AIOPS PERSPECTIVES

WINTER 2020

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Enabling Application Optimisation

The importance of proactive performance monitoring and analysis in an increasingly complex IT landscape

Editor's View

By Phil Alsop

AIOPS PERSPECTIVES: Making sense of complexity

WELCOME to what we believe is the first ever publication which acts as something of a guide to the world of AIOPS.

We won't claim it's comprehensive (it appears that the ancient adage: 'Beware of Greeks bearing gifts' holds true!), but we're confident that we've brought together an invaluable AIOPS information repository. There are Q and As with some of the major AIOPS players, a range of technology articles from a range of AIOPS vendors, and a round-up of plenty of recent news announcements – the latter, in particular, reflecting that the boundaries of AIOPS are far from clear-defined, but tend to blend with a range of other IT disciplines, including DevOps, more general monitoring tools and various other AI and automation fields.

We think that AIOPS as a self-contained discipline has much to recommend it and will develop as a major digital transformation technology over the coming years. Whether you are already an AIOPS convert and expert, or someone who is investigating the topic for the very first time, the AIOPS Guide will provide great educational value.

Our Digitalisation World media platform includes regular coverage of AIOPS, and we're also developing events and a dedicated AIOPS website to serve this space. So, if you are an end user, please make sure that you explore the AIOPS content we offer, not just via the AIOPS Perspectives guide, but right across Digitalisation World; and if you are an AIOPS vendor, then please do engage with us into the future.

The Guide is akin to dipping a toe in the water, but with the help of AIOPS end users and vendors alike, we know that it won't be long before we're making waves!

AIOPS PERSPECTIVES

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Contents

WINTER 2020

10 COVER STORY

Enabling Application Optimisation

The importance of proactive performance monitoring and analysis in an increasingly complex IT landscape

TECHNOLOGY FEATURES

NEWS

Q A

WITH PAUL BEVAN, RESEARCH DIRECTOR, IT INFRASTRUCTURE, BLOOR

AIOps - what's all the fuss about? In other words, what is it and why does it matter?

PB: AIOps is a set of tools covering all elements of IT operations…datacentre, network, endpoints, security and DevOps. It started from the need to be able to make sense, at pace, of the vast amounts of data being captured by monitoring and management systems. Now it is about providing ever increasing levels of automation that rely on various degrees of machine learning and artificial intelligence.

Put simply, there are a lot more elements to manage in an organisation's IT environment than even 5 years ago. Global connectivity to multiple channels. A mix of on premises, co-location and cloud-based systems. Different types of applications and services, some legacy, some brand new. Demands for ever increasing agility in developing and deploying new apps and services. Greater reliance on IT to deliver critical, customer facing revenue generating systems

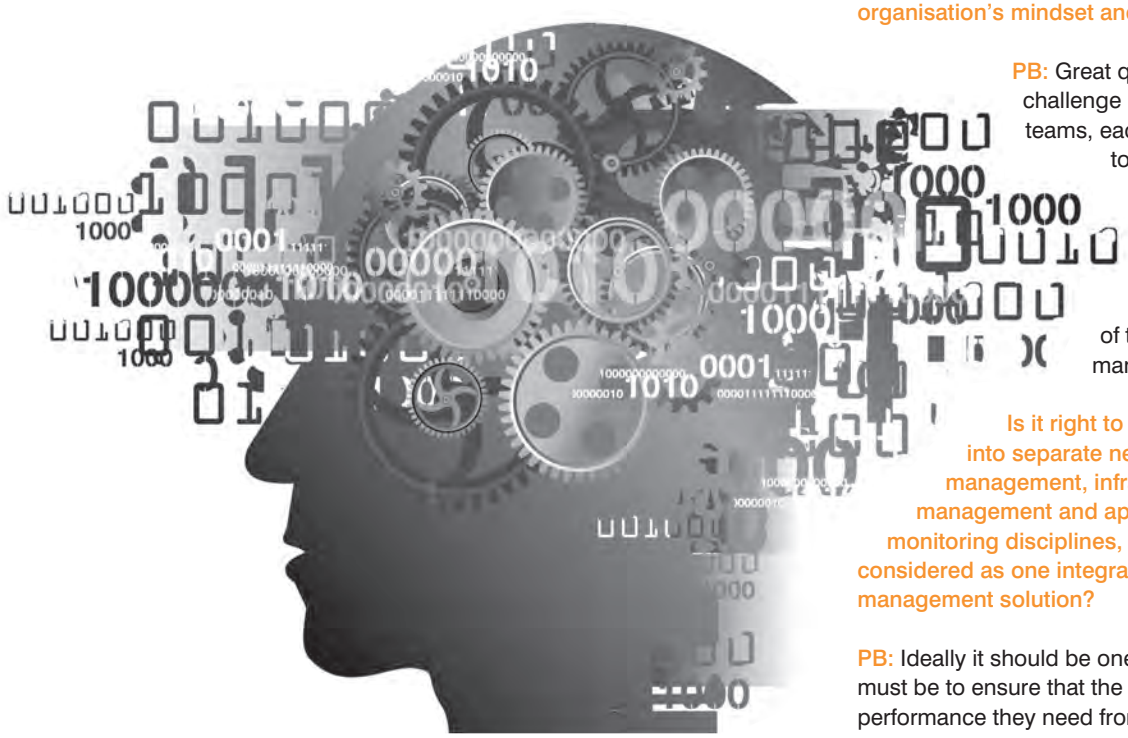
AIOps – does it replace existing technologies and approaches used to monitor and manage IT, or is it more of an add-on to what an organisation is already doing?

PB: In the sense that AI and Machine Learning are being applied to the data collected by existing monitoring technologies, then AIOps is an add-on.

In other words, are we talking evolution or revolution?

PB: I'd probably call it evolution at pace. The basic principles of deploying, monitoring and managing IT systems haven't necessarily changed. What has changed is the breadth and complexity of systems, the deployment cadence and the potential impact of failure. Some tool sets have evolved, but there has been a slew of new vendors with new offerings.

Bearing this in mind, how much is AIOps about the new breed of monitoring and management technology solutions and how much is it about an organisation's mindset and willingness to change?



PB: Great question. There is clearly a challenge in getting siloed operational teams, each with their own favourite tools to change and embrace a much smaller set of integrated solutions. Management needs to enforce the principle of having a single version of the truth…a manager of managers if you like.

Is it right to break down AIOps into separate network monitoring/ management, infrastructure monitoring/ management and application performance monitoring disciplines, or should AIOps be considered as one integrated monitoring and management solution?

PB: Ideally it should be one. After all the objective must be to ensure that the end user experiences the performance they need from the application or service

that they are using. I think the disciplines should merge…there will still be specialisms…but it is about what comes first and the need for both responsibility and accountability at the top level.

AIOps seems to cover a whole range of tools and solutions, ranging from the passive – this is what's happened, and maybe why; right through to the predictive or proactive – this is about to happen and here's what you need to do about it. What are the relative merits and drawbacks of the range of the available AIOps approaches?

PB: This depends very much on how an organisation views the risk and impact of performance problems or systems outages. If you are in the ad-serving business or financial trading the financial impact of poor infrastructure performance is immediate and severe. In that case you need to have real time monitoring and good predictive capabilities. Other applications might not be so critical and there will be more business tolerance to performance degradation and outages as long as IT Ops can get to the bottom of the problem and prevent it happening again.

In other words, how would you characterise the relative value in working through historical data as opposed to working with streaming, live data?

PB: Detailed root cause analysis v stopping things happening in the first place. The more you rely on IT to deliver your business value on a day to day basis, the more you will need to work with live streaming dad.

AIOps – primarily, it seems to be about the optimisation of an organisation's likely hybrid IT operations through better monitoring and management, but it can also offer valuable business insights at a more strategic level?

PB: The wealth of information being collected can be used for more effective capacity planning and also understanding what applications are likely to work well if migrated to the cloud. Also provides help on likely cloud costs.

So far, we've talked about what AIOps is, and isn't, and the value it offers to organisations which embrace this new approach to IT operations. Before we finish, let's look at how an organisation goes about acquiring AIOps technology. For example, what are some of the key questions to ask an AIOps vendor?

PB: Breadth of coverage. Data Ingestion… Implementation costs and on-going costs. Process/ flexibility for monitoring new technologies. Integration of acquisitions. Use of AI

And are there integrated, single vendor AIOps solutions available today, or is it more about acquiring two or three key pieces of software which together form the basis of an AIOps implementation?

> Stop stressing (and stressing about) AI. Think about how you get a single version of the truth. As an initial step you might want to think about deploying an AIOps solution that acts as an integration hub for all the various existing monitoring tools you have

PB: No, there aren't single vendor solutions that cover all aspects of the end-to-end infrastructure. Depending on the origins of the AIOps vendor you are likely to need one or two specialist, deep dive tools (like APM). I am also not convinced you can do without tools that have visibility into the performance of public networks. I'd like to think you could get away with about 3 tools…but it may be as many as 5 or 6 particularly as you need to consider security which we haven't really covered here. But with all the different development and deployment tools out there you might need to retain more specialist deep dive capabilities.

Bearing in mind that we've established the value of AIOps, where does an organisation start in terms of introducing AIOps into the business? With previous technologies such as virtualisation and cloud, it was possible to start with a single application in a test environment, before going more mainstream. AIOps would appear to be a bit more 'all or nothing'?

PB: I don't think this is any different. You will have a specific use case or issue that needs addressing. Might be using AIOps tools to help with developing and deploying container-based services in a continuous delivery cycle or you might have a new service or a new delivery infrastructure you want to monitor before rolling out more broadly.

Finally, are there one or two key pieces of advice you'd like to offer individuals and organisations who are approaching AIOps for the first time?

PB: Stop stressing (and stressing about) AI. Think about how you get a single version of the truth. As an initial step you might want to think about deploying an AIOps solution that acts as an integration hub for all the various existing monitoring tools you have rather than a larger solution that captures data at source and almost certainly overlaps some of your existing tools. Overtime this AIOps approach might allow you to retire some existing tools sets in a staged and consensually driven manner.

The new business landscape and AIOps – a perfect match

The IT world is fond of buzzwords and talk of the 'next big thing'. A few years ago, it was the cloud and SaaS, then machine learning and automation, and now you are probably hearing discussion of AIOps and the potential it holds. But what is AIOps? Will it really transform IT and if so, how?

BY DAVID CUMBERWORTH, MANAGING DIRECTOR, EMEA AND APAC, VIRTANA

AIOps is artificial intelligence for IT operations and yes, it stands to transform IT and operations massively. The deployment of AIOps lets infrastructure owners use a vast array of real time data, algorithmic insight and machine learning to get the very best from optimizing on private and public clouds and automating the way companies migrate applications and workloads to the cloud or next generation platforms. In this article, I will explore how that can be achieved, and how AIOps can be seamlessly integrated into all forms and combinations of data centre(s).

AIOps, the cloud and the data centre

The past few years have seen mass migration to the cloud, and it's now commonplace for an organisation to use cloud storage and cloud-based applications daily. Much of this data is held and managed in the public cloud (Azure, GCP, AWS, etc) and PaaS and SaaS providers. The public cloud is typically coupled with on premise infrastructure being managed by in house IT teams, third-party providers (System Integrators/MSP's etc) and colocation hosting providers. Hybrid clouds, which make up this mix of both on-premises and cloud arrangements are increasingly the way enterprise organisations consume IT.

The benefits of moving to the cloud are well understood; business agility, massive scale, ultimate flexibility and organisations not to be consumed with spending huge capex and opex to run their own data centres.

The widespread adoption of the cloud however and resulting hybrid cloud environments, has generated a highly complex IT landscape that now requires infrastructure owners to integrate, monitor and maintain multiple applications, infrastructures and locations simultaneously. Machine learning, and AI algorithms, now permit the automation of many routine tasks, but the management of this technology must also be incorporated into the organisation's IT domain, and this challenge will grow as the use of AI expands.

As the options for hybrid/public/on-premises data centres have proliferated, organisations have moved between them according to specific business needs. This means that cloud migration is not a one-time event. We read about significant reassessment of cloud consumption due to high costs, performance issues or simply, the migration of a very complex infrastructure to cloud/colo being too much of a heavy lift. As the cost models improve, technology such as containers making migration easier and increased agility the cloud provides, we will see continued migration to and from cloud for the foreseeable future.

For IT teams, multiple clouds and migrations result in a plethora of management paradigms and are extremely difficult to manage, let alone optimise. There are diverse hosts and/or applications being managed through a wide range of tools and accessed through different dashboards. These lack natural synergies and they are not context aware.

For example, if there is an outage in one silo and an application performance issue in the cloud the fact the tools cannot speak to each other requires a lot of manual intervention to try and root cause problems – which is a pity, because if those synergies could be realised, providing an overview of the entire IT infrastructure and its functioning from a single viewpoint, the business impact would be huge; reduced outages, increased productivity and the resulting positive revenue impact. Well, now such synergies can be realised – through AIOps – and the potential is indeed vast.

AIOps brings it all together

The evolution of IT, particularly in the last few years, has resembled that of the motor car. In its early days, the car was managed, driven and maintained by the owner, with input from a third-party specialist. Today, the car is driven by its owner, and still has attention from the specialist, but much of the process is augmented by an on-board computer that keeps it running and diagnoses faults.
AIOps gives infrastructure owners capabilities comparable with those of specialists working on modern cars who rely on tooling and diagnostics to highlight the problem; the machine augments the technician providing insight across all tiers of infrastructure, regardless of location or data centre type, via a single interface.

Using AIOps this way provides two key benefits: The ability to see all applications and functionality in real time and in context and allowing the organisation to pre-empt outages and issues that the AIOps algorithms detect, and to use AIOps real time analytics to optimise choices around operations and infrastructure and what application and workloads should be moved to the cloud, based on algorithmic insight and reliable predictions of future consumption.

The beauty of AIOps lies in its ability to cut through the 'noise' generated by the many moving parts of modern IT infrastructure, and show clearly what is working and what is not (or may not, in the future). This gives IT teams the power to predict and avoid outages based on historical data, to expedite and guarantee successful cloud migrations and to make real time decisions around workload and application placement. This, in turn, lets the organisation get the best from cloud capability, maximise data centre value for money and optimise infrastructure resource/capital spend.

Understandably, some are reluctant to throw an entire business behind this new concept straight away – although the signs suggest that AIOps, rather like driverless cars, will in time become the new normal. But a gradual introduction is in any case perfectly feasible – this capability can be applied across the board or used with a few initial applications and then scaled up in 'baby steps', according to business objectives.

In short, AIOps is no mere buzzword or 'next big thing', but a transformative step in the evolution of IT. And since it will make IT managers' jobs easier, more efficient and – hopefully – more appreciated, it is surely a step to be welcomed.

AIOps: The data lifeboat we've all been waiting for

While people are really good at detecting patterns, machines excel at detail, volume and analytics. The fact that Machine Learning (ML) and Artificial Intelligence (AI) technologies are becoming more sophisticated, has come at the perfect time.

BY STÉPHANE ESTEVEZ, EMEA PRODUCT MARKETING DIRECTOR, IT MARKETS, SPLUNK

ACCORDING to our recent research, 60% of organisations said the volume of data is already growing faster than their organisation's ability to keep up with it. When it comes to the challenges that some organisations experience in managing and leveraging this data, 85% said that one was the sheer volume available. New and emerging technologies - like 5G - will only make this worse. Despite being lauded for several years, the data age has well and truly arrived and without AI, businesses would truly be drowning in the amount of data currently being created.

Conventional approaches, tools and solutions were not designed in anticipation of the volume, variety and velocity of data generated by today's complex and connected IT environments. Instead, they consolidate and aggregate data and roll them up into averages, compromising the fidelity of data. That is where AIOps

comes in…A fundamental tenet of an AIOps platform is its ability to capture large data sets of any type, from across the environment, while maintaining data fidelity for comprehensive analysis. In short – AI can get that data to a place where those intelligent humans at the other end of it can genuinely derive actionable insights from that data and turn it into genuine business value.

What Problems Do AIOps Help You Solve?

One of the big differentiators for AIOps platforms is their ability to collect all formats of data in varying velocity and volume. The platform then applies automated analysis on that data to empower your IT teams to be smarter, more responsive and proactive—accelerating data-validated decisions. With an AIOps platform, you can:

- **Avoid costly downtime and improve customer satisfaction:** Better predict sources of downtime to proactively prevent and fix problems
- **Dissolve IT silos and siloed responses:** Gain value from data that's trapped in silos to reduce downtime through accelerated root-cause analysis and remediation
- **Eliminate tedious manual tasks:** Use automation to reduce inconsistency in response, eradicate errors that are hard to troubleshoot, and enable IT teams to focus more time and energy on analysis and optimization
- **Collaborate with your business peers:** Work together to demonstrate the business value of strategic organizational initiatives

What are Some of the Common Challenges with AIOps?

It's easy to think about these broad, top-line benefits to AIOps, but the key to realising these solutions is an understanding of the practical challenges that can arise when integrating AIOps into your business. Below are some of the most significant:

Making AI part of your culture – Unsurprisingly, the first step in great AIOps is to trust the decisions that your tools are providing. A common issue IT professionals have found is that so-called 'black box' machine learning systems don't give the necessary visibility on why AI has made a decision. It's therefore crucial that your platform runs on an 'open box' model that can justify algorithmically determined choices.

Integration with your legacy system – Many conventional tools tend to be unfriendly when it comes to integrating with new AIOps. The problem with this is that historic data is then lost in the modernisation process. Having to rely solely on recent data severely

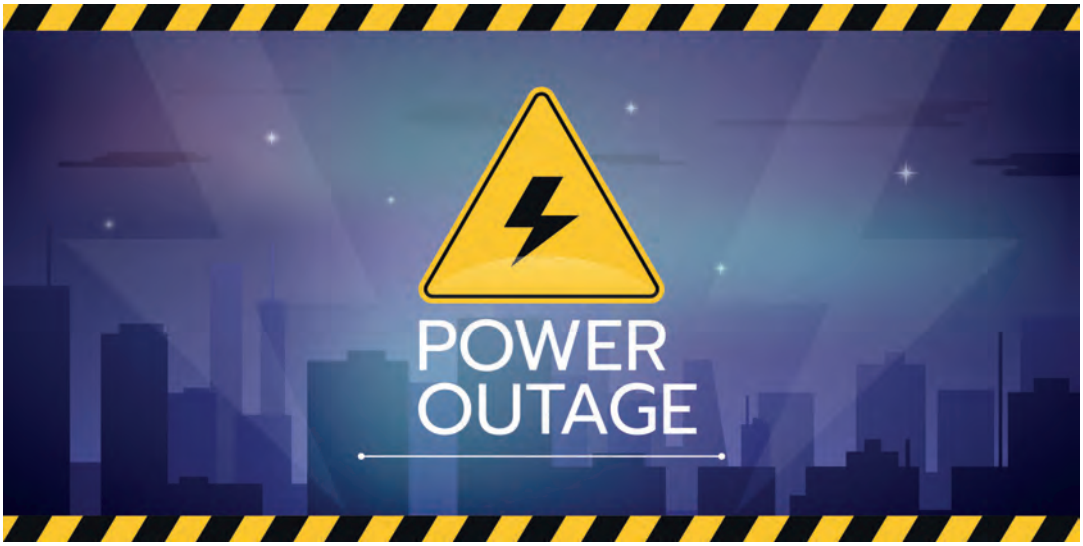
limits the depth of the insights your monitoring system generates. To avoid this, IT professionals must choose AI services that can incorporate both legacy and modern data with seamless accessibility.

Prioritising Data that Affects Stakeholders – Intertwined with the importance of legacy data is that this often includes tickets and issues raised by helpdesks. Not having access to flaws and incidents explicitly impacting upon the customer experience naturally affects your ability to improve that experience. Any good AI strategy means harnessing insights not just from your successes, but also your failures.

By marrying machine data with machine learning for classification, correlation, prediction and forecasting, pattern discovery, anomaly detection and root-cause analysis, any business can deliver a modern approach to AIOps and leverage it to bring intelligence to modern IT organisations. The result however is in making sure your teams are empowered to predict and prevent issues from ever arising and quickly solve operational disruptions in real time. Taking the plunge is not as scary when there is an AIOps shaped life raft in the data pool.

By marrying machine data with machine learning for classification, correlation, prediction and forecasting, pattern discovery, anomaly detection and root-cause analysis, any business can deliver a modern approach to AIOps and leverage it to bring intelligence to modern IT organisations

IT outages are a major challenge



BIGPANDA has revealed the results of an IDG Research survey conducted in the early days of the pandemic. The study explores challenges IT Ops, NOC, DevOps and SRE teams face as their organizations race to capture the digital-led market.

The results of the survey show that, in addition to managing complex and ever-changing IT environments with many different tools, teams are now plagued with an increasing volume of IT incidents and outages which results in customer churn and costly service outages.

"An influx of data from multiple tools, coupled with low levels of automation, can have a paralyzing effect on IT incident management processes," said Jen Garofalo, IDG's Research Director. "More than 40% of respondents indicate IT incident remediation is handled with a mix of manual and automated processes, while another 20% report these processes are mostly manual."

Complex environments lead to longer incident management cycles
Nearly one-quarter of respondents (22%) have 20 or more distinct IT teams supporting the different IT and business services at their organizations. On average, enterprises use 20 different monitoring and observability tools to detect potential issues with infrastructure, applications and services.

The average respondent reports that infrastructure is hosted in more than one location including on-premises infrastructure (60%), public cloud (57%), private cloud (47%) and commercial data centers (24%).

Nearly half of IT Ops professionals, 47%, said coordinating IT incident or outage detection, analysis, and response across siloed IT teams is the biggest challenge they face. Reasons why include:
More than 14,000 alerts are generated from IT monitoring tools on average, and nearly two-thirds of respondents (65%) report that alerts have increased in frequency over the past 12 months.

More than four in 10 alerts (44%) are caused by infrastructure or software changes made by someone in the organization who doesn't have visibility across all systems to understand the impact of their change.
Respondents report an average of 12 hours to determine the root cause of a P1 (major) incident.

Further, the survey uncovered the largest business impacts of IT incident management challenges, including increased operating costs (43%), delays in time to market (42%) and decreased IT Ops productivity (41%).

While all of this is happening, more applications are being built and put into production — nearly three-quarters of respondents (74%) expect Development/DevOps workloads to increase over the next 12 months, with 30% expecting a significant increase.

"For a variety of reasons, the COVID-19 pandemic is accelerating the pace at which enterprises are digitally transforming. This, in turn, increases the challenge facing IT Operations teams to keep their companies running smoothly," said Assaf Resnick, co-founder and Chief Executive Officer for BigPanda.

"The IDG report clearly shows that corporate executives are not just driving business teams to increase their digital footprint – they are doubling-down on IT's parallel effort to adopt AI and automation in order to support those new revenue-generating initiatives."

A majority of respondents (79%) expect budgets for IT Operations to increase over the next 12 months (34% significantly, 45% somewhat). This will be reflected in multiple areas including automating IT incident management, increasing communication/knowledge sharing and improving IT monitoring and event correlation, all of which were cited by more than 50% of respondents.

Meanwhile, most respondents have heard the term AIOps, and 44% are considering or already have a solution with AIOps in place. Those who are considering or already have a solution with AIOps in place are most likely to leverage it to automate IT incident response. Overall, respondents are most interested in the potential to leverage AIOps to accelerate IT incident and outage resolution.

In the end, the survey confirmed that modern and constantly evolving IT environments require a best-of-breed IT operations toolkit.

PARK PLACE

WITH PARK PLACE SYSTEMS

AIOps - what's all the fuss about? In other words, what is it and why does it matter?

The general idea of AIOps is a system that helps automate IT operations in an intelligent way, by taking advantage of data from many sources, finding correlations to help determine root cause of current/existing issues, predict future issues before they occur, and automate remediation/prevention of those issues, as well as automate general changes to the IT infrastructure to support business decisions. The entire purpose being to help IT operators make better informed decisions, reduce MTTR and increase MTBF, lower operational costs, and optimize the IT infrastructure in support of business strategy.

In the utopian solution, an operator would simply ask questions about status or make requests regarding changes / fixes, and the system would be able to respond and/or make the necessary changes, as appropriate using fully fledged AI. However, we're some way off that yet.

In the meantime, todays analysis tools are improving to help us make sense of the vast amount of data, and help us spot correlations, anomalies and trends, which we can then use to trigger alerts or automated scripts and anticipate future issues. Park Place is already taking steps to this end, by combining monitoring tools and data analysis tools to identify likely device failures before they occur, and back this up with best-in-class TPM to swap out flagging kit before it fails. Further, through the use of dynamic baselining across a wide range of OEM storage, server, and networking hardware, Park Place has reduced alerts routed for action by over 95% creating significant operational efficiencies.

AIOps – does it replace existing technologies and approaches used to monitor and manage IT, or is it more of an add-on to what an organisation is already doing?

Right now, it's an add on, or rather an integration of several tools. No one system does it all.
Ultimately several technologies may merge into a more complete solution but, for now, the all-in-one AIOps doesn't exist – it's just too broad.
Some generic tools (like Moogsoft) aim to provide the core analytics platform, but still rely of 3rd party tools to feed them data and push out changes, as well as provide domain specific knowledge – as not everything can be handled generically just yet.

In other words, are we talking evolution or revolution?

Evolution, for the foreseeable future. Small steps to improve operational insights, control, remediation. One day the system may be good enough to drive a revolution. But we're still a long way off.

Bearing this in mind, how much is AIOps about the new breed of monitoring and management technology solutions and how much is it about an organisation's mindset and willingness to change?

It's both. The tools need to continue to improve significantly. But organisations are naturally resistant to change. Not that they don't want to, but wanting and doing are different things. No one has yet come up with a clear "This is how to do AIOps". Organizations need to have (be given) a clear plan to implement AIOps, and be convinced the investment is going to pay off. Today there's still a lot of hype and resulting scepticism. There needs to be more concrete successes stories, demonstrating real benefits to real world issues.

Park Place is one of those companies investing in this area, and working on being one of the success stories.

Is it right to break down AIOps into separate network monitoring/management, infrastructure monitoring/management and application performance monitoring disciplines, or should AIOps be considered as one integrated monitoring and management solution?

Ultimately, it should be one, fully integrated system – as each part of the IT system has dependencies and, therefore, impact on the other parts.

However, that's not to say that there aren't benefits in tackling the problem in smaller parts, in the absence of the complete solution. And this, in fact, is more tangible and easier to implement for many right now.

AIOps seems to cover a whole range of tools and solutions, ranging from the passive – this is what's happened, and maybe why; right through to the predictive or proactive – this is about to happen and here's what you need to do about it. What are the relative merits and drawbacks of the range of the available AIOps approaches?

Clearly, both have value. However, put them together and you get even greater value, as the historical can be used to derive the logic needed for the predictive/ proactive. There's a third dimension, which is correlating similar data across components of similar types / across multiple independent infrastructures, to find commonalities, i.e. a problem from one could well indicate the same problem for another, if they share certain key characteristics. This is what Park Place Technologies are doing by using the historical data, across multiple sources, to determine sensible baselines for different equipment which is then used to compare with real-time monitoring data, to detect anomalies.

In other words, how would you characterise the relative value in working through historical data as opposed to working with streaming, live data?

They're both important but depends on the goal. Historical data is critical to establishing the expected range of operation for individual data points, and over time this enables more intelligent and efficient alert processing. Live, or streaming data provides insights into performance trends that in turn result in scheduled maintenance and reduced downtime.

AIOps – primarily, it seems to be about the optimisation of an organisation's likely hybrid IT operations through better monitoring and management, but it can also offer valuable business insights at a more strategic level?

Agreed. That's the state of play today. Perhaps one day, much further down the line, the system will be able to answer questions and implement changes based on specific or even general requests and policies, using natural language UI.

So far, we've talked about what AIOps is, and isn't, and the value it offers to organisations which embrace this new approach to IT operations. Before we finish, let's look at how an organisation goes about acquiring AIOps technology. For example, what are some of the key questions to ask an AIOps vendor?

1. What exactly is it your software does, Mr Vendor?
2. What specific use cases does your technology help me solve?
3. What are the pre-requisites in terms of data input, hardware, etc.
4. How difficult is it to use the tool? Do I need a bunch of Data Scientists, and code engineers to configure it for specific use-cases / issues, or is it automatic? If the latter, prove it!
5. How does it integrate with other tools?
6. How extensible / configurable is it to support my specific business model/goals, both now and in the future?

And are there integrated, single vendor AIOps solutions available today, or is it more about acquiring two or three key pieces of software which together form the basis of an AIOps implementation?

I'm not aware of any single AIOps solution. It currently requires several tools, plus a whole bunch of internal effort to set it up and configure it to achieve the desired effect – one use case at a time – possibly an ongoing effort.

Bearing in mind that we've established the value of AIOps, where does an organisation start in terms of introducing AIOps into the business? With previous technologies such as virtualisation and cloud, it was possible to start with a single application in a test environment, before going more mainstream. AIOps would appear to be a bit more 'all or nothing'?

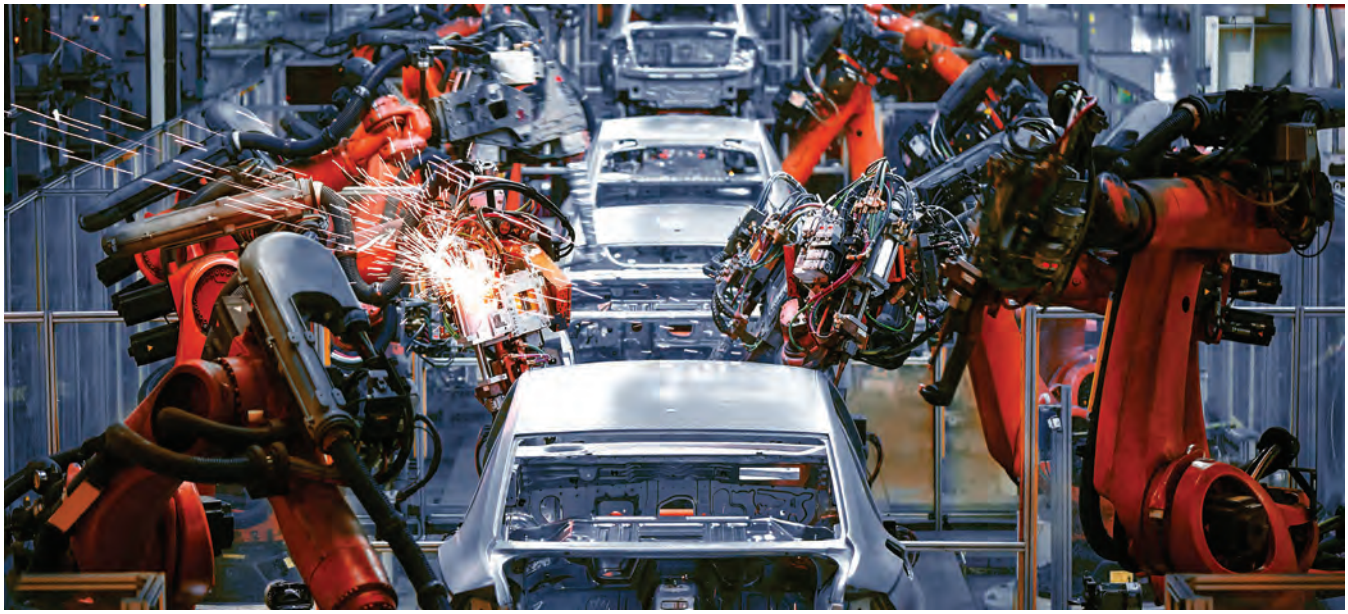
I don't think it's all or nothing. The system can be built up in parts, to add value. Then as the system evolves, bring the pieces together to form a more encompassing system. Identify critical, high value use-cases and the common (or most time consuming) issues, and focus on them. Select tools that can collect and provide the necessary data and combine them with tools to analyse that data to help tailor the system to alert on those use cases/ issues going forward, and additionally tools to help operators automate the best course of action.

Finally, are there one or two key pieces of advice you'd like to offer individuals and organisations who are approaching AIOps for the first time?

Just leave it to Park Place. We'll do it for you

Note:
ENA is not an AIOps solution in of itself, but it's well placed to form part of an AIOps solution by providing:

- Deep and broad, vendor-neutral network data – both near real-time and historical, to feed AIOps data lakes and analysis tools
- Powerful events processing – to filter noise and only raise important incidents
- Domain knowledge and expertise – built into event rules, SurePath analysis, data normalization.
- Dynamic baseline capability – for anomaly detection
- Configuration Management framework – offering a chance to push system changes and deliver auto-remediation
- Integrations with key tools – Moogsoft, Splunk, Slack, more.
- REST API – for access to data and control of the ENA system, essential for seamless integration with other in-house/3rd party tools to form an overall solution.



Bringing AIOps to life through people, process, and technology

In many ways, AIOps feels like it should be an easy sell to IT teams. Certainly, we are in an age when the idea of adding a layer of artificial intelligence to existing processes to make them more useful, efficient, or responsive is commonplace, and it makes intuitive sense that IT operations is an area where AI should be able to deliver real benefits.

BY WES COOPER, GLOBAL PRODUCT MARKETING MANAGER, IT OPERATIONS MANAGEMENT, MICRO FOCUS

IN PRACTICE, those benefits are clear and distinct. Reducing manual workloads has probably never been more important. As remote working increases the pressure on infrastructure, the environments that users work in become more diverse, which adds complexity to the process of remediating issues.

The man-hours that IT teams have available to them are therefore more critical than ever. For the same reasons, reducing the mean time to repair now has greater financial benefits for the business than ever. All of this, of course, merely accelerates a pre-existing trend where the need to give people the capacity to focus on higher-value work has been hugely important. Implementing sophisticated machine learning to automate routine processes in a robust and trustworthy way is a promising offer.

The simple word ‘implementing’, however, hides a lot of work behind it. From the perspective of the people introducing and working with AIOps, it would be a mistake to see the task as one of plugging an additional piece of software into a given process. In practical terms, this only adds more tools and does nothing to reduce the growing complexities or costs associated with managing modern IT Operations.

This approach might ease the burden of certain tasks. However, in a world where enterprises rely on a broad and diverse set of tools for their daily business, each

of which is likely to provide its own idiosyncratic monitoring and management solution, additional layers of process are the last thing we need.

At the same time, though, IT teams don't tend to change their monitoring tools very often; daily routines become deeply ingrained, and there can be significant inertia attached to existing ways of working.

Rather than a piecemeal approach which dips a toe in the water of AIOps, then, businesses should be looking at laying the proper organisational groundwork which will ultimately deliver a thoroughly AI-driven approach to IT Operations – and sizable enough benefits that team members will readily rethink their routines.

As a starting point, this groundwork should cover three important factors. First, data needs to be made observable. Data domains exist not just across different tools and systems with different silos, but across distinct IT estates, both in the cloud and on the premises. Rather than relying on manually-built data connections, which can all too easily miss changes in the infrastructure, teams must ensure that an automated discovery and monitoring system is in place, maintaining awareness of how data and devices are behaving.

Second, those pipelines need to allow for data consolidation and analysis. Once data is located, the system will need to be able to understand what it is in order to analyse and manipulate it. This can be a challenge, especially in environments where very different kinds of data (such as structured statistical data, human-readable plaintext, and video) is generated in high volumes. The key is to anticipate diversity and cast a wide net to begin with, rather than setting teams up for manual configuration headaches further down the line.

Finally, the analysis needs to be able to trigger automated problem resolution. A minimal version of AIOps monitors and analyses IT estates to flag issues which may require resolution, but the full benefits are unlocked when human operators can be taken out of the loop entirely. Establishing a context where AIOps can directly and automatically resolve issues will involve different challenges for different businesses – assessing these up-front will deliver better returns when AI systems are ultimately implemented. The task of laying this groundwork might, perhaps, not be as easy a sell as the end goal for AIOps initiatives is. Nonetheless, starting at this level is a chance to properly align people, process, and technology across the entire organisation, and maximise the chance of a truly successful AIOps deployment.

Moogsoft focuses on Cloud AIOps structure

AIOPS PIONEER drives vision for the future of 'AIOps Everywhere' with rapid-deployment and self-service model. Moogsoft has introduced its new cloud AIOps architecture and product vision, focused on delivering agile and scalable AIOps to companies of all sizes.

As part of this vision, the company is unveiling the results of its investment in a rapid-deployment and self-service model for delivering advanced AI and ML at scale to existing and new customers. This includes the creation of an entirely new architecture based around the latest developments in modern microservices and cloud-based technologies.

As every business embraces a fully digital future, organizations of all sizes increasingly rely on digital infrastructure, and in turn, on DevOps and SRE teams to operate business-critical digital services. To best serve this accelerated evolution towards a digital economy, Moogsoft will increase its focus towards a scalable, self-service architecture and model that allows both new and existing customers to quickly deploy and see value from observability using AIOps. "Moogsoft recently introduced the first dedicated DevOps solution in the AIOps market," said Dennis Drogseth, Vice President, Enterprise Management Associates. "This innovation helps enable DevOps and SRE teams across organizations of any size to gain greater visibility and control over service assurance, and ultimately to spend more time developing innovative services." Moogsoft is empowering customers to accelerate the adoption of AIOps by allowing them to self-provision and self-service, including the ability to build their own integrations to anything, anywhere. This is required for any self-servicing AIOps platform to realize rapid value in minutes and hours, rather than months and years.

"Every business is currently accelerating its digital transformation, and seeking solutions like AIOps to help tackle the complexity and scale of operating digital services, while continuing to innovate," said Moogsoft Founder and CEO Phil Tee. "It's clear from this shift that the market needs a highly-scalable and agile observability and AIOps platform. We have addressed this need by accelerating our roadmap to deliver DevOps and SRE teams a self-service solution from which to rapidly deploy and automate observability across all their services."
Tee concluded, "I am excited to see the realization of a project two years in the making to re-platform our 50 patents and leading edge technology for the new age. This move will send shockwaves through the AIOps community."

The Moogsoft AIOps Platform
Moogsoft is a cloud-native AIOps offering with native observability capabilities that helps DevOps and SRE teams deliver continuous service assurance. This SaaS solution features intelligent noise-reduction, alert correlation, and native observability capabilities, including metrics collection and anomaly detection. It also offers out-of-the-box workflows and integrations with notification and alerting tools, helping DevOps teams resolve incidents quicker and meet service level agreements (SLAs) with their customers.

Moogsoft partners with Orange Business Services in the Americas

MOOGSOFT and Orange Business Services, a network-native digital services company, have formed a new partnership in the Americas to streamline incident management and help prevent outages for Orange enterprise customers. A new virtual network operations center (NOC) solution based on the Moogsoft AIOps Platform allows IT teams within Orange customers' organizations to operate virtually and collaboratively.

AIOps helps customers proactively understand incidents and their root causes, and ensure uptime. This virtual option is paramount with the shift to extensive remote working.
"The pandemic has driven a near-complete reliance on digital services to keep enterprises thriving, at the same time disrupting the ways in which IT operations teams work together to maintain these services and build new ones," said Rob Willcock, President of the Americas, Orange Business Services. "The Moogsoft AIOps Platform's unique virtual NOC gives our customers advanced collaboration capabilities to allow their remote IT workforce to address situations quickly, ensure business continuity and optimize operational efficiency."

Orange Business Services will combine the Moogsoft AIOps Platform with both its IT transformation and Digital and Data expertise to deliver its global customers a single-pane-of-glass from which to efficiently identify, understand and address incidents from across multiple sources, including metrics, alerts, traces and logs. By applying deep knowledge of its customers' operational needs, Orange Business Services can quickly help virtualize its customers' global NOCs using the patented Moogsoft algorithms and collaboration tools, ultimately providing an even better user experience. The unique, combined approach of digital transformation expertise with AIOps capabilities ensures customers a rapid and smooth transition to a new way of remote IT work by consolidating visibility and control. Using the Moogsoft Situation Room, teams can leverage AI and machine learning-powered automation to quickly identify and resolve IT incidents and focus on innovation instead of fighting fires.

"Orange Business Services has created an impressive IT Transformation practice that aligns its intimate knowledge of clients' IT environments and business needs with the very best in IT operations and service management technology," said Moogsoft founder and CEO Phil Tee. "Through the Moogsoft AIOps Platform, Orange adds a layer of advanced automation for solving potential problems with remote IT operations."

AIOps: The future of IT monitoring

Today's IT infrastructures are defined by their complexity. Organisations in the IT sector must support infrastructure in multiple clouds, on-premises, the connections in between and Software-as-a-Service (SaaS) applications.

BY DANIELA STRENG, VP AND GM EMEA, LOGICMONITOR

THE KEY to managing these complex environments effectively is through monitoring across the entire IT infrastructure, so that IT teams can spot issues before they become major problems that can result in downtime. However, this is no simple task.

Exacerbating this issue is the exponential growth in data volumes generated by infrastructure and applications that must be captured, analysed, and used to improve business processes. When organisations fail to maintain visibility across the IT infrastructure, they are blind to issues that might arise in their environments, leading to downtime and poor performance.

Even before the current pandemic, IT infrastructure performance was a vital part of customer satisfaction and retention. After all, if a customer is prevented from using a rideshare app, food delivery service, or fintech platform, they will simply choose a competitor that can provide the service they are looking for. This home truth has never been starker following COVID-19, as isolation measures have shifted many customer interactions online. As the world's reliance on IT infrastructure accelerates, and the complexity of these infrastructures is ever-increasing, IT teams must look to transformational AIOps in IT monitoring to maintain company IT performance.

The future of IT lies in AIOps

AIOps is a term coined by Gartner that refers to the use of artificial intelligence (AI) in the process of IT operations (Ops). AIOps technology combines data science and machine learning (ML) to identify, troubleshoot and resolve issues developing in the IT ecosystem. Traditionally, AIOps involves automation and has the capacity to reduce manual work for stretched IT teams. At the heart of AIOps lies the ingestion of the big data, followed by a historical analysis of stored data or real-time analysis of ingested data, to determine its behaviour.

Through ML, AIOps can perform procedures based on analytics drawn from these pools of data. This

allows monitoring solutions with AIOps capabilities to initiate and complete tasks that would otherwise have been a labour-intensive drain on the IT team. Amid the increasing complexity of IT environments, the advantages to an AIOps-enhanced approach in IT operations are becoming clear to industry leaders. Gartner, for example, predicts that large enterprise use of AIOps and digital experience monitoring tools used to monitor applications and IT infrastructures will increase to 30 percent by 20231. Gartner further predicts that the global AI-derived business value will reach nearly $3.9 trillion by 20222.

An asset to IT monitoring

AIOps capabilities can process and analyse data in a timeframe far beyond the limits of a human team. This allows AIOps-enabled monitoring solutions to evaluate vast and complicated IT environments, while communicating issues to teams in a precise, actionable way. Instead of poring over every nook and cranny of the modern IT environment, IT teams can entrust a monitoring solution with AIOps functionality to keep unblinking watch.

Intelligent monitoring platforms that use AIOps capabilities can easily correlate troves of information for the IT team. This includes infrastructure and application data, such as the data from monitoring systems and logs from intelligent application and service monitoring (IASM) tools, IT service management (ITSM) data, such as tickets, change controls and asset information, as well as business system data. By automating this data analysis, AIOps provides the data-validated insights IT teams need to make smarter, quicker decisions. AIOps has enabled enterprise organisations to reduce costs, optimise resource utilisation and capacity, identify threats and performance anomalies sooner, resolve issues faster, and, in general, better understand and act on operational challenges. Beyond helping IT teams contextualise and prevent issues that may result in IT downtime, AIOps can produce real business strategy value. Indeed, any decision that relies upon evaluating pools of data – which is most decisions in a business setting – can be better informed through the use of AIOps.

A futuristic necessity

As a technology, AIOps is still emerging. However, as IT infrastructures inevitably become more complicated and the value of data further increases, this technology will become a necessity for companies even far beyond the IT sphere. There are few areas in which AIOps will prove more important than in IT monitoring, as today nearly every facet of company operations relies upon the smooth running of the IT environment. After all, companies that show themselves to be liable to preventable outages will soon fall behind their competitors in customer retention.

Further reading

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Look Mum, NoOps! Embracing the next evolution of IT operations

Today's customers expect a constant stream of 'new' applications and digital service experiences, and so companies everywhere are transforming into software businesses to meet those demands.

BY MICHAEL ALLEN, VP & CTO EMEA, DYNATRACE.

THIS TREND has an even greater importance now, as the world battles with the current crisis, with digital services the primary link many of us have with the outside world – both professionally and as consumers.

Innovating at the rapid speed needed to meet these demands requires agility within IT operations, and almost all organisations are using the cloud in some capacity to achieve this. However, the cloud's dynamic nature has also led to a surge in complexity, with 76% of IT professionals stating this as the biggest barrier to productivity among operations teams. IT teams spend enormous amounts of their time piecing together metrics and alerts to 'keep the lights on', as they struggle to manually capture everything happening in their IT environment using traditional performance management approaches. This eats into the time IT teams could be spending developing and delivering new, value-added services to the end-user. It's also especially challenging in the current situation as the majority of business and IT teams work remotely and are stretched more than ever. However, an automated

approach to IT operations, known as NoOps, offers an attractive alternative for IT leaders, enabling them to run IT operations autonomously, so remote IT teams can develop and deploy new functions and services faster and with less friction.

The journey to NoOps

NoOps is the concept of an IT environment whereby the use of automation and AI-assistance radically reduces operations staff. While this is especially attractive in the current crisis, as it reduces the need for employees to be physically present, NoOps is also crucial to improving IT operations in the longer term. Essentially, it's driven by looking at what could potentially go wrong, taking steps to proactively prevent that through automation.

However, this can only be achieved if businesses have a solid CI/CD toolchain in place with AIOps fully integrated into their ecosystem. With this approach, AI is used to analyse and triage monitoring data at a higher volume and faster speed than could ever be achieved manually. This uncovers precise answers and detailed performance insights, in real-time, creating a stream of software intelligence that makes sense of the endless alerts. This can then be used to trigger the automated responses that are at the heart of NoOps.

However, baking in automation and self-healing to create a continuous delivery process has some – including Mike Gualtieri, the Forrester analyst who coined the term NoOps – speculating if this will spell the end for DevOps. Their argument is that NoOps eliminates the need for developers to collaborate with operations, which may lead to a decline in ideas that drive innovation and help to maintain seamless user experiences. Unsurprisingly, this theory can lead to resistance from DevOps teams to embrace the NoOps approach, as they worry they will become redundant.

This isn't the 'end' for DevOps

Contrary to what its critics profess, NoOps is far from the 'end' for DevOps and more akin to its next natural evolution. With DevOps, operations teams apply development practices such as version control, scripting and automation to address potential performance issues. With NoOps, it's like the inverse, as developers begin to think like operations teams. The result is operations teams can work in tandem with developers towards the common goal of driving innovation for the business and its end-users. DevOps teams will therefore no longer find themselves working at half power towards the goal of creating new services, as the other half of their team is occupied with 'keeping the lights on'.

For organisations that achieve NoOps, it will be the biggest transformation of software delivery processes since the emergence of DevOps. We'll begin to see DevOps evolving to align closer to the needs of the modern business, as organisations embark on the journey to autonomous cloud operations. This is far more suited to the current climate, where stretched IT teams must achieve a faster pace of innovation, as problems are fixed automatically in the development phase, speeding up the delivery of new software experiences to the business and its customers.

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Understanding the NoOps approach

While organisations may recognise the benefits NoOps can bring, it can still be difficult for them to get DevOps teams on board. However, having the full support and commitment from those who will be involved in the shift to NoOps is crucial to success as it requires a fundamental transformation in how teams think and operate. Giving DevOps teams a more concrete idea of how NoOps will benefit them can dispel concerns that there will be no more need for collaboration between developers and operations. Businesses should therefore embark on an education process to ensure teams are clear about how their roles will evolve, they're comfortable with the tools that will be available to them and are happy about working with a shared goal in mind.

For developers, this involves informing them of how NoOps can remove bottlenecks, as they won't have to spend time in a cycle of debugging to figure out where things went wrong with their code. For operations teams, IT leaders should highlight how NoOps can help them elevate their role within the organisation and take a more active role in driving innovation. Operations teams will no longer have to spend time on tasks that simply 'keep the lights on', instead they will be focussing on value-added activities – such as continuous deployment and innovation.

Embracing the evolution

As the scale and complexity of the cloud continues to grow, and organisations are also now busy working through the unprecedented situation the current crisis has created, businesses need to find a way to help their DevOps teams sooner rather than later to make sense of their IT environment and NoOps is the key to this. Those who implement it successfully will be able to supercharge innovation and deliver new, high quality services to end-users faster than ever before.

Volume and value of data increasing exponentially

SPLUNK has published the results of new research that explores how prepared organizations are for the beginning of the Data Age. Two-thirds (67%) of those surveyed expect the sheer quantity of data to grow nearly five times by 2025.

The research shows that leaders see the significant opportunity in this explosion of data and believe data is extremely or very valuable to their organization in terms of: overall success (81%), innovation (75%) and cybersecurity (78%). The report is titled: The Data Age Is Here. Are You Ready?

The report, built using research conducted by TRUE Global Intelligence and directed by Splunk, surveyed 2,259 global business and IT managers from the U.S., France, China, Australia, U.K., Germany, Japan and the Netherlands. The vast majority of survey respondents (81%) believe data to be very or highly valuable yet the majority (57%) fear that the volume of data is growing faster than their organizations' ability to keep up.

"The Data Age is here. We can now quantify how data is taking center stage in industries around the world. As this new research demonstrates, organizations understand the value of data, but are overwhelmed by the task of adjusting to the many opportunities and threats this new reality presents," said Doug Merritt, President and CEO, Splunk. "There are boundless opportunities for organizations willing to quickly learn and adapt, embrace new technologies and harness the power of data."

The Data Age has been accelerated by emerging technologies powered by, and contributing to, exponential data growth. Chief among these emerging technologies are Edge Computing, 5G networking,

Internet of Things (IoT), Artificial intelligence and machine learning (AI/ML), Augmented and virtual reality (AR/VR) and Blockchain. It's these very same technologies that nearly half (49%) of those surveyed expect to use to harness the power of data, but across technologies, on average, just 42% feel they have high levels of understanding of all six.

To thrive in this new age, every organization needs a complete view of its data — real-time insight, with the ability to take real-time action. But many organizations feel overwhelmed and unprepared.

The new study from Splunk and TRUE Global Intelligence quantifies the emergence of a Data Age as well as the recognition that organizations have some work to do in order to use data effectively and be successful.

- Data is extremely or very valuable to organizations in terms of: overall success (81%), innovation (75%) and cybersecurity (78%).
- And yet, 66% of IT and business managers report that half or more f their organizations' data is dark (untapped, unknown, unused) - a 10% increase over the previous year.
- 57% say the volume of data is growing faster than their organizations' ability to keep up.
- 47% acknowledge their organizations will fall behind when faced with rapid data volume growth.

The study quantifies the emergence of a Data Age and the adoption of emerging technologies across industries, including:

- Across industries, IoT has the most current users (but only 28%). 5G has the fewest and has the shortest implementation timeline at 2.6 years.
- Confidence in understanding of 5G's potential varies: 59% in France, 62% in China and only 24% in Japan.
- For five of the six technologies, financial services leads in terms of current development of use cases. Retail comes second in most cases, though retailers lag notably in adoption of AI.
- 62% of healthcare organizations say that half or more of their data is dark and that they struggle to manage and leverage data.
- The public sector lags commercial organizations in adoption of emerging technologies.
- Manufacturing leaders predict growth in data volume (78%) than in any other industry; 76% expect the value of data to continue to rise.

The study also found that countries seen as technology leaders, like the U.S. and China, are more likely to be optimistic about their ability to harness the opportunities of the Data Age.

- 90% of business leaders from China expect the value of data to grow. They are by far the most optimistic about the impact of emerging technologies, and they are getting ready. 83% of Chinese organizations are prepared, or are preparing, for rapid data growth compared to just 47% across all regions.
- U.S. leaders are the second most confident in their ability to prepare for apid data growth, with 59% indicating that they are at least somewhat confident.
- In France, 59% of respondents say that no one in their organization is having conversations about the impact of the Data Age. Meanwhile, in Japan % say their organization is struggling to stay up to date, compared to the global average of 58%.
- U.K. managers report relatively low current usage of emerging technologies but are optimistic about plans to use them in the future. For example, just 19% of U.K. respondents say they are currently using AI/ML technologies, but 58% say they will use them in the near future.

WITH ALI SIDDIQUI, CHIEF PRODUCT OFFICER, BMC

AIOps - what's all the fuss about? In other words, what is it and why does it matter?

In essence, AIOps combines AI, ML, and big data analysis to improve IT operations (IT Ops). It does this by intelligently and autonomously spotting issues - in some cases fixing them in real time. This greatly supports a business' need for speed, agility, and increased efficiency, while also ensuring performance and improving customer experience.

Why do they need this? IT Ops teams are faced with mounting and varied challenges. These span from managing the huge increase in operational data volumes that have scaled far beyond any human capacity to handle; to increasing complexity of IT environments; to competing with the speed and agility pressures posed from digital transformation itself. These high frequency app releases may come from Development but the performance and management responsibilities fall on IT Ops.

In short, for IT Ops to stand any hope of succeeding in the future there needs to be an evolution toward intelligent autonomy, hence AIOps.

AIOps – does it replace existing technologies and approaches used to monitor and manage IT, or is it more of an add-on to what an organization is already doing?

Businesses' digital infrastructures and requirements are becoming ever more complex. AIOps is a tool to help keep track of, manage, streamline, and automate these disparate and expanding workflows – modernizing, speeding up, and automating those existing processes with ML and analytics. AIOps can assist in many ways, spanning event noise reduction, predictive alerting, probable cause analysis, and capacity analytics. Yes, some legacy tools may become obsolete but it is certainly an additional – and vital – function rather than a replacement.

In other words, are we talking evolution or revolution?

It is the natural evolution and convergence of IT operations infrastructure that will cause a business revolution once it reaches maturity.

Bearing this in mind, how much is AIOps about the new breed of monitoring and management technology solutions and how much is it about an organization's mindset and willingness to change?

It's really about both. It's about a mind set and willingness to change in terms of modernizing those traditional monitoring and event management processes, and also adopting these new breeds of technology solutions to do that.

Some IT organizations have been scared off by thinking that they need to invest in data scientist skill sets or staffing up teams with people with data science degrees. This isn't the case - all the intelligence should be in the solution, it should be built in. They just need the operational skill sets in order to manage it and strategically take advantage of the rich actionable insights AIOps can deliver.

Part of the responsibility here actually lies with the industry. We need to make it more tangible and the

value realization clearer. At the moment, it often comes across as quite abstract and esoteric, and companies just don't have the IT budget to invest where there is not a clear path to realizing tangible benefits.

Is it right to break down AIOps into separate network monitoring/management, infrastructure monitoring/management and application performance monitoring disciplines, or should AIOps be considered as one integrated monitoring and management solution?

At BMC we think an integrated solution is best. For something to be seen as a 'true' AIOps solution it needs to cover the three key areas of Observe (monitoring), Engage (linking ITSM and ITOM processes) and Act (for Automation). It needs to be able to detect, analyze, and act all in one solution rather than piecemeal. This holistic approach is better for AIOps as IT organizations are working across extremely complex, hybrid environments – so it's not only more expensive to be piecemeal, but it can quickly become unmanageable too. Additionally, the value of the solution increases with the amount of cross-silo data that you can observe.

AIOps seems to cover a whole range of tools and solutions, ranging from the passive – this is what's happened, and maybe why; right through to the predictive or proactive – this is about to happen and here's what you need to do about it. What are the relative merits and drawbacks of the range of the available AIOps approaches?

Often companies will start with the passive (i.e. what can we learn), but to get the full value you need to become proactive and predictive. A good AIOps platform should support that. Yes, the historical data is certainly part of it – it's essential to know what happened, what is the normal course of action, what is normal behavior, and what is abnormal behavior.

But where you see the true value is when you move to becoming predictive and proactive. After the machine has been trained to monitor and predictively alert, you can proactively trigger automated remediation. This way you can address issues in your environment before any service impact, or before the end user even knows about it or experiences a decrease in availability or performance of their systems. That remediation part is how you close the loop in AIOps.

In other words, how would you characterize the relative value in working through historical data as opposed to working with streaming, live data?

You really do need both. In order to do ML you need the historical data for pattern learning. Once you're able to identify patterns and understand system performance you can identify anomalies in current real time data and respond in a timely way.

AIOps – primarily, it seems to be about the optimization of an organization's likely hybrid IT operations through better monitoring and management, but can it also offer valuable business insights at a more strategic level?

Yes, as AIOps adoption grows and evolves in maturity, it does have the potential to offer strategic insights. A good example of this is in the capacity optimization area. When looking at things like capacity management optimization, the system is analyzing historical data then making projections and forecast models.

By understanding capacity metrics and workload patterns, you can predict resource saturation points, perform what-if simulations, and recommend and perform optimization actions that lower overall IT infrastructure costs.

So far, we've talked about what AIOps is, and isn't, and the value it offers to organisations which embrace this new approach to IT operations. Before we finish, let's look at how an organisation goes about acquiring AIOps technology. For example, what are some of the key questions to ask an AIOps vendor?

There are a number of questions. First and foremost, "what parts of the AIOps value chain do you cover?" We've spoken a lot about piecemeal vs. holistic approaches so understanding which (if not all) elements - observe, engage, and act - the AIOps solution covers is vitally important.

The second step is investigating which use cases are supported. IT teams need real tangible value from an AIOps strategy – they're not just going to invest in a science experiment. So understanding and prioritizing use cases such as event noise reduction, predictive alerting, root cause analysis, and even remediation is essential.

Also you need to understand how easily these new analytics and automation tools can integrate across existing IT Ops processes and cover the entire IT environment across on-prem, cloud, and even containers. And then lastly – how immediately actionable these new automation capabilities will be.

And are there integrated, single vendor AIOps solutions available today, or is it more about acquiring two or three key pieces of software which together form the basis of an AIOps implementation?

Yes, there are certainly vendors (BMC being one of them) that cover the whole value chain, as well as other solutions providers which may cover only part of it. But bearing in mind the compute complexity, various hybrid environments, and huge increases in data, we see it as far more strategic to go for a holistic approach.

Bearing in mind that we've established the value of AIOps, where does an organization start in terms of introducing AIOps into the business? With previous technologies such as virtualization and cloud, it was possible to start with a single application in a test environment, before going more mainstream. AIOps would appear to be a bit more 'all or nothing'?

It doesn't have to be all or nothing. There are steps to get started, and it comes back to aligning it to use cases or identifying the areas of friction within existing IT Ops processes that need to be addressed – pre-determining what the success criteria are beforehand. For example, one of the use cases we help a lot of customers with is event noise reduction. Large enterprises can have thousands of events per hour, far beyond any human scale to manage, so here AIOps can be deployed to suppress the 'normal' events, flag the abnormalities, and quickly provide root cause analysis and remediation guidance.

Part of the initial process is simply establishing data sources and models, and making data available and centralized in a single solution so that it can be analyzed. Organizations certainly need to take a planned approach, but each business will have different priority use cases.

Are you able to share one or two examples of customers who are already benefitting from implementing AIOps?

One example is a global manufacturer for the medical industry. A key part of the AIOps value chain is acting with and engaging the service desk. This customer has a central command center that monitors over 40 critical applications across its IT infrastructure and handles events worldwide. Part of its function is ensuring the availability and performance of its global IT infrastructure as well as issue resolution.

With the BMC solutions, this customer is able to monitor the entire IT environment, predictively alert before thresholds are breached, and proactively remediate more than one-third of the critical incidents. This saves the customer time by reducing the mean-time-to-identification (MTTI) and mean-time-to-repair (MTTR), and it saves the customer money by automating analysis and remediation tasks.

And how do you see AIOps developing over the next 12 to 18 months, both in terms of the products/solutions available and the adoption rate amongst end users?

We recently did a customer poll which found that 70% of those surveyed are currently in the "exploring options and use cases" phase. So naturally, over this time period we'd expect to see a natural migration toward "planning to" or "actively deploying" AIOps, as well as far more tangible value coming through from AIOps deployments.

We're also going to see more of a push from the data itself. Data volumes will just keep on increasing and become less and less manageable, especially with IoT and 5G adoption. We'll see AIOps demand increase simply for businesses to keep meeting performance demands and SLAs in the face of this tsunami of data.

We'd also expect a strengthening of the link between DevOps and IT Ops, using the rich insights from AIOps in the app development process to ensure that performance management of applications is at the forefront.

And finally, we know cloud adoption is booming; Gartner predicts that by 2025 80% of organizations will have completely shut down their data centers in favor of the cloud. AIOps will begin to take a central role in managing these cloud-based apps and services.

Finally, are there one or two key pieces of advice you'd like to offer individuals and organizations who are approaching AIOps for the first time?

At the core of a successful AIOps strategy and deployment lies the data. The solution needs to be able to learn patterns and apply those learnings to become more predictive and proactive. So you need to be able to ingest and consolidate diverse data sets, metrics, and logs into a single view for analysis and action.

It's also important to be able to understand the service impact – creating a link between the events and the end services they are affecting, and getting better at analyzing the data to understand how performance is affected.

And finally prioritize your use cases – identify those areas of pain in existing processes and use specific AIOps capabilities to remove friction, increase agility, and improve service quality.

AIOps and the future of IT operations

As IT stacks continue to expand and become more complex, IT leaders need to look beyond MTTR to proactively identify issues before they arise.

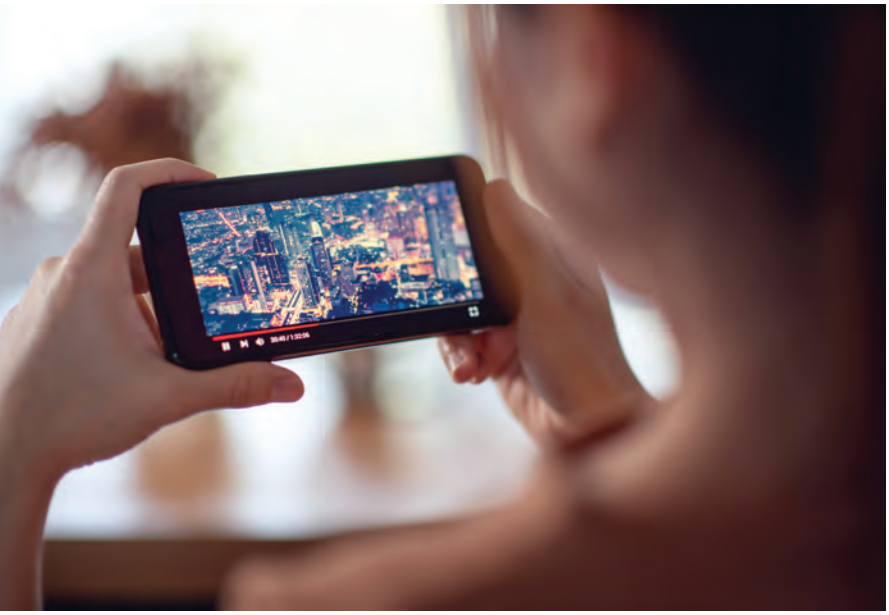
BY JAMES HARVEY, EMEA CTO AT CISCO APPDYNAMICS

WE LIVE in an increasingly digital world. A world full of data, which continues to expand at an astonishing rate. Data is generated through taps within a phone app, streaming content and so much more. According to Domo, in a single given minute in 2019, 390,030 apps were downloaded and 188,000,000 emails sent. For businesses, as data volumes increase, IT environments become increasingly complex.

Without the right tools, teams can struggle to monitor, let alone manage, the performance of their applications across the IT stack.

Application performance monitoring (APM) solutions have proven essential in helping IT teams navigate the increasingly complex IT environments by providing the real-time insights required to take the right action when detecting and resolving performance or availability issues.

However, many still rely on manually overseeing and monitoring complex data sets, and due to siloed systems, spend large sums of money and time troubleshooting issues and completing routine operational tasks. The COVID-19 pandemic has been a wake-up call for businesses. A recent study from AppDynamics, The Agents of Transformation Report 2020: Covid-19 Special Edition, found that 95 per cent of technologists reported that their organisation's technology priorities changed during the pandemic. Here are three ways in which AIOps is helping IT teams adapt to current business challenges:



1. Address cloud migration challenges
Even prior to the pandemic, enterprises had begun a steady march into the cloud. Now we see an even greater surge in demand for remote technical services and an overload of data. For businesses quickly transitioning to the cloud, AIOps can be an essential tool in helping avoid cloud migration challenges which may have a significant impact on application performance.

By providing technologists with insights into uptime, performance, and availability, AIOps helps identify and solve issues before they can affect the end-user during cloud migration. AIOps also helps provide visibility within multi-cloud or containerised environments, as organisations manage more complex platforms.

2. Reduce pressure and increase agility
Technologists are experiencing demands from all sides. With accelerating digital transformation projects, mobilising huge sections of the workforce to operate remotely, and at the same time having to manage the network and maintain security and resilience throughout the technology stack. In fact, 61 per cent of technologists feel more under pressure at work than ever before

How, then, can IT teams ensure they have accurate data to make informed, strategic decisions in real-time, and to connect application and digital performance to key business outcomes? AIOps (Artificial Intelligence for IT Operations) may be the answer.

AIOps improves IT operations - but how? AIOps platforms utilise data, machine learning (ML) and artificial intelligence (AI) to automatically spot and react to operational issues in real-time. It's about making businesses more efficient.

Freeing up IT's time to focus on further innovation like optimising customer and employee experience, through the digital services (the applications and associated infrastructure) offered.

IT teams need a robust strategy, underpinned by AI and ML, to improve agility, minimise time-consuming routine tasks, and surface the insights that matter most in real-time.

3. Use AIOps to resolve application complexity
Grappling with the potential of AIOps to deal with application environment complexity is a necessity for any modern enterprise. AIOps helps technologists get ahead and ensures companies decrease revenue-impacting outages, where customer experience and brand reputation are at stake. Using ML and AI, IT teams can turn data monitoring into meaningful insights quickly, automatically, to deliver exemplary digital experiences by monitoring the full technology stack in real-time, from the customer's device, to the back-end application, or the underlying network.

One of the most fundamental capabilities AIOps can provide is not simply automating existing tasks, but identifying opportunities for improvement, and managing new optimised tasks, even as application environments change.

The future of ITOps

To ensure that IT teams meet the demands of the complex application environments, AIOps can provide real-time visibility, insight and automation that drive improved customer experiences and business performance.

Solving problems quickly and understanding their impact on the business will play a crucial part in performance management in the years ahead. AIOps can assist in providing more agility in the face of potential service disruptions or threats, without the additional drain on resources.

Park Place Technologies introduces DMSO

DMSO is a simplified and automated approach to Discovering, Monitoring, Supporting and Optimizing digital infrastructures to maximize uptime, create cost efficiencies, enable greater infrastructure control and visibility, and enhance asset performance. The DMSO market is expected to be $228 billion annually by 2023.

As businesses continue their digital transformations, they depend on data that resides on-premises, in public and private clouds, devices at the edge and networks and operation centers that span the globe. Managing these complex environments is increasingly becoming more difficult. Exponential increases in time, labor and cost, as well as the complexity of navigating a maze of service providers to establish clear accountability and support, requires a more intelligent and flexible approach. With DMSO, Park Place clients will maximize uptime, improve operational speed, eliminate IT chaos, and boost return on investment – ultimately accelerating their digital transformations. "Data centers have changed, and the concept of infrastructure continues to evolve radically as businesses move to implement digital transformation in its many forms," said Chris Adams, CEO of Park Place Technologies. "This requires a more strategic approach to maintain physical and virtual infrastructures and gain insights through automation and analytics. This is the genesis of DMSO and we are confident that it represents a new way to deliver value and help transform critical infrastructure into a strategic business asset."

Park Place Technologies, in consultation with industry analysts and Park Place customers, leveraged three decades of insight gained from providing global hardware maintenance for 17,000 customers in 58,000 data centers across 150 countries. Park Place has an impeccable record, delivering a 97 percent first-time fix rate and a 31 percent faster mean time to repair (MTTR) and carries a 97 percent customer satisfaction rate. This experience fueled the innovation that developed DMSO to provide comprehensive infrastructure control and visibility. Through a single pane of glass, DMSO will offer a view up and down the technology stack, including hardware, operating systems, networks, databases, applications, and the cloud, for customers to:

- **Discover –** Holistic, accurate listing of data center assets across OEMs, with automated IT asset discovery and dependency mapping and comprehensive coverage of servers (physical, virtual, and cloud), desktops, edge devices and peripherals;
- **Monitor –** Server and storage monitoring hardware (storage, server and network) and software (OS Monitoring, Linux, Windows, VM)
- **Support –** Event filtering and remediation for hardware, operating systems and network hardware (predictive/proactive alerting and ticket integration) OS remediation (patch management, updates) and network incidents (management, configuration, root cause)
- **Optimize –** Enable client efficiencies and ensure uptime with capacity management, CPU utilization and cloud cost controls).

Park Place Technologies' aggregated service delivery platform monitors and remediates hardware, networks, operating systems and applications. Recent strategic acquisitions, such as the network operations center of IntelliNet, and global network monitoring service Entuity, add new depth and breadth and demonstrate a commitment to advancing DMSO and the future of digital infrastructure. These are in addition to the dozen other acquisitions made in the US, UK, Latin America and APAC over the last few years.

The acquired technologies dovetail with and strengthen ParkView™, which delivers an automated monitoring service and will extend beyond the hardware layer into software to include both operating systems and virtual servers, furthering the company's DMSO capabilities. Together with a commitment to continue to add expertise and presence around the world, Park Place Technologies is uniquely suited to advance the DMSO category for the future of digital infrastructure.
Demand for DMSO is fueled by a healthy and growing infrastructure market, estimated by industry analysts to reach $228 billion by 2023 (inclusive of dedicated and shared equipment and services). Additionally, the market for data center and network maintenance is expected to exceed $185 billion annually. "In this digital era, it is imperative that companies put an emphasis on fixing problems before they happen," said Rob Brothers, program vice president, datacenter and support services, IDC. "This new approach to infrastructure management will enable providers like Park Place Technologies to be proactive about identifying and correcting potential problems for customers before they result in potential downtime which could cost them money."

Information technology decision makers agree. A recent survey found that 35 percent cannot seamlessly monitor and optimize cloud capacity and configurations, and 36 percent are missing single-source visibility and monitoring. The issue of a lack of in-house expertise to act and respond to performance alerts and alarms affected 39 percent of respondents.

WITH VIJAY KURKAL, CEO, RESOLVE

AIOps – what's all the fuss about? In other words, what is it and why does it matter?

AIOps – AI for IT Operations – helps streamline the management of complex, hybrid IT environments. These technologies help IT teams quickly fix issues with fewer resources, improve application and infrastructure performance, and highlight areas for optimisation and cost reduction – ultimately serving as the backbone for an effective data-driven IT operations strategy that offers significant improvements in efficiency and agility. Hence, the fuss.

To accomplish all of these great things, AIOps harnesses AI, machine learning and advanced analytics to aggregate, analyse and contextualise immense volumes of data collected from a wide variety of sources across IT infrastructure. Doing so enables AIOps tools to quickly identify existing or potential performance issues, spot anomalies and pinpoint the root cause of problems. Through machine learning and advanced pattern matching, AIOps can even predict future issues so that IT teams can automate proactive fixes before the business is impacted.

These tools also provide advanced correlation capabilities that determine how alarms relate to each other, clustering them into smaller groups of events that are all fundamentally related to the same problem. By reducing alarm noise, IT teams can focus their attention on what matters and accelerate incident response to get critical systems back online. An example would be a spike in CPU utilisation, leading to a slowing database, which ultimately presents in e-commerce transactions slowing to a crawl. By understanding that the e-commerce performance issues are related to the CPU problem, IT teams can quickly get things up and running again, rather than manually sorting through a laundry list of possibilities ranging from the network to the application itself. AIOps also ensures they don't miss the alarm that the

e-commerce system is down amidst all of the other alerts coming through.

Some AIOps solutions (Resolve included) can also automatically discover applications and infrastructure, generate rich topology maps, and identify dependencies between business-critical applications and underlying infrastructure. Understanding these relationships makes troubleshooting easier and facilitates overall management, offering a single pane of glass into complex, cross-domain environments. This data can be automatically pushed to the CMDB in near real-time, ensuring accurate inventory information and creating a strong ITSM foundation.

AIOps – does it replace existing technologies and approaches used to monitor and manage IT, or is it more of an add-on to what an organisation is already doing? In other words, are we talking evolution or revolution?

Typically, AIOps is first implemented as a complimentary technology; we find that our customers are deploying it alongside existing tools to evolve their management and monitoring strategy. AIOps is very flexible in that sense, and it's one reason that we recommend choosing AIOps vendors with robust third-party integrations that can help maximise the value of existing investments.

Over time, as customers realise the value of AIOps, it often replaces standalone tools for discovery, dependency mapping, event management, noise reduction, and performance monitoring – to name a few. This makes it a great option for organisations who ultimately want to consolidate tool sets.

A recent study by EMA found that almost 25 percent of large enterprises have eight or more network performance monitoring tools, with some having as many as 25. The costs of those tools add up over time, not to mention the "swivel-chair effect" requiring IT pros to manually sort through data from multiple tools when troubleshooting and effectively adding noise to an already noisy environment. Ultimately, AIOps can eliminate some of these monitoring tools and provide a single pane of glass into the remaining ones by aggregating and analysing the data in one place and providing meaningful insights to streamline operations.

Additionally, AIOps can deliver even more value when combined with IT automation. With both of these technologies in place, AIOps and intelligent automation can work together to enable autonomous actions to be carried out in response to AI-driven insights. This valuable pairing can ensure preventative steps are taken before issues impact the business, ultimately improving performance and agility. Additionally, it can minimise the human impact required in these processes. AIOps effectively can deliver a closed-loop system of discovery, analysis, detection, prediction, and automation, which is a game changer for teams struggling to manage complex, multi-cloud, hybrid environments.

Bearing this in mind, how much is AIOps about the new breed of monitoring and management technology solutions and how much is it about an organisation's mindset and willingness to change?

Like most transformative technologies, in order for businesses to fully benefit from AIOps and automation the workforce has to embrace it. The most successful organisations cultivate a culture that inspires excitement about what people can achieve with this new technology on their side. If the IT professionals expected to deploy and adopt transformative technologies don't understand the value or fear that their jobs will be displaced by machines, AIOps and automation will struggle to get off the ground. There must be a detailed strategy to secure buy-in from the boardroom down to the technicians on the floor.

Given our roots in automation, we see AIOps going well beyond monitoring and management. The ability for AIOps insights to trigger autonomous actions is a new technology paradigm on the path to self-healing IT. Resolve is a bit different given that we are approaching the market from an automation perspective. Adding AIOps to the mix informs our automation ecosystem – so for us it's not just about being a better monitoring tool, it's about the ability to intelligently take action on monitoring data without human intervention.

AIOps – primarily, it seems to be about the optimisation of an organisation's likely hybrid IT operations through better monitoring and management, but it can also offer valuable business insights at a more strategic level?

Absolutely, AIOps can offer incredibly valuable business insights. AIOps tools can finally give business stakeholders much-needed insight into real-time performance, health, and transactional data through dashboards and reports. Additionally, by focusing on the business impact of application and infrastructure performance, IT teams can better prioritise issues, ensuring they are focused on those that impact revenue or customer experience versus those that might only impact a small number of internal users.

AIOps also offers tangential business benefits, like cost optimisation and capacity planning. Identifying anomalous groups of events is helpful not only in alerting teams to unplanned events, like a DDOS attack, but also to help organisations improve planning for expected events like Black Friday or a big sale. Capacity can be dynamically increased for the latter to ensure applications and infrastructure perform well during periods of high demand based on historical patterns, but dropped back down after the

fact to account for business-as-usual conditions. That ensures you aren't paying for infrastructure you don't need and makes your IT operations more agile.

Bearing in mind that we've established the value of AIOps, where does an organisation start in terms of introducing AIOps into the business? With previous technologies such as virtualisation and cloud, it was possible to start with a single application in a test environment, before going more mainstream. AIOps would appear to be a bit more 'all or nothing'?

We feel it's important to give our customers an easy onramp to AIOps (and automation), so it is not all or nothing. It's important to identify specific use cases that will not only benefit the business most but also offer quick wins. Employing a crawl-walk-run approach allows people to see clear benefits out of the gates so they can start visualising longer term potential. This offers a natural progression to more complex use cases – especially with automation, which is ultimately where the eye-popping ROI will emerge.

For example, Resolve's AIOps product provides out-of-the-box value in a matter of hours with our automated discovery and dependency mapping capabilities. We're able to generate complete infrastructure visualisations, detailed topology maps, application dependency maps, and comprehensive views of inventory on Day One. Being able to truly see what's going on in the environment (and trust the data about inventory, device relationships, configurations and more) delivers immediate value to overburdened IT teams. With these resources at their fingertips, they can streamline operations, fix issues faster, and make changes more confidently; compliance improves as well.

Over time machine learning enriches this data and produces deeper insights, including the ability to predict issues; however, this does take time. Our customers respond well to the notion that they get value both today and tomorrow with our product, eliminating the need to wait for months to see results or concerns about AIOps being all or nothing.

Finally, are there one or two key pieces of advice you'd like to offer individuals and organisations who are approaching AIOps for the first time?

To summarise, we'd recommend:

- Start your AIOps journey with a quick win in the form of auto-discovery and dependency mapping. Your IT team will get immediate value from the comprehensive visibility into infrastructure and business-critical applications. Efficiency, incident response, change management and compliance will all improve just with this initial set of capabilities. Over time, they will become even more enamoured as advanced machine learning-driven capabilities like predictive analytics and noise reduction offer additional insights.
- Plan to pair your AIOps with automation for maximum value over the long term. EMA has published extensive research on the relationship between the two, determining that integrating AIOps with automation strongly correlates with successful, progressive adoption, and produces significantly better ROI.
- Choose vendor-agnostic AIOps solutions that offer flexibility in the surrounding tools you choose – you don't want to inadvertently limit your choices. Also look for AIOps solutions that ship with plenty of out-of-the-box integrations that make it easy to snap seamlessly into your existing ecosystem.
- Identify champions on your team who advocate for AIOps and automation. Give them a voice and the tools to spread the excitement to their teammates.

Why AIOps must have a starring role in large-scale digital transformation

According to research by Adroit, the global AIOps market is expected to grow quickly to $237bn by 2025. This is unsurprising because AIOps is increasingly moving out of the wings and into a starring role. Its mission? To fundamentally redefine cloud service building and operations.

BY HARRY MILLER, HEAD OF PORTFOLIO, PARTNERS & STRATEGY FOR DATA & AI AT DIGITAL TRANSFORMATION CONSULTANCY ECS.

WITH A FULLY-FLEDGED AIOps platform, large enterprises can finally embrace the cloud as a strategic platform - and reap the rewards of becoming truly digital enterprises.

Ready for prime time?

The emergence of AIOps is a direct result of IT operations management becoming increasingly challenging as IT networks grow larger and more complex.

Conventional approaches, tools and solutions weren't designed for the sheer volume, variety and velocity of data from disparate sources that is generated today. The siloed approaches of old do not provide the holistic view that nimble organisations require.

Perhaps more worryingly, they are not even fit for purpose because they consolidate and aggregate data and roll it up into averages that compromise data fidelity.

AIOps platforms take centre stage

To overcome these problems, log aggregation tools have evolved into fully fledged AIOps platforms, offering far more than simply a monitoring tool with embedded AIOps. A fundamental tenet of AIOps platforms is their ability to capture any variety, velocity or volume of data from across the environment, while maintaining data fidelity for comprehensive analysis. Applying the speed and accuracy of AI and machine learning, they simplify IT operations and boost efficiencies across the organisation through the continuous automation of problem detection, alert triaging, and root cause analysis.

A comprehensive AIOps platform has to be able to both analyse stored data and provide real-time analytics at the point of ingestion. Its central functions are:

- Ingesting data from multiple sources agnostic to the source or vendor.
- Performing real-time analysis at the point of ingestion.
- Performing historical analysis on stored data.
- Leveraging machine learning to recognise patterns and predict resulting events or issues.
- Initiating an action or next step based on insights and analytics.

Star quality in the cloud

The appeal of AIOps doesn't stop there, though. Done right, implementing AIOps in the cloud opens up powerful opportunities to grow, evolve, innovate, and disrupt across the organisation. Areas that can benefit include: enabling customer experience at scale; ensuring service quality assurance; boosting engineers' productivity; and continuous COGS reduction.

AIOps platforms such as Splunk's that are optimised for the cloud are particularly compelling, ensuring organisations have comprehensive security, operational and cost management insights across their cloud and hybrid environments.

The benefits of adopting an AIOps in the cloud model include:

- **Efficiency -** Cloud offers resource scalability and lower overall resource acquisition costs when compared with on-prem, driving down the business cost.
- **Edge processing -** Edge computing brings data centre resources closer to the user or data source, reducing latency and improving performance. This improves the efficiency of AIOps in the cloud, reduces costs and increases processing capacity.
- **AutoML -** Many ML workloads for AIOps can be performed using pre-trained models available on cloud platforms. This enables users to select and apply the best model for each specific use case which increases performance and accuracy and delivers improved outcomes.

An Oscar-worthy performance

In summary, AIOps delivers significant business benefits. Accelerating root-cause analysis and remediation saves time, money and resources, while increasing response time and response consistency improves service delivery.

For IT teams, implementing AIOps increases job satisfaction because it lets them focus on higher-value analysis and optimisation instead. In parallel, IT leaders have more time to collaborate with business peers and reinforce the strategic value of the IT team to the overall success of the business. On the business side, avoiding downtime improves customer satisfaction. And bringing together previously siloed data sources allows for faster and more complete analysis and insight that in turn drive more informed business decisions.

Increased observability is required

CATCHPOINT has conducted a study with the DevOps Institute of more than 600 site reliability engineers (SREs), examining the impact SREs have on improving operations and how the role is now permanent.

The "2020 SRE Survey Report" also highlights how SREs are taking on more responsibility for improving the digital experiences. The survey noted that a majority will be working remotely post COVID-19.

According to Google, SREs should be doing 50% ops work and 50% dev work, yet having a 50/50 workload split seems to be a pipe dream. The majority of respondents are currently spending 75% of their time on operations resulting in far less of their time being devoted to development. Additionally, 53% of respondents said they were being involved too late in the application lifecycle.

When SREs are invited early into the development process, organizations can mature to more advanced observability resulting in improved service reliability, incident management effectiveness and customer satisfaction.

"Solving complex problems and ensuring reliability in today's highly distributed world can be very difficult and requires greater monitoring and true observability. Prior to the pandemic, most companies had a handle on end-user/customer experience monitoring for distributed systems," said Mehdi Daoudi, CEO of Catchpoint. "But now with a greater distribution of users comes new challenges and added reliability needs. True observability is the key to ensure reliability and customer experiences for all things distributed."

"At Equinix, we connect mobile operators, clouds, SaaS platforms, and Enterprises across 55 global markets," said Zac Smith, General Manager of Bare Metal at Equinix. "From this unique vantage point, we see how important the SRE role — and mindset — is to digital businesses as they take advantage of distributed infrastructure to create consistently amazing experiences for their users."

"SRE is one of the most innovative approaches to managing services since the early days of ITIL and is most closely aligned with the principles and practices of Agile and DevOps.

The data in this report supports the rising criticality of both SRE as a practice and Site Reliability Engineer as a role for any organization trying to adapt to the digital age." Jayne Groll, CEO, DevOps Institute

When asked what tool categories SREs are using today, the majority (93 percent) chose monitoring as compared with 53 percent choosing observability.

Additionally, when asked about their key responsibilities, the majority ignored those aligned with the observability pillars (events, metrics and tracing) highlighting the lack of true observability. True observability requires monitoring of external outputs to determine how reliable internal systems function.

DevOps appears to be in a tug of war, and Ops is winning in the SRE community with the pre-COVID survey showing that 75% said they are spending the majority of their time on Ops, resulting in increased costs of owning and maintaining systems. Perhaps widening the gap, the survey showed that two and a half months into working from home, the survey results showed a net 10% increase in Ops related responsibilities.

The post-pandemic environment has resulted in a major shift on where SREs will be located, with nearly 50% of SREs believing they will be working remotely post COVID-19, as compared to only 19% prior to the pandemic.

Additionally, 9% of respondents felt incident management has improved. However, there are cautionary findings for organizations considering the structure of SRE teams post-COVID, as many respondents noted they are dealing with the following challenges:

- 41% state that half or more of their work is a toil with mostly manual, repetitive, and tactical jobs that could be automated.
- 52% said they spent too much time debugging
- More than half of respondents felt that personal challenges included staying focused and having a good work/life balance while working from home

Below are a few recommendations for SREs based on the survey's findings:

- Be sure to include consideration for not only your code, but also the networks, third party services, and delivery chain components, to evaluate how well the three observability pillars are applied through this new digital experience observability lens.
- Work to be included earlier in the evelopment process should shift reliability further left to reduce cost, increase team alignment, and identify constraints that can be removed.
- Turn newly surfaced, or previously-ignored challenges into strategic differentiators. Focusing on challenges like morale, employee experience, work/life balance, and employee engagement and sentiment may showcase a company's employee-first mentality to attract or retain top talent.

AIOps: The right Waze to managing IT and driving business success

A common misconception around the customer journey is that it's a process of A to B. In reality, requirements and circumstances often change at many points along the way – much like a car trip with unexpected traffic and road closures. This is why, as IT requirements get more complex, AI for IT Operations (AIOps) is becoming the future of IT management.

BY LEE JAMES, CTO, EMEA AT RACKSPACE.

That's certainly the view of Gartner, which predicts that by 2020, approximately 50 per cent of enterprises will use AIOps technologies together with application performance management (APM) – up from 10 per cent in late 2018.

Take GPS app Waze as an example. It provides live directions and traffic alerts while the philosophy of AIOps is to enhance IT operations through machine learning, analytics, and big data. Where Waze looks at the thousands of other cars on the road and incorporates user-submitted updates in real-time, AIOps can proactively and often pre-emptively detect incidents and correlate events across ecosystems.

AIOps is a far cry from the 'robots are taking over' scenario that tends to play out in the popular imagination. It is about using multi-layered technology platforms to make operations smarter and free up resources. To put it simply, it presents two key opportunities for businesses. Firstly, it enables faster management of IT issues, which in turn reduces the scope for reputational risks. It also drives customer centricity by helping businesses understand where customers would like them to innovate.

Navigating reputational risk

Managing cloud services is no straightforward feat. It is a challenging and resource-intensive process. Picture this: a warning sign pops up and the IT team has to get together to decide what to do about it. In the meantime, the business' service is down and customers are filling the gap with a competitor's service.

In today's landscape of 24/7 delivery and ever-increasing customer expectations, customers are willing to voice their opinion across different platforms including social media if something is amiss in their experience. This means reputation and service delivery are more closely linked than ever before, and reputational damage can happen in a matter of seconds.

To mitigate the risk of reputational damage, businesses need to be able to act immediately, have teams understand what's happening across different services, and quickly gather and analyse feedback from a growing number of platforms. Many businesses have introduced a level of automation in an attempt to achieve this, through a chatbot advising when the

next customer representative is available. But this is effectively just a quick fix solution as humans will still need to be part of the overall issue to develop a solution.

AIOps comes into its own here with its ability to automatically detect, diagnose, and in many cases can remediate service issues in real time. Codifying knowledge from previous incidents to find and fix future ones quickly and accurately – and with far less effort – to ultimately protect the business' revenues and reputation.

With AIOps, businesses not only receive the right information but have faster access to it, enabling them to make better decisions. It can be used to correlate data across millions of customer journeys to identify patterns, developing a clearer understanding of how customers would like services delivered and opportunities to enhance the customer experience

Driving customer experience

When it comes to business data, there's a difference between background noise and the messages customers want a business to hear. Keeping on top of customer feedback and understanding how much should be closely listened to is becoming increasingly complex, with more data types and sources to track.

With AIOps, businesses not only receive the right information but have faster access to it, enabling them to make better decisions. It can be used to correlate data across millions of customer journeys to identify patterns, developing a clearer understanding of how customers would like services delivered and opportunities to enhance the customer experience.

Much like Waze uses smart technology to alert users to traffic incidents and map the best possible route in real time, AIOps allows businesses to navigate issues and creates scope to improve at every juncture.

It's clear that Waze has transformed the way users travel and similarly, AIOps will transform IT management and allow IT teams to deliver real benefits back to the business in terms of revenue, reputation management, and customer happiness.

Aggressive IT strategies more than double positive business outcomes during COVID-19 Pandemic

CATCHPOINT has released a survey of 200 enterprise CIOs and 200 enterprise work-from-home (WFH) managers today that examines the differences between those enterprises who fared the best and the worst during the COVID-19 pandemic.

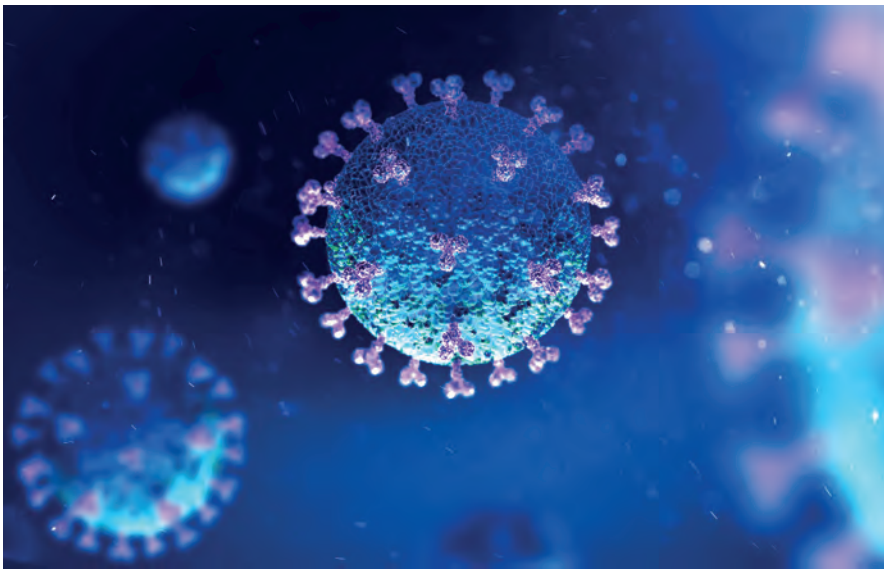
The survey found that top-tier enterprises were 2.6 times as likely to have grown revenue, 2.5 times as likely to have reached profit goals and 2.1 times as likely to have high employee satisfaction numbers. Improved performance was seen also within IT, where top-tier enterprises saw improved app reliability, network reliability and cyber security.

Catchpoint commissioned ReRez Research of Dallas, TX to conduct the survey. CIOs and managers came from enterprises with at least 1,000 employees and were geographically dispersed across the United States and comprised a wide range of industries. Enterprise managers surveyed worked from home during the crisis and used a computer for 50 percent or more of their day.

Effects of COVID-19 on Enterprises
Before COVID-19 hit, roughly one in three (33 percent) American enterprise employees worked from home at least some of the time. During the pandemic, this increased to three in four (74 percent). In terms of engaging with customers, prior to the pandemic, less than half (43 percent) of customer engagements were face-to-face. During the pandemic, this dropped to just one in eight (13 percent).

The COVID-19 pandemic has been tough on most enterprises. Our survey shows that the three biggest impacts on businesses were profitability, revenue growth and productivity. Within IT departments, the biggest impacts were security, app reliability and network availability.

"When it comes to today's Digital Workplace, reliable performance is critical



for employee productivity and morale, and with a fast-increasing number of employees working from home, systems are more prone to reliability, availability and performance issues affecting remote workers," said Mehdi Daoudi, CEO at Catchpoint. "The ability to measure, visualize and proactively react to outages and slowdowns can deliver a 1st class digital employee experience."

Lessons from Top-Tier Enterprises
Not every enterprise had the same experience and some did surprisingly well during the pandemic. To see the differences, we divided the responses into three tiers. Top tier are organizations that performed the best in terms of business and IT metrics and bottom tier performed the worst. We then compared the top and bottom tiers to explore those differences and what the top tier was doing differently.

We found four keys to top-tier enterprises' impressive results:

- **Focus on Reliability.** The top tier is fully committed to reliability. Nearly all (91 percent) of the top tier has implemented a formal site reliability engineering methodology (SRE). This compares to just 69% of bottom-tier organizations.
- **Focus on Work-from-Home Tech Stack.** The top tier is committed to making Work-from-Home (WFH) employees as productive as possible. For example, the top tier is 33 percent more likely to train their employees on work-from-home technologies. The top tier also does a better job of equipping their WFH employees – nearly three times as likely to say their employees' collaboration tools are extremely effective.
- **General Networking Initiatives.** Top-tier organizations are more engaged with cutting- edge initiatives that optimize remote work. For example, top-tier are 1.8 times as likely to be involved with robotic process automation.
- **Security Initiatives.** Finally, top-tier organizations are also more engaged with cutting-edge security initiatives. Top-tier reported being 1.4 times as likely to be involved with better security management and working with software-defined perimeters.

Catchpoint's New Normal study includes even more insight on how enterprises are handling the impact of the pandemic and recommendations and strategies needed for enterprises to prepare for the new future of work.

Fasten your seatbelts for the next bump in the AI revolution

BY PAUL MERCINA, DIRECTOR, PRODUCT MANAGEMENT, AT PARK PLACE TECHNOLOGIES

AIOps software platforms use cutting-edge computing technologies like machine learning and advanced analytics that support IT operations in three areas: monitoring, automation and service desk. The market is exponentially growing, to the extent that Gardner predicts that large enterprise use of AIOps and digital experience monitoring tools will increase from 5% in 2018 to 30% in 2023, making this one of the fastest-growing market areas for digital transformation.

For too long, large volumes of alerts and significant IT signals distributed across disparate tools have held back DevOps professionals; finally, teams are beginning to improve performance across their IT infrastructure more accurately, with the assistance of AIOps. With one report suggesting that 89% of senior IT decision-makers believing that AI and ML are integral to their organisations IT operations, combined with 84% mentioning that the technology will ultimately make their role more manageable, it comes as no surprise that the AIOps revolution is on our doorstep.

From Evolutionary to Revolutionary

Due to the complexity of underlying infrastructures behind IT systems, a single incident in the IT stack

can cause detrimental effects. A lapse in the IT infrastructure can cost businesses millions – or even billions. Understandably, many businesses are now considering implementing AIOps in their IT operations to safeguard their assets – and crucially, ensure there is no downtime.

There is no doubt that IT decision-makers are beginning to interpret the huge capacities of implementing AIOps in their infrastructure. However, the manner in which they introduce the technology must coincide with their business development. There are two main ways of implementing AIOps into your business: Revolutionary or Evolutionary.
A revolutionary approach would be adopting and implementing monolithic AIOps technology across the entire IT stack in one sweep. If you require a wholesale change across your IT operations with a single vendor's suite, then a Revolution path would be optimal.

Nonetheless, an overhaul of the IT operations can be disruptive. Your teams could be victim of uncertainty and will have to hope their vendor's stack is sufficient in dealing with the myriad requests they encounter. Alternatively, AIOps evolution can be harnessed, by slowing down the overhaul and simply, taking one step at a time with a best-of-breed approach of choosing specific tools, and strategising how to best evolve your stack gradually over time and with the most benefits.

Ultimately, AIOps can offer an integration of various tools and systems allowing businesses a Hybrid IT operation at their disposal. However, several technologies may merge into a more complete solution, but, for now, the all-encompassing AIOps doesn't exist – it's simply too broad. Nonetheless, as digital transformation propels us into the future, let's determine the crucial components of the optimum AIOps package.

The Perfect Ingredients of AIOps

There are a couple of aspects that are pivotal in ensuring the well-oiled machine which will automate and take charge of the IT stack. Foremost, transforming siloed data into contextual insights for faster and better-informed decision making is essential in initiating a successful AIOps platform. Data is the key here; a broad and rich set of data collectors is necessary to feed the ML algorithms. Nonetheless, the issue is that the data resides across multiple domains and must be visualised and analysed in the context of hybrid IT environments, this enables business decision makers to act upon insights derived from data more effectively and efficiently.

In addition, when your IT operations tools embrace the use of open APIs to gather analytics, you gain the advantage of viewing curated data from a holistic perspective, to share hidden insights across teams,

thereby achieving great efficiencies. For example, suppose you have a scenario where your network is running too slowly. Data visibility from one tool may limit you to what is happening within that singular network environment, however analysis across the domains enables teams to work together cross functionally to resolve issues in a timely manner.

Finally, using automation to advance towards self-healing systems, like the one mentioned above, is the horizon for AIOps. Once your AIOps system is providing accurate insights in context, they also have the capacity to alert and remedy abnormal trends or possible issues, which quickly isolates the issue and diagnoses the source, through an automated and appropriated intervention.

There is no doubt that the overhaul of AIOps is incoming. IT decision makers will be rewarded in their agility and trust that they place in progressing their IT operations towards an automated and reliable model. The proof will be in the pudding; the sooner IT decision makers harness the power of emerging technologies, the sooner they will be explicitly and implicitly considering a progressive and proactive corporation.

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In 2020, DevOps and AIOps go hand-in-hand

Today's DevOps professionals have a lot to monitor and react to in order to keep IT systems running including high volumes of alerts, signals coming from disparate tools and considerable amounts of IT noise. What's more, their workload has only increased since the shift to remote working due to COVID-19.

BY GUY FIGHEL IS GVP & PRODUCT GM, APPLIED INTELLIGENCE AT NEW RELIC

ON TOP OF ALL THAT, they are expected to continuously improve IT infrastructure performance, problem-solve more accurately and find incident resolutions more readily. So much data and so many alerts can cause response fatigue and make it hard to prioritise issues and know what they really need to act on.

Busy DevOps engineers and leaders are well aware of how AI can help them achieve their goals, possessing a keen 'automation mentality', whereby they identify opportunities to automate away toil by deploying a tool and thus save time down the line. They recognise that the more time they save with AI taking on manual tasks, the more time they have to spend focusing on more complex and higher-value tasks.

Research by New Relic and Vanson Bourne revealed that out of 750 global IT decision makers, 89 percent said they believe AI and machine learning (ML) is important for how organisations run IT operations, and 84 percent also remarked that AI and ML will make their job easier. Plus, findings from Gartner shows

use of tools such as AIOps specifically is growing – it predicted their integration in large enterprises will grow from 5 percent in 2018 to 30 percent by 2023. AIOps tools that detect, diagnose and resolve problems and improve incident response are vital to the success of today's DevOps professionals, but in what ways is AIOps helping them exactly?

1. Automatic anomaly detection

Some of the latest AIOps tools automatically monitor and detect anomalies via site reliability engineering golden signals such as latency, saturation and traffic. They can then send notifications to IT teams including details about the anomaly. This enables them to quickly and easily assess how to respond, before it potentially causes a problem.

2. Data-agnostic tools for richer data analytics

Data-agnostic AIOps tools allow DevOps teams to leverage data from numerous sources; standardise it and improve its usefulness with metadata to provide greater context, such as which components are related. This allows users to have a greater understanding of the problem and thus reach the root cause of any issue faster.

3. Correlation of related incidents to reduce IT noise

DevOps teams are used to noisy environments, but AIOps helps them significantly reduce large volumes of alerts down to manageable amounts and thus avoid alert fatigue. This is possible due to AI establishing relationships between cases of incidents that are alike or related. Some tools also become 'smarter' the more they are used, enabling the user to feedback to the AI, for example, by confirming that it correctly identified alerts were resulting from one issue, training it to spot similar instances in future.

4. Augmentation of incident management

The use of AI is not to replace those working in DevOps, it's to augment routine activities so that workers can perform better. The two working in tandem together means organisations get the best of both the ability to manage huge datasets accurately from AI, enhanced intuition, and the combined decades of experience of the people that make up the IT team doing their jobs. There are AIOps technologies that include 'decisions builders', which allow users to create their own logic based on event attributes or choose similarity algorithms out-of-the-box to correlate incidents. Tools that are transparent rather than opaque also allow humans to stay fully in the loop with why certain actions were taken so they can stay in control of the process and avoid missing critical signals.

5. Accurate routing of incident for ownership and actioning

AIOps tools can automatically suggest where to route incidents based on data about the issue and enable DevOps professionals to improve the process

by which tasks are distributed among the team. For example, they can mark cases related to a specific application to be sent to a dedicated group, and if they already have too much on, go to another team member with relevant experience and the capacity to own it.

Those in DevOps today may be experiencing the busiest work lives they and their colleagues have ever faced in their careers right now, particularly since the shift to remote working. At the same time though, they have the most advanced technologies at their disposal to deal with the high volumes of alerts and disparate signals successfully. AIOps tools truly go hand-in-hand with DevOps. This means IT professionals possess quicker and easier ways to identify issues, create diagnoses and find the right resolutions to issues, both after and before they cause problems.

DevOps teams are used to noisy environments, but AIOps helps them significantly reduce large volumes of alerts down to manageable amounts and thus avoid alert fatigue. This is possible due to AI establishing relationships between cases of incidents that are alike or related

Customer-impacting issues impede ability to innovate

DIGITAL SERVICE resilience is the ability to recover quickly, adapt and learn from incidents such as outages and interruptions to prevent future technology and customer-impacting issues. The report also analyzed the varying degrees of incident management readiness or preparedness within an organization to identify its position in the Incident Management Spectrum. The research found that comparatively, across the Incident Management Spectrum, only the most advanced organizations have isolated keys to success across business and incident management functions.

"Through a series of research reports over the past year, we studied the growing challenges faced by those tasked with the delivery and maintenance of digital services. Customer-impacting issues continue to be a roadblock to innovation as today's digital, fast moving environment requires technology teams to spend more time supporting operations," said Troy McAlpin, CEO at xMatters. "However, there is an opportunity for technology professionals to evolve incident management approaches through incident response automation, collaboration and constant learning in order to achieve customer delight and further innovation."

Spending on digital transformation has increased continually since the November 2019 Incident Management in the Age of Customer-Centricity research. Twenty percent of companies with 1,001-5,000 employees are budgeting more than $10 million on digital transformation initiatives, compared with 9.3% in November 2019.

This focus on digital transformation was accelerated by the COVID-19 pandemic. Findings from the April 2020 Impact of COVID-19 on Digital Transformation survey showed more than half of consumers experienced a rise in application performance issues, forcing many companies to accelerate digital transformation in order to deliver accessible digital experiences for customers and employees.

The State of Automation in Incident Management research found that the proportion of technology professionals affected by customer-impacting issues when building out services has increased by almost ten percentage points to 84.3%, compared to results from the November 2019 Incident Management in the Age of Customer-Centricity research. Overall, there is a marked need for improvement in customer experiences and an organizational commitment to innovation across industries.

A majority of respondents (72.3%) — across a variety of titles including development, SRE, IT operations and management — reported that at least half of their team's time is spent resolving incidents compared to time spent on innovation. Of these respondents, over a quarter (27.3%) said at least 80% of their team's time is spent resolving incidents.

To assess the efficacy of incident management in organizations, the State of Automation in Incident Management analyzed components of a comprehensive incident management practice (i.e., team structure, tools) and how organizations detect, resolve and learn about incidents.

Responses to survey questions were further analyzed and scored to determine an organization's position in the Incident Management Spectrum based on approaches to incident management. The four categories within the Incident Management Spectrum include: ad hoc where there is no formal incident management practice; traditional incident management, an approach driven by service desk tickets and ITIL processes; modern incident management where individual teams detect and resolve service-based issues; and adaptive incident management where a scalable and service-centric model harnesses as much automation as possible. The results of the research found that almost all respondents employ either a traditional (40.1%) or modern (58.6%) approach to incident management.

"Traditional teams spend much of their time on firefighting and completing non-value-added tasks compared to innovation, while modern teams, who have allocated more budget toward digital transformation, spend equal amounts of time resolving incidents and building out features," continued McAlpin. "Most technology organizations want to spend more time building differentiated features and new services instead of frequently dealing with incidents. Organizations must shift their approaches toward the modern and adaptive categories of the Incident Management Spectrum, which will enable teams to automate more components of the incident management lifecycle. The result: more time back in order to release products and put new innovations into the market while ensuring products are as reliable as possible for customers."

While most technology professionals reported the implementation of team-oriented incident management processes, there is room for advancement in multiple aspects of day-to-day processes. Nearly half of technology professionals (43.4%) deploy less sophisticated processes such as alerting; emailing and paging; conference bridges; or manual setup and outreach to engage team members, stakeholders and customers during an incident. Most organizations who employ a traditional approach to incident management use service desks and process-heavy approaches, whereas modern organizations leverage incident management tools for incident response and management.

Moreover, as companies look to reliable digital services as an indicator of customer success, there is an opportunity to automate the postmortem process. When asked about top benefits of using artificial intelligence or machine learning for incident management, respondents identified informing post-incident reporting with data from previous, related incidents (36%) and aggregation of data to detect anomalies early (28.9%).

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In what has been, and continues to be, extraordinary times for the business world, it seems doubly important to recognise the projects, innovations and individuals which have made such a huge difference during 2020. Almost overnight, employees switched from office working to working from home, and the new, or next, normal, means that, into the future, what might be called a 'hybrid work' model looks set to evolve, with flexible working very much the order of the day. What was already becoming a trend as part of many organisations' digital transformation programmes, has been accelerated.

The SDC Awards 2020 will celebrate the achievements of end users and the IT community as they have innovated like never before to ensure business continuity in these challenging times. This year more than any other, please do make sure that you enter our SDC Awards. There's no limit to the number of entries, all of which are free of charge, and we'll be promoting all the short-listed entries via Digitalisation World's multi-media platform over the coming months, ahead of the awards ceremony. We really do want to celebrate and recognise the many amazing achievements which have come about in response to the coronavirus.

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MASERGY Q&A

WITH STEVE HARRINGTON, VICE PRESIDENT SALES, EMEA, MASERGY

AIOps - what's all the fuss about? In other words, what is it and why does it matter?

SH: Artificial intelligence (AI) technologies like machine learning, virtual assistants, and process automation are driving revolutionary capabilities across the enterprise. Yet, arguably the greatest area of untapped opportunity is with AI and IT operations (a.k.a. AIOps). AIOps applies AI and analytics to network visibility and management capabilities, and the benefits of AIOps are enormous. According to Gartner, "organisations that automate 70+% of their network change activities will reduce outages by at least 50% and deliver services 50% faster."

Network management is still plagued by manual processes and analysis requirements that are largely unfit for humans. For two reasons, IT teams aren't fit for comprehensive network analysis. First, under the pressures of trying to do more with less, IT teams aren't growing as the pace of technological change accelerates. Second, machine learning and behavioral analysis are simply better at the job.

AIOps technologies create virtual assistants or virtual network engineers working 24/7 that are designed to help IT teams build a full, comprehensive view of network activity. They deeply understand what constitutes "normal" activity, for example, and can sift out potential performance- or security-affecting events. Furthermore, they go beyond identifying "normal" network behavior to maintain a dynamic picture of what constitutes this behavior as the network changes over time.

AIOps – does it replace existing technologies and approaches used to monitor and manage IT, or is it more of an add-on to what an organization is already doing?

SH: AIOps automates the manual management approaches of today, providing an advisor to help optimize your network, application performance, and security. It analyzes the network and makes recommendations to enhance reliability. While it doesn't replace one specific piece of software or technology, it takes the strain off of IT professionals so they can focus on strategic work, instead of trying to find patterns in network behavior.

Masergy has built AIOps into its Managed SD-WAN solution, embedding it into the client management portal. It's a standard feature included with Managed SD-WAN–there's nothing for clients to install or configure.

In other words, are we talking evolution or revolution?

SH: AIOps represents the beginning of a revolution in network management, as it represents the first stepping stone on the journey toward autonomous networking. Here's how AIOps lays the foundation for total autonomy and where Masergy AIOps is on its journey.

