## Customer Spotlight

# Trust and Transparency: The Role of Infrastructure Analytics in a Productive Partnership Between IT and the Business

Sponsored by: Virtual Instruments

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## IDC OPINION

Enterprise datacenter infrastructure environments are becoming more complex, heterogeneous, and dynamic because of increased use of virtualization, cloud, and software-defined architectures. European organizations are finding that compliance with performance and availability SLAs requires extensive monitoring, dependency mapping, and analytics across a broad mix of physical and virtual systems, public and private clouds, middleware, and application resources. IDC believes that infrastructure performance monitoring and analytics solutions that provide a unified, integrated view of workload requirements, cross-tier dependencies, and root cause of performance problems are important enablers of today's hybrid IT architectures.

IDC's *European Storage Manager Survey* in 2016 revealed that the need for storage performance is much more pronounced now than in previous years as enterprises welcome the new generation of applications that are demanding and are expected to be highly scalable.

We see that the 3rd Platform computing environments, driven as they are by the needs of both older applications (Oracle, SQL, Exchange, etc.) and newer applications (mobile computing, social media, Big Data and analytics, and cloud), demand significant performance, scalability, and agility. As enterprises consolidate applications onto virtual infrastructure, they are also dealing with very different I/O workloads at the storage array level. These requirements are all converging to drive the need not just for a new storage architecture based around flash technologies but also to have a holistic infrastructure monitoring and analytics solution to optimize performance and availability.

Insights from infrastructure performance monitoring, management, and analytics platforms can form the basis of a transparent, trusting, and proactive relationship with business units as IT moves to a service delivery model. The insights can also provide an end-to-end view of IT usage patterns to ensure capacity and performance are managed more efficiently without over- or under-provisioning of resources. But most importantly, infrastructure performance management (IPM) solutions can also form the foundation for delivering sustained and predictable application performance at a time when a heterogeneous set of traditional and modern applications co-exist within the datacenter with varied and dynamic infrastructure requirements. This allows IT to provide stable, consistent on-demand IT services to business units more efficiently.

## Virtual Instruments and Infrastructure Performance Management

Virtual Instruments, founded in 2008 via a spinout from Finisar, provides IPM solutions. The company's flagship product, VirtualWisdom, is a monitoring, visualization, and analytics platform that helps organizations manage performance, availability, and utilization across their physical and virtual infrastructures. Its products include hardware probes that monitor Fibre Channel SANs and

NAS infrastructures and software probes that monitor virtual machines and switches, as well as the VirtualWisdom analytics software.

The company has more than 500 customers, predominantly Global 1000 companies including mega brands in Europe such as Unilever and Lloyds Banking Group, as well as Morrisons supermarket in the U.K.

Virtual Instruments offers capabilities in optimizing the performance, availability, and utilization of SAN and NAS environments. Adding Load DynamiX technologies, from its recent merger, to the mix instantly helps broaden its solutions set and deliver IPM across any storage technology – NFS/CIFS/SMB, iSCSI, Amazon S3, OpenStack Swift/Cinder – and cover a wider range of infrastructure components, such as virtual machines, SAN, NAS, software-defined storage, object storage, and cloud storage. Its solutions give IT teams deep workload visibility and actionable insights into their end-to-end systems across the hybrid datacenter. Virtual Instruments empowers companies to maximize the performance, availability, and utilization of their production IT infrastructure. IPM platforms are becoming more critical to enterprise datacenters today than ever before, thanks to the growing complexity and heterogeneity of datacenter infrastructure. End-to-end performance measurement and analytics is a technical challenge for many datacenter administrators making investment in IPM solutions a necessity.

As revealed in Figure 1, storage performance is one of the key challenges for datacenter professionals with 37% and 36% of respondents rating it as a high priority or medium priority respectively. This is followed by simplification of storage management and protection of virtualized server environments as other key priorities for datacenter professionals. In IDC's opinion, infrastructure performance management platforms combined with monitoring and analytics tools can provide datacenter professionals with valuable and actionable insights to overcome these top challenges.

FIGURE 1

## Top Storage-Related Priorities in 2016 and Beyond

*Q.        Which of the following are your top priorities related to storage for the next 12 months?*
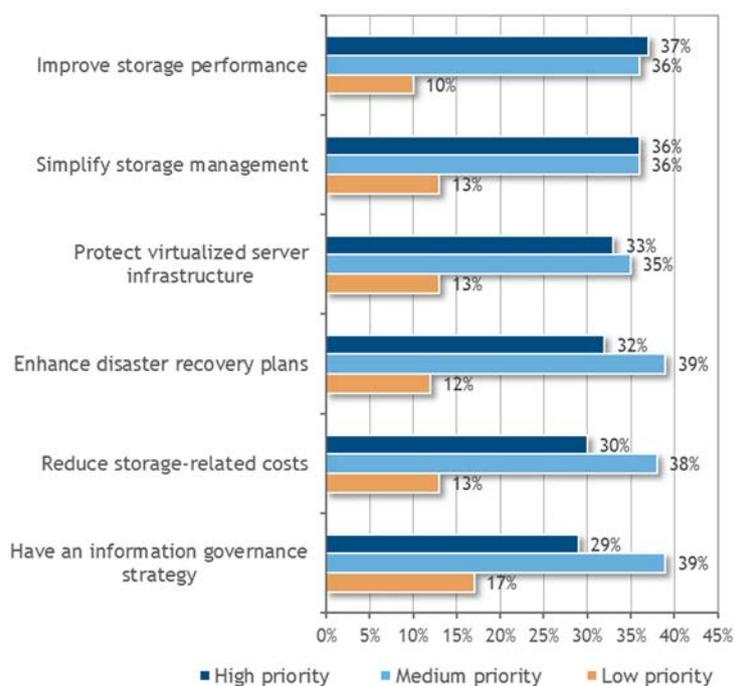


n = 558

Source: IDC, 2016

## Virtual Instruments' Vision for IPM — Creating a DevOps Platform for Infrastructure

Despite a growing business, impressive customer roster, and a compelling solution around infrastructure performance management, Virtual Instruments' future growth was limited because there are only so many Fibre Channel SAN environments. But that dramatically changed in March 2016 when it merged with storage performance management vendor Load DynamiX with a vision to create a "DevOps platform for the datacenter infrastructure."

The merged entity, called Virtual Instruments, combines technologies from both companies to broaden its infrastructure monitoring and analytics solutions portfolio across servers, storage, and networking. In September 2016, it launched VirtualWisdom 5.0, which included the much awaited NAS probe to offer deep domain experience across all platforms and applications. The NAS Performance Probe is the first full line-rate NFS monitoring device to offer real-time analysis of wire data and correlation across compute, network, and storage. It provides the same capabilities the SAN Performance Probe customers have relied on for years, including NAS performance SLAs made possible by the capture of latency and I/O size data related to every read and write operation that traverses the network. In IDC's opinion, this instantly increased Virtual Instruments' total addressable market (TAM) and makes its solutions even more relevant in the 3rd Platform-based datacenter infrastructures.

IDC views this combination as a merger of equals with distinct yet highly complementary product portfolios. The two companies also share the vision of developing an end-to-end infrastructure performance management and analytics platform – that is, to create a DevOps platform for the infrastructure. The merger is a natural step forward for both companies to expand their total

addressable market instantly without spending years of investment and engineering efforts in expanding their individual portfolios.

Load DynamiX had rich capabilities around workload analysis, modeling, and load generation, but lacked the server/VM correlation and monitoring expertise and so is very complementary to Virtual Instruments. IDC sees this as one of the least disruptive mergers in the infrastructure space in recent times with genuine synergies of technologies, minimal overlap of solutions, no planned staff reductions, and little change to the go-to-market and channel strategy. This, we believe, will be key in helping the newly merged company to execute on the business transformation, integrate the technologies quickly, and focus on growth opportunities.

In IDC's opinion, workload performance management and storage monitoring act as key links between application and infrastructure performance domains. IDC also believes that workload performance data viewed in the context of overall storage, compute, and networking infrastructure makes the data more useful to datacenter managers.

When both products are used together within these large enterprises, IT teams can proactively identify and resolve performance problems and predict how application workloads will perform on the planned infrastructure.

Virtual Instruments' customer base spans verticals such as IT, manufacturing, healthcare, financial services, retail, government, and utility providers. Its European customers include Nestlé, Amadeus, BNP Paribas, Siemens, Thames Water, and the Co-op Group.

The following case study shows how the Co-op overcomes its legacy infrastructure challenges with the help of Virtual Instruments' IPM platform and gains performance efficiencies, improves the relationship between IT and lines of business, and helps find cost efficiencies too.

## BUYER CASE STUDY: THE CO-OP

The Co-op is one of the world's largest consumer cooperatives, with interests across food, funerals, insurance, electrical, and legal services. Owned by millions of U.K. consumers, the Co-op operates 3,800 outlets, with more than 69,000 employees and an annual turnover of more than £9.5 billion.

### IT Challenges and How Legacy Infrastructure was Limiting Business Output

Jason Vickerman heads up Enterprise Computing in the Co-op Group IT Organization that delivers IT services to the Co-op business units. He joined in 2013. Vickerman describes the 2013 infrastructure as "aging, highly bespoke, with multiple vendors and lots of islands of infrastructure supporting many business units. The risk position was high in respect of culture and capability. Processes were not correctly established or properly documented; there were few standard delivery routines, and insufficient disaster-recovery testing."

Following a ground-up infrastructure review, storage was identified as the first priority for upgrade because of the business impact it was creating. The legacy arrays were approaching end of life, and these aging assets experienced poor hardware performance and reliability.

However, according to Vickerman, the key issue was the lack of rigorous management practices around storage health, utilization, and performance. Storage issues were mainly handled in an ad hoc manner using local expertise. Also, there was poor visibