user experience for its employees, customers and partners. A mature AIOps platform should enable user experience monitoring to complement the IT operations monitoring. ML-driven KPIs should capture anomalies that go beyond static thresholds to proactively detect abnormal conditions, extrapolate future events to prevent potential breakdowns, and initiate action to resolve a problem (either directly or via integration).

4 Automation

A modern IT environment has IT Service Management (ITSM) tools to enable IT as a service using standards such as ITIL and eTOM. In addition, Continuous Integration (CI) and Continuous Delivery (CD) tools are now common in most IT environments deploying code to their private and public cloud systems. If you're making 500 changes per week, for example, and even 1 percent of these changes fail, that's one incident per day for the team to deal with. Low as that percentage is, one incident per day can still feel like you're having a lot of failures. If you have automated much of your delivery process, restoring service and remediating security vulnerabilities is faster, too. An ideal AIOps platform has to support integration with ITSM tools and support scripts to enable automation across the DevOps and SRE tool sets.

Reimagining AIOps with VuNet vuSmartMaps™

Not all AIOps products are equal. It is important for every organization to carefully select and deploy an AIOps product that not only meets current needs but also to the evolving needs of the organization with a platform approach.

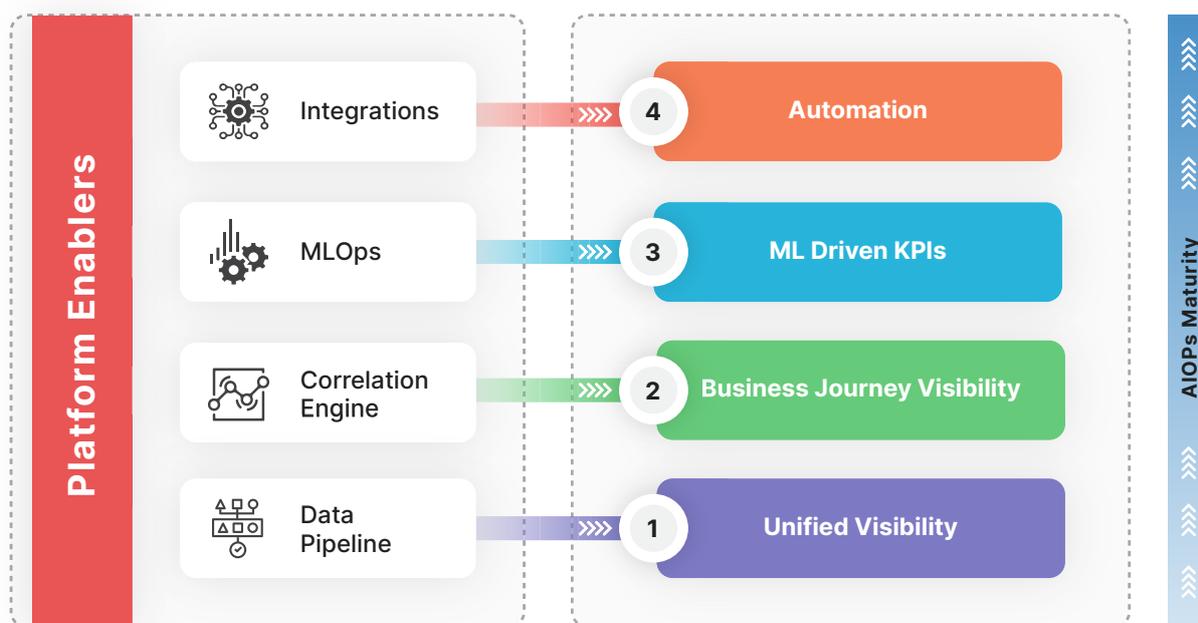


Figure 2 - vuSmartMaps™ platform enablers and AIOps building blocks

VuNet's vuSmartMaps™, an award-winning AIOps and Big Data Analytics platform, helps CXOs transform their enterprise IT operations for the new age digital enterprise. In a first of its kind, vuSmartMaps™ brings together its platform enablers – Data pipeline for Unified Visibility, Correlation Engine for Unified Visibility, MLOps for ML Driven KPIs, and Integration for Automation to enable organizations reach AIOps maturity goals.

A complete full stack product, vuSmartMaps™ comes with pre-packaged adapters, powerful correlation algorithms, custom workflows add on, advanced visual storyboards to contextual alerts, all in real time.

vuSmartMaps™ platform not only powers the four critical building blocks of an ideal AIOps Platform but also helps customers progress on Root Cause Analysis (RCA) maturity step by step from component-centric RCA -> service-centric RCA -> proactive RCA -> automated resolutions.

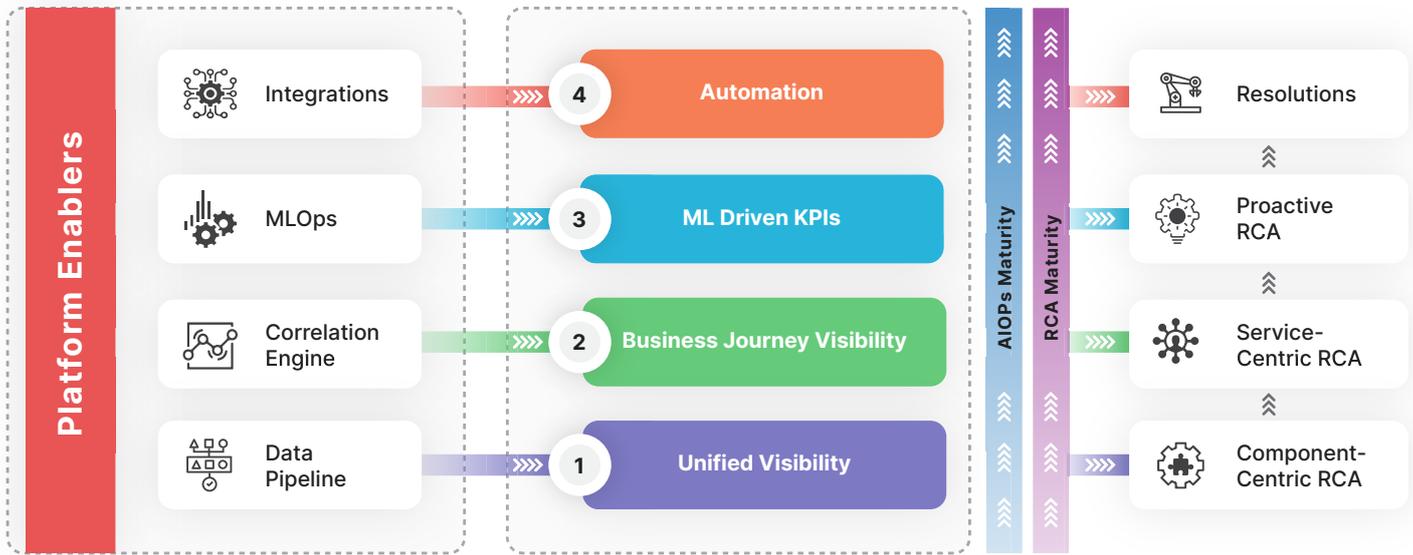


Figure 3 - vuSmartMaps™ platform enabling AIOps and RCA maturity

We are very pleased to mention that Gartner has recognized VuNet as a Cool Vendor and in the Market Guide for AIOps platforms for two years in a row. As per Gartner, “VuNet’s vuSmartMaps™ platform is a departure from traditional discovery tools that start with relatively small datasets and rely on pre-existing, static models to interpret the data”.

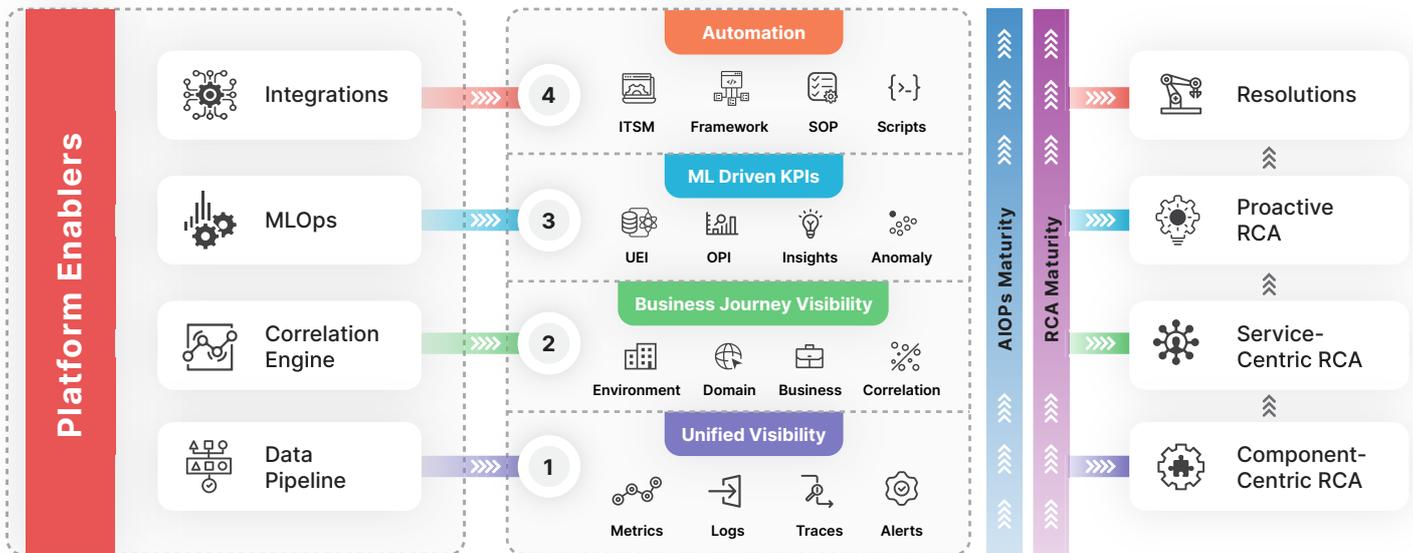


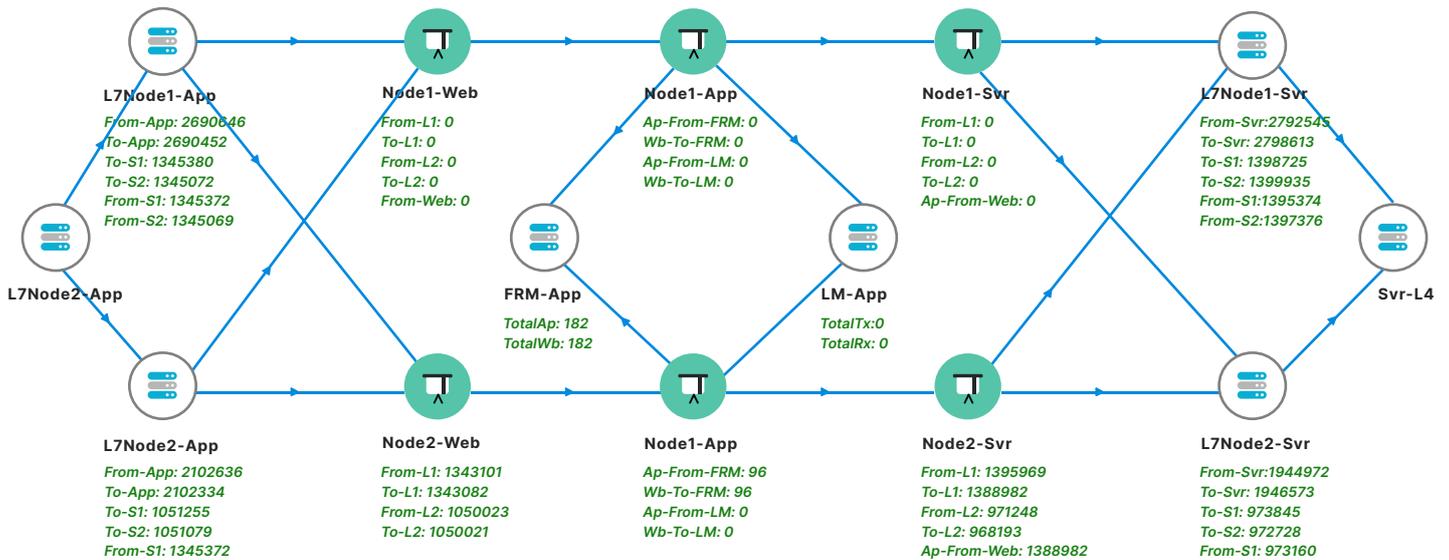
Figure 4 - vuSmartMaps™ platform architecture

Let us take a deeper look on the capabilities of each building block of vuSmartMaps™ platform and how they enable real-time business analytics and service-centric IT operations.

vuSmartMaps™ platform architecture (figure 4) illustrates how organizations can achieve automation in a phased approach thereby enabling IT operations provide automated resolutions of service incidents. The most mature digital companies can deploy new code changes on demand, restore service and remediate security vulnerabilities faster.

1

Unified Visibility

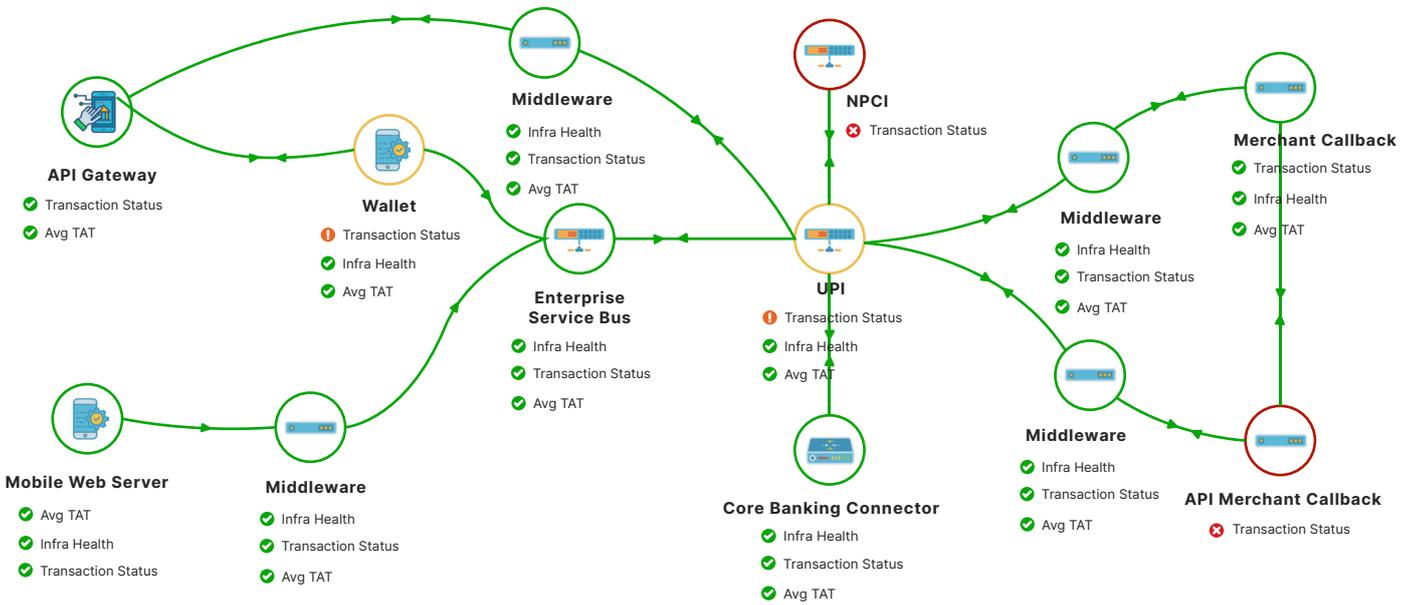
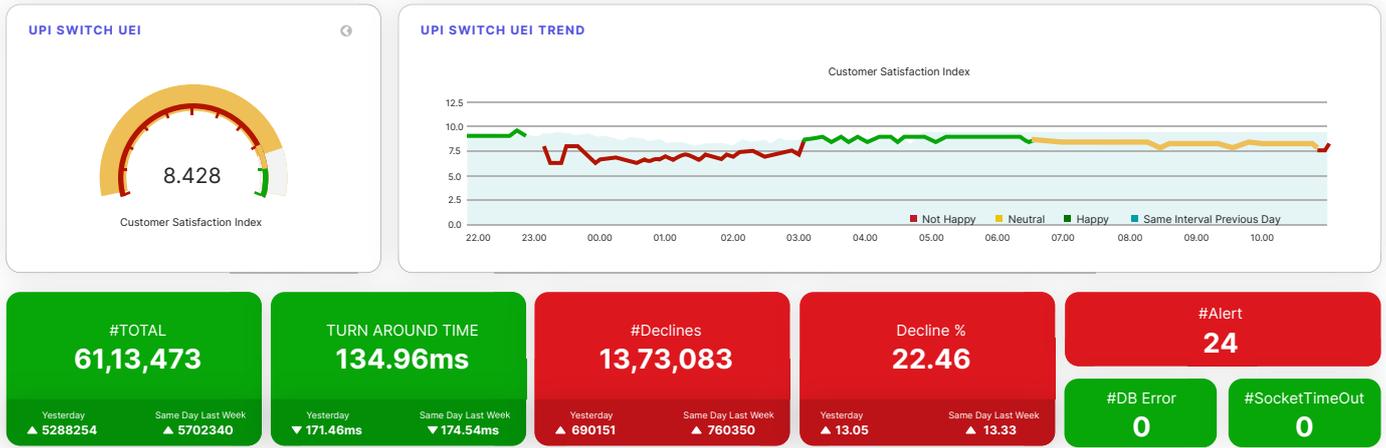


- vuSmartMaps™ comes with 400+ data adapters to automatically discover new diverse data sources and touch points in the organization; many existing AIOps tools in the market require additional integration to new data sources
- vuSmartMaps™ custom adaptors are aligned with ISO 8583 to ingest and enrich over 1 TB of data per day
- vuSmartMaps™ can receive alert messages from existing infrastructure systems and also can sit on top of existing AIOps systems
- Integrates syslogs, event logs along with application and transaction logs and can provide deep log analytics
- vuSmartMaps™ brings in correlated views across user experience, infrastructure and applications

2

Business Journey Visibility

- vuSmartMaps™ brings in domain and business context with correlation using transaction identifier
- vuSmartMaps™ enables frictionless visibility into business transactions to drive increased system uptime and enhanced user experience



- The platform provides key business journey analytics such as transaction analytics, transaction volumetrics, transaction exceptions, proactive fraud monitoring
- Identifies newer revenue streams through merchant analytics and segmentation

- Optimizes payment environments
- Optimizes customer journeys
- Provides measurable view into customer experiences

3

Visualization through ML Driven KPIs

Transactions	User Experience Index (UEI)	Avg Turn Around Time (TAT)	Total	Decline	Decline %
					
PAY	9.03	355.48ms	4,08,169	33,413	8.19
COLLECT	3.55	106.16ms	31,714	13,382	42.08
DEBIT	9.19	1.61sec	1,030	49	4.76
CREDIT	9.41	1.28sec	4,837	33	0.68
Non Financial Transactions	7.75	1.32sec	5,09,100	10,182	2

- vuSmartMaps™ has built-in time series model capabilities for anomalies, prediction and alert prioritization
- vuSmartMaps™ visualization is enriched with automated insights that provides reasoning of the ML models
- vuSmartMaps™ comes with pre-packaged and custom ML models to enable KPIs such as User Experience Index (UEI), Operational Performance Index (OPI), and ISP Index; most AIOps tools in the market do not provide off-the-shelf KPIs to meet the needs of the business decision makers. Every business depends on UEI and OPI KPIs along with historical data analysis to provide insights about the future of operations on a timeline, highlighting the potential anomalies and suggesting possible remediation

4

Automation

- Most of the key practices in the DevOps evolution frameworks revolve around automation of IT Service Management (ITSM) tools, frameworks, configurations, infrastructure, systems of procedures (SOP) and scripts. vuSmartMaps™ platform is highly customizable to enterprise ITSM environments. The platform enables a phased approach of AIOps implementation targeting on specific applications and business workflows in each phase

- vuSmartMaps™ platform is built on hybrid lambda architecture that supports real-time streaming data base and long-term bigdata operational data store for the organizations
- vuSmartMaps™ platform provides direct OEM support for third party ITSM vendors
- vuSmartMaps™ platform supports and automates flexible deployment models – on-premise, hybrid or cloud

How to measure the ROI of your AIOps Platform?

Mike Stahnke, Vice President of Platform, CircleCI says “your firm needs to have some idea of what downtime costs. If you don’t, that is the right place to start.

Once you know the approximate cost of downtime, you can begin calculating the value of shrinking your downtime and increasing your uptime. Apart from actual transaction value, make sure you do your best to quantify improved user trust and confidence”.

Here are some operations metrics Mike Stanhnke tracks at CircleCI:

- 28-day rolling and/or seven-day rolling uptime
- Incident frequency
- Mean investigation time per incident (example: how long it takes to find out what went wrong)
- Percentage of services or capabilities with vulnerability-patching SLAs
- Cost per work unit (specific to the business goals)
- Developer throughput rate
- Deployment rate
- Rollback rate
- Conformance metrics (how close a service is to using the most desired configurations)

In addition to IT Operations metrics, every successful digitization tracks user experience score, TCO, business transactions visibility, end-to-end customer journey and pro-active operations monitoring.

Conclusion

As Kent Beck, author of Extreme Programming puts: **“The problem isn't change, per se, because change is going to happen; the problem, rather, is the inability to cope with change when it comes”.**

- Every enterprise has to transform through digitization, perhaps, not just once but multiple times. Covid-19 has accelerated the need for digital first
- As the urgency of digital transformation initiatives grows, so does the need for AIOps platforms
- VuNet's vuSmartMaps™ AIOps platform is best positioned to provide Unified Visibility across application, infrastructure and transaction for your organisation's needs of today and tomorrow
- There are a lot of AIOps products in the market; VuNet believes that there is a maturity curve to AIOps and a flexible, scalable, intelligent AIOps platform is the key foundation. Monitoring more than 2.5 billion transactions a month, across various verticals and some of the largest banking, financial services and insurance enterprises, VuNet's customers have realized the benefits with a phased approach to AIOps
- With the increased focus on digital user experience, VuNet's business journey mapping provides a common language to bring the business and operations group together and connect them to user experience



www.vunetsystems.com

VuNet Systems is an AI & Big Data analytics company revolutionizing digital transactions. vuSmartMaps™ is next generation full stack observability solution built using big data and machine learning in innovative ways to monitor business journeys and improve user experience. Monitoring more than 2.5+ billion transactions per month, the AIOps platform is improving digital payment experience, driving more financial inclusion across the country for several Banks and Payment Gateways.