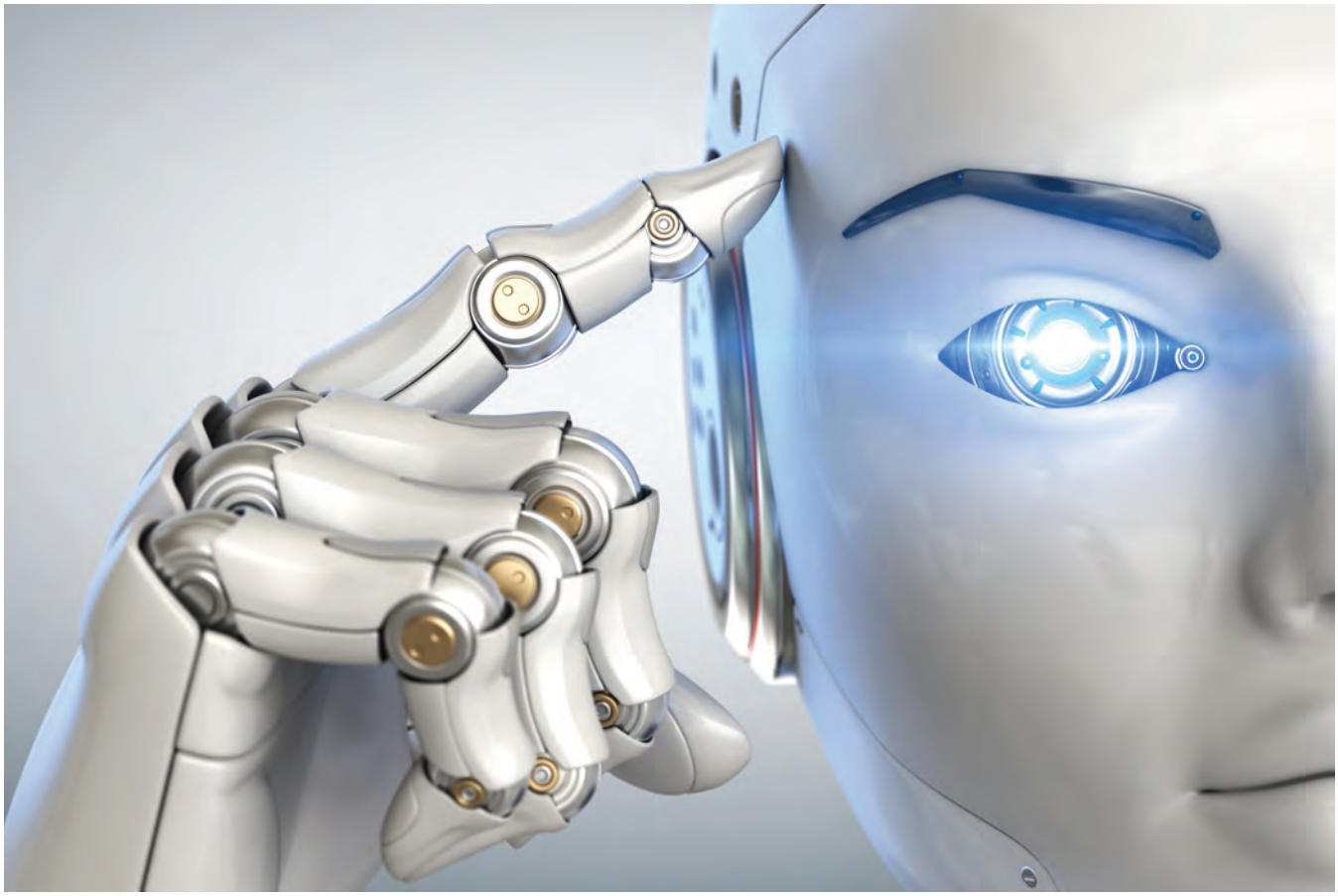
STEP 1 - Acquire an understanding of the network: AIOps provides the tools needed for systemic analysis of what's happening inside the network. Specifically, AIOps virtual assistants provide analysis via sophisticated pattern recognition algorithms and predictive anomaly detection.

STEP 2 - Analyze the data: After acquiring and aggregating the network data, AIOps provides actionable recommendations for IT managers to optimize multi-cloud environments including advice on

- which path an application should take, based upon performance,
- when and where to add bandwidth, including cloud vendors
- network changes and configuration settings to optimize application performance, based on business needs and service priorities

STEP 3 - Act: With access to network controls and permission from the humans responsible for the WAN, AIOps can automate making changes to the network, acting on its own recommendations. This is the key milestone for true autonomy.

Masergy AIOps, released in September 2019, moves Masergy's SD-WAN services firmly in the direction of autonomous networking, but we should be clear



about what our solution can and cannot do today. The solution applies machine learning and behavior analytics to the network, but it is not yet capable of acting on its own (step 3). Our next phase of development will focus on automated decision making and response. Right now, it's a virtual analyst and advisor that deeply understands the network and makes intelligent recommendations.

Masergy is on a mission to deliver autonomous networking in the next few years.

Bearing this in mind, how much is AIOps about the new breed of monitoring and management technology solutions and how much is it about an organisation's mindset and willingness to change?

SH: AIOps is about making IT operations automated, which requires both a new approach and a new mindset. The new approach comes in the way of playbooks. AIOps requires in-depth IT management ruleset that allows the team to train the system so it can ultimately be trusted to self-correct and become self-driving or autonomous.

In the early stages, AIOps acts simply as an advisor finding problems faster, predicting issues before they occur, and offering actionable remediation steps as per the IT management playbook. But more sophisticated AIOps systems are given direct control over network "levers and buttons" so they can make adjustments as needed all by themselves. By testing, training, and teaching the system with fine-tuned rulesets and playbooks, the IT team coaches the system until it can be trusted to act alone. This trust and confidence represent a new mindset.

Is it right to break down AIOps into separate network monitoring/management, infrastructure monitoring/management and application performance monitoring disciplines, or should AIOps be considered as one integrated monitoring and management solution?

SH: Segmenting AIOps into separate disciplines can create a siloed environment that can stymie success. Network infrastructure and application performance monitoring are intrinsically linked, meaning that one affects the other and deep visibility across the entire IT environment is required in order to monitor and manage performance effectively. Thus, solutions should not be siloed but rather embedded into the control portal and applied across software-defined networks with one unified portal.

AIOps seems to cover a whole range of tools and solutions, ranging from the passive – this is what's happened, and maybe why; right through to the predictive or proactive – this is about to happen and here's what you need to do about it. What are the relative merits and drawbacks of the range of the available AIOps approaches?

SH: Both historical and real-time data are equally valuable in understanding what's happening now and in predicting what will likely happen in the future. The more data it ingests the better and more accurate your AIOps system will be at evaluating, predicting, and recommending solutions.

Customer Benefits

- Reduce noise from bandwidth usage alarms, based on static thresholds
- Gain continuous 24/7 analysis across the network, application performance, and security
- Get best-practice recommendations and actionable insights for performance optimization
- Increase service quality and reduce business continuity risks with predictive algorithms
- Quickly identify the probable cause of network service incidents
- Decrease the number of support calls and lower IT costs

The drawbacks are more associated with the preparation and approach the organization takes with AIOps:

- Network readiness is a large factor in AIOps success, as these tools must have the raw data, network visibility, and computing power they need to evaluate the IT environment. Software-defined environments work best. (More on this in question 8)
- Most AIOps solutions are largely point solutions with their own management portals. This means customers get AI analytics and recommendations in a separate portal that must be integrated into their network and IT environment. In these cases, AIOps needs comprehensive APIs for the network underlay as well as any overlaid apps and services. These solutions can be more complex when compared to the Masergy AIOps solution that is a built-in portal capability within our SD-WAN offering. There needs to be a software-defined network or SD-WAN controller through which it can drive changes in network configuration. Where AIOps is not built directly into the core network management, it must have a means to act.

In other words, how would you characterise the relative value in working through historical data as opposed to working with streaming, live data?

SH: See previous question

AIOps – primarily, it seems to be about the optimisation of an organisation's likely hybrid IT operations through better monitoring and management, but it can also offer valuable business insights at a more strategic level?

SH: AIOps platforms generate contextual intelligence and help eliminate human errors that are still the root cause of most service degradations and outages today. By correlating across data streams and applying human-like reasoning to an array of alerts from various layers of the infrastructure, AIOps tools help eliminate false positives. They can discard thousands of alerts that are repetitious and consolidate hundreds or thousands of alerts from different components into a single one pointing at the root cause of the whole constellation of related problems.

AIOps' strategic insights come from two sources:
Data: AIOps should be able to see, ingest, and

use configuration data as well as performance monitoring feeds from all the underlay components of the network. It should also be able to take feeds from other management tools, like software-defined network and SD-WAN controllers. The complexity of the network architecture, as well as the management environment will ultimately affect the use of AIOps. Agile, software-defined environments will best serve AIOps.

Power to process: To make use of these data streams, AIOps tools need strong analytical capacity behind them. Whether provided in data center resource pools or in a service provider or cloud infrastructure, AIOps needs computer power to drive event correlation, real-time altering, and response.
AIOps should deliver:

- Deeper understanding
- Proactive focus
- Root cause analysis
- Process support
- Process integration

By alerting IT only when it needs to be alerted and focusing attention not just on symptoms but on actual causes, AIOps tools conserve IT's most precious resource: the attention of the staff.

So far, we've talked about what AIOps is, and isn't, and the value it offers to organisations which embrace this new approach to IT operations. Before we finish, let's look at how an organisation goes about acquiring AIOps technology. For example, what are some of the key questions to ask an AIOps vendor?

SH: How does your AIOps tool work with your network to collect and ingest the kinds of information feeds and architectural support it needs to be effective?

- Is your AIOps a siloed, standalone solution or is it built into a network management portal for key infrastructure or network services? Consider what will work best for your network given the ways in which AIOps can support integration (e.g. via SDN and SD-WAN controllers, or device APIs, or CLIs, etc.), and where their greatest staffing and performance challenges lie.
- If working with a service provider, how well is that provider's own infrastructure tailored to provide the AIOps tool all the data it needs, and the ability to act effectively on the enterprise's behalf? How long has the tool been in production use, and how many years of operational data have gone into its training?

And are there integrated, single vendor AIOps solutions available today, or is it more about acquiring two or three key pieces of software which together form the basis of an AIOps implementation?

SH: Again, the silo issue comes to the front. If you're leveraging several AI services or technologies to create your own AIOps solution, then gaps can form between them and API complexities arise. Networks that were architected for a pre-cloud era and come with a myriad of control panels only multiply the complexity when adding AIOps. Instead, the underlying network must have a software-defined architectural model that supports real-time flexibility, big data collection, and secure analytics at speed and at scale.

Yes, there are integrated, single vendor AIOps solutions available today. Masergy's SD-WAN for instance. Masergy is different because we have embedded AIOps into the SD-WAN customer portal. It's an integrated part of our SD-WAN services, so all clients can take advantage of AI-based analysis. Separate AIOps services are out there, but are they optimised for your specific hardware, software, and infrastructure? Probably not.

To do everything it can for the organization, an AIOps tool must be able to integrate with or into the core network management and security platforms. With Masergy all of this is possible.

Bearing in mind that we've established the value of AIOps, where does an organisation start in terms of introducing AIOps into the business? With previous technologies such as virtualisation and cloud, it was possible to start with a single application in a test environment, before going more mainstream. AIOps would appear to be a bit more 'all or nothing'?

SH: Use AIOps for visibility first. Operations can also simplify by starting with one location or site. Further simplify AIOps by ensuring it fits into operational processes. The tools should literally integrate, via API at least, into ticketing systems, for example, so that they can create and update tickets for real incidents. They should also integrate functionally. For example, they should play a key role in incident response processes, starting with providing the alerts that trigger a response plan. Beyond that, their ability to assist in root cause analysis and to provide guidance on remedial action should put them at the center of incident response.

Finally, are there one or two key pieces of advice you'd like to offer individuals and organisations who are approaching AIOps for the first time?

SH: Start slowly, and early: use AIOps for visibility first, and expect to take time to teach it their context before looking to it for automated responses (hence the importance of starting early). Use the analysis AIOps provides to fine tune your own operations playbooks before attempting to automate them. Learn to trust: Lay out a timeline for moving from "show me the button to push" to "tell me you just fixed something" with a rising level of importance over time (and plans how to fall back a level if a step push past the tool's abilities).

AIOps and data

Getting a continuous view

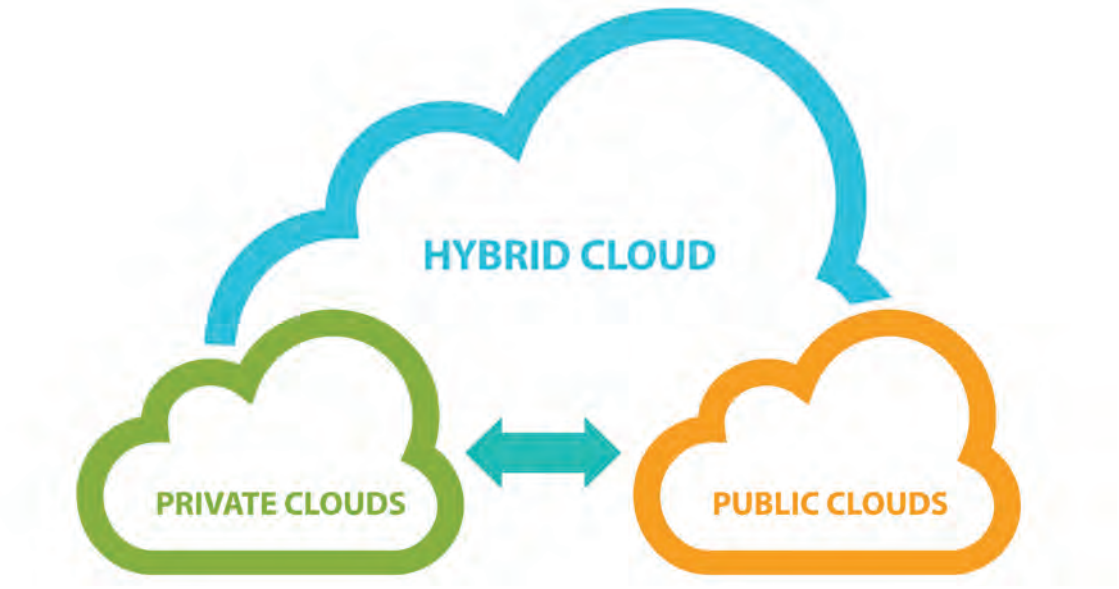
AIOps can help across your operations, improving your efficiency and taking out some of the manual work that does not provide value.

BY CHRISTIAN BEEDGEN, CHIEF TECHNOLOGY OFFICER, SUMO LOGIC.

BUSINESSES TODAY create data every second they operate. From applications carrying out processes or transactions, from websites used by customers, from their supply chain or security operations, each asset provides the digital equivalent of "I did this!" With so many different tools in place, getting insight into what is happening across the software development lifecycle is hard. Yet, at the same time, we are all being told that data is essential to our operations.

Each of these individually might not amount to much, but when you have all this data in aggregate, you can start to tell a lot about the business. To use this data, you have to automate how it is gathered, processed and analysed, and then get that analysis into users' hands. Gartner defines this as continuous intelligence, as it goes beyond simply analysing data and crosses into automated decision support and recommendations for what to do next.

For AIOps, this process involves getting data from all your applications, cloud services and pipelines. The number of pipelines within enterprise has gone up over time - there may be tens or hundreds of different



pipelines in place. The challenge for IT Ops teams is that all these pipelines use different software lifecycle tools, so it is harder to manage and consolidate data.

Alongside this, teams may use different platforms to host their applications, whether this is due to cloud location, availability, or preference for a certain provider's tools. Whatever the reason, running multiple services and pipelines across multiple clouds will make it more difficult to spot problems from an operational perspective. AIOps can help.

When you have so many tools and cloud services to think about, any automation should help improve performance. Using artificial intelligence, machine learning, and pattern recognition, you can perform and automate tasks that would normally be executed by IT operations faster and more efficiently. AIOps implementations should help your team increase their oversight of hybrid cloud environments, detect and respond to network security events more quickly and save time by automating routine tasks and processes.

From software pipeline to production

Using this approach, you should be able to speed up how quickly you can bring data sets together, and use this information to improve your operations. The important thing here is that each team involved should get insights that are useful to them as well as recommendations for what to do next.

For teams running applications in production, automating this process for interrogating data has to provide recommendations on what to do around those services. For a developer, this might involve changing a service or fixing a problem - this could recommend an update that would be needed for compliance purposes, or to provide a level of performance improvement. This data can provide similar data for security analysts, showing them where issues might exist in their applications as well as where to research potential issues. Automating this relies on a lot of the same data as the developer team will require.

CI/CD pipelines are supposed to run continuously, so we should be getting information from them continuously as well. Using this data will involve getting a continuous process in place to turn that data from multiple logs, files and metrics spread across pipelines into a form that developers can visualise and use themselves. Automating this process makes it easier to get the results back faster. Using AI, you can then start to make comparisons and recommendations back to developers. This is only possible when you can make recommendations based on what the wider industry is achieving, so you can see the context for whether you are performing well or not.

This benchmarking activity can be really useful for judging your success over time. However, this relies on being able to see outside data. A good example here is the DevOps Research and Assessment (DORA) reports that have details on automated processes and the results. Looking at these in context can help reduce stress and improve performance.

This benchmark can help you see how well your team is performing in context, as well as where there are areas for improvement through more automation.

AIOps can help across your operations, improving your efficiency and taking out some of the manual work that does not provide value. By bringing data and automation together, you can help your teams concentrate on what will make the most difference to their pipelines, to their security or to their operations. The same data - supported by AIOps - can be useful for multiple teams. However, it relies on a continuous approach to data, to analysis, and to recommendations.

ITSM continues to be effective in a remote work environment

THE SURVEY, conducted among more than 500 global IT professionals, highlights the ramifications and challenges the COVID-19 pandemic caused for IT service teams. The survey focused on five facets of ITSM – impact of employees working remote, financial and asset management implications, security and governance issues, third-party services and technology assistance, and business continuity success levels. The survey yielded key findings that organizations and teams should be aware of when adapting to remote work environments.

As employees began working beyond the corporate perimeter, the data and tools local to their network became out of reach. Therefore, a majority (78%) of IT professionals overcame this hurdle by transitioning to cloud services.

Further, global IT teams have adopted new tools and applications to accommodate a dispersed workforce. This led to an increased requirement to update knowledge articles and user documentation to address the new technologies. Worryingly, in these times with unprecedented service desk pressure, a considerable minority of organizations do not have self-service (28%) and virtual agent (24%) technologies to offset the workload. It is worth investing in them, as the survey evidenced high correlation of remote ITSM success among organizations that are leveraging such tools.

Other key findings show security concerns loom large, and greater recognition of IT's efforts are anticipated. Further data shows:

- **Impact of employee remote working:** 72% of IT professionals affirm ITSM's continued effectiveness even in remote work scenarios. However, only one in two organizations have a bring your own device (BYOD) policy to support continued productivity in new remote work environments.
- **Financial and asset management implications:** 4 out of 5 respondents believe IT will have greater appreciation in terms of budgets, salaries and recognition of efforts, post crisis. Only 15% of organizations were under-equipped with the necessary applications and tools to enable remote working, well into the crisis.
- **Security and governance issues:** Only 40% of organizations confidently agreed that they are equipped to tackle the increase in security and privacy concerns related to employees working outside the office.
- **Third-party services and technology assistance:** Among the organizations that outsourced ITSM, over 70% were satisfied with their MSP's performance. Interestingly, IT self-service was non-existent in 28% of the respondent's organization.
- **Business continuity success levels:** Most organizations had a business continuity plan (BCP), leaving only 20% without one. A reliable BCP was an important factor for successful remote IT support.

Build it for them, and they will come

We hear a lot about data - how successfully integrating data into your strategy, operations and culture will see you outpace your peers.

BY STEVE BARRETT, VICE PRESIDENT EMEA, PAGERDUTY.

DATA IS HARD TO FATHOM - and it's about to get worse. The volume of data is expected to increase, as more organisations embrace digital delivery. By 2022 more than half of enterprise data will be created and processed outside the data centre or cloud according to Gartner.

That's a challenge for those building and managing digital services; those trying to separate the signals from the noise to discover, diagnose and repair problems.

Many perceive this an opportunity for Artificial Intelligence: Apply machine learning and data science to what is a big-data problem. From there, you can build processes and automation to take over operational functions such as performance monitoring, event correlation and analysis.

This is AIOps - something Gartner's evangelised since 2017 and expects 30% of large enterprises to employ by 2023. But while that sounds promising, we are a year past the point when Gartner expected a quarter plus of large companies to have "strategically implemented" AIOps.

By Gartner's own reckoning, just 5% had combined data and machine learning to realise this.

There's clearly an opportunity to deliver AIOps with a system that overcomes these challenges. That means a system that doesn't require data scientists to implement or to customise.

Why isn't AIOps rolling out faster? To answer this you must understand the forces driving data growth - and how AIOps has been presented and packaged.

Not your parents' AI

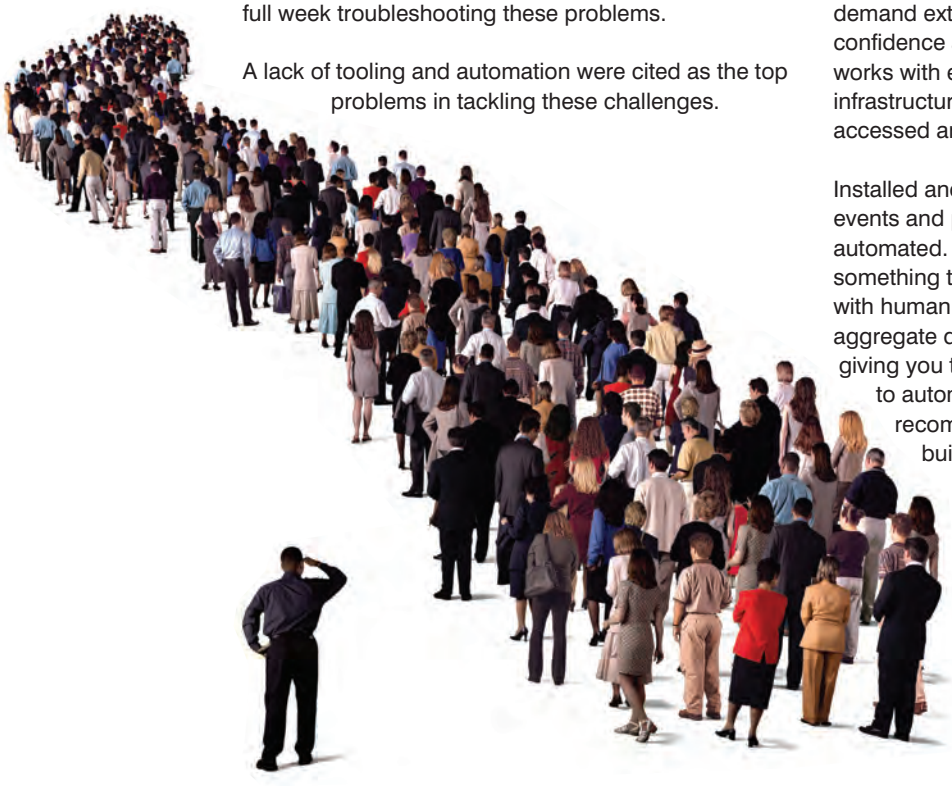
Digital is promoting data growth for two key reasons.

First: an explosion in software development. IT infrastructures are going virtual and software-defined. Monolithic applications being broken down into microservices. The pace of software development is speeding up with hourly, daily and weekly builds. We are seeing more features, more individual application components and more digital services.

Next is the greater number of transactions: more commerce being conducted online, more devices in the enterprise, a greater number of employee services - particularly in the era of Covid-19, as organisations consolidate online estates for remote working.

Little wonder IT pros are struggling. The volume of data generated is already impacting the health of the IT infrastructures digital business depends on - and the quality of services. For example, the 2020 State of Software Quality found that 53% of developers are encountering critical or customer-impacting issues with production software at least one or more times a month. A third are spending between two-days to a full week troubleshooting these problems.

A lack of tooling and automation were cited as the top problems in tackling these challenges.



Twin challenges

If this is a big-data issue, and given AIOPs by Gartner's definition has existed since 2017, why hasn't AIOps penetrated enterprise IT?

One reason is a lack of trust. Successful AIOps should help teams find the actionable signals in the data noise. It can identify potential problems and automate response to events and incidents having learned from a diet of past event data. Today's IT pros, however, have a major issue trusting the relevance and reliability of what AIOps is telling them, says the 2019 State of AIOps report.

Another challenge is a lack of skills to implement AI. AI has - traditionally - required expertise in such areas as machine learning and statistical modelling. These skills are possessed by specialists who are expensive and in short supply - not your typical developer or ops person. Given the way AIOps' has been pitched and packaged, it's natural to believe a lack of such skills are holding up your AIOps: and 64% do, according to the 2019 State of AIOps.

Breaking the cycle

There's clearly an opportunity to deliver AIOps with a system that overcomes these challenges. That means a system that doesn't require data scientists to implement or to customise. A system that doesn't demand extensive configuration. To help foster that confidence and trust currently missing, a system that works with existing data and is integrated with existing infrastructure so past incident responses can be accessed and learned from.

Installed and trained this way, AIOps can understand events and propose recommendations that can be automated. This is the basis for event intelligence - something that combines data and machine learning with human context and best practices. It lets you aggregate data and find the signal in the noise, giving you the information to act with the ability to automate workflows and combine machine recommendations with human judgement - building a system you trust.

Digitalisation is producing data-rich IT infrastructures that are stretching IT teams. An AIOps system built around statistical modelling and analytics with machine learning and that is assisted by automation, offers a means to cut through the noise, and zero in on the signals. The challenge - and opportunity - is to deliver AIOps that IT pros can easily work with.

AIOPS SOLUTIONS ONLINE SUMMIT

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The importance of proactive performance monitoring and analysis in an increasingly complex IT landscape.

2 December 2020

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Downtime and disillusionment: How IT can support boosting employee morale

As the home becomes the new office, there has never been such a heavy reliance on technology to keep the notion of the 'workplace', and its culture, alive. Technology is the backbone of most 21st-century enterprises, supporting everything from data storage and security systems, to the software that employees use every day to get their work done. As employees continue working remotely, modern businesses understand that now, more than ever, a technology issue can quickly become a significant risk or loss of productivity.

BY CHRIS TERNDRUP, BUSINESS TRANSFORMATION ARCHITECT AT NEXTHINK.

EMPLOYEES are being offered a range of new collaboration tools and ways of working from home, but they have high expectations of the technology they are given to work with.

Despite the desperate need for reliable and fully-functioning tech, the reality of this is far from perfect.

A recent study found that 61% of employees report IT downtime as an accepted norm in their organisation, with IT disruptions occurring on average twice a week. But how are these delays impacting the average employee's working day? To what extent are technology issues impacting employees' mood and motivation?

The bottom line

In the 2020 Experience Report, we've found that employees are being set back by an average of 28 minutes every time they encounter a technology problem at work. For projects that are particularly time sensitive, technical issues like these can result in missed deadlines and a drop in work quality, putting the employee in a difficult position through no fault of their own. This could be particularly disruptive for an employee who is due to host a presentation or live webinar.

The same study gained insight directly from IT leaders, who reported an average of two technology interruptions for each employee per week. But, with employees only reporting just over half of incidents (55%) the real productivity drain could be almost twice as bad as IT estimates.

When these figures are extrapolated, the loss in productivity is evident. For a company of 10,000 employees, this downtime equates to a loss of £20 million per year. The impact of workforce engagement on a businesses' bottom-line is very real.

Keeping colleagues connected and emotionally supported

With the recent shift to remote working, the kitchens, bedrooms and living rooms of millions of employees have become their new workplace. And as they look at their companies solely through the window of their devices, technology is expected to fill this gap. Not only is the computer now the conduit to productivity – it is also the main (for many, the only) social and collaborative tool that keeps colleagues connected.

Consequently, in addition to ensuring a consistent technology experience, increasingly IT is tasked with helping find solutions to employees mental well-being. Supporting in the deployment of employee surveys that gauge emotional stress or helping to measure where employees might be suffering from video call / meeting fatigue.

Be wary of demoralising employees

In some environments, new software is being released on a daily basis, workers are forced to learn new technological procedures and functions while still under intense pressure to meet deadlines. Throw in common IT problems, such as crashes and data loss, and it's increasingly difficult for employees to maintain a state of flow and work productively.

In contrast, the positive link between happy employees and improved productivity is proven and well documented. A recent report found reduced stress levels in 72% of workers who have access to technology that helps them to work more productively. The same study also found that automation helps to reduce workload and stress in 64% of employees. A happy and engaged workforce can transform a business, which is why organisations need to take

practical steps to improve the digital experience for employees.

Proactive IT is the solution

To deliver high-quality IT services and improve employee satisfaction, businesses should focus on proactive IT management to prevent issues before they arise. The reality is that for every end user who takes the time to report an incident, there are many more with the same problem who suffer in silence due to the perceived hassle of reporting to IT.

Organisations shifting to a more proactive approach will see an increase in visibility into the performance, behaviour and compliance of employee devices. By analysing user engagement and implementing comprehensive, real-time monitoring of devices on the network, IT teams can shed light on the affected services underneath the radar. Not only will this help IT to provide a new level of digital satisfaction for employees, it will also have a positive knock-on effect for their level of engagement and productivity.

From the data centre to user endpoints, IT represents the nervous system for any enterprise, and every employee depends on it to be productive. Anger, frustration and wasted time are bad enough consequences of technology designed fundamentally to improve employee experience. It's time for IT teams to take a more proactive approach, to eliminate issues before they arise and create a smooth digital experience for employees. After all, providing workers with fully-functioning and reliable technology can be instrumental in boosting their wellbeing and reinforcing the feeling of connectedness, particularly during this period of remote working.

OpsRamp partners with Google Cloud

OPSRAMP has entered into a go-to-market partnership with Google Cloud. Enterprise customers of Google Cloud will be able to procure the OpsRamp platform on the Google Cloud Marketplace. OpsRamp will benefit from an advanced view into Google Cloud roadmaps and will host the OpsRamp platform on Google Cloud.

As enterprises accelerate their public cloud investments, they require full visibility into their on-premises and cloud resources for performance and cost optimization. OpsRamp delivers hybrid infrastructure discovery, monitoring, event management, and automation capabilities to prevent outages and service degradations. OpsRamp is designed to deliver a single pane of glass across all environments, powered by artificial intelligence for IT operations management (AIOps). With OpsRamp, Google Cloud customers and partners can:

- **Be the First to Know:** OpsRamp automatically discovers and onboards Google Cloud services as they appear on the network and supports out-of-the-box integrations for popular Google Cloud services across compute, storage, network, big data & analytics, serverless, and containers as well as the Google Cloud Operations Suite. Google Cloud customers and partners can view cost analytics for services being used and alert teams to underutilized IT resources and teams that have exceeded their allocated cloud budgets.
- **Take the Right Action with Context:** OpsRamp establishes linkages and dependencies between business-critical services and cloud infrastructure with topology maps for Google Cloud resources. Intelligent alert correlation and bi-directional integration with IT service management (ITSM) tools like ServiceNow reduce alert noise and ensure the right priorities are set for incident management.
- **Automate and Resolve Faster:** OpsRamp simplifies routine operational processes and drives incident remediation without human intervention, using policy-based automation. Built-in patch management capabilities allow IT operations teams to patch Windows and Linux operating systems at scale and mitigate operational risks.

- **Run IT Operations as a Service:** OpsRamp's multi-tenant, multi-tier SaaS architecture is designed for distributed IT organizations and managed service providers who are establishing a modern digital operations control center.

"This is a seminal time for public cloud adoption as Covid-19 has elevated the value proposition of scalable, on-demand infrastructure," says Varma Kunaparaju, CEO and co-founder of OpsRamp. "This partnership elevates our commitment to Google Cloud, which we expect to only expand in time as we increase our Google Cloud monitoring, event management, and automation capabilities to meet growing customer demands for Google Cloud's advanced cloud infrastructure."

"As organizations accelerate their cloud migrations, better visibility into resources, operations, and services can help IT manage spend and optimize performance and uptime," said Nirav Sheth, Director, ISV and Channel Sales at Google Cloud. "We're delighted to partner with OpsRamp to bring the capabilities of their IT infrastructure monitoring platform to Google Cloud Marketplace."

OpsRamp has introduced new synthetic and cloud monitoring capabilities for identifying and resolving user performance issues across business-critical applications and services. As IT organizations adjust to remote infrastructure operations, OpsRamp now combines user experience metrics with end-to-end synthetic transaction visibility and service maps to deliver better business context and improved customer experiences across their websites and digital properties.

The OpsRamp Summer 2020 Release also introduces 22 new cloud monitoring integrations for Amazon Web Services (AWS) and visualizations for machine learning-powered event correlation.

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OPSVIEW Q&A

WITH SCOTT HEYHOE, VP OF PRODUCT MANAGEMENT, OPSVIEW

AIOps - what's all the fuss about? In other words, what is it and why does it matter?

SH: There certainly is a lot of fuss about AIOps – some of it is justified and some not. Unfortunately, AIOps seems to be a badge that companies add to their offering without really adding AIOps functionality at all. Gartner [report November 2019], helpfully break AIOps down into two categories: domain-centric and domain-agnostic. D-C is a where a company (like Opsview) continues to excel in their focus area (in Opsview's case that is IT Infrastructure and Cloud monitoring), and adds machine learning or AI capabilities to add extra value to their offering. This could be in predicting when something might fail – a simple example is predicting when a disk might run out of capacity, allowing a system administrator to take action before the failure. D-A is where a company (like say Moogsoft) consumes data multiple sources (eg monitoring data, transactional data, environmental data) and aggregates and analyses that data. An example here could be correlating a dramatic increase in web traffic with a network failure, understanding that these have the same root cause. Both approaches have merit.

AIOps – does it replace existing technologies and approaches used to monitor and manage IT, or is it more of an add-on to what an organisation is already doing?

SH: AIOps will almost always be an add-on, whether that is adding functionality to existing monitoring products, or buying in an aggregation and analysis product. Some D-A tools provide rudimentary monitoring capabilities, and some pure monitoring tools provide some rudimentary aggregation capabilities, but it is clear that these technologies overlap at worst and complement at best.

In other words, are we talking evolution or revolution?

SH: Technology choices force evolution. It is a brave CTO or COO who will swap out an entire monitoring stack, containing multiple monitoring tools (e.g. network, application, infrastructure), for a do-it-all system that a) almost certainly doesn't do it all, and b) almost certainly causes IT continuity issues. Additionally, AIOps comes with the promise of reducing noise – fewer, but more meaningful alerts – and yet those alerts can often by-pass the local team where they could be addressed without escalation. In other words, a big bang approach is risky and potentially disruptive.

Bearing this in mind, how much is AIOps about the new breed of monitoring and management technology solutions and how much is it about an organisation's mindset and willingness to change?

SH: I'd question what is meant by "the new breed of monitoring and management technology". Whilst there are new entrants into the market, it is the established players that are adding AI/ML to their existing arsenal of monitoring products, or adding AI/ML to their existing aggregation and analysis products.

Is it right to break down AIOps into separate network monitoring/management, infrastructure monitoring/management and application performance monitoring disciplines, or should AIOps be

considered as one integrated monitoring and management solution?

SH: See answer to 1. It is correct to discuss domain-centric AIOps (network, infrastructure, application) and domain-agnostic AIOps (aggregation and analysis).

AIOps seems to cover a whole range of tools and solutions, ranging from the passive – this is what's happened, and maybe why; right through to the predictive or proactive – this is about to happen and here's what you need to do about it. What are the relative merits and drawbacks of the range of the available AIOps approaches?

SH: Opsview did a survey in July 2019, where IT decision makers were conclusively better at recovering from outages than from preventing them in the first place. As outages will still happen in even the best of predictive environments, mean-time-to-resolution and automated resolution are key requirements. On the other hand, a dramatic reduction in outages should manifest itself if the predictive capabilities learn over time – prevention is better than cure, and the biggest of outages can result from the smallest of components failing.

In other words, how would you characterise the relative value in working through historical data as opposed to working with streaming, live data? Predicting with live, streamed data is far more effective and powerful as failures can be headed off. When something has gone wrong however, then historical data must be analysed. The trick with AIOps is to have the predictive algorithms learn from historical data – guided by human intervention and interpretation: was an anomaly really an anomaly or was it expected, repeated behaviour, for example.

AIOps – primarily, it seems to be about the optimisation of an organisation's likely hybrid IT operations through better monitoring and management, but it can also offer valuable business insights at a more strategic level?

SH: At Opsview, we focus on the monitoring of Business Services – the end to end connection of many devices in the provision of a key business service. A simple example could be the web server, traffic routers, address data bases and connecting network devices in an e-commerce website. If one component fails then the service fails, unless the service is analysed and redundancy, high-availability and disaster recovery are built-in. In that case, a business service warning can be issued when a component fails, rather than an outage occurring. This is business impact at the highest level, and C-level execs are very interested in business service continuity. There are plenty of documented cases (TSB, SouthWest Airlines, NYSE, BA, others) where thousands or millions of dollars or pounds are lost due to service outages. Exec want a warning when a service is at risk, not when a network switch has got a little bit hotter.

So far, we've talked about what AIOps is, and isn't, and the value it offers to organisations which embrace this new approach to IT operations. Before we finish, let's look at how an organisation goes about acquiring AIOps technology. For example, what are some of the key questions to ask an AIOps vendor?

SH: I think that the key questions are about appetite for change. A step-wise approach, adding AIOps to critical network, application or infrastructure monitoring adds immediate value, with relatively little impact on operations and on operational staff. Adding an aggregation and analysis tool over-and-above existing monitoring tools will require additional expenditure, additional training and/or additional staff. Also, there is very much a machine learning phases with D-A AIOps tools, as well as human learning – it is not uncommon for system administrators to be overwhelmed with the newly available data – adding more noise and resulting in usage barely scratching the surface. Ask how long is the break even business case. Ask how long is the learning curve. Ask yourself whether you have the appetite for wholesale change or incremental change.

And are there integrated, single vendor AIOps solutions available today, or is it more about acquiring two or three key pieces of software which together form the basis of an AIOps implementation?

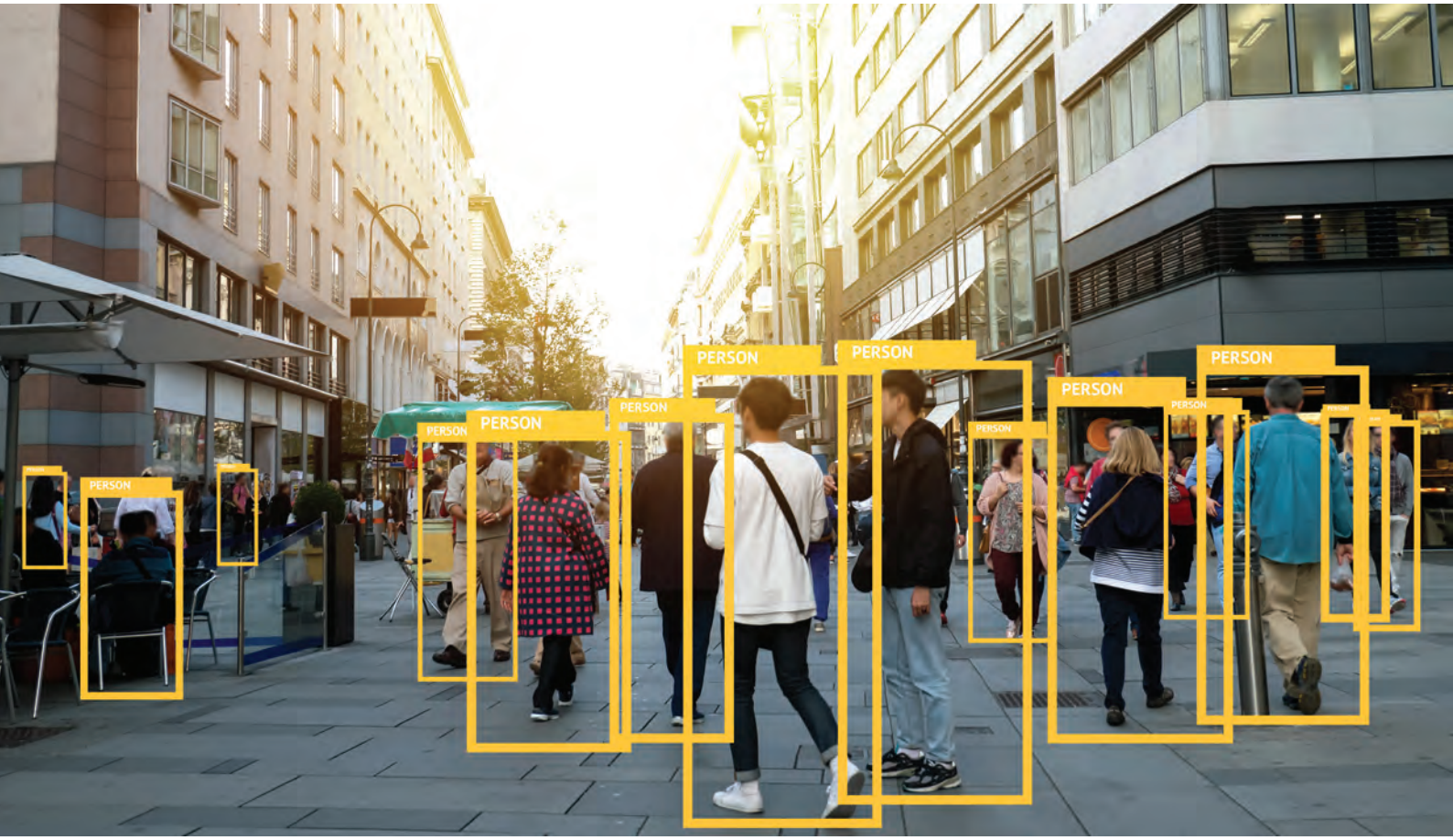
SH: See answer to 1. There are domain-agnostic systems such as Splunk or Moogsoft, and these can be added over the top of existing monitoring tools. These (rightly) rely on the underlying monitoring tools to provide the richness and depth of monitoring metrics and event data.

Bearing in mind that we've established the value of AIOps, where does an organisation start in terms of introducing AIOps into the business? With previous technologies such as virtualisation and cloud, it was possible to start with a single application in a test environment, before going more mainstream. AIOps would appear to be a bit more 'all or nothing'?

SH: Hopefully the above answers show that this is not the case. Start by adding AI/ML to existing monitoring capabilities. Or start with a domain-agnostic tool only consuming one or two sources of monitoring data.

Finally, are there one or two key pieces of advice you'd like to offer individuals and organisations who are approaching AIOps for the first time?

SH: See answer to 9. Be clear what the value is that you are looking for. What is the objective of adding AI/ML to your current processes. How will you measure success.



How machine learning models are central to AIOPS success

Over the last few years, there has been a significant shift in the IT architectures that an IT operations management team has to support and manage.

BY JOHN SPOONER, HEAD OF ARTIFICIAL INTELLIGENCE, EMEA, H2O.AI.

THIS SHIFT has occurred through virtualisation technologies, such as virtual machines, microservices, elastic clouds and containers. These new technologies generate a vast amount of data, and the current management systems are not always able to sufficiently cope with this 'data deluge'. Often, the systems are unable to gather and act upon the insights that exist within the data. This, in turn, would help the ops teams to proactively manage these environments.

To help with these challenges, a new set of technology and processes have emerged that is called AIOps. In summary, this new strategic concept combines Machine Learning and Artificial Intelligence concepts to IT Operations challenges. As quoted by Gartner:

"AIOps platforms combine big data and Machine Learning (ML) 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."

Many AIOps platforms are built using the following components:

- Data
- Discovery
- Correlation
- Visualisation
- Machine Learning
- Automation

While all of these elements are important, it is the combination of the data and the Machine Learning elements that provide the intelligence to the AIOps systems. The term Machine Learning (ML) is widely used today. ML is the application of software to try to fit models and predict the future based on historical data. It can be visualised as a person behind a control panel with a bunch of knobs and levers, tuning them until they get to the optimal combination that delivers the most accurate outcome. However, businesses should consider that many AIOps platforms provide a data scientist with the most elementary ML functionality, and it then becomes that data scientist's job to tune the control panel with all their knowledge of all the different algorithms, and how they work. This takes time and effort for a discipline that is notoriously hard to find the right people to perform.

Organisations that are building AIOps technology stacks need to make sure that they consider the latest innovation in 'Automated ML'. This includes a way to automate the construction of a Machine Learning model, helping the data scientist avoid spending a lot of time on unnecessary grunt work, which is commonly performed to get models up and running. It is a technique that speeds up the process, compresses the time spent writing code and automatically checks assumptions done manually. This allows the refocus of valuable resource, which can be re-directed on utilising data science expertise, and combining it with the understanding of IT operations to fine-tune high-value machine learning models. It also allows more time to interpret the results and deliver them to stakeholders.

One of the major objections that IT teams sometimes have with this approach is that Machine Learning models should not be seen as 'black boxes'. When the model flags an issue with a system, then the reason for the flag needs to be quickly surfaced. Users must be able to explain them coherently and identify the logic behind any ML model predictions. Being able to describe the model's decision adequately, having good documentation and eliminating bias from the results are vital considerations for companies, in order to instil trust in the Machine Learning that is underpinning AIOps. Many of the standard Machine Learning capabilities that are embedded within AIOps technology does not necessarily provide this transparency, which creates another reason why IT teams need to add specialist ML technology on top of the AIOps stack.

Once that Machine Learning model has been built, it only has economic value when it sees the light of day and is used in the automation process of making business decisions. Only by utilising best of breed Machine Learning technologies that allow the model to be deployed quickly, across several different environments (cloud, on-premise, IoT device) and through a variety of other technologies (python, java, c++, rest APIs) will enable companies to instantly react to the unusual patterns that are occurring in the IT systems and proactively fix them.

In summary, for AIOps to succeed, they must be built on the best of breed Machine Learning and automation technologies. Only then will the AIOps platforms automatically detect the business level issues within the systems from the 'data deluge' that is being generated across the organisation. Without embracing these Machine Learning considerations, any digital innovation and IT transformation will be throttled, and your competitive advantage minimised.

Virtana integrates with Pure Storage

ENTERPRISES are struggling with their IT performance, as almost half (47%) admitted they lack visibility and insight into their systems in a recent survey. In response, Virtana, a leader in enterprise hybrid cloud migration and optimization today announced an integration with Pure Storage, an IT pioneer that delivers storage as-a-service in a multi-cloud world.

Integrating visibility of Pure Storage's FlashArray products into Virtana's VirtualWisdom platform provides enterprises with real-time insights into the performance, consumption, right-sizing, and service levels of their IT workloads.

The goal of Pure Storage is to eliminate complexity and accelerate business results. The FlashArray products are part of a Modern Data Experience – an all-flash, agile, simple, and Evergreen platform for data storage, enabling customers to take advantage of advances in software, compute, and storage media technologies completely non-disruptively. Virtana's VirtualWisdom is a platform which assures the performance and

availability of mission-critical workloads through AI-powered monitoring analytics and automation.

How it Works:
VirtualWisdom ties together visibility of disparate elements of an infrastructure stack – compute, network, cloud – and now includes Pure Storage's FlashArray elements, allowing visibility and real-time insights into the resource relationships underpinning mission-critical applications. This process provides increased awareness and real-time insights to make informed business-critical decisions.

Benefits:
This integration will provide customers with full visualization of application stacks, allowing them to do the following:

- Understand the data supplied
- Provide the ability to right-size workloads and automatically triage
- Diagnose and provide actionable resolution recommendations before operations teams are even aware of the potential impact.
- Provide scalable automatic alarms that align with SLAs: VirtualWisdom will now be able to automatically set alarms on the supporting infrastructure that aligns with service levels and thresholds can be scaled in either direction.

According to Ian Wheat, Director of Emerging Technology Alliances, Pure Storage, "Our customers rely on relevant insights provided by our tools about the FlashArray platform – providing a simpler way to aggregate and correlate insights with the infrastructure elements outside of storage is critical to making smart decisions quickly that drive business forward. "Virtana has extensive experience in this area and will help many customers avoid costly and time consuming investigations into problem areas."

Perfect Image sees 10:1 return on investment

PERFECT IMAGE'S IT infrastructure has seen a 10:1 return on investment by implementing a multi-cloud rightsizing and optimization tool. The UK-based managed service provider's improvements in results were gained through its partnership with Virtana, a leader in enterprise hybrid cloud migration and optimization.

According to a recent survey by Virtana, nearly half (47%) of businesses in the US and UK said they lack visibility and insight into the performance of their IT systems in today's economic climate.

Without such insights, planning and implementing a multi-cloud strategy is likely to be sub-optimal. Perfect Image has addressed this issue to get ahead of its competitors by adopting Virtana's CloudWisdom, a platform which allows them to take control of public cloud costs by eliminating idle resources, rightsizing capacity, and optimizing usage of their cloud-hosted IT infrastructure. CloudWisdom's cloud cost optimization offering after being dissatisfied with the results provided by traditional tools. Bob McKay, Director of Operations at Perfect Image, said, "Perfect Image has been working in the cloud sector for a long time, compared with a lot of our competitors.

"We chose CloudWisdom because we were blown away with the product and what it could do. In fact, we were able to conservatively identify potential savings of £300K in just the proof-of-value stage, which could ultimately reach £800K.

That meant that just based on that subset we were going to a get a return on investment of around ten to one, which enables us to deliver quantitative, measured, and significant savings to our cloud clients by cost and capacity optimisation and control. Perfect Image is a forward-thinking organization that worked with us to strategically build out its hybrid cloud infrastructure solution to efficiently map, plan, and validate optimization.

Today, they have detailed analysis, including real-time rightsizing and optimization recommendations, all in a single interface. They're not only integrating CloudWisdom into their FlexCare Managed IT offering but also giving their customers access to it so they can see cost, performance, and capacity savings for themselves."

Virtana's range of workload capacity optimization, cost management, and performance assurance solutions help more than 260 global customers and partners plan, execute, and manage their hybrid cloud implementations.

Why managing application performance in the cloud is vital

In the digital era, it's now easier than ever to support a remote workforce as so many applications are moving to the cloud. Applications such as Office 365 are ensuring that employees can work from anywhere, which is especially important in the current environment, but this also raises issues for IT managers.

BY KATHIE LYONS, EVP & GM OF PARKVIEW AT PARK PLACE TECHNOLOGIES.

IT teams are now having to cope with an increasing number of remote devices and services working beyond their own local network. This means monitoring and managing firewalls and VPNs while ensuring minimal network disruption. Moving applications and services to the cloud also allows businesses to cut down on hardware costs. Automatic software updates and the ability to deal with ever-growing or fluctuating bandwidth demands are also plus points when working with applications beyond the local network. The combination of these benefits enables businesses to react more quickly to evolving market conditions. And with a third of enterprise workloads now running in the cloud and just 21%

It's essential to use a network management platform that provides an up-to-date view of all network assets. This enables IT engineers to quickly identify network issues so that they can address them as soon as possible

hosted locally, it appears that migration to the cloud is set to continue.

While moving applications to the cloud has lots of advantages for businesses, it also presents some new challenges. The key challenge with moving applications to the cloud is that this puts them well beyond the scope of most businesses' existing network monitoring and troubleshooting capabilities. IT managers need to be able to monitor application and service performance beyond the edge of their own network. This is becoming increasingly complex as new users, services and technologies are being added all the time. Managing the entire network properly is a major challenge for businesses in the increasingly cloud-centric world.

The ability to view the network whether it's on-prem or in the cloud is an absolute must for businesses in the digital era because you can't manage what you can't see. An all-in-one management platform is the key to complete real-time visibility, enabling IT managers to monitor everything from a 'single pane of glass' so that they can pinpoint and tackle any issues that arise straight away.

Without the ability to monitor applications and services beyond their own firewall, IT managers will be unable to tell where traffic is routing or where any potential issues might be. If they don't have complete visibility they cannot see whether traffic is using the correct paths and so they are unable to guarantee that it is using the most secure route possible. This could result in security problems as well as poor performance of applications and services to end-users ultimately adversely impacting the business.

As well as having a central point of control, organisations also require a flexible management platform that can be configured and scaled up to fit their specific business needs. Support for virtual platforms is also necessary as businesses continue to move through their digital transformation journey, along with the ability to support an unlimited number of users.

It's essential to use a network management platform that provides an up-to-date view of all network assets. This enables IT engineers to quickly identify network issues so that they can address them as soon as possible. Management platforms should be flexible so that they can cater for a diverse range of industry sectors including financial, legal, telecoms, media, retail and public sector.

When managing the network, the ability to discover, trace and visualise application data paths offers businesses a major advantage. This enables IT managers to immediately spot problems with cloud-based applications or services, providing them with immediate locational and geographical context which they would not get from a simple table of data. By visualising data paths, network managers can easily spot bottlenecks, paths that have deviated from expected routes, or paths that haven't reached their destinations. As well as identifying the exact issue, this also tells IT engineers whether the problem has occurred within or outside of their local network. Now that applications reside on the cloud it is still very important to be able to see and track latency issues for each application. High latency impacts an end-user's productivity with poor application performance. Consequently, it is vital for IT managers to be alerted to any latency change so they can adjust before performance degrades.

Applications moving to the cloud is a trend that's set to stay, so it's vital that businesses have a way of ensuring visibility, both within their own network and beyond. Bridging the gap between application management and network management should be a priority in any IT strategy. Ensuring visibility over application network paths means that businesses can work smarter and faster, with minimal disruption, no matter where their employees are.

IBM and ServiceNow help businesses

EXPANDED strategic partnership to combine Watson AIOps with ServiceNow IT Service Management and IT Operations Management Visibility to help businesses fix and prevent IT issues at scale. IBM and ServiceNow have expanded their strategic partnership designed to help companies reduce operational risk and lower costs by applying AI to automate IT operations.

Available later this year, a new joint solution will combine IBM's AI-powered hybrid cloud software and professional services to ServiceNow's intelligent workflow capabilities and market-leading IT service and operations management products.

The solution is engineered to help clients realise deeper, AI-driven insights from their data, create a baseline of a typical IT environment, and take succinct recommended actions on outlying behavior to help prevent and fix IT issues at scale. Together, IBM and ServiceNow can help companies free up valuable time and IT resources from maintenance activities, to focus on driving the transformation projects necessary to support the digital demands of their businesses.

"AI is one of the biggest forces driving change in the IT industry to the extent that every company is swiftly becoming an AI company," said Arvind Krishna, Chief Executive Officer, IBM. "By partnering with ServiceNow and their market leading Now Platform, clients will be able to use AI to quickly mitigate unforeseen IT incident costs. Watson AIOps with ServiceNow's Now Platform is a powerful new way for clients to use automation to transform their IT operations."

Organisations are under pressure to deliver innovation and create great experiences for customers and employees, all while driving efficiencies and keeping costs and IT risks down. Yet in today's technology-driven organisation, even the smallest outages can cause massive economic impact for both lost revenue and reputation.

This partnership will help customers address these challenges and help

avoid unnecessary loss of revenue and reputation by automating old, manual IT processes and increasing IT productivity.

IBM and ServiceNow will initially focus on:

- **Joint Solution:** IBM and ServiceNow will deliver a first of its kind joint IT solution that marries IBM Watson AIOps with ServiceNow's intelligent workflow capabilities and market-leading ITSM and ITOM Visibility products to help customers prevent and fix IT issues at scale. Now, businesses that use ServiceNow ITSM can push historical incident data into the deep machine learning algorithms of Watson AIOps to create a baseline of their normal IT environment, while simultaneously having the ability to help them identify anomalies outside of that normal, which could take a human up to 60% longer to manually identify, according to initial results from specific Watson AIOps early adopter clients. The joint solution will position customers to enhance employee productivity, obtain greater visibility into their operational footprint and respond to incidents and issues faster.

Specific product capabilities will include:

- **ServiceNow ITSM** allows IT to deliver scalable services on a single cloud platform estimated to increase productivity by 20%.
- **ServiceNow ITOM Visibility** automatically delivers near real-time visibility from a native Configuration Management Database, into all resources and the true operational state of all business services.
- **IBM Watson AIOps** uses AI to automate how enterprises detect, diagnose, and respond to, and remediate IT anomalies in real time. The solution is designed to help CIOs make more informed decisions when predicting and shaping future outcomes, focus resources on higher-value work and build more responsive and intelligent applications that can stay up and running longer. Using Watson AIOps, the average time to resolve incidents was reduced by 65 percent, according to one recent initial proof of concept project with a client.
- **Services:** IBM is expanding its global ServiceNow business to include additional capabilities that provide advisory, implementation, and managed services on the Now Platform. Highly-skilled IBM practitioners will apply their expertise to facilitate rapid delivery of valuable insights and innovation to clients. IBM Services professionals also will introduce clients to intelligent workflows to help improve resiliency and reduce IT risk. ServiceNow is co-investing in training and certification of IBM employees and dedicated staff for customer success.

The growth of the cloud has left us with a mess of visibility tools: Here's how to clean it up

Cloud visibility – what you see or what you do not see, that is the question.

BY RONNEN BRUNNER, VICE PRESIDENT OF EMEA SALES AT EXTRAHOP.

THE QUESTION OF HOW to see into the cloud is one that has long dogged enterprise security. On one hand, the promises of the cloud are hard to turn down, on the other enabling visibility into it has been nigh-on impossible for many. Out of that dilemma comes the most serious and widespread cloud security problem: Misconfiguration.

Cloud misconfigurations have been behind some of the largest public data exposures to date. For example, in 2019 an unsecured web server led to the exposure of 540 million Facebook users. That's just one example of many. Despite constant reminders of the devastation that cloud misconfigurations can wreak, they continue to occur. No really effective detection or prevention system has reached wide adoption, yet. With enhanced visibility tightly coupled with machine learning any abnormal behavior will be detected hence misconfiguration could be detected not by inspecting a config file but by inspecting the expected behaviour.

The poor state of cloud visibility is not only the cause of these catastrophic mishaps, but obscures the true scale of them too. In 2019, McAfee noted that the average enterprise discovers 37 cloud misconfigurations a month. But that only describes the misconfigurations that they know about. Given that 99 percent of cloud misconfigurations go unreported, those 37 instances represent only 1 percent of the actual number. A more realistic estimate, the McAfee report concluded, was 3500 a month.

One of the great benefits of the cloud is how easy it is for users to spin up new instances to rapidly meet the need for more compute and storage. Unfortunately, this also means that new cloud resources are hard to control and easy to connect to the open internet, sometimes with limited control or oversight. Hackers know this, and know how to reconnoiter their target enterprises for poorly secured cloud resources that can be exposed and exploited.

Enterprises understand that they need greater visibility into their cloud environments, and greater ability to discover attacker behavior, even if it is using authentic, though poorly secured cloud resources within the enterprise. Many enterprises have brought in tools to help correct their vision but this has led to a vicious cycle. We identify a blind spot, buy a new tool to illuminate it, rinse and repeat until we're spending more effort managing the tools than on the original goal: detecting cloud vulnerabilities before disaster strikes.

Tool Sprawl: A Ten to Twenty Edged Sword

We've purchased more tools to see into the cloud, when they've often only ended up obscuring our view. According to the 2020 Sans Network Visibility and Threat Detection report, most companies use visibility tools from more than 10 vendors and nearly 20 percent use tools from more than 20 different vendors. As enterprises migrated towards the cloud they moved away from the perimetered network architectures for which much of their visibility tools were built. Many enterprises found themselves split between the cloud and the data centre, but still saddled with tools that could only see into the latter.

As the great migration to the cloud progressed, enterprises recognised how blind they were to the flow of some of their most critical data, and the ways

in which it exposed them to accidental leakage and malicious theft or just lack of control of their crown jewels – the data. For many organisations, this slowed down or stalled their migration to the cloud, leaving them in a state of limbo. So, they acquired more tools to see into their otherwise opaque cloud environments. Sometimes these were provided by their cloud hosts - but they often did not integrate with the legacy tools that enterprise used to watch over their data centres - creating an inconsistent view of the enterprise which admins hated and often put the enterprise at risk. It was like trying to paint a landscape from the reflection in a disco ball.
Now, the modern hybrid enterprise is likely to include multiple cloud environments - each from different providers - and tools from different generations and vendors all of which might provide partial visibility but ultimately contribute towards further inconsistency and chaos. This often does more to frustrate performance and security than enable it. It hamstrings productivity, it devours budgets, it leaves IT practitioners confused and enterprises exposed – customers just want to have a single pane of glass where all the detections show across the hybrid environment.

It's a particularly pressing issue given the developments of 2020. As the pandemic has taken hold, enterprises have had to lean on remote working as a way to ensure business continuity. This has accelerated the ever mounting reliance on the cloud, and the exposure to the threats that face it.
As organisations have moved to remote working en-masse, they need all manner of cloud based services and apps for which they will have little oversight or ability to manage or protect.
A recent SANS survey - carried out in the first months of the pandemic identified this as a cause for concern - 40 percent of respondents pointed to their cloud systems as potential breach points while only 17 percent reported high visibility into internal network communications including cloud traffic.

Cloud traffic mirroring opens a new opportunity for better visibility

The outlook is however better than it would have been just a few years ago when cloud providers did not offer native traffic mirroring. Previously, you would have to intercept packets with analysis tools or install agents, adding more complexity, deployment friction, network latency, and cost. The introduction of virtual taps by major cloud providers has enabled native traffic mirroring meaning that organisations can copy cloud traffic and feed it into passive analysis and NDR tools, permitting the user a unified vision of enterprise traffic. Finally.

Until then, enterprises couldn't complete what Gartner calls the Security Operations Centre (SOC) Triad of Visibility in the cloud. They often had the first two pieces - the logs and endpoint data - but lacked the complete, constant, reliable and objective network data they needed to see into their cloud deployments.

With virtual traffic mirroring, Network Detection and Response (NDR) comes into play in the cloud, opening up the single source of untamperable, unavoidable, ground truth provided by raw network traffic. A single view of traffic in multi-cloud and on-premises environments is the ultimate source of cloud visibility.

Using that network data, SOCs can get way ahead of misconfigurations and security mishaps, stopping them in their tracks before they cause problems. NDR can reveal asset usage information, monitor sensitive data movement, and parse IP protocols to provide great detail about what's happening within and between cloud resources. NDR products can also flag the high-risk or suspicious behaviours that can indicate an impending breach. Whether a breach was prevented, or is currently in progress, analysts can directly and quickly access the copied network packets to forensically analyse what happened and why.

Those benefits to security spill over into other parts of the enterprise too. The insights that one can glean from NDR products and wire data helps operation teams too - finding performance issues and removing

Everyone will be tightening their belts and IT departments will be forced to do the same. Consolidating tool sprawl will be a critical part of reducing IT expenditures, and NDR delivered Cloud visibility provides a way to do just that. By eliminating tool sprawl, enabling visibility into the cloud, creating a unified vision of the network which can be shared across teams, enterprises can cut down on capital and operational expenditures

them at the root. On a strategic level, those insights can help an enterprise make long term plans about their network and make decisions about budgeting and requirements.

Cloud visibility, Tool consolidation and the pandemic 2020 has made this problem particularly pressing - for two reasons. Firstly, as previously mentioned, enterprises now rely on the cloud as a matter of not just profit, but business continuity. Cloud use has exploded as enterprises have gone to remote work en-masse.

Secondly, the ensuing toll the pandemic has taken on the world economy has forced enterprises to look at their budgets. Everyone will be tightening their belts and IT departments will be forced to do the same. Consolidating tool sprawl will be a critical part of reducing IT expenditures, and NDR delivered Cloud visibility provides a way to do just that. By eliminating tool sprawl, enabling visibility into the cloud, creating a unified vision of the network which can be shared across teams, enterprises can cut down on capital and operational expenditures.

Cloud adoption has grown significantly in the last few months and we see more workloads moving to the cloud quickly to support new work from home realities. One of the ways to relieve any concerns about lack of control is to provide true, comprehensive, visibility.

As enterprises head further into the cloud - with many pushed further along by the strictures of the global pandemic - cloud visibility and NDR is imperative. Enterprises were blind to their cloud traffic for a long time, with a pile of tools obscuring their view. Enterprises now have the opportunity to clear their field of view - saving money, eliminating redundancies and unifying visibility across the full hybrid environment - cloud and data centre alike.

IBM to acquire WDG Automation

IBM has reached a definitive agreement to acquire Brazilian software provider of robotic process automation (RPA) WDG Soluções Em Sistemas E Automação De Processos LTDA (referred to as "WDG Automation" throughout). The acquisition further advances IBM's comprehensive AI-infused automation capabilities, spanning business processes to IT operations. Financial terms were not disclosed.

In today's digital era, companies are looking for new ways to create new business models, deliver new services and lower costs. The need to drive this transformation is even greater now given the uncertainties of COVID-19. IDC predicts that by 2025, AI-powered enterprises will see a 100% increase in knowledge worker productivity, resulting in shorter reaction times, greater product innovation success and improved customer satisfactioni.

When AI-infused automation is applied to business processes and IT operations, it can help shorten the time between identifying an issue and responding. This is critical as unforeseen IT incidents and outages, for example, can cost businesses in both revenue and reputation.

By embedding WDG Automation's RPA capabilities into IBM's existing AI-infused automation capabilities across business processes and IT operations, business leaders including Chief Operating Officers (COOs) and Chief Information Officers (CIOs) will have broader access to intelligent automation through software robots. The acquisition also will extend IBM Services' ability to transform clients' operations as RPA, analytics and AI bring more intelligence to the enterprise workflows that fuel adaptive and resilient businesses and helps to expand IBM's capabilities for delivering automation pervasively across client organizations.

With today's news, businesses will be able to efficiently re-engineer, optimize and standardize operations, while eliminating business processes and IT operations that are redundant or unnecessary. They can also quickly identify more granular opportunities for automation, including tasks that have many steps, as well as help ensure consistent and accurate data is being used across all tools and business functions, including customer service, IT, finance, HR, and supply chain. "IBM already automates how companies apply AI to business processes and IT operations so they can detect opportunities and problems and recommend next steps and solutions," said Denis Kennelly, General Manager, Cloud Integration, IBM Cloud and Cognitive Software. "With today's announcement, IBM is taking that a step further and helping clients accelerate automation to more parts of the organization, not just to routine, but more complex tasks so employees can focus on higher value work."

"Automation is crucial in the digital era, as businesses need to perform several repetitive or routine tasks, so that employees are able to focus on innovation. I'm incredibly proud of the role WDG Automation has played in the RPA market with a unified and integrated platform to help companies in Brazil increase their productivity," said Robson Felix, Founder and CEO, WDG Automation. Joining forces with IBM will scale our capabilities to a wider audience, helping companies around the world accelerate their growth on their business transformation journeys," said Kleber Rodrigues Junior, co-founder, WDG Automation.

WDG Automation's RPA Capabilities Automate Basic and Complex Tasks
WDG Automation is a software provider of RPA, headquartered in São José do Rio Preto, Brazil. WDG Automation provides RPA, Intelligent Automation (IA), Interactive Voice Response (IVR) and chatbots primarily to customers in Latin America.

The WDG Automation technology is designed for business users to create automations using a desktop recorder without the need of IT. These software robots can run on-demand by the end user or by an automated scheduler.
IBM Offers Complete AI-Infused Automation Capabilities – Spanning Business Process to IT Operations
Today's news will further extend the capabilities of the IBM Cloud Pak

offerings on Red Hat OpenShift, starting with Cloud Pak for Automation. As part of the acquisition, IBM will integrate over 600 pre-built RPA functions from WDG Automation into Cloud Pak for Automation to help businesses turn insights from AI into automated actions.

Available on any public or private cloud, or on-premises, the IBM Cloud Pak for Automation offers clients a single set of AI-infused automation software and services, including data capture, workflow orchestration, decision management, monitoring and reporting, that helps companies design, build and run intelligently automated business processes and IT operations. With WDG Automation, clients will be able to more quickly identify more granular opportunities for automation, accelerate the deployment of bots, and streamline more end-to-end workflows.

In addition to business operations, IBM plans to integrate WDG Automation RPA into its capabilities for automating IT operations, specifically Watson AIOps and Cloud Pak for Multicloud Management. IBM Watson AIOps, for example, automates how CIOs self-detect, diagnose and respond to IT anomalies in real time. RPA can help close the loop and ensure consistent data across all tools that connect to Watson AIOps. This can increase data quality and improve the accuracy of AI, as well as the productivity of engineers involved.

IBM's investment in AI-infused automation will help improve and redefine the workflows that drive the operations across an organization. IBM Services delivers fast prototyping, rapid scaling, and management of digital operations for business process and IT.

NEW RELIC

WITH ANNETTE SHEPPARD, SENIOR PRODUCT MARKETING MANAGER, NEW RELIC

AIOps - what's all the fuss about? In other words, what is it and why does it matter?

AS: DevOps is all about improving the way teams work in order to ship software faster, more frequently, and with greater reliability. That means responding quickly when problems occur that may impact customer experience or service level objectives (SLOs).

As software teams adopt modern technologies, there are now a lot more things to monitor and react to – a wider surface area, more software changes happening, more operational data emitted across fragmented tools, more dashboards, more alerts – plus increased pressure to find and fix incidents quickly, as well as prevent them from occurring. A new category of technology has emerged that puts AI and machine learning (ML) in the hands of on-call teams so they can prevent more incidents and respond to them faster. Gartner coined the term "AIOps" (Artificial Intelligence for IT Operations) to describe this space. AIOps uses AI and ML to analyse data generated by software systems in order to predict possible problems, determine the root causes, and drive automation to fix them.

IOps – does it replace existing technologies and approaches used to monitor and manage IT, or is it more of an add-on to what an organisation is already doing?

AS: AIOps capabilities are a key requirement for observability. Monitoring tools do a great job of acquiring and aggregating telemetry data (metrics, events, logs, traces). AIOps augments the value teams get from monitoring by providing an intelligent feed of incident information alongside their telemetry, and applying AI and ML to analyze and take action on that data, so they can troubleshoot and respond to problems faster.

AIOps pulls together existing processes / tools / technology to gain insights across the entire estate so that issues can be caught before they start (anomaly detection) and issues can be resolved faster. Because it can pull in data from across different tools, it's key to achieving true observability. Correctly implemented, AIOps should seamlessly incorporate into users existing workflow, an invisible helper behind the scenes, working to make their lives easier by removing toil, complexity, and noise.

In other words, are we talking evolution or revolution?

AS: Much as machine learning is an evolving process, so will be the impact AIOps. Many factors influence the adoption of AIOps beyond the capabilities and inherent value of an AIOps solution. These factors span people, process, technology, and data. Because successful adoption requires alignment across all these factors within an organisation, which takes time, adoption of AIOps will lean more towards evolution than revolution, starting small, expanding, and applying lessons learned to increase adoption, efficiency, and trust in the solution.

Many things are easier to digest in small quantities and change is no exception. AIOps covers a number of capabilities across the incident response workflow and an organisation's entire estate. Minimising the total amount of change that teams need to adjust to will speed adoption and integrating into an organisation's existing workflows is crucial.

To minimise change, it is easier for teams and organisations to integrate a portion of AIOps, say anomaly detection, into their existing workflows, then the scope of the solution can be expanded to event correlation and alert suppression and enrichment.

Once benefits from fewer alerts and accelerated incident response are seen by a portion of the organisation, expansion to additional teams is possible. Much like evolution, every new iteration and implementation is better than the last as lessons learned from the first adoption can be applied as the solution is expanded across the organisation.

As AIOps benefits are expanded across both the incident response workflow and organisation, efficiency of both the machine-learning models AIOps is based upon and teams will improve, and inherent

trust in the solution will be strengthened through familiarity and usage.

Bearing this in mind, how much is AIOps about the new breed of monitoring and management technology solutions and how much is it about an organisation's mindset and willingness to change?

AS: The application of AI and machine learning (ML) to IT operations is a new approach to incident response and AI and ML can be complicated and difficult to understand. An organisation's mindset towards AI and ML and trust in the output is important in the successful adoption of AIOps as a solution. Because of this, any solution that is implemented should be as transparent as possible when it comes to transparency of it's AI and ML, clearly explaining what has been done and why.

The best possible AIOps solution should integrate into and augment organisations existing workflows because change management is extremely difficult. By integrating AIOps into existing workflows you can minimise the extent of change and reduce the disruption that comes from teams needing to implement and adopt a new process or workflow.

Is it right to break down AIOps into separate network monitoring/management, infrastructure monitoring/management and application performance monitoring disciplines, or should AIOps be considered as one integrated monitoring and management solution?

AS: Today's systems are complex. When issues occur in networks, infrastructure, or applications they can, and almost always do, cascade across areas. The greatest benefit of AIOps comes when applying machine-learning to as large an estate as possible. The more data an AIOps solution can ingest, the more connections and correlations can be made that otherwise wouldn't have surfaced if the solution were dedicated to only one area. When an issue does begin to cascade and create an alert storm, an AIOps solution can help cut through the noise across all of the areas and point teams to root cause faster. The larger the data set that machine learning can train on, the faster and more accurate results will be.

AIOps seems to cover a whole range of tools and solutions, ranging from the passive – this is what's happened, and maybe why; right through to the predictive or proactive – this is about to happen and here's what you need to do about it. What are the relative merits and drawbacks of the range of the available AIOps approaches?

AS: If you were a carpenter looking at a pile of wood wanting to build a dresser, you would want more than just a hammer in your tool bag. Certain tools are good, or even required, for certain jobs. You wouldn't use a saw to varnish a dresser. Similarly in the IT

world, you wouldn't use proactive anomaly detection to figure out who on your team should respond to an existing outage.

AIOps has a variety of use cases because there are a variety of problems across the stages incident response workflow, and teams need to use the right tool for the right problem.

The incident response workflow at a high level entails three areas: detection, diagnosis, and response. When it comes to detecting a problem, the ideal solution would be to catch it before it ever occurs. This is where proactive anomaly detention and dynamic baselines are your tool of choice, alerting you to anything in your system that may have changed- it finds something that's not quite right before it has time to grow into a larger issue.

When an issue is detected, the next step is diagnosis: what was the cause. Teams today work with a complex array of systems and tools sending alerts when something goes wrong, which can typically cascade into even more alerts. Where AIOps can help is in quieting the noise by grouping and reducing alerts, so that teams can prioritise. Additionally, AIOps can recognise patterns and begin surfacing context related to the alerts, which can be critical in helping teams understand the issue at hand.

Once the issue has been diagnosed, it is time to respond. Here historical data and usage can inform machine learning, which in turn can begin to predict and suggest the best responders, based on prior experience, specialty, or previous response to similar issues. The key difference between a carpenters tool box and AIOps is that AIOps tools get better and more accurate the more they are used. Through both active (such as a thumbs up / thumbs down buttons in the product), and passive (usage and historical data) feedback AIOps learns and tailors tools to your specific system.

Each AIOps tool has a particular use and for best overall response, having access to all the tools from proactive and reactive to predictive, will help your team properly assess and react to each area in the

incident response workflow with the result being the fastest possible incident response.

In other words, how would you characterise the relative value in working through historical data as opposed to working with streaming, live data?

AS: Both are important. Part of the value of a self-improving AIOps solution is to train the models to learn from historical data and past experience to ideally prevent similar problems from occurring again in the future. But AIOps solutions also need to operate on real-time data, monitoring application and system health to detect anomalous signals before they turn into full-blown incidents, as well as grouping and correlating alerts and events that may be due to the same core issue.

AIOps – primarily, it seems to be about the optimisation of an organisation's likely hybrid IT operations through better monitoring and management, but it can also offer valuable business insights at a more strategic level?

AS: While AIOps is primarily about optimisation of an organisation's IT operations, it has the potential to help shed light on the efficiency of your incident response through by easing visibility and measurement of metrics such as mean time to detection (MTTD), mean time to understanding (MTTU), mean time to resolution (MTTR), mean time between failures (MTBF), as well as reducing alert fatigue.

So far, we've talked about what AIOps is, and isn't, and the value it offers to organisations which embrace this new approach to IT operations. Before we finish, let's look at how an organisation goes about acquiring AIOps technology. For example, what are some of the key questions to ask an AIOps vendor?

AS: **Four key themes come to mind:**

- **Understand of the AIOps approach taken by the vendor (detection, event correlation, root cause diagnosis, etc.)**
- Does the solution offer automatic anomaly detection?
- Does the solution offer both static and dynamic thresholds?
- Does the solution offer incident correlation (noise reduction)?
- Does the solution offer other types of ML based categorisation?
- Does the solution offer context enrichment capabilities to help determine root cause?

Understand if the AIOps solution fits in the current environment/incident workflow.

- Does your AIOps solution support 3rd-party data sources (ingest)?
- Does your AIOps solution integrate with commonly used incident management and notification tools (eg. PageDuty, ServiceNow, Slack, etc.)?
- Do you offer out-of-the-box integrations (related to questions above)?
- Do you support interfaces for non-standard integrations (eg. web-hooks)

Understand how the AIOps solution can be trained and tuned for higher accuracy and trust.

- Can a user influence / train / provide confidence or dissatisfaction of the correlation engine logic? How do they do that?
- Can the AIOps solution be augmented by human expert knowledge?
- Does the AIOps solution explain its decisions and correlations?
- How long does it take for the AIOps engine to be operational (trained)?
- Describe the ingest datatypes supported by your AIOps solution?

Understand the maturity of the solution and if the algorithms used by the solution are a good fit for the data.

- Does your AIOps solution leverage similarity algorithms like Levenshtein, Jaccard, Jaro-Winkler and LCS?
- Does your AIOps solution leverage categorical clustering?
- Does your AIOps solution leverage NLP classification?
- Does your AIOps solution offer other types of ML techniques and features?

And are there integrated, single vendor AIOps solutions available today, or is it more about acquiring two or three key pieces of software which together form the basis of an AIOps implementation?

AS: At New Relic, we believe AIOps capabilities are a key requirement for observability in order to properly address the entire incident response workflow. If software teams have to juggle multiple tools to get the full picture or to find and fix problems, it can create blind spots, increase toil, and make it harder to diagnose issues that may be impacting different parts of their environment or multiple layers of their application stack. That's why it's important to have a single platform that lets you see all of your data and connect all the dots.

It's more important than ever to be able to get a connected, real-time view of all performance data in one place, so on-call teams can pinpoint issues faster and understand not just when an issue occurs but also what caused it and why. This is why this is currently reflected in our observability platform today.

Bearing in mind that we've established the value of AIOps, where does an organisation start in terms of introducing AIOps into the business? With previous technologies such as virtualisation and cloud, it was

possible to start with a single application in a test environment, before going more mainstream. AIOps would appear to be a bit more 'all or nothing'?

AS: Deciding where to start is critical, because trying to solve every issue for every team at once can potentially slow your time to value. You could also set the wrong expectations by tackling too many problems from the start, which frustrates teams that don't see immediate but desperately needed improvements.

To achieve the right balance of rapid results and to set the stage for more iterative improvement, it's best to first deploy anomaly detection and then introduce event correlation and issue suppression and enrichment. Not only can every team benefit from anomaly detection, but AIOps uses information about anomalies to improve the enrichment of issues with additional context to help pinpoint root causes of issues.

Here's a suggested deployment scenario:

1. Pick a team and configure anomaly detection. You could choose a team responsible for important systems that are already reliable and that is interested in receiving early warning signs of trouble. Or you could choose a team responsible for backend services that is occasionally informed of issues by internal or external customers.

2. Expand to other teams. Once you've demonstrated the value of AIOps for proactive anomaly detection and prevention of unknown unknowns for one team, you can expand to additional teams suffering from similar problems.

3. Set up advanced AIOps workflows. Choose one team to start using deeper AIOps functionality to improve and accelerate response. Criteria to look for includes teams that have:
   - Several services and infrastructure for which issues commonly result in cascading sets of alerts
   - Alerts coming from multiple alerting engines and multiple notifications for the same problem
   - A volume of alerts that creates fatigue and inhibits prioritisation and action

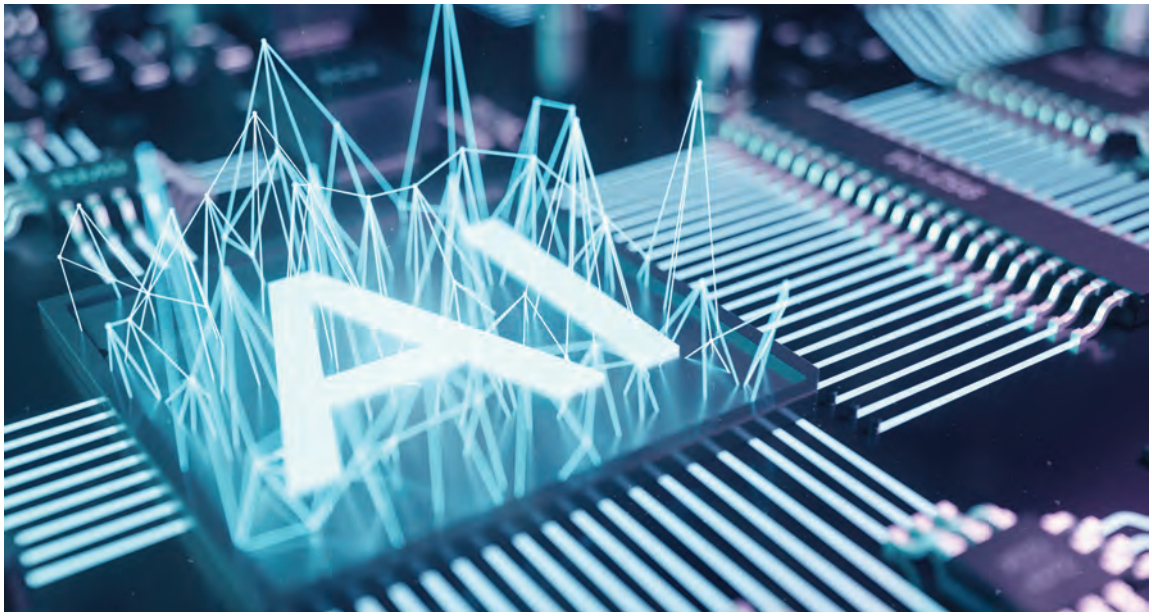
4. Expand the scope. Once you have one team that is benefitting from fewer alerts and accelerated incident response, expand to more teams suffering from alert fatigue or that have inadequate MTTR or difficulties pinpointing problems.

As you deploy AIOps across the organisation, steps three and four will be iterative. When you're ready to expand to new teams, you'll broaden the criteria you've defined for success. When you implement new functionality, you should revisit any relevant KPIs again to make sure you're focusing on those that the new functionality can measurably improve.

Finally, are there one or two key pieces of advice you'd like to offer individuals and organisations who are approaching AIOps for the first time?

AS: For best results from an AIOps solution, make sure it aligns with your existing incident response workflows and is as transparent as possible to build trust in the results and increase adoption across your organisation.

- Not every problem can be solved with a single tool, so look for an AIOps solution that applies the right processes to the right problems and supplies the right solution to each aspect of the incident response workflow from proactive anomaly detection, to correlation for noise reduction, to predicting and suggesting the appropriate responders to a given issue.



Can AI help make performance problems a thing of the past

Every industry, and every company, is transforming itself with software to deliver new, improved digital services that capture new markets and reduce operational costs.

BY MICHAEL ALLEN, VP AND EMEA CTO, DYNATRACE.

IN THIS QUEST for constant improvement, organisations are set to spend $1.2 trillion this year. However, despite the goal to provide customers and business users with better, more seamless experiences, rarely does a week go by without performance problems causing disruption.

In today's always on, always connected digital world, mere milliseconds of downtime can cost millions in lost revenue and, as we become ever more reliant on software, there's increasingly less margin for error.

To protect their organisation against the chaos that performance problems can cause, the root cause must be found quickly, so IT teams can get to work resolving it before users are impacted.

However, as the software landscape evolves to drive faster innovation, enterprise applications, and the hybrid cloud environments they run in, are becoming increasingly dynamic and complex. Organisations are now reliant on thousands of intricately connected services, running on millions of lines of code and trillions of dependencies. A single point of failure in this complex delivery chain can be incredibly difficult to pinpoint accurately. If this complexity goes unchecked, digital performance problems will increase in frequency and severity, creating an unacceptable risk for the business.

The flip side to agility

This escalating complexity is largely being driven by the accelerating shift towards the cloud. In modern,

cloud native IT stacks, everything is defined by software. Applications are built as microservices running in containers, networks and infrastructure are virtualised, and all resources are shared among applications. This has been a key part of many businesses' digital transformation strategy, enabling them to drive greater agility and faster innovation. However, the downside to all this is that complexity is off the charts. To understand their apps, IT teams now need to understand the full stack, with visibility into every tier, not just the application layer. This has made it impossible for humans to quickly identify where problems originate, leaving IT teams desperately trying to put out a growing number of fires, with little to no visibility into where and why they're occurring.

As digital services and technology environments become increasingly defined by software, being unable to quickly detect and resolve performance problems will have wider ramifications for businesses and their revenues. While currently it's frustrating when, say, an online banking website is down, glitches in the code of the driverless cars or drones that will dominate our roads and skies in the future could have catastrophic consequences. Businesses must act now if they are to relegate performance problems to the past before they have a devastating impact on our future.

Anyone call for some AI assistance?

It should come as a comfort that there is hope on the horizon for IT teams, in the form of a new breed of AI that has emerged over the past few years; AIOps. AIOps tools can automatically identify and triage problems to prevent IT teams drowning in the deluge of alerts from their monitoring solutions. The global AIOps market is expected to grow to reach $11bn by 2023, which demonstrates a real appetite for these capabilities.

However, these solutions have their limitations, which is why we're now seeing the emergence of more holistic, next-generation approaches to monitoring that combine AIOps capabilities with deterministic AI. This provides access to software intelligence based on performance data that's analysed in real-time, with full-stack context that provides IT teams with instant answers, so they can fix performance issues before users feel any impact. This type of 20:20 vision will help teams combat modern software complexity and gain clearer insight into their hazy cloud environments.

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Taking it one step further, AI will eventually be capable of stopping performance degradations in their tracks, before they begin to develop into a real problem. For this to become reality, AI-powered monitoring solutions will need to be fully integrated with the enterprise cloud ecosystem, with access to metrics and events from other tools in the CI/CD pipeline, such as ServiceNow and Jenkins. AI capabilities will then be able to pull all monitoring data into a single platform, analyse it in real-time and deliver instant and precise answers that trigger autonomous problem remediation without the need for human intervention– something often referred to as application self-healing.

Smooth sailing into the future

It's no secret that user experience is absolutely crucial for all companies operating today. While it may sound like a pipedream, AI is fast becoming the key to helping businesses ensure these experiences remain seamless, by relegating performance problems to the history books. Whether you look at it in the long or short term, AI capabilities will ultimately give companies total peace of mind that performance problems will be dealt with quickly and efficiently – minimising impact on user experience and protecting revenues and reputations against the devastation they can cause.

BMC unveils AIOps for the modern mainframe

BMC has unveiled BMC AMI Operational Insight, an AI-driven, forward-looking solution that uses machine learning to detect anomalies and maximize lead time for remediation to mitigate mainframe issues before they become business problems.

Today's rapidly changing marketplace, with shifting dynamics and competitor challenges, requires companies to optimize for increased performance and 24/7 availability to stay ahead of the competition. As a business-critical platform, it is imperative that mainframe issues are identified and addressed before any system downtime or degradation can impact operations.

The BMC AMI Operational Insight solution provides the intelligence for mainframe experts and newer employees alike to support every organization's journey to an Autonomous Digital Enterprise with the modern mainframe.

"Managing the mainframe has never been more critical to serving customers and ensuring uptime. It is imperative that companies have the capabilities to proactively manage the platform and anticipate problems before they happen," said John McKenny, Senior Vice President of ZSolutions Strategy and Innovation at BMC. "By applying AIOps to the mainframe for better availability and performance with BMC AMI Operational Insight, our customers can reclaim their valuable time and shift resources to focus on the strategic priorities that will allow them to become Autonomous Digital Enterprises."

The BMC Automated Mainframe Intelligence (AMI) AIOps suite envisions a three-part workflow – detect, find, and fix – designed to greatly reduce mean time to repair (MTTR) so operations teams spend less time reacting to issues and more time advancing high-level business initiatives. With BMC AMI Operational Insight, users gain a solution that utilizes machine learning to learn what is normal, detect anomalies, and maximize lead time for remediation, avoiding downtime or system degradation.

As an example of how companies can avoid downtime, a global financial services provider has seen the potential benefits of using BMC AMI Operational Insight and the predictive insights it could provide. Through a demo, the company noticed it was able to detect problems two days earlier to avoid a system issue. Key benefits of BMC AMI AIOps include: Faster detection: Notifications alert users of anomalies, allowing them to proactively solve problems impacting systems before they cause any downtime. More accurate predictions: Multivariate analysis looks across all KPIs simultaneously instead of in silos, to ensure no KPI anomalies are missed, resulting in fewer false positives.

Data science and domain expertise built-in: Knowledge of which metrics to watch quickly fills the gaps left by a retiring workforce and expedites the learning curve for new staff. In addition, getting rid of the guesswork of collecting and evaluating extraneous metrics eliminates the waste of costly MIPS.

Out-of-the-box predictive problem detection: Minimal configuration required means users can install, add data, and realize value immediately.

Improved and adaptive intelligence for systems: Continuous consumption of deep and broad data sources helps add intelligence to complex systems, while continuous learning ensures teams can keep up with rapid pace of change.

"MTTR has been increasing for I&O leaders, indicating difficulty with finding and fixing issues that arise. Monitors have been a staple, but have reached their limits," said Stephen Elliot, Program Vice President, Management Software and DevOps, IDC. "Products with early detection and actionable insight that can help prevent damaging outages before your monitor alerts you are decreasing MTTR, leading to time and cost savings."

As part of the new BMC AMI AIOps suite, the BMC AMI Operational Insight solution ensures mainframe uptime that allows organizations to meet the growing demands of digital business growth. BMC continues to invest and innovate for the mainframe with new product introductions, as well as the recent acquisition of Compuware.

BMC now offers a full suite of mainframe software development, delivery, and performance solutions that empower organizations to scale Agile and DevOps with a fully integrated toolchain.

How AIOps is solving today's real-world IT problems

IT teams are overwhelmed with the constant roll-out of new digital services. They are simultaneously tasked with keeping existing business-critical apps and infrastructure performing optimally. On the business side of the organisation, C-suite executives are working to find new solutions for streamlining operations within their organisations. It is time both sides needs are met by employing tactics which free up both time and capital for employee innovation. To solve their challenges, automation can help as IT leaders can now turn to AIOps.

BY PAUL CANT, VICE PRESIDENT EMEA AT BMC.

LAST YEAR IDC predicted 70% of CIOs would apply a mix of data and artificial intelligence (AI) to tools, processes and IT operations by 2021. It shouldn't be assumed that a few algorithms are a quick fix to an organisations' worldwide IT operations, however, if these innovative technologies are implemented with a strategic course of action, they can help the business thrive.

The 'what' & 'how'

AIOps is now a market category which has gained serious momentum in the last few years. The concept brings together machine learning (ML) and data analytics in several different contexts. The technology empowers quicker, simpler, and more efficient IT operations management by enhancing some processes such as application performance monitoring, behavioral learning (dynamic baselining) as well as predictive event management, probable cause analysis and log analytics. As more and more businesses are going digital, requirements and infrastructures are becoming more complex. IT needs in turn must respond at the most optimal level possible and AIOps can enable this.

IT operation teams are able to move from rule-based, manual analysis to machine-assisted analysis and machine learning systems when AIOps is implemented. Human agents are only capable of completing a certain amount of analysis in a given time frame, dependent on the amount and complexity of the task. AIOps enables a level of change with the help of AI.

AIOps in action

One example of AIOps at work is the use case of Park Place Technologies (PPT). They are the world's largest post-warranty data center maintenance organisation,

helping thousands of customers manage their data centres globally. When customers have performance issues, costs escalate for Park Place if manual triage is required.

To improve customer satisfaction and drive uptime, Park Place decided that an AIOps platform was the right solution for automating the support process, and began their implementation with 500 customers, with plans to support more.

"Using AIOps helps us move from a reactive service model to proactive, and ultimately to predictive. We're able to see signs that there's an impending failure and remediate it before it happens, really saving our customers a lot of downtime," said Paul Mercina, Director of Product Management, Park Place Technologies.

Since applying its AIOps solution, Park Place has reduced the number of times a ticket is touched by a human by 80 percent. Not only that, the AIOps solution also allowed them to automate the triage process and optimize the customer experience – in fact they've experienced a 10 percent faster time to resolve incidents by leveraging advanced anomaly detection. These figures exemplify the reality of AIOps coming into works at an organisation and the wide variety of benefits it brings.

Holistic monitoring

For all organisations, IT services can use AIOps to produce holistic monitoring strategies. These allow the IT team to see patterns across various channels and make predictions based on the combined data, events, logs, and metrics. There is also a behavioral learning capacity gained from AIOps which uses the identified patterns to suppress any unusual events which fall outside of the recognised patterns of operational normalcy.

Lastly, AIOps can centralise the way organisations address and respond to IT incidents at different locations around the world. It can produce insights to identify problems affecting operations between services and send automated notifications when a problem has been identified. This helps to not only increase incident response times, but better resolve issues when they take place.

These are just some of the many ways enterprises are using AIOps today to cut costs, improve customer experience, avert problems, and free IT staff to focus their time on innovations their organisations need.

It might not work miracles, but AIOps elevates the strategic importance and visibility of IT to the business by delivering the performance and availability needed no matter how complex environments become.

Sumo Logic showcases innovations

SUMO LOGIC has highlighted the broad cloud-native, analytics functionality across DevSecOps use cases, running on its Continuous Intelligence Platform™, as part of the opening keynote by President and CEO at Ramin Sayar during the company's fourth annual Illuminate user conference.

Sumo Logic's offerings have grown to span multiple solution areas across operations intelligence -- including application management, microservices management, multi-cloud management and web/edge management; security intelligence -- including audit and compliance management, security analytics and cloud SIEM; and a new ecosystem business intelligence solution for DevOps, called Software Development Optimization.

Sayar also highlighted updates to its differentiated cloud economics licensing and packaging model, called Cloud Flex. Sumo Logic also announced a number of new solution enhancements including general availability of the Sumo Logic Observability solution for DevSecOps, and additional enhancements to its cloud-native, security intelligence solution.

"Digital transformation is now at the forefront of all companies of every size from every industry, and the need to build reliable, secure digital services is more critical than ever," said Ramin Sayar, president and CEO of Sumo Logic. "Digital and cloud transformation requires the migration, modernization and development of new workloads, all of which require modern management and analytics capabilities, while also being secure given the vast amount of growing threats. T

he challenge is these services that run as modern applications are highly complex and difficult to manage without real-time analytics to drive comprehensive observability for DevSecOps teams. That means it requires the ability to monitor, detect, isolate, diagnose, troubleshoot and remediate issues in real-time for these constantly changing and complex environments. Sumo Logic enables companies to quickly know the what, where, why and how of these issues in real-time to ensure their customer experiences remain reliable, performant and secure."

Sumo Logic continues to see broad adoption of its Compliance and Audit, Security Analytics and Cloud SIEM solutions with customers such as Clorox, Greensky, SEGA Europe and Sykes who are all speaking at Illuminate 2020 today. Business Intelligence Suite: Redefined for the Modern Application Development Ecosystem with Software Development Optimization

As digital businesses continue to modernize their organizational models and software development processes to improve the way they architect, develop, manage and secure modern applications, they must now rely more than ever on specific business key performance indicators (KPIs) to manage and track success. These metrics include deployment frequency, lead time (the time it takes to go from code commit to completed production deployment), mean time to resolution and failure rates and more. Since company innovation cycles often comprise multiple software delivery pipelines, getting the right level of insights without analytics across all the pipelines is very difficult and requires a lot of manual work.

Sumo Logic today announced the general availability of its Software Development Optimization (SDO) solution, a new business intelligence offering that integrates and analyzes data from multiple DevOps tools to give developers real-time insights into software development pipelines. The solution was developed in partnership with various key ecosystem partners and provides engineering organizations of all sizes and maturity, the ability to benchmark and optimize their software development and delivery performance against industry standard DORA metrics to better understand the health of their innovation cycles.

With SDO, data across disparate DevOps tools is captured in real-time and automatically enriched, normalized and correlated across the entire DevOps lifecycle. By unifying fragmented data sets generated by software development and delivery tools, DevOps, engineering and business leaders gain the continuous intelligence needed for data-driven decisions to drive faster innovation cycles and better team collaboration that lead to reliable, performant and secure customer experiences.

The Sumo Logic SDO solution is free to existing customers and has already been adopted by a number of customers and also comes with out of the box integrations to Jira, GitHub, Jenkins, Bitbucket, PagerDuty and OpsGenie and can also be easily extended to other popular tools like Azure DevOps, GitLab, CircleCI and more.

Cloud Economics to Fit Every Budget
As more businesses make the shift to digital, the data generated by applications and infrastructure is growing at an extraordinary pace. The reality is the bigger the volume of data being generated, the higher the cost it is to derive value from it. Sumo Logic continues to demonstrate its commitment to push the boundaries of innovation, by making data and analytics more economical with its Cloud Flex licensing model. Earlier this year the company announced:

- **Credit-based Licensing and Infrequent Analytics Tier -** expanded limitless analytics that fit every budget by extending Sumo Logic's platform capabilities and value with credit-based licensing and an infrequent analytics data tier.
- **New GA Archive Intelligence Service** archiving capabilities allows customers to send unlimited log or other machine data to their own AWS S3 bucket, at no charge with the reliability and convenience of Sumo Logic's collection management features.

Sumo Logic has seen broad adoption of these innovations across companies of all digital and cloud maturities, sizes and use cases, providing limitless choices and the flexibility to maximize value from a single continuous intelligence platform, while controlling costs and increasing ROI.

Preventing IT outages and downtime

As businesses continue to embrace digital transformation, availability has become a company's most valuable commodity.

BY DANIELA STRENG, VP & GM EMEA, LOGICMONITOR.

AVAILABILITY refers to the state of when an organisation's IT infrastructure, which is critical to operating a successful business, is functioning properly. However, when an organisation experiences an influx in demand or another catastrophic IT issue, availability subsides and downtime occurs at an alarming rate. One of the biggest challenges organisations face is that availability is difficult to maintain and is indiscriminate, even for the world's largest enterprises.

Companies like British Airways, Facebook and Twitter have all battled through expensive outages in recent years that not only impact their businesses, but also expose society's growing dependence on technology to perform key functions of our daily needs. As technology continues to advance, IT outages will continue to ensue and will affect more than just an organisation's bottom line.

Downtime is still a major issue

Outages occur when an organisation's services or systems are unavailable, while brownouts are when an organisation's services remain available, but are not operating at an optimal level. According to a LogicMonitor survey of IT decision-makers in the UK, US and Canada, and Australia and New Zealand regions, 96 percent of respondents said they experienced at least one outage in the past three years. Surprisingly, 69 percent of respondents in Australia and New Zealand experienced five or more outages in the last three years, versus an average of 50 percent of respondents in UK, US and Canada respondents who said they experienced five or more outages in the past three years.

Only 31 percent of Australia and New Zealand-based IT decision-makers said they experienced four or fewer outages over the last three years. In

comparison, approximately 50 percent of UK, US and Canada respondents said they had experienced four or fewer outages in the same timeframe.

An outage can impact more than just an organisation's finances. The survey found organisations that experienced frequent outages and brownouts incurred higher costs – up to 16-times more than companies who had fewer instances of downtime. Beyond the financial impact, these organisations had to double the size of their teams to troubleshoot problems, and it still took them twice as long on average to resolve them.

The industries most affected

Results from the survey also revealed that the frequency of outages and brownouts is conducive to the industry in which the company operates. Financial and technology organisations experienced outages and brownouts most frequently during a three year period, followed by retail and manufacturing. According to the survey:

- 41 percent of respondents from financial organisations stated that they experienced 10 or more outages over the past three years.
- 37 percent of respondents from technology organisations said they experienced 10 or more outages over the past three years.
- 34 percent of respondents from retail organisations stated that they experienced 10 or more outages over the past three years.
- 28 percent of respondents from manufacturing organisations stated that they experienced 10 or more outages over the past three years.

These numbers highlight the sweeping nature of outages across the various industry sectors and prove that no company should consider itself immune.

The importance of availability

Availability matters not only to an organisation's customers, but also to the IT decision-makers tasked with maintaining it. In fact, 80 percent of global respondents indicated that performance and availability are important issues, ranking above security and cost-effectiveness. After all, IT availability is essential in the smooth running of IT infrastructure and therefore crucial to maintaining business operations.

Availability ensures that airline passengers, for example, aren't stranded due to system outages, food stays at safe temperatures and customers can access their online banking applications.

Despite the importance of availability, IT decision-makers indicated that 51 percent of outages and 53 percent of brownouts are avoidable. This means that organisations could prevent this costly downtime, but do not have the means necessary – whether that involves tools, teams or other resources – to avoid it.

Concerns over the repercussions

With high-profile outages and brownouts hitting the headlines on a regular basis, concerns over the repercussions of experiencing downtime are inevitable. In the UK, 38 percent of respondents said that they will likely experience a major brownout or outage so severe that it will generate media attention, while 35 percent believe someone might lose his or her job as a result of this downtime.

In the US and Canada, 50 percent of respondents said they will likely experience a major brownout or outage so severe that it will generate media attention. Of the same respondents, 52 percent fear someone will lose his or her job. A majority of respondents (63 percent) in Australia and New Zealand feel the same way. The sector that feared the repercussions of downtime the most was retail, followed by manufacturing. 68 percent of respondents working in retail felt that they would experience a major brownout or outage so severe that it would make national media coverage and that someone could lose his or her job. 67 percent of IT decision-makers in manufacturing felt it would make national coverage, while 69 percent were concerned someone would lose his or her job.

Comprehensive monitoring is key

To combat downtime, it's critical that companies have a comprehensive monitoring platform that allows them to view their IT infrastructure through a single glass panel. This means potential causes of downtime are more easily identified and resolved before they can negatively impact the business. This type of visibility is invaluable, allowing organisations to focus less on problem-solving and more on optimisation and innovation.

Evaluating monitoring solutions can be an arduous but necessary task, and the importance of extensibility cannot be overstated. Companies must ensure that the selected platform integrates well with all of its IT systems and can identify and address gaps in a company's infrastructure that might cause outages. It is also imperative that the selected monitoring solution is not only flexible, but also gives IT teams early visibility into trends that could signify trouble ahead.

Taking it a step further, intelligent monitoring solutions that use AIOps functionality like machine learning and artificial intelligence can detect the warning signs that precede issues and warn organisations accordingly. Ultimately, whether adopting new technologies or moving infrastructure to the cloud, enterprises must make sure that availability is top of mind, and that their monitoring solution is able to keep up.

By selecting a scalable platform that provides visibility into their systems and forecasts potential issues, businesses can rise to the next level without sacrificing availability. This type of visibility will not only prevent downtime and system outages, but also keep organisations from hitting unwanted headlines.

SYNAPTEK | ZENOSS

WITH KARL NICHOLSON, CHIEF INFORMATION OFFICER, SYNAPTEK WWW.SYNAPTEK.CO.UK AND RAVINDER SIMAK, CHANNEL SOLUTIONS MANAGER, ZENOSS WWW.ZENOSS.COM

AIOps - what's all the fuss about? In other words, what is it and why does it matter?

Synaptek: AIOps is the fusion of Artificial Intelligence with IT operations to deliver a new level of business continuity.

AIOps uses artificial intelligence and machine learning to analyse and interpret IT operational issues at speed, enabling faster issue resolutions and a reduction in system downtime. AI-enabled actions can predict and resolve IT issues faster than ever before to ensure business systems stay online and ready for business.

Never have IT teams had to manage such vast amounts of data and even the most capable IT teams can struggle to cope with the volume of information now generated by IT events across businesses. Manual analysis and interpretation of the copious system alerts and outage information can result in slow decision making and delayed issue resolutions. AIOps platforms can analyse and interpret this mass of data in milliseconds and bring to the surface meaningful insights on the most likely root causes of issues.

With an AIOps solution, IT personnel are no longer bombarded with the usual alert noise and can make decisions faster. In addition to the data insight, AIOps can automate actions and learn over time to predict future events and take preventative measures before an issue even occurs.

AIOps – does it replace existing technologies and approaches used to monitor and manage IT, or is it more of an add-on to what an organisation is already doing?

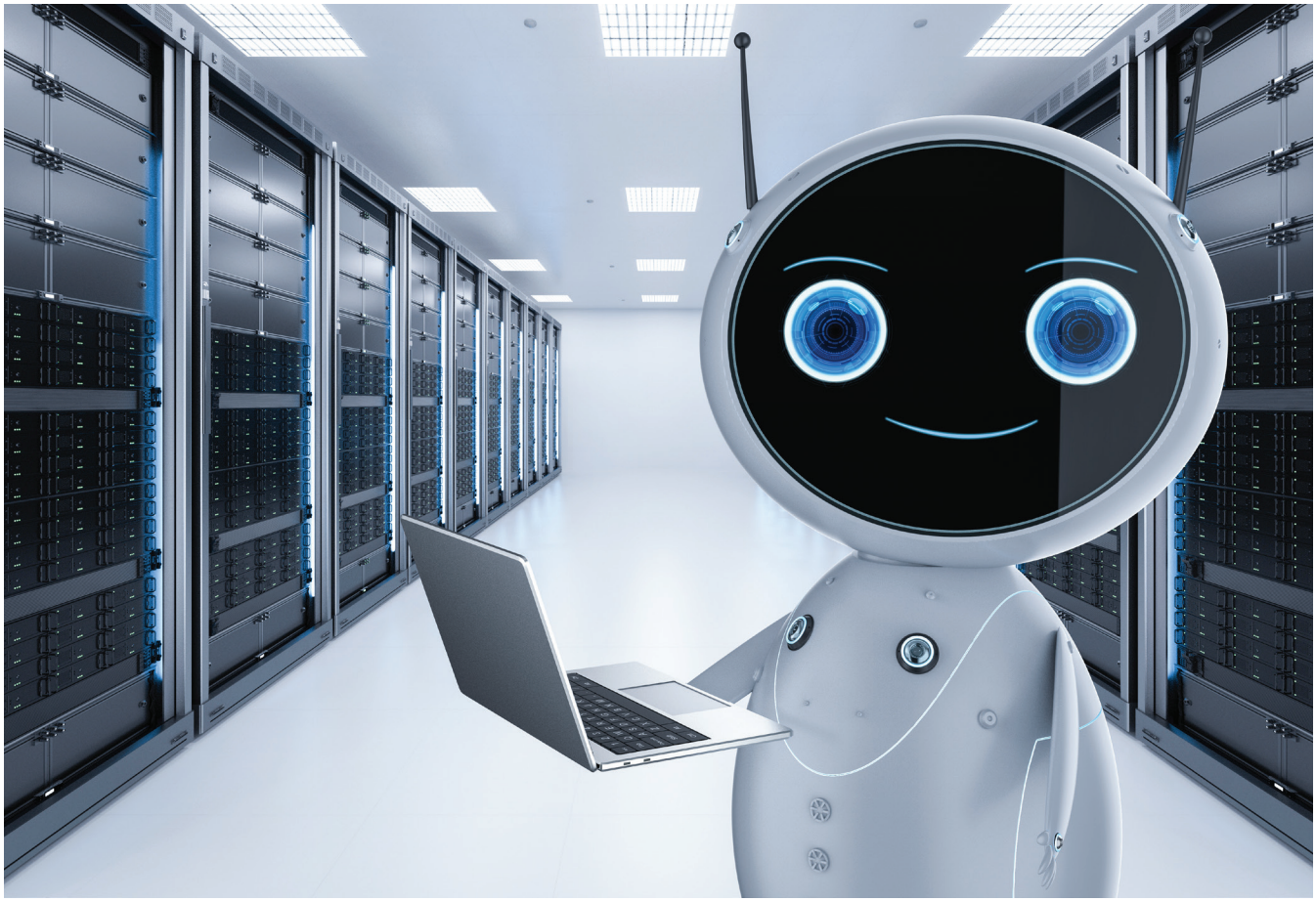
Synaptek: I'd say it's both! You can add AIOps onto your current toolset if the existing technology can be easily integrated into the methodology.

Zenoss: There are actually different dimensions of AIOps. The two most widely used are; Domain-centric AIOps and Domain-agnostic AIOps. Domain-agnostic AIOps tools cannot perform their own monitoring, and rely on existing monitoring tools to perform data capture. Domain-centric AIOps tools have rich data but only in one domain, such as the application or the network. Zenoss is a hybrid of these two, which means they are able to gather their own cloud and infrastructure data as well as ingesting data from others tools/sources to include as part of their analysis. They also have the ability to reduce the number of technologies in an environment to provide a true single pane of glass. In other words, are we talking evolution or revolution?

Synaptek: Although the implementation of AIOps may be an evolution, the benefits of an AIOps solution are a revolution in IT operations that enhances business continuity.

Bearing this in mind, how much is AIOps about the new breed of monitoring and management technology solutions and how much is it about an organisation's mindset and willingness to change?

Synaptek: As mentioned, the pressure on IT personnel is ever-growing and this can reach the point where the business is at risk from human error and prolonged system downtime. AIOps helps address this and also gives IT personnel more time to focus on tasks that can drive the businesses forward. That's a pretty easy sell to me, but good change management is key to successful implementation. Engaging



impacted personnel early in the change management process will help to reduce friction and speed up the adoption of new ways of working.

Is it right to break down AIOps into separate network monitoring/management, infrastructure monitoring/management and application performance monitoring disciplines, or should AIOps be considered as one integrated monitoring and management solution?

Synaptek: AIOps should be considered as sitting across service management, performance monitoring and automation.

Zenoss: AIOps should be considered as one integrated monitoring and management solution that accelerates IT Operations to break down silos across teams and tools. This eliminates finger pointing and promotes collaboration with the right people to resolve issues quickly and easily. A successful AIOps platform should do four key things;

1. Receive data from different sources, including network/infrastructure/application monitoring.
2. Perform AI-based analytics on that data to derive insights.
3. Engage other systems, such as ITSM for incident creation.
4. Automate remediation through Run Books, Scripts etc.

AIOps seems to cover a whole range of tools and solutions, ranging from the passive – this is what's happened, and maybe why; right through to the predictive or proactive – this is about to happen and here's what you need to do about it. What are the relative merits and drawbacks of the range of the available AIOps approaches?

Synaptek: Because there is a lack of standardisation, every solution and methodology is slightly different leading to AIOps meaning different things to different people. To find the right solution that will protect business continuity and future proof their operations, IT leaders must first identify the vulnerabilities and pain points that put their operations most at risk. Each AIOps solution can then be evaluated against these.

Zenoss: There are 5 key stages to evolving an AIOps strategy; 1) How do we reduce false alarms? 2) Can we improve the current state? 3) How can we minimise the impact of incidents? 4) Can we reduce MTTR? 5) How can we measurably improve service delivery? Most AIOps platforms cannot reach every stage. IT should select tools that support as many of the five stages as possible, and that will mean having both passive and predictive approaches. The effectiveness of passive approach alone will diminish with each stage. IT teams should use the five stages to evaluate how mature their AIOps strategy is today vs. where they would like to be tomorrow.

In other words, how would you characterise the relative value in working through historical data as opposed to working with streaming, live data?

Zenoss: Both have equal importance, but one thing of a higher value is context. Without context, it's difficult to determine how datasources are related to one another, especially in today's complex IT environments. This coupled with a timeline driven investigation tool can aid in problem management and prevent recurring incidents. Similarly, streaming live data with context to the application supporting can reduce MTTR.

AIOps – primarily, it seems to be about the optimisation of an organisation's likely hybrid IT operations through better monitoring and management, but it can also offer valuable business insights at a more strategic level?

Synaptek: Absolutely! Knowledge is power and time is money.

The speed with which data can be interpreted and the comparable ease with which incident root cause can be surfaced frees IT personnel from the constant fire-fighting, giving them more time to focus on value-added tasks and innovation. With this extra time, IT teams can take a more holistic view of business processes and strategic goals and play a central role in providing data insights that inform decisions. Big data analysis also helps speed decision making and can enable IT leaders to quickly identify where investments are needed to enhance their technology infrastructure.

So far, we've talked about what AIOps is, and isn't, and the value it offers to organisations which embrace this new approach to IT operations. Before we finish, let's look at how an organisation goes about acquiring AIOps technology. For example, what are some of the key questions to ask an AIOps vendor?

Synaptek: It's about defining where you want to get to, where you are today and what you need to do to get to your end goal. Review your current toolset and consult experts in the field to ensure you invest in a solution that best fits your business and is scalable. See our Automation Starter Pack here for a detailed roadmap on how to develop an automation strategy for your business.

The key to success in AIOps adoption is to choose a vendor that can understand the context of your business processes and work with you to design a solution that frees your IT team from time-consuming, mundane tasks.

Be ruthless with suppliers and challenge them on how their solution can be tailored to your businesses. Consider solutions that are platform agnostic and can work with the tools you use most in your business. If a product won't work with the platforms you rely on to do what you do, find something else that is the right fit. A microservices approach could also achieve any missing functionality. The result of the right solution will be a more sustainable, agile business with fewer IT outages, significant cost savings and improved customer experiences.

And are there integrated, single vendor AIOps solutions available today, or is it more about acquiring two or three key pieces of software which together form the basis of an AIOps implementation?

Synaptek: Both, depending on your strategy and goal.

Bearing in mind that we've established the value of AIOps, where does an organisation start in terms of introducing AIOps into the business? With previous technologies such as virtualisation and cloud, it was possible to start with a single application in a test environment, before going more mainstream. AIOps would appear to be a bit more 'all or nothing'?

Synaptek: Again, see our Automation Starter Pack here for guidance. A robust strategy that starts with your goals and then identifies the technology that's right for you is key to success. Then, if possible, start small to demonstrate the value and then go big.

Finally, are there one or two key pieces of advice you'd like to offer individuals and organisations who are approaching AIOps for the first time?

Synaptek: AIOps delivers big data management, alert analysis and valuable insights at speed, but the context of the actions and outcomes that need to follow must be defined to enable effective automated resolutions. This is where a partnership like the one between Synaptek and Zenoss adds significant value. Synaptek design and automate the actions required following the identification of the root cause of an issue, reducing mean time to resolution (MTTR) and enabling predictive actions that prevent outages in the first place. Put simply, Zenoss diagnoses the issue and Synaptek automates the fix. It's a real game-changer!

Datadog releases deployment tracking

DATADOG has introduced Deployment Tracking, a new feature for Datadog APM. This feature enables engineering teams to identify when new code deployments are the root cause of performance issues.

With the rise in adoption of continuous integration and continuous delivery (CI/CD) practices, DevOps teams are increasingly using modern code deployment strategies such as Canary, Blue-Green, and Shadow deployments to test new versions with limited impact to end-users. While this agility comes with an increased risk of failure, traditional APM vendors offer hard-to-setup solutions that do not monitor these deployments in real time or the impact they have on specific endpoints. To prevent such risky visibility gaps, Datadog Deployment Tracking visualizes key performance metrics such as requests per second and error rate, identifying new error types for specific endpoints during every code deployment. This allows developers to detect and contain the impact of changes as they happen, as well as respond to incidents more quickly.

"Our customers build and ship applications with multiple types of deployment practices, increasing efficiency but often with the risk of impacting overall performance or introducing errors," said Renaud Boutet, Vice President of Product, Datadog.

"Deployment Tracking will visualize and compare key data related to various version deployments, helping our customers efficiently prevent outages related to bad code deploys, so they can rapidly iterate their applications in a more organized way."

"Our customers depend on Cvent's flexible and scalable platform for a seamless, impactful virtual event experience, which is essential in our current environment," said Brent Montague, Site Reliability Architect at Cvent. "To ensure a world-class experience for all users, we lean on Deployment Tracking within Datadog APM, which easily pinpoints new errors down to specific endpoints, improving our MTTR and allowing for continuous shipping of features and fixes to our customers. By leveraging Datadog's Deployment Tracking, our engineering teams can adopt Canary deployments with confidence."

Datadog Deployment Tracking is available for all languages supported by Datadog APM and works in both containerized and non-containerized environments. Deployment Tracking extends existing APM capabilities by using a unified version tag to analyze recent deployments. Functionalities include:

- Easily comparing performance between versions: quickly identifying bad deployments by comparing high-level performance and error data between releases.
- Ensuring efficiency of targeted fixes: viewing granular performance data down to a single endpoint to ensure a hotfix is actually resolving the issue.
- Starting troubleshooting in one-click: leveraging seamless correlation between version performance metrics and the associated hosts, traces, logs, code profiles, and processes to detect the root-cause faster.

Datadog and Microsoft partnership

Datadog has announced a new strategic partnership with Microsoft Azure. As part of this launch, Datadog will now be available in the Azure console as a first class service. This means that Azure customers will be able to implement Datadog as a monitoring solution for their cloud workloads through new streamlined workflows that cover everything from procurement to configuration. The improved onboarding experience makes Datadog setup automatic, so new users can start monitoring the health and performance of their applications with Datadog quickly, whether they are based entirely in

Azure or spread across hybrid or multi-cloud environments. With the deepest integration and the easiest configuration, Datadog is now clearly positioned as the premier monitoring solution for Azure.

In addition to the integration enhancements, the new channel through the Azure Marketplace allows customers to draw down on their committed Azure spend to purchase Datadog. This makes it significantly easier for customers to find budget, and also aligns incentives for Azure and Datadog sales teams for better collaboration and engagement in co-sell motions with enterprise clients. As a result, this partnership will enable more Azure customers to leverage Datadog's observability platform to drive successful cloud modernization and migration initiatives.

Datadog's native presence represents a first-of-its-kind integration of a third-party service into Azure.

"Azure is the first cloud to enable a seamless configuration and management experience for customers to use partner solutions like Datadog. Together with Datadog, we are enabling customers to use this experience to monitor their Azure workloads and enable an accelerated transition to the cloud," said Corey Sanders, Microsoft Corporate Vice President, Azure.

"Observability is a key capability for any successful cloud migration. Through our new partnership with Microsoft Azure, customers will now have access to the Datadog platform directly in the Azure console, enabling them to migrate, optimize and secure new and migrated workloads," said Amit Agarwal, Chief Product Officer, Datadog.

Through the new experience in the Azure Portal, customers can:

- Purchase a Datadog plan and consolidate billing through the Azure Marketplace
- Start sending Azure logs and metrics to Datadog with a few clicks
- View and manage which Azure resources are monitored by Datadog
- Easily deploy the Datadog agent to Azure hosts and web applications.

The hive mind:

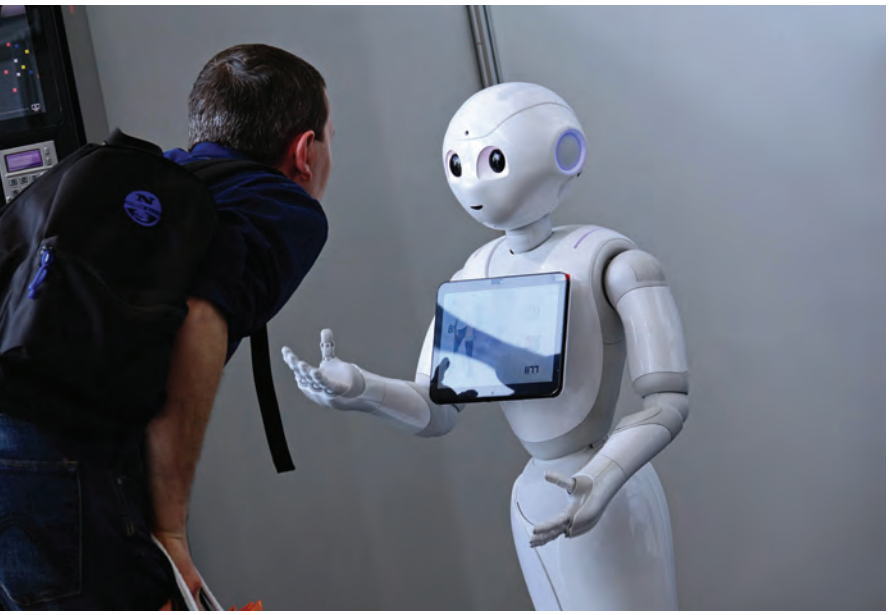
Creating unity between AI and Man

There was a time when the idea of 'artificial intelligence' was the reserve of blockbusting sci-fi action thrillers and only seen through the lens of dystopian fantasies such as Westworld and the Terminator.

BY KATHIE LYONS, EVP AND GM OF PARKVIEW AT PARKPLACE TECHNOLOGIES.

MOVE TO THE PRESENT DAY and it's safe to say the term artificial intelligence (AI) has firmly made its way to the real world. This is no surprise considering that today data is widely touted as the new oil - especially when noting the power this data deluge presents. Every part of an organisation's infrastructure, no matter what sector, creates data – from metrics on machine performance, to software and customer interactions. However, while many focus on what the data can tell us, what is often forgotten is the lifespan of data and where it is kept. And, with more data potential, the data centre has now become a pivotal and strategic part of the mix.

With this in mind, the questions we need to answer accumulate to: how do we navigate through the data, how will we use it and can we better understand where the potential for AI is in helping us utilise it. Already, AI is being widely touted as the hot ticket for data centres in 2020 but with present fears of a Matrix-style apocalypse leading the job shortages ripe, is it too hot for staff to handle?



One small step for man, one giant leap for machine

Leveraging AI in the data center will become a necessity for every data-driven business. Gartner has already claimed that more than 30% of data centers that don't deploy AI and machine learning won't be operationally and economically feasible in the near future.

Historically, the depth of learning possible from data was limited by time and resource. The datasets available today are not only far larger, but require more resources to ensure the data is stored and monitored, and that uptime is optimised across the data center.

Now, couple this with how automation has continually prompted concerns that technology will make people redundant or alter society in unsettling ways with an industry-wide skill gap. And then add the rise of AI such as 'social humanoid' robot Sophia. Fears that 'the robots will take over' are not only logical, but more prominent than ever. Those with roles in data and analytics in particular have growing concerns, especially when it is estimated that some five million jobs in the UK will be taken by robots by the end of 2025.

With this in mind, is there an opportunity for the hive mind? One where human and machine complement each other and are more valuable than the sum of their parts?

Cultivating human-machine harmony

Luckily for us, the answer to that question is yes. The machine-based dystopian apocalypse is still, for now, one of fiction. But that doesn't mean we're out of the woods. Deploy AI in the data center too early and staff confidence will be shaken and jilted adoption will become prevalent.

There is still a very strong need for hiring skilled professionals for maintaining and monitoring, in order to maximise uptime. With the skills gap increasing, upskilling and ensuring each member of the team is working on higher level critical tasks is crucial to success.

One of the reasons why it is unlikely that technology will completely replace humans within the decision-making process lies in its very purpose. Machine learning and AI are intended to create new, innovative solutions based on an analysis of the data it 'reads'. But technology cannot comprehend the emotional impact of these decisions or be trusted to act on them appropriately. Dispassion is not always a strength. So, while the hive mind is achievable, the next question raised is, as usual, how? How will man and machine work together?

The future – more like Wall-e than HALL 9000

When people talk about how Tesla cars can now figure out which parts need to be replaced and order new ones, the hype isn't around how the mechanics will be shut down and the profession lost to the dark ages. The hype is around innovation. In fact, this will streamline the mechanics services, having already identified the cause and the part ordered. The mechanic is now able to spend most of their skilled time on more complex and unforeseen issues that they can advise their clients on, based on experience.

This should be no different in the data center. Advancements in the use of AI should be celebrated in the same way and the opportunity taken to start upskilling and better training staff.

Imagine, rather than simply reporting faults after they happen, the system also leverages machine learning algorithms to "get a sense" for what the environment looks like and when a fault is about to occur. Allowing AI to "learn" from historic data sets to recognise faults-in-the-making can alert us in real-time time to intervene proactively and prevent downtime. However, the knowledge gained and shared from

human experience is still crucial for business decisions to be made in suitable context. You wouldn't perform a U-turn on a busy motorway into oncoming traffic just because your sat nav told you to.

To paint the picture within an IT environment, an AI tool might decide that CPU utilisation on a server is insufficient to maintain regular system performance. As a result, the AI may decide that a trigger must be set, as low CPU power may result in downtime, or could be an indicator of a virus or malware. But a person in the business might know that this peak is an anticipated occurrence and is short term. So, in fact, no trigger is necessary. In essence, no matter what "thought processes" are being devolved, a person will need to decide whether action is appropriate.

The collective conscious

While machine learning and AI can deal with the heavy lifting of analysing vast amounts of data quickly, it is the human element that recognises nuances and sentiments that drives the value for the business. Introducing AI into the data center should be a gradual process with training to support. This applies both for upskilling and so that staff understand the advantages of creating a hive mind, where both humans and machines learn, adapt and feed each other, will ensure that people will remain essential to every business process. For AI to innovate and allow data centres to thrive, an active partnership of humans and machines must be established. Just as it has been for centuries.

One of the reasons why it is unlikely that technology will completely replace humans within the decision-making process lies in its very purpose. Machine learning and AI are intended to create new, innovative solutions based on an analysis of the data it 'reads'

Accelerating incident response and prevention

EVOLVEN SOFTWARE has announced its integration with PagerDuty, the global leader in digital operations management, creating "FIRST - IT First Response Solution", for PagerDuty customers. Evolven also joins PagerDuty's Integration Partner Program.

The FIRST solution and integration combines Evolven's Change Control software with PagerDuty's Platform for real-time DigitalOps in order to provide users with the unique ability to proactively highlight the risky application and infrastructure changes that lead to issues, as well as the ability to automatically correlate performance events and metrics with the actual changes carried out in their enterprise cloud environments. The solution will allow users to prevent, detect and resolve incidents before the trouble starts.

The integration allows joint customers to:

- **Accelerate Incident Resolution -** automatically correlate actual changes detected by Evolven with incident data aggregated by PagerDuty, and quickly zoom in on the changes that are the true incidents' root cause.
- **Prevent Incidents through Hypercare** - receive actionable alerts on risky changes way before they can lead to an incident.
- **Drive Automated Remediation -** use granular change data gathered and analyzed by Evolven to enrich and provide context to automated remediation.

"As organizations struggle to maintain control while rapidly accelerating speed of change, led by the increased adoption of DevOps, Agile and Cloud, we're excited about the joint offering with PagerDuty," said Sasha Gilenson, CEO at Evolven. "PagerDuty is a highly respected market leader, and FIRST will bring tremendous value helping enterprises to accelerate with confidence by preventing or quickly resolving stability, security and compliance incidents."

"We are excited to equip our users with technology that delivers a huge advantage to IT teams, with actionable insights into actual changes," said Steve Gross, Sr. Director, Strategic Ecosystem Development at PagerDuty. "Integrating with Evolven adds another critical layer for our users to prevent and effectively troubleshoot incidents."

Root Cause Analysis patent

Evolven Software has secured a new patent from the U.S. Patent & Trademark Office (USPTO) for its root cause analysis method. Evolven's latest patent, USPTO Patent No. US20170213142A1, is the fifth patent granted to Evolven since 2016, recognizing its unique Change Collection and Analytics Technology system.

Evolven's Change Analytics patented technology is the only solution tracking incident root cause back to the actual configuration changes in IT environments, with the ability to reliably prioritize changes by the likelihood of a particular change being the root cause of a failure.

Evolven technology constructs a comprehensive understanding of each change, its role in the system, ability to impact performance, availability, connectivity etc, and initial operational risk. Once a change occurs, Evolven's unique technology predicts how long before the change can manifest as a problem, putting Evolven in a unique position to build a change lifetime profile for each individual change.

Identified change characteristics augmented with lifetime profile gives Evolven the ability to accurately calculate the likelihood that a specific change is the root cause of an incident, significantly improving incident remediation to prevent economic damage to organizations.

"We are excited to have secured this patent from USPTO, further validating these unique capabilities in our platform," said Bostjan Kaluza, Chief Data Scientist at Evolven. "With our technology, IT professionals will know which changes lead to an incident, where in the stack are they, how likely they are to be the root cause of an issue, and how to avoid such incidents in the future."

WITH MICHAEL ALLEN, VP & CTO EMEA, DYNATRACE

AIOps – what's all the fuss about? In other words, what is it and why does it matter?

MA: AIOps represents hope of helping organisations automate operations, turn data into precise answers and assist stretched IT teams who are struggling to piece together often conflicting insights from countless monitoring tools and dashboards. AIOps combines AI and continuous automation to analyse and triage monitoring data faster than humans ever could, making sense of the barrage of alerts they face due to rising IT complexity.

AIOps matters as, when deployed correctly, it can help teams get out of the endless firefighting loop, enable them to eliminate false positives and identify which problems need to be prioritised to optimise the user experience – effectively allowing them to stretch their limited resources even further and focus on what matters.

According to research by Adroit, the global AIOps market is expected to grow to $237bn by 2025, demonstrating there is a substantial appetite for AIOps capabilities. However, it's important for organisations to recognise that AIOps tools alone are not a silver bullet and must be part of an integrated approach to monitoring the IT environment.

AIOps – does it replace existing technologies and approaches used to monitor and manage IT, or is it more of an add-on to what an organisation is already doing?

MA: Existing technologies and traditional approaches to monitoring have become largely redundant for IT teams, as they were using many tools, often in silos, with each covering only a small fraction of the overall environment. As a result, it's impossible to monitor modern user experiences with metrics that don't display the full context from across the entire IT stack.

AIOps offers a solution to this challenge, with the ability to provide a more holistic view across the entire IT environment by ingesting data from multiple tools and turning it into a single source of precise answers. However, AIOps doesn't work in isolation and so shouldn't be seen as something to replace existing approaches. Instead, AIOps should be part of an AI-powered platform, where AIOps is fully integrated with application performance, business analytics, user experience and infrastructure monitoring capabilities. With advanced observability across the IT environment, and the business at large, AIOps solutions can pull any pertinent data and fully contextualise alerts using performance metrics. It's important not to see AIOps as something that can quickly be implemented to replace or 'bolt-on' to an organisation's current approach, as both AIOps and other approaches work hand-in-hand with one another.

When it comes to AIOps, are we talking evolution or revolution of IT operations?

MA: AIOps is part of a welcome revolution of IT operations, enabling teams to do more with less, but it's important to recognise that it isn't a complete solution in itself. The goal of AIOps is to simplify operations and deliver increased efficiency across an organisation through continuous automation of problem detection, alert-triaging, and root cause analysis. The next natural step of AIOps will revolutionise IT even further by enabling the transition towards autonomous cloud operations.

Here, the insights coming from AIOps solutions are used to enable cloud environments to dynamically adapt in real time to optimise performance for end-users, without the need for human intervention. However, to reach this state, a holistic approach to performance management is required, combining application performance insights and advanced observability across the cloud infrastructure with digital experience management and AIOps capabilities.

How would you characterise the relative value in working through historical data as opposed to working with real-time data?

MA: Historical data certainly has its role in modern IT operations. For example, it can be beneficial for compliance and predictive analytics. However, training

AIOps solutions solely with historical data brings an array of challenges. Given the dynamism of modern cloud environments, by the time AIOps solutions have learned a pattern from an analysis of historical data – the environment will have changed and so that pattern is no longer relevant. AIOps needs to be able to adapt and deal with what's going on in the IT environment right now, which is why real-time data is also important. This ensures the solution has up to date insights and can flag precise root-causes and instant answers to problems that arise in real-time, to help IT and business teams to optimise user experience.

Can AIOps offer valuable business insights at a more strategic level – beyond its strengths in optimising hybrid IT operations through better monitoring and management?

MA: It would be a mistake for organisations to only view AIOps through the lens of monitoring and managing the IT environment, as it can also be integral in driving better outcomes across BizDevOps teams and use cases. However, this can only be achieved by breaking down the silos between tools, to integrate AIOps with other solutions in the monitoring toolchain.

This enables IT and business teams to tie together user experience insights and application performance data to identify their impact on business metrics. As a result, IT teams can become more strategic; armed with valuable insights from the entire business, they can make better-informed decisions and prioritise efforts to optimise digital services based on the wider impact on outcomes for the business, such as revenues and conversions.

As a further benefit, this also creates a single source of truth in a common language for the business, which enables IT departments to democratise access to their data. As a result, they can free up their own time by encouraging other teams to self-serve the information and insights they need to drive their own decisions, rather than needing to request it from the IT department.

And are there integrated, single vendor AIOps solutions available today, or is it more about acquiring two or three key pieces of software which together form the basis of an AIOps implementation?

MA: There are many standalone, single vendor AIOps solutions available on the market, but simply adopting these tools as a bolt-on and expecting them to solve all the business' problems is unlikely to result in success. Instead, integration with other monitoring capabilities is the secret to success when adopting AIOps. Without the other necessary monitoring tools across the IT environment, AIOps solutions won't have the array of data needed to understand the full context of any problems and produce the results that the business needs.

The most successful approach can be found by adopting AIOps as part of an AI-powered observability platform. At the heart of this is a real time, dynamic causation model that enables true software intelligence by automatically adapting to change and negating guess work found in previous, error-prone correlation approaches. Teams are instead provided with precise answers detailing root cause, enabling them to prioritise insights based on the business outcome and impact on user experience.

Finally, are there one or two key pieces of advice you'd like to offer individuals and organisations who are approaching AIOps for the first time?

MA: The key piece of advice for organisations beginning to evaluate the potential of AIOps is to understand that it is not a silver bullet to all of IT and cloud operations teams' problems. If AIOps is simply adopted and treated as another cog in the machine, alongside an array of other monitoring solutions already in use, it will fail to reach its full potential.

For AIOps to truly deliver on its promise to make life easier for IT teams, it must be part of a platform that offers a holistic approach to performance management. This integrated approach enables BizDevOps teams to not only automatically find and triage issues but create effective software intelligence that can surface answers to those problems and help to optimise the business in real-time.

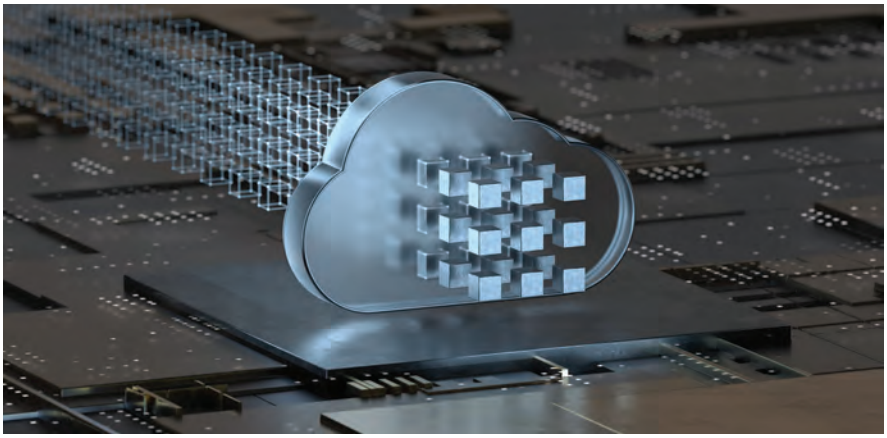
AIOps for optimisation in multicloud and 5G

PROPHETSTOR DATA SERVICES, INC. was assigned the patent "WORKLOAD-AWARE I/O SCHEDULER IN SOFTWARE-DEFINED HYBRID STORAGE SYSTEM" (Patent number US 9,575,664) by the United States Patent and Trademark Office. The patented technology has been incorporated into ProphetStor's Federator.ai platform that leverages application awareness for scheduling resources in a Just-In-Time Fitted manner for application workloads. The technology results in much improved performance and utilization for general IT and Kubernetes platforms that have become the "Operating Systems" for MultiCloud and 5G Network operations.

As Dr. Jeff Dean of Google Brain stated in his 2019 article that "The potential exists to use machine-learned heuristics to replace hand-coded heuristics, with the ability for these ML heuristics to take into account much more contextual information than is possible in hand-written heuristics, allowing them to adapt more readily to the actual usage patterns of a system."

The patented technology of ProphetStor lays the foundation of bringing the digital intelligence into Cloud and 5G operations to address both the complexity and efficiency issues that are very difficult to be automated. ProphetStor has been focusing its innovation in applying Machine Learning in IT operations since it was founded in 2012. This patent grant is a recognition of our vision.

"ProphetStor started its journey of Application-Aware AIOps first by its invention in storage performance virtualization to improve the conventional storage capacity virtualization," said Dr. Ming Sheu, ProphetStor's EVP of Products. "At the heart of the IT technology, it is the applications that need to be ultimately supported. ProphetStor brings the essence of workload awareness to its design philosophy for optimization in resource allocation and workload placement, which is also the center of our product offering. We are delighted that our technology is recognized by the patent grant and we are excited to bring tremendous values to our customers."



"In many of our customer use cases, we have witnessed the performance improvement of application workloads by up to twenty (20) times and savings of the cloud usage or operating cost by 50%," said Dr. Eric Chen, CEO of ProphetStor. "In 5G operation, the allocation of bandwidth/radio resources for the variable-in-time workloads is a complicated problem to handle. There would be a huge cost savings when 20% or more of the bandwidth can be saved by intelligent multiplexing throughout the edge and core networks with our patented technology which is also essential for the 'Zero-Touch' operation in 5G."

ProphetStor's patented Deep Learning enabled Data Correlation and Impact Prediction Engine (DCIE) forms the foundation for its Federator.ai. Federator.ai 4.2 is a generally available product from ProphetStor. For a detailed description of the solution, please visit Federator.ai®.

Viable AIOps and Machine Learning for system operation

ProphetStor Data Services, Inc. was assigned the patent "METHOD FOR OPTIMIZING STORAGE CONFIGURATION FOR FUTURE DEMAND AND SYSTEM THEREOF" (Patent number US 10,067,704) by the United States Patent and Trademark Office. The patented technology has been incorporated into ProphetStor's Federator.ai platform that uses prediction of the application workloads as the basis for resource allocation and adaptation to meet the requested SLA. Deep Learning and math models are used to create accurate predictions of FUTURE workloads so that the planning, performance enhancement, and resource allocation in Cloud and Telecom services can be simplified with reduced computational cost.

ProphetStor has been devoting its innovation in applying Machine Learning in IT operations since it was founded in 2012. The patented technology is a part of its efforts to manage the complexity of automating and optimizing the operations in Kubernetes ecosystems, Cloud, and Zero-Touch operation in 5G.

"We believe the resource allocation in Clouds and in the 5G edge to core network should be adaptive according to the application workloads. ProphetStor's newly granted patent illustrates that prediction could help simplify the operation by bringing in intelligence about the applications and the infrastructure. The prediction of application workload, coupled with the Multi-Layer Correlation and Impact Analysis, can effectively reduce the computation resources needed for planning and operation," said Eric Chen, CEO of ProphetStor. "Working from the top of the application stack, and analyzing the correlation from the top layer down, we can achieve the reduction in the computational cost by hundreds or even thousands times less than needed for optimizing planning, scheduling, and scaling. Also, the application-awareness and workload-awareness sets Federator.ai, our AIOps solution for Kubernetes ecosystems, apart from other solutions that claim to have a similar objective."

Solving the last mile challenges of operations noise reduction with AIOps

IT noise can be defined as any piece of information that a first responder has to deal with in order to solve a problem that is affecting their business – and that is not contributing to the understanding or resolution of that issue.

BY GUY FIGHEL, GENERAL MANAGER AIOPS & VP OF PRODUCT ENGINEERING AT NEW RELIC.

IT NOISE is irrelevant information that is making it harder to spot and solve problems. It's an issue because in an IT operational environment, every second IT is not doing what it's supposed to it means potential revenue loss. Today, modern technologies – such as AIOPs – is helping teams reduce operations noise significantly. Over the next decade, experts and innovators will continually be pushing to eliminate the last mile of noise reduction. But how?

Applying intelligence throughout the DevOps cycle

Rather than narrowing your IT approach to one specific aspect of the incident response process, teams should strengthen the relationships between each stage of the process to create a more powerful solution. Focusing only on faster detection, faster understanding, faster response, or faster follow-up is not enough; teams need a comprehensive tool

that thinks like their best SREs – from a systems perspective.

Tapping intelligent assistance

Understanding the root cause and determining steps to resolution usually account for the majority of the time between an issue occurring and its remediation. To achieve this, teams need useful context about existing issues, including their classification based on the "Four Golden Signals" (latency, traffic, errors, and saturation) and correlated issues from across an environment.

Leveraging smarter tools for creating perfect software In order to help customers create stellar software, experiences, and businesses, it's critical to embrace solutions that are easy to connect and configure, work with the tools teams already use, create value throughout the entire observability process, and learn from data patterns and user feedback to get smarter over time. AI is one more step in this journey.

Enter AIOps

DevOps, SRE, and on-call teams rely on a multitude of tools to detect and respond to incidents. This ever-growing list of tools can pose problems: incident, event, and telemetry data is fragmented, siloed, or redundant, making it harder to find the information needed to diagnose and resolve incidents.AIOps platforms promise to solve these problems with a centralized, intelligent feed of incident information that displays everything you need to troubleshoot and respond to problems, all behind a single pane of glass. Unlocking this value, though, can require a significant time commitment and workflow shift, potentially costing teams hundreds of hours in integration, configuration, training, and on-boarding tasks.

Delivering operations noise reduction and augmentation teams

On-call teams are familiar with noisy alerts triggered by low-priority, irrelevant, or flapping issues. These can lead to pager fatigue, cause distractions, and increase the probability that a critical signal will go unnoticed.

Developing a system of AIOPs whereby AI is augmenting humans means IT teams can achieve an IT noise-free production environment. Via the AIOps system, the user will get a much richer problem description with details of all the sub-incidents in one single notification, enabling them to more easily identify the root cause of the issue and solve all sub-incidents at once. Once operations understand what is wrong in one incidence it is much easier for them to solve the problem. In summary, IT operations teams that want to successfully eliminate IT noise need to apply the aforementioned different techniques to augment IT operations teams and ultimately impact the bottom line positively.

AIOPS and why digital business demands velocity and quality

When it comes to digital experiences, modern consumers are impatient. The likes of Apple and Amazon have taught them well that they can get exactly what they want in the digital realm, immediately, via their channel of choice.

BY JOHN MCKENNY, SENIOR VICE PRESIDENT OF STRATEGY AND INNOVATION FOR ZSOLUTIONS AT BMC SOFTWARE.

WHILE BUSINESSES are looking for ways to meet these expectations by expediting the delivery of new applications, features and services, accelerating the development process can lead to quality issues and poor customer experiences. Consider also that new technologies are continuously introduced into your environment, making it increasingly complex. Service ticket volumes are proliferating as IoT devices, APIs, mobile applications, and both digital and machine users access systems.

This onslaught of new technologies and users is yielding vast amounts of data as well, which only complicates the challenges faced by IT operations teams. As noted by Gartner, “IT operations is challenged by the rapid growth in data volumes generated by IT infrastructure and applications that must be captured, analyzed, and acted on.”

While traditional monitoring and management tools may have worked well in the past, given the complexity of today’s hybrid cloud environments, IT managers no longer have the time or bandwidth to sift through volumes of alerts to discern whether the issues they are flagging are real or not.

So how can your IT operations team continue to evolve applications and services across the environment, meeting customer expectations, maintaining performance and availability, and ensuring that strategic initiatives are supported?

AIOps Drives Innovation

An investment in AIOps can help you successfully advance your infrastructure by providing your team with the tools they need to both filter out event noise and take a more accurate and predictive approach to management and monitoring. Powered by artificial intelligence and machine learning, AIOps solutions allow you to identify or predict potential problems before they impact business services, help with root cause analysis and then prescribe corrective actions.

AIOps tools help simplify and streamline IT operations by building models that can examine, for example, a given set of minutes on a Tuesday and compare that to a model of what historically are normal conditions for that same time period. Based on this data, AIOps tools can pinpoint anomalies and raise alerts accordingly. When overall conditions change, AIOps models can also be retrained as well.

Because AIOps solutions automate monitoring and management processes, they elevate the role of ITOps teams, allowing them to spend less time troubleshooting and more time collaborating with business units to advance their strategies and put innovation to work.

Achieving Velocity

ITOps teams remain focused on the user experience. More than any aspect of the digital experience, consumers value velocity – the speed at which the

new technologies they need are developed and available to them.

However, just deploying new features, services, and applications for users is not enough. When a new application is launched, you need to ensure a quality experience for users – and slow response times are more than just an aggravation. They have real business impacts. In fact, a recent Google study cited by Forbes found that "53 percent of mobile site visitors will leave a page that takes longer than three seconds to load."

And if your system or application goes down for users, the costs can be staggering. According to the IT Intelligence Consulting 2019 Hourly Cost of Downtime Survey, "98 percent of organizations say a single hour of downtime costs more than $100K; 86 percent report that number to be more than $300K; and 34 percent say it can cost anywhere between $1M and $5M."

Proactively diagnosing issues is critical to elevating user experiences – especially in agile software development – and can prevent the financial bleeding that application downtime ultimately yields.

AIOps can help you meet the demand for velocity and quality. The intelligence embedded in AIOps makes future capacity planning much easier and more precise for IT operations teams. This is because the solutions can enable you to correlate analyses between business drivers and resource utilization metrics, information you can use to allocate and schedule the resources needed to support new applications.

AIOps and the Mainframe

The market for mainframe technology continues to grow according to MarketWatch, at 2.6 percent annually, suggesting that these highly secure supercomputers are as relevant today as they were decades ago.

Like many large organizations, your environment may be anchored by mainframes. However, managing the mainframe has never been more complex – in part because many organizations have failed to modernize the software tools they need to optimize the platform – and also because older generations of workers are retiring, which can mean a loss of mainframe expertise within the ITOps team. AIOps solutions help fill in the skills gap. By modernizing and automating critical monitoring and management processes, AIOps tools allow your ITOps personnel to quickly apply their existing skills to this unfamiliar platform, detecting issues before they escalate while delivering the performance levels customers demand.

BMC's Automated Mainframe Intelligence (AMI) Solutions

According to IDC, by 2021 70 percent of CIOs will aggressively apply AIOps to "cut costs, improve

IT agility, and accelerate innovation." Here's why you should invest in BMC AMI solutions for your mainframe assets as you embark on this journey: A self-managed mainframe isn't achieved through a patchwork of disparate solutions. Instead it requires an end-to-end solution that fosters integration across the infrastructure and delivers a seamless user experience that sets the stage for business growth and technological innovation.

BMC's AMI suite of products delivers on AIOps' promise by:

- Applying multivariate analysis simultaneously across multiple data sources to track anomalies
- Employing predictive analytics driven by pattern analysis algorithms that detect anomalies and assess their impact
- Using intelligent automation to keep the environment running securely and at peak efficiency
- Offering built-in domain expertise so users can track the right KPIs without necessarily relying on in-house technical skills that might be scarce.

AIOps solutions help fill in the skills gap. By modernizing and automating critical monitoring and management processes, AIOps tools allow your ITOps personnel to quickly apply their existing skills to this unfamiliar platform, detecting issues before they escalate while delivering the performance levels customers demand

EMA Radar Report

focuses on AIOps solutions

EMA evaluated incident, performance, and availability management, change impact and capacity optimization, and business impact and IT-to-business alignment use cases to guide organizations with their AIOps platform selection. **Part 1**

Enterprise Management Associates (EMA), a leading IT and data management research and consulting firm, today announced the release of its newest EMA Radar Report, titled "EMA Radar Report: AIOps – A Guide for Investing in Innovation."

Created to assist IT professionals in selecting the right solutions for their specific needs, EMA identifies the leading vendors in this space based on key criteria defined by EMA vice president of research, Dennis Drogseth.

"All indications are that this is groundbreaking research," said Drogseth. "So far, the industry has been struggling to define and understand AIOps, including its benefits, requirements, and challenges. Our extensive data gathering, vendor dialogues, and 31 supplemental deployment interviews have brought AIOps into a new level of clarity—one that underscores both its diversity and its richly beneficial common ground."

The fact that AIOps is a market showing strong growth in value has been borne out time and again in EMA research over the past decade and remains true in this newest iteration of research on the topic. The message for IT organizations looking to pursue a forward path in AIOps adoption is overall a strongly

positive one. The benefits achieved are growing in diversity and value. The obstacles remain similar, as they reflect not only on a technology purchase, but also on processes, organizations, and cultural realities. To assist IT organizations pursuing this path, EMA evaluated 17 vendors providing AIOps solutions. Any of the 17 vendors represented in the report might be the best choice for an IT organization depending on what tools and solutions they currently have, their level of process and organizational maturity, their goals and priorities, and what advanced technologies they already have deployed.

The following criteria were used for market inclusion:

- Assimilation of data from cross-domain sources in high data volumes for cross-domain insights.
- The ability to access critical data types, e.g., events, KPIs, logs, flow, configuration data, etc.
- Capabilities for self-learning to deliver predictive and/or prescriptive and/or if/then actionable insights.
- Support for a wide range of advanced heuristics, such as multivariate analysis, machine learning, streaming data, tiered analytics, cognitive analytics, etc.
- Potential use as a strategic overlay that may assimilate or consolidate multiple monitoring investments.
- Support for private cloud and public cloud, as well as hybrid/legacy environments.
- The ability to support multiple use cases, including but not limited to application/infrastructure performance and availability.

Two areas of primary interest not on this list, but examined closely in this Radar, were support for automation to accelerate action and how platforms leverage discovery and dependency mapping for improved context.

A detailed, comparative study of solutions from the following vendors is provided in the report:

- Aisera
- BigPanda
- BMC Software
- Broadcom
- Centerity
- CloudFabrix
- Digital.ai
- Digitate
- IBM
- Interlink Software
- Micro Focus
- Moogsoft
- Resolve Systems
- ScienceLogic
- ServiceNow
- Splunk
- Virtana

The objective of the Radar was not to pick a single winner but, instead, to provide IT organizations with use case descriptions relevant to purchase. The three use cases evaluated were:

The Radar also looked at DevOps support, integrated SecOps capabilities, and IoT support, which could variously play to each, or all, of the use cases listed depending on the platform's design and the vendor's focus

Incident, performance, and availability management

This used case focused on optimizing the resiliency of critical application and business services – including microservices, VoIP, and rich media – in cloud (public/private) as well as non-cloud environments with a strong focus on triage, diagnostics, roles supported, self-learning capabilities, and associated automation.

Change impact and capacity optimization

These are admittedly two use cases combined into one but share requirements in terms of understanding interdependencies across the application/service infrastructure as volumes increase, changes are made, configuration issues arise, and automated actions are required.

Business impact and IT-to-business alignment

This use case includes user experience, customer experience, customer management, business process impacts, and other relevant data, with an eye to supporting business initiatives, such as digital transformation through superior IT-to-business alignment.

The Radar also looked at DevOps support, integrated SecOps capabilities, and IoT support, which could variously play to each, or all, of the use cases listed depending on the platform's design and the vendor's focus.

AIOps can and should be transformative in enabling more effective decision-making, data sharing, and analytics-driven automation. The recommendation from EMA remains that buyers should consider their own realities, then begin a search for the AIOps platform that most fits their requirements. Which vendor can most effectively address top prioritized long-term goals? Which vendor is a most natural fit for the current technology environment? Which vendor is likely to bring the fastest near-term wins? The answer could be any one of the 17 presented in this Radar, depending on the answers to these and other questions. A detailed analysis of the research findings is available in the report, "EMA Radar Report: AIOps – A Guide for Investing in Innovation."

When there are too many tools in the infrastructure toolbox

Digital transformation and IT modernisation initiatives provide innovations to create a competitive edge and drive business growth. But they've also created increasingly complex environments that need to be managed by teams that are strapped for time and resources.

BY DAVID CUMBERWORTH, MD EMEA, VIRTANA

IT ORGANISATIONS are good at taking on new tools but really bad at retiring older ones. But how do you know which tools are critical to keep, where there's overlap, and what's no longer needed? Part of the promise of AIOps is to rationalise tools so you end up with a single-pane-of-glass view of the IT environment.

This, however, is unrealistic. Most analysts agree that you need a number of different tools to manage everything. The challenges, therefore, are to reduce the number of legacy tools and replace them with a platform that does the collective work better. The final tool selection should operate together in a fully integrated manner.

The IT infrastructure is made up of servers and their related VMs and hypervisors, the network and related switches, and a storage layer (traditional or NAS). A good starting point is to evaluate what you are using to manage these layers. Then look at the infrastructure from an application point of view – do the legacy tools give you an application view or do they just show their particular silo? You need a view of how the applications using the infrastructure are performing so you can create a baseline.

Once established, you can then look at pinch points and capacities to optimise the system. This new application-centric approach also gives you valuable insight you can share with the business – after all, they are only interested in how the applications are performing and not what technology they are running on.

The next stage is to look at the applications themselves and the customer experience they provide. For this you will need an Application Performance Monitor (APM) that shows end-user experience, the coding and all IT components outside the data centre. A good example of this is AppDynamics from Cisco.

You now have application and infrastructure views, offering an integration interface so analytics can be viewed holistically rather than by platform. This enables you to report to the business how their applications are running and have performed during the time since last reviewed, transforming IT from overhead into a source of competitive advantage and business value.

Improve speed and agility by breaking down silos

AS THE NEW RESEARCH SHOWS, multiclouds, workloads, and application environments are interrupting the way that security and operations teams need to interact—with new levels of complexity driven by an overall lack of integration between the two, poor communication, nonstandardized systems, accelerated software development lifecycles, and noncollaborative teams and processes.

Through interviews with IT/development and security operations team members from the hospitality, finance, manufacturing, and government sectors, researchers uncovered opportunities to improve speed and agility by breaking down silos. Data cited from several other IDC surveys completed independently of SolarWinds' knowledge and input, supported the findings.

As part of the study, IDC research director, security and trust products, Chris Kissel advised, "Don't rethink your approach to security. Instead, rethink your approach to IT and the manner in which business application and data services are provided to users. Addressing security without addressing IT produces a suboptimal, kludged, band-aid-riddled mess."
Key findings included:

- **COVID-19:** The pandemic has put siloed infrastructures under a microscope and increased the need for integration between operations and security teams, including mutual visibility of systems.
- **Communication:** Organizations with teams that communicate regularly rise to meet the challenges of multicloud, multidevice, multinetwork, etc.
- **Standardization and team collaboration:** These two strategies can reduce and contain costs and complexity across IT and security teams.
- **Shared concerns:** IT and security share discreet concerns, such as risk and workflow that can help align teams.
- **Risk:** An organization has to be finely attuned to "risk" and manage risk at the right levels.
- **Compliance:** Companies want to have the ability to "show" compliant practices as much as they want to maintain actual compliance.
- **Digital transformation:** Network architecture is becoming more and more cloud-based, and endpoint protection platforms have become increasingly important.

IDC interview excerpts support these points. For example, a corporate operational vice president for a leading aerospace company explained, "Some of our security and operational processes are fragmented; COVID-19 is accelerating their integration and automation."

A digital leader at a large insurance company stated, "Our multicloud success requires IT and security teamwork, or we will fail." And a certified information security manager for a top 20 U.S. financial institution said, "The first thing I look for in a job applicant is: do they understand risk?"

"We are in an ultra-hybrid world with multi-everything, and in order to successfully navigate this landscape, ITOps, DevOps, and SecOps teams need to more closely align," concluded SolarWinds vice president of security, Tim Brown. "As this study showed us, the challenges these teams face are across all verticals.

"We're all trying to do more and push our IT infrastructure to its limits, and cybersecurity can't be an afterthought. When we work together, things move more quickly and more efficiently. And we need to simply understand that we share a lot of the same priorities and we're not as different as we really think."

EMA Radar Report

focuses on AIOps solutions

EMA evaluated incident, performance, and availability management, change impact and capacity optimization, and business impact and IT-to-business alignment use cases to guide organizations with their AIOps platform selection. Part 2 of this article focuses on some of the vendors' reactions to the report's findings. **Part 2**

Digital.ai named a leader

Digital.ai has been named a Leader in the 2020 Radar Report on Artificial Intelligence for IT Operations (AIOps). Published by Enterprise Management Associates (EMA), a leading IT and data management research and consulting firm, the report highlights Digital.ai's ability to leverage analytics to improve the software development lifecycle and drive positive business outcomes.

According to the report, Digital.ai differentiates itself with "capabilities that empower everyone, from the CIO to analysts, to get the right information at their fingertips, with interactive visualizations that support all types of analytics, dashboards, and queries." The report goes on to say that "while most AIOps platforms are centered in telling you what's wrong, or what might be wrong in the future, Digital.ai can tell its customers how they can improve the way they work in a well-metricized, proactive way."

The report examines 17 vendors across three use cases. Digital.ai received special recognition for its AIOps-Driven IT governance, which the report described as "unequaled" and "unsurpassed." Additionally, the company was named the overall Value Leader in Change Impact and Capacity Optimization and in Business Impact and IT-to-Business Alignment, and a Strong Value in Incident, Performance, and Availability Management.

"We are pleased to be recognized by EMA as a leader in AIOps and for our commitment to helping enterprises leverage analytics to proactively improve

IT and business outcomes," said Gaurav Rewari, CTO & GM of AI and VSM at Digital.ai. "Timely information is critical to optimizing processes and driving digital transformation, and it is the foundation of our Value Stream Platform."

Powered by an AI/ML-driven analytics engine, the Digital.ai intelligent Value Stream Platform provides a unified, end-to-end value delivery solution, including enterprise agile planning, application security, continuous delivery and release orchestration, and continuous testing that helps organizations align software development and business value streams and realize the benefits of their digital transformation initiatives.

"Digital.ai offers significant insights to improve IT efficiencies and outcomes across all three of the use cases we evaluated," said Dennis Drogseth, Vice President of Research at EMA. "Digital.ai's customers have seen benefits ranging from improved ROI on applications and services, to significantly improved OpEx efficiencies, prioritization of remediation efforts based on highest impact, and governance on how to minimize risk in making changes, among others. Digital.ai's complementary role in AIOps helps to underscore the rich potential and diversity of the AIOps landscape while suggesting future areas for innovation and advancement."

Evaluated across 35 applicable criteria, Digital.ai was rated "outstanding" in 57 percent of the categories, and "strong" or "solid" in 40 percent of the remaining applicable categories. Areas of excellence include: Estimated Time for ROI, Application Support, Business Impact, Reporting and Visualization, Scalability, Breadth of Domain Support, Big Data Capabilities, Change Impact/Optimization, DevOps Support, IT and Business (non-IT) Roles, Versatility in Deployment Options, Automation for Deployment, Breadth of Professional Services, Levels of Customer Support, FTEs Required for Admin, and Breadth of Support for Data Collection.

Additional findings from the report include:
IT-to-business alignment has risen consistently in importance and has accelerated due to the COVID-19 pandemic. When asked about the top five business sources for import, vendors reported: Enterprise Operations Data (75 percent), IT Warehouse for Advanced Trending (50 percent), Business Application Owner Data (44 percent), Executive Dashboard (31 percent), and Security/Audit Compliance Systems (31 percent).

Support for automation is critical for digital transformation and other business and IT initiatives. In a 3-way tie for first place at 94 percent, the top automation priorities for AIOps vendors were: Alert-driven Notification, Automation in Support of Incident Team Communication, and Workflow Within and Across IT.

Integration with third-party toolsets is critical for data collection. On average, vendors supported between 51-75 different toolsets, with 42 percent supporting fewer than 30 toolsets and 48 percent supporting more 76 or more.

Digitate's ignio recognised as value leader

Digitate's ignio software for IT and business operations has been identified as a value leader in Enterprise Management Associates' (EMA) inaugural AIOps Radar Report. Digitate's industry-leading, closed-loop software for the autonomous enterprise, ignio AIOps, stands out for its strength in categories including change and capacity optimization, performance and availability management, business impact and IT-to-business alignment. EMA also recognized Digitate with the Integrated Automation award as a testament to industry leadership in regard to the "analytics/automation handshake," for enabling critical IT and digital business transformation.

EMA finds that the AIOps market is on a growth trajectory and, in the last eight years, the diversity of approaches and design within the landscape has ramped up significantly. The report recognizes ignio AIOps' rich set of pre-built automation options in addition to its extensive AI/ML algorithms, contributing to Digitate's overall leadership in the AIOps landscape. ignio has been evaluated as "outstanding" across criteria spanning features, architecture and ease of deployment. The report can be accessed here.

"We are successfully leveraging ignio AIOps for infrastructure and application performance and capacity analytics in our virtualized infrastructure. Its combined capabilities for digital automation and machine learning were the initial drivers for its selection after looking at a number of other options," said a head of product development for enterprise systems management at a large, UK-based financial services provider in the report.

Akhilesh Tripathi, CEO, Digitate, said, "With our closed-loop, end-to-end, proactive problem management and autonomous resolution approach, ignio AIOps is enabling enterprises to operate with stability, agility and resilience while delivering a brilliant customer experience. EMA's recognition validates that we are delivering on our vision for autonomous enterprise. We are honored to be showcased as leaders in this landscape as more and more organizations look to AIOps to build new competitive advantages."

Dennis Drogseth, Vice President of Research, EMA, said: "Digitate successfully delivers on its vision for 'autonomous IT operations' with ignio AIOps. With ignio AIOps, analytics and automation come together strongly in managing, planning and optimizing changes across the full IT application and

infrastructure. Digitate deployments have enjoyed noise reductions of up to 90% due in large part to the combination of automation and analytics that the vendor brings to the table. ignio AIOps offers solid support across all three use cases, with active ongoing investment to accelerate the growth of its AI/ML capabilities and expand its technological breadth, while making its platform strengths increasingly user friendly."

Digitate's ignio AIOps is an AI/ML driven software that combines enterprise IT context, insights and intelligent automation to deliver resilient, agile and autonomous enterprise operations.

Moogsoft named a leader

Moogsoft, the pioneer and leading provider of artificial intelligence for IT Operations (AIOps), today announced says that Enterprise Management Associates (EMA) has named it a "Value Leader" and recognized for its DevOps innovation in the firm's 2020 AIOps Radar report.

In the comprehensive report, Moogsoft earned EMA's value leader status across nearly all AIOps use cases: Incident, Performance, and Availability Management as well as Change Impact and Capacity Optimization. EMA also recognized Moogsoft exclusively as an Innovator in DevOps, which is the third-most-common AIOps use case, according to the report.

"In an eclectic market with many different approaches, Moogsoft has established itself as one of the leaders and a definer of AIOps," said Dennis Drogseth, Vice President, EMA and author of the report. "Its rich data ingestion capabilities are a credit to Moogsoft's patented algorithms, while its integrations are among the best in the market. This is enhanced by Moogsoft's Situation Room, which provides a uniquely rich environment for IT teams to remotely collaborate."

The report also recognizes Moogsoft's extraordinary investments in AI/ML heuristics with well-integrated workflows and automation, as well as out-of-the-box capabilities for data assimilation from third-party sources. "It is designed to deliver compelling value without the significant amount of overhead that often accompanies large, complex AIOps deployments," continues its evaluation, which considered user feedback as a significant part of its methodology.

"We selected Moogsoft after evaluating other AIOps platforms and suites because of its AI/analytic strength and Moogsoft's guided machine learning," states the director IT operations at a global oil and gas industry leader, in the report. The platform's embedded capabilities for automation were also an important factor."

"This report validates how important AIOps has become for businesses of all sizes as they embrace a fully digital future," said Moogsoft Founder and CEO Phil Tee. "It also perfectly underscores our vision for a cloud AIOps architecture to deliver DevOps and SRE teams rapidly deployable and automated observability across all their services."

Cloud-First model recognized as a game-changer

EMA also named Moogsoft the winner of its DevOps Innovation Award, which recognizes strides to democratize AIOps with the arrival of an entirely new cloud-first architecture. Based around the latest developments in modern microservices and cloud-based technologies, this new platform delivers the market a new self-service, rapid-deployment model for DevOps and SRE teams to combine AIOps and Observability in a single platform.

The report calls this new architecture "the first dedicated DevOps solution in the AIOps market, with fast-time-to value and a wide range of features."

Highest ranking in every category

Resolve Systems has announced its distinction as the only vendor to achieve "Value Leader" status (the highest ranking) in all three categories evaluated by Enterprise Management Associates (EMA) in the "EMA Radar Report: AIOps – A Guide for Investing in Innovation."

The new analyst report assesses core AIOps use cases including incident, performance and availability management; change impact and capacity optimization; and business impact and IT-to-business alignment. Resolve's recognition as a leader in all three areas results in large part from the company's singular combination of a robust AIOps solution, Resolve Insights, paired with an enterprise-class automation solution, Resolve Actions.

"Resolve is unique within the AIOps market in having a fully evolved automation suite. The company has proven that combining AIOps with full-scale automation provides tremendous value to enterprise IT organizations by fueling more agile, autonomous operations," said Dennis Drogseth, Vice President at EMA. "Resolve customers report demonstrable improvements in OpEx efficiencies and incident management, as well as increases in the performance and reliability of critical business services. We're excited to see what's next as Resolve continues evolving to drive even more value for their customers."

The report highlights Resolve Insight's support for a wide array of IT stakeholders in proactively managing and minimizing incidents and ensuring that critical business services perform as needed. It also notes that Resolve Insights and Resolve Actions come together to bring customers powerful options in change management, change impact awareness, and cloud migration. Additional customer benefits

showcased in the report include:

- Accelerated capabilities for digital transformation
- Faster time to deliver new IT services
- Improved end-user and customer experience
- Better alignment between IT and the business
- Proactive ability to prevent problems
- Faster time to repair problems
- More efficient use of infrastructure capacity for effective service delivery
- Improved compliance with industry requirements
- Reduction/consolidation of monitoring and other toolsets

"We're excited to be named as the only Value Leader in every category evaluated by EMA in their new AIOps Radar Report," said Vijay Kurkal, CEO of Resolve. "This achievement further validates our product vision to deliver on the long-awaited promise of self-healing IT. By combining AI-driven insights with intelligent automation, our customers have an unparalleled ability to predict, prevent, and fix issues autonomously before they ever impact the business. Our team is thrilled to have these results recognized by a leading analyst firm."

The Resolve platform tackles a host of IT challenges related to increasing complexity and exponential infrastructure growth. Offering a closed loop of discovery, detection, analysis, prediction, and automation, Resolve has helped enterprises achieve annual savings ranging from more than $15 million in operational costs to 99% improvement in incident response times.

Mainstream adoption of AIOps

ScienceLogic says that, once again, it leads the way in the inaugural Enterprise Management Associates (EMA) AIOps Radar Report. This latest recognition cements ScienceLogic's leadership in the AIOps industry and its reputation for delivering resilient and automated IT operations.

"In an evolving market where 'AIOps' is too often simply a branding move, ScienceLogic stands out as a true leader in industry advances – unifying stakeholders to deliver on the promise of transforming business delivery," said EMA's Dennis Nils Drogseth, the report's author. "Their exceptional impact across all three use cases is a culmination of some of the platform's most notable core strengths. That includes supporting business services from both top-down and bottom-up perspectives, delivering compelling outcomes, and scaling to a level that can assimilate thousands of different sources while also bringing in more than 10 million data points in less than five minutes."

As further detailed in the report and supplementary customer feedback, ScienceLogic was recognized for its highly scalable, "richly assimilative" SL1 platform. This automated solution employs analytics and machine learning to assess operational data in real-time across the IT estate, delivering service-level insights that directly impact business outcomes. With SL1, managed service providers (MSPs), large enterprises and global systems integrators (GSIs) can proactively avoid service outages using AI-enabled performance baselines and behavioral correlation.

Now, we're socializing proactive and intelligent monitoring in our customer conversations. We've taken an area previously considered 'technical' or a 'background task' and shifted it to our priority topics and value propositions

"The findings in the EMA report are a powerful validation of the technology investments ScienceLogic has made since its inception, addressing the needs of increasingly large and complex IT estates," said Michael Nappi, ScienceLogic Chief Product Officer. "Our data collection mechanisms, for example, are extremely capable – ingesting huge volumes and varieties of data across multiple protocols to feed a comprehensive data lake representing IT artifacts and their relationships. Getting the data right is the hardest problem in AIOps – and this is an area where SL1 really shines. With this authoritative data platform in place, our machine learning algorithms can be applied to great effect: efficiently reasoning over the data to derive actionable insights, which in turn drive increased service health and availability for our customers."

Other differentiating features of ScienceLogic SL1:

- Business service views radically simplify the management of large IT estates
- Behavioral correlation extends traditional event correlation with AI/ML
- Low code automation with Powerflow allows for rapid creation of automated workflows and integrations

"We evaluated ScienceLogic against other solutions [and] SL1 stood out as a provider of automation, machine learning and integration. The resulting ease of use, customization and support for nearly every tech vendor gave us the most bang for our buck," said Doug James, Director of Technology and Business Management, NetDesign. "Now, we're socializing proactive and intelligent monitoring in our customer conversations. We've taken an area previously considered 'technical' or a 'background task' and shifted it to our priority topics and value propositions. ScienceLogic has enabled and enhanced this B2B transparency, which has helped us engage our customers and prospects in new and different ways."

Reimagined observability platform

IN A VIDEO to customers, New Relic CEO and Founder Lew Cirne introduced a reimagined New Relic One, including a clear intuitive user experience, powerful new capabilities, and simple, predictable packaging and pricing, including a new perpetual free tier to make it easy for engineers to try, use, and do business with New Relic.

New Relic One is a powerful offering designed to give every engineer a single platform to easily experience the benefits of full observability, including improved uptime and availability, greater scale and efficiency, and faster time to market.

"From the beginning, New Relic has been focused on delivering a simple, yet powerful way to help every company and every engineer deliver more perfect software," said New Relic CEO and Founder Lew Cirne. "Every engineer deserves the benefits of observability. That's why we're taking a bold step in dramatically simplifying and reducing the total cost of instrumenting everything across their environment. Welcome to the new New Relic – your single source of truth for the performance of your digital business."

New Relic unveiled a reimagined New Relic One, including all of the powerful, innovative product experiences users have come to know and love, now delivered in a fully integrated and dramatically simplified platform. The revamped New Relic One is designed as a single source of truth for all of a customers' telemetry data, and at a price point that can remove the barriers of adopting observability across a customers' full environment. As a result, customers no longer have to sample which applications they monitor. In addition, they can reduce the cost and complexity of maintaining disparate monitoring tools, which limit their true understanding of what's happening in their software environment. This eliminates the toil of forcing engineers to scramble and switch between tools to investigate issues.

Updated New Relic One

New Relic One is the most powerful cloud-based observability platform

built to help customers create more perfect software. It includes everything organizations need to achieve observability:

- Telemetry Data Platform to collect, visualize, and alert on all types of application and infrastructure data at petabyte scale. It is designed to be the single source of truth for all operational data.
- Full-Stack Observability to easily analyze and troubleshoot the entire software stack across APM, infrastructure, logs, and digital customer experience in one connected experience.
- Applied Intelligence to detect, understand, and resolve incidents faster.

Introducing a New Perpetual Free Tier

The company introduced a perpetual free offering for New Relic One. Now, every engineer can have instant access to New Relic's powerful complete observability platform at no cost, forever. The new perpetual free offering includes access to New Relic One with no hidden costs or credit card required, including:

- Telemetry Data Platform: 100 GB of data every month free.
- Full-Stack Observability: one free full access user license.
- Applied Intelligence's Proactive Detection: first 100 million app transactions per month free.
- Applied Intelligence's Incident Intelligence: first 1,000 incident events per month free.

Once an engineer's usage increases beyond these levels, New Relic One makes it easy for customers to upgrade to meet their growing needs.

Customers Praise New Relic One

"As we've scaled our team to meet the growing needs of the Ancestry business, we've implemented many observability tools, some developed in-house, some open source. Rather than continuing to develop specialized tools, we wanted to standardize on one solution without having to worry about how much data we were logging and the associated costs. New Relic One gives us an integrated, cost-effective platform to centralize our approach to observability. Standardizing on the platform has allowed our engineers to stay better informed on what is happening on other teams, breaking down silos and resolving issues faster for higher uptime." – ***Nat Natarajan, EVP, Chief Product Officer, Chief Technology Officer, Ancestry***

"Standardizing on New Relic means any engineer can jump in and start troubleshooting any incident and see a clear picture all the way through to the data layer. The full end-to-end visibility that New Relic provides is key to reducing the time it takes to detect and resolve incidents: it enables us to ensure our platform is always available to students in need." – ***Steve Evans, Vice President of Engineering Services, Chegg***

"At Cox Automotive, we want to instrument everything in order to understand every aspect of our architecture. New Relic's disruptive pricing model will allow our teams to experiment with new approaches to do that without breaking the budget. New Relic truly believes in innovation and has been critical in our modernization journey." – ***Chris Dillon, Vice President, Architecture & Cloud Enablement, Cox Automotive***

"Our team has a big monitor displaying New Relic One to showcase everything that's happening on the Morningstar.com site. If there's a blip in performance, we can tell within seconds. We've instilled robust monitoring practices that our teams trust so that we can move forward through a problem rather than backward. With New Relic, we can tell immediately when the ground starts to shift and act quickly." – ***Zach Erdmann, Senior Software Engineer, Morningstar***

Delivering advanced machine learning and automation capabilities

PAGERDUTY has launched the most significant update yet to its Digital Ops platform, during its annual user conference Summit20. The new release applies machine learning and automation to break down the complexity of managing digital operations by reducing interruptions and minimizing the time to resolve issues.

PagerDuty's latest platform release empowers teams in both large enterprises and high growth disruptors to prevent incidents that cause customer dissatisfaction and negative business impact, so they can confidently scale services and accelerate initiatives that capitalize on strong consumer demand for digital services.

"We now live, work, and learn primarily online. Digital is the new operating system, and operations teams are now on the frontline that keeps businesses running, as they manage the technologies that deliver the customer experience and revenue," said Jennifer Tejada, CEO at PagerDuty. "These teams deserve a cloud native, real-time platform designed for unpredictable emergent work that automates in service of people. PagerDuty is the modern platform for action in the digital default world."

PagerDuty's platform release includes new capabilities for event management, incident response and AIOps, as well as advanced insights and analytics that enable a proactive approach to digital ops. As Eric Yuan, CEO and founder of Zoom explains: "We have experienced unprecedented growth in the last six months, requiring us to scale our service without compromising the great video experience our customers expect from Zoom. We could not have done this without PagerDuty underpinning us and this new platform release will only make things easier for our digital teams".
The new capabilities in Event Intelligence (an event management and AIOps solution within PagerDuty's platform) are as follows:

- **Intelligent recommendations**

New machine learning capabilities in PagerDuty's Event Intelligence offering automatically identify the noisiest services and provide recommendations to reduce noise so teams can focus on the incidents that matter. While Event Intelligence has long been known for noise reduction, what's new is the prescriptive nature of the recommendations which are powered by PagerDuty's machine learning and don't require training to use.

- **Change impact mapping**

By linking changes in a customers' software deployment pipeline with incidents in its digital operations, PagerDuty allows teams to quickly find and resolve an incident's root cause. With an estimated 80% of incidents caused by change1, this is an important advancement. This new capability integrates change events from code repositories via new integrations with GitHub, Puppet, and Evolven.

- **Dynamic service dependencies**

New capabilities in PagerDuty's Service Directory which provides a single view of a customers' entire digital operations, dynamically identifies dependencies between people, changes, incidents, and services in real time. It then applies machine learning to automatically keep a company's service directory up to date, preventing redundant work between teams, and surfacing recommendations for automation of incidents without needing to follow manual steps, or learn advanced skills.

- **Flexibly automation controls**

Applying AI and automation to something as critical as a company's digital operations requires complete trust. The platform now includes flexible automation controls to safely ensure that a human is in control at all times by pausing incident notifications, to give systems a chance to auto-remediate before a responder steps in, and by providing push button automation so teams can run automated response play and monitor results.
Industry-first advanced new insights and analytics capabilities in the PagerDuty platform are as follows:

- **Analytics Lab –** Building on PagerDuty's powerful new analytics API, the Lab curates the most important queries from teams and provides them with an easy to use interface so technical and business leaders alike can extract insights from PagerDuty's deep dataset.

- **Analytics Maturity Model**

This new release codifies PagerDuty's Maturity Model and benchmark data from over 13,300 customers to help users gauge where their businesses are in their digital journey. It provides recommendations on how teams can improve their practices, for example by notifying leaders when team members are consistently working outside business hours, so schedules can be more equally distributed to avoid burnout.

"Nearly every company (92%) is accelerating their digital transformation2, subsequently increasing the complexity of their tech ecosystem. Managing that complexity and improving the performance of their digital operations is business critical," said Jonathan Rende, Senior Vice President of Products at PagerDuty. "The road to modern DevOps practices and full service ownership is hard. Our new release unlocks the power of our rich data set to align teams around their most critical business services so they can resolve incidents up to 67% faster."

According to Nancy Gohring, Senior Research Analyst at 451 Research, "The incident management category is important in terms of collecting and analyzing data about automations that have been performed, and in terms of collecting and analyzing data in order to identify impactful activities to automate. These functions can help drive the success of new and ongoing automation efforts. PagerDuty is one vendor that has been emphasizing and enabling these capabilities, surfacing data about incident resolutions that allow users to make data-driven decisions about what activities to automate and what automations have been performed."

GLOBAL NEWS

MICRO FOCUS has released Hybrid Cloud Management X (HCMX), said to be the industry's first cloud-native, multi-tenant cloud management platform that can run in the public cloud or on-premises. As companies deliver on digital transformation (DX) strategies, Micro Focus HCMX provides cloud service consumption in a single view with analytics-based recommendations for discount management, enabling customers to easily achieve the benefits of speed, scale, agility and cost reduction while leveraging existing on-premises investments.

RESOLVE SYSTEMS is pleased to announce its partnership with Excalibur Data Systems, a pioneer in IT Service Management (ITSM) and Enterprise Service Management (ESM) solutions. Together, the two companies transform business and IT operations to be more agile, responsive, and futureproof by harnessing data-driven strategies and innovative technologies. With business processes increasingly shifting to digital channels and new IT challenges emerging daily, the role of IT service management has never been more important. To keep critical infrastructure and applications running smoothly while streamlining operations, IT teams are accelerating adoption of AIOps and IT automation to aid in managing infrastructure complexity. Resolve's award-winning products paired with Excalibur Data Systems' robust service offerings enable organizations to advance ITSM maturity, respond to incidents faster, and safeguard business continuity while improving efficiency.

OPUS INTERACTIVE, a leading provider of complex hybrid cloud hosting services, announces a partnership with ScienceLogic to deliver highly secure hybrid and multi-cloud monitoring and management. The joint solution offers federal agencies the ability to acquire the DISA-approved ScienceLogic SL1 hosted inside of the OpusGov FedRAMP Moderate Ready environment that resides in FISMA High rated datacenters. The joint Opus and ScienceLogic offering delivers real-time visibility and control across complex IT environments to provide reliability and high security by integrating the DISA approved ScienceLogic SL1 platform with FedRAMP Moderate Ready infrastructure housed inside of FISMA High-Rated facilities backed up in redundant geographies on separate energy grids.

SENSU has launched its latest cloud and infrastructure monitoring solution for managed service providers (MSPs), offering MSPs a new way to monitor dynamic workloads and various infrastructures for their multiple customers. Using Sensu's subscription-based technology, the latest cloud monitoring solution now offers MSPs a multi-tenant solution for dynamic container and Kubernetes workloads.

KENTIK has launched Hybrid Map. With Hybrid Map from Kentik, NetOps teams gain an immediate and single, unified view to understand topology state, traffic flows, network performance and device health status within and between multi-cloud, on-prem and internet infrastructures. This new level of interactivity within the Kentik Network Intelligence Platform enables NetOps teams to get immediate insights into hybrid networks, and resolve problems.

ZENOSS has formed a partnership with Zensar, a leading digital solutions and technology services company. The partnership will address the growing need for quality data and automated IT operations among Zensar's enterprise customers as they embark on digital transformation initiatives. Zensar's Digital Foundation Services enable clients to accelerate digital transformation by leveraging technologies such as cloud, automation and artificial intelligence to deliver business outcomes such as faster time to market, work from anywhere and lower capital expense. The unique service-centric monitoring capabilities from Zenoss are a foundational element for Zensar's integrated managed service platform, The Vinci. Zensar's managed services enabled by this platform drive the three Ps (proactive, predictive and preventative) across multiple environments, thereby delivering enhanced operational services through a lean and an agile environment.

STRATODESK, leader in EUC solutions, is working with Lakeside, the digital experience monitoring platform, in order to help streamline endpoint management, monitoring and transparency for the mobile, remote workforce. The new collaboration delivers advanced and greatly improved end-user experience to the entire VDI/ cloud deployment — in the office, at home or on the go. Lakeside's SysTrack software integrates with Stratodesk, making specific and detailed insights into endpoint management and end-user experience a possibility to enterprises and organizations worldwide.

LOGICMONITOR has joined the ServiceNow Service Graph Connector Program, a new designation within the Technology Partner Program. Service Graph Connectors harness the expertise of ServiceNow technology partners and ServiceNow engineering to provide a quick and reliable means of bringing third-party data into the ServiceNow Service Graph and Configuration Management Database (CMDB). LogicMonitor is one of the inaugural integrations in the Service Graph Connector Program. With the new LogicMonitor Service Graph Connector, LogicMonitor is helping customers more quickly, easily and reliably load from LogicMonitor to ServiceNow Service Graph and CMDB to improve digital service health.

NETREO has released its Microsoft Azure Kubernetes Service (AKS) monitoring and management functionality. This new functionality within the Netreo platform will deliver container performance monitoring, optimization of container health, and container cost control. Azure Kubernetes Service (AKS) is a managed container orchestration service, based on the open source Kubernetes system, which is available on the Microsoft Azure public cloud. An organization can use AKS to deploy, scale and manage Docker containers and applications across a cluster of container hosts.

NEXTHINK EXPERIENCE is the only cloud-native solution that combines real-time analytics, employee feedback and automated remediation, empowering IT teams to continuously improve employees' digital experiences. Given the current working environment, providing a better digital experience to employees has never been more critical. In fact, 78% of IT leaders report it's a top priority on their agenda – up 30% from one year ago, according to new research published today. Nexthink Experience is built to deliver on this priority by enabling IT teams to provide great experience to employees wherever they are working.

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Semiconductor (Silicon/Compound)
Publications include: Compound Semiconductor, Silicon Semiconductor, CS China, SiS China

Power Electronics
Publications include: Power Electronics World

Future Mobility
Publications include: TaaS Technology, TaaS News

Data Centres
Publications include: DCS Europe, DCS UK, SNS International

SmartSolar UK & Ireland
Publications include: Solar and Power Management, Solar UK and Ireland

Sensors
Publications include: Sensor Solutions Magazine, Sensor Solutions International

Digitalisation
Publications include: Digitalisation World, Information Security Solutions, Managed Services

Photonics
Publications include: PIC Magazine, PIC Conference

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DR RICHARD STEVENSON
Dr Richard Stevenson is a seasoned science and technology journalist with valuable experience in industry and academia. For almost a decade, he has been the editor of Compound Semiconductor magazine, as well as the programme manager for the CS International Conference

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