Fed Up with Legacy Monitoring Tools?

It's Time for Composable IT Monitoring

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WHITE PAPER

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Throw Out Your Legacy Monitoring Tools

The forces of change impacting today's IT operational environment are diverse, bewildering, and rapidly accelerating.

Technology innovation continues its Moore's Law exponential path, while DevOps revamps the ops organization. Simultaneously, digital transformation initiatives are driving new applications, new devices, new sources of traffic. And the data – so many data! – pour in, with no end in sight.

But the old ops priorities still remain. Keep the lights on. Make sure everything is working properly, all the time. And if something breaks, then fix it, and fix it right away.

Add to those timeworn priorities a new litany of mandates: move fast. Don't just avoid downtime, avoid slowdowns as well – every millisecond is money down the drain. And most of all – automate everything.

Fair enough – but the weary ops staff faces a challenge. Customer demands and business pressures may be moving quickly, but all the gear that ops has been using to do its job for the last decade or so has been unable to keep up.

The monitoring technology of the early 2000s was perhaps the best tooling available in its time, but today it's woefully inadequate to meet the diverse needs of next-generation operations. Modern ops cannot afford to move slowly, and old gear is slowing it down.

It's time to clean house.

The Challenges with Legacy Monitoring Tools

In the period from the late 1990s through the early 2000s, enterprise vendors like IBM, HP, BMC, CA, and others put together 'enterprise class' suites for operations management. In order to build such complex suites, these tech behemoths acquired various smaller players, assembling their products along with various homegrown apps into offerings that were at best integrated at the 'PowerPoint layer.'

Under the covers, however, these products were hodgepodges of mismatched tools with varying levels of integration. For customers, they proved difficult to configure, run, and manage – and only after many millions of dollars and hundreds of person-hours did they work at all.

Today such tools are falling further and further behind, as their limited scalability isn't up to modern standards, and their functionality becomes increasingly obsolete. In fact, they fall short by every key operational metric, including the critical mean time to discovery (MTTD) and mean time to repair (MTTR) measures, as support personnel find themselves increasingly overwhelmed with the volume of alert information such tools spew out.

More often than not, companies are finding that their customers report problems before the tools do.

Other companies have to scale back the number of events such tooling monitors for fear they will crash under a traffic load unheard of in the day the vendor launched the tool, but increasingly common today.

All of these limitations hit the bottom line – violations of service-level agreements, loss of revenues, increased costs, and tarnished brands.

It's no wonder, then, that ops management from the CIO on down are clamoring for better solutions. They want to reorganize IT ops to better meet

LEGACY MONITORING TOOLS TO THROW AWAY NOW

BMC EVENT & IMPACT MANAGEMENT (BEM)

BMC PROACTIVENET

CA SERVICE OPERATIONS INSIGHT (SOI)

CA SPECTRUM INFRASTRUCTURE MANAGER

CISCO APPLICATION NETWORKING MANAGER (ANM)

CISCO INFO CENTER (CIC)

EMC SMARTS BUSINESS IMPACT MANAGER

EMC SMARTS SERVICE ASSURANCE MANAGER

HP NETWORK NODE MANAGER (NNM)

HP OPENVIEW

IBM TIVOLI COMPOSITE APPLICATION MANAGER (ITCAM)

IBM TIVOLI

modern digital mandates, and they want monitoring tools to adapt to this new world, not the other way around.

First order of business: cast off the legacy monitoring boat anchor. Keeping it around simply because you poured so much money and time into it is a fallacious argument, when there are better, less expensive alternatives. It's time to move forward with modern ops monitoring tools.

The Rise of Composable Monitoring

There was a reason why the vendors who built the earlier generation of ops tooling assembled suites of unevenly matched apps into the complex monstrosities of the time: there was simply no other way to meet the needs of the enterprises of the day. Of course, the fact that such tools locked in customers by increasing their switching costs was a notable side benefit for the vendors – often at the expense of their customers.

Enterprise needs have always been too varied and diverse for a vendor to construct a single, monolithic tool that could address more than a segment of the market. Given the limited, proprietary integration technologies of the day, therefore, building suites was the vendors' best bet.

What a difference a decade makes. Today we've mostly cracked the integration nut, with the rise of REST as a lightweight, straightforward application integration mechanism, coupled with increased maturity and flexibility in the data formats and standards that underlie the necessary data integration.

There's still work to be done, of course, but today this REST-fueled API economy has dramatically simplified the custom assembly of modular components, without the hassle, cost, and inflexibility of traditional integration.

This hard-won composability has dramatically transformed the enterprise technology landscape, including IT operations monitoring. 451 Research coined the term composable monitoring for this trend toward modularizing the technologies necessary to implement comprehensive IT monitoring.

One of the most obvious business benefits to such a modular approach is affording companies the ability to implement best-of-breed solutions, instead of becoming mired in the vendor lock-in that characterized earlier monitoring strategies.

In the past, such vendors warned against best-of-breed strategies, touting incompatibility challenges and the lack of 'one throat to choke' should a problem manifest itself.

Today, the rise of open APIs has largely deflated this argument. The ubiquity of web APIs as well as the availability of increasingly mature open source alternatives and modular platform designs has recast best-of-breed as the leading choice for implementing enterprise-class monitoring systems.

The Digital Mandate

Fundamentally, digital transformation recognizes that customers have raised the bar on their expectations of performance and usability of the technologies companies provide them – and operations monitoring is a critical enabler of such performance.

As a result, business stakeholders – and by extension, customers themselves – are now coming to expect the benefits of composable monitoring implementations. Compositions of best-of-breed tools are no longer a nice to have, they're a must have.

Furthermore, composable monitoring is here to stay. In past generations of technology, large vendors would cherry pick the best tools from the younger, more innovative players to assemble their enterprise suites – but only because those tools didn't play well together on their own. Given the vast diversity of enterprise needs, composable monitoring is the only approach that has the flexibility and variety to meet such needs.

As enterprise operations needs continue to evolve, furthermore, composable monitoring will evolve apace. Best of breed doesn't mean that once an organization assembles its set of tools that it's finished. On the contrary –

best of breed affords the ability to switch out one tool for another should the need arise.

Even for individual tools in this modern scenario, therefore, vendors have scant customer lock-in to rely upon to pay the bills. As a result, each vendor in this dynamic ecosystem cannot slack off on its ongoing innovation and product development. Instead, vendors must continually battle to meet ever-changing customer demands.

The winner in this battle, of course are the enterprises that leverage such tools.

Architecting Composable Monitoring

There is more to implementing composable monitoring than simply buying or downloading a bunch of tools and using their APIs to string them together. The essential missing element is architecture. 451 Research recommends a dual-layer architecture consisting of an instrumentation layer and a management layer.

The instrumentation layer handles the data collection and analysis from all the data feeds throughout the IT environment, both on-premise and in the cloud. Any particular enterprise might choose from a number of possible tools for this instrumentation: log management, business transaction monitoring, application monitoring, server monitoring, network monitoring, or any other data feed that might be relevant to the overall performance of the end-to-end IT environment.

Considering the sheer volume of such data, as well as the real-time nature of the data feeds, clearly makes such instrumentation a big data problem. As a result, the instrumentation layer should leverage modern big data architectures, as well as big data tools like Hadoop or Kafka, depending upon the specific needs of the organization.

The second layer is the management layer. The management layer works on top of the instrumentation layer, providing event-driven exception management, anomaly detection, and root cause analysis.

Modern tools that participate in this layer typically leverage machine learning to reduce the chances of the false positives that lead to alert storms by continually improving the ability to detect anomalies and root causes of issues.

One critical component of the management layer is the one management tool that coordinates the others. This manager of managers (MoM) oversees all of the composable elements at both the management and instrumentation layers, while providing a unified 'single pane of glass' view into the composable monitoring system.

The MoM category has actually been around since the 1990s, but early MoM tools were rule-based instead of machine learning-based, and were thus inflexible and scaled poorly.

Today's MoMs from vendors like Moogsoft, in contrast, leverage modern APIs, machine learning, and big data architectural practices to scale to any number of instrumentation tools, each feeding the MoM vast quantities of data.

Such modern MoM tools also typically provide collaboration capabilities, allowing multiple people within the ops or DevOps teams to work together to gain critical operational insights and resolve issues across the environment.

The Third Layer: Situational Awareness

Even with a modern MoM, enterprises have more applications, more servers, more data than ever — and everything is in flux. Ops teams struggle to cope with the scale and change all around them, as one element of the infrastructure after another becomes fully software-defined.

Better insights and collaboration are important, but even more importantly, ops personnel need a better grasp of the context of what is going on around them. Beyond instrumentation and management, IT ops requires 360° situational awareness.

Traditional monitoring tools — like the ones earlier generation vendors assembled into suites — have a physical infrastructure context. Admins would

monitor servers or network hardware or other tangible pieces of equipment, and this focus on actual gear drove the design of the tools that monitored it. In the intervening decade or so, virtualization has changed the playing field. Today, notions like 'server' or 'network' or 'runtime' have shifted dramatically in context.

Furthermore, even virtualization itself has split into different levels of abstraction, with hypervisors and containers providing different perspectives on an increasingly software-driven world.

Many of today's instrumentation and management vendors have done their best to keep up with the times – but much of their technology still has a physical infrastructure monitoring context.

However, the more dynamic the software-defined environment becomes, the less such monitoring tools provide adequate visibility into the performance metrics that matter most to the business.

Physical infrastructure is still important in the software-defined world, of course, as bare metal underlies everything in the end. But monitoring physical infrastructure separate from the various layers of abstraction above simply won't provide the visibility necessary to support the business transaction, and hence the customer.

After all, the customer doesn't care if an application runs on a virtual machine or in containers, or in the cloud vs. on premise. The customer simply wants it to run properly, at top speed, every time. And where the customer goes, so too go the key performance indicators (KPIs) that the business cares about, whether they be shopping cart conversions, revenue per customer, or any other KPI.

Monitoring each of the components of the business transaction separately, whether they be server, database, application, and infrastructure components, cannot provide the visibility necessary to connect the performance of each component to the overall performance of the business transactions that connect the components together.

Instead, the MoM must work at a higher level of abstraction. Instead of simply managing the instrumentation of the physical infrastructure, modern MoM tools like Moogsoft's must essentially work at the 'software-defined everything' layer – taking into account the fact that much of the enterprise infrastructure is virtualized, and will become more so over time.

Composable Monitoring for the Digitally Transformed World

The secret to 360° situational awareness, therefore, is the context of the software-defined abstraction. The end-to-end visibility that modern enterprises require depends on this situational awareness, as well as the modularity and diversity of APIs and the inherent flexibility of composable monitoring.

Moogsoft's MoM operates within this context. End-to-end, top-to-bottom, from the customer to the bare metal – Moogsoft offers the correlation of data necessary for root cause analysis, while implementing 360° situational awareness for the modern IT environment, as shown in the illustration below.

Moogsoft's 360° Situational Awareness
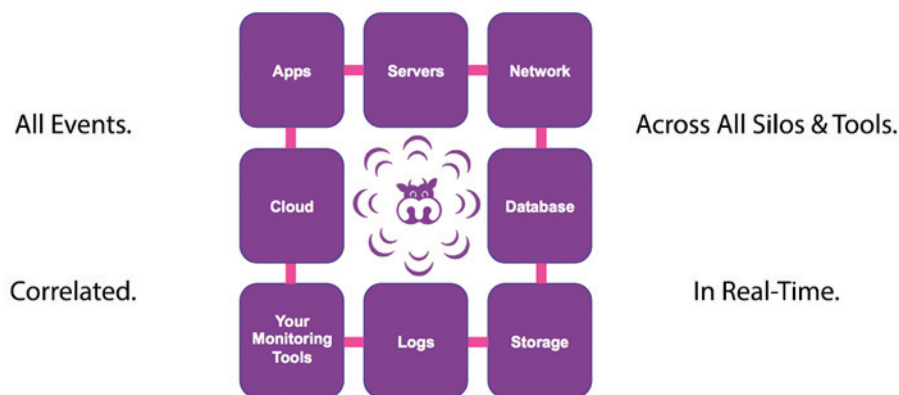
By leveraging machine learning-based contextualization and team collaboration within a single pane of glass that brings all relevant insights together, Moogsoft is able to compose multiple monitoring tools into one holistic and intelligent monitoring ecosystem.

The result is operations management for a 'software-defined everything' world – flexible, customizable, modular, scalable, and easy to integrate. It's time to throw out those ancient, legacy monitoring tools and enter the modern world of composable monitoring.

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Moogsoft AIOps helps modern IT Operations and DevOps teams become smarter, faster, and more effective by providing technological supplementation that automates mundane tasks, enables scalability, and frees up human beings to do what they do best — ideate, create, and innovate. For more information, visit www.moogsoft.com.

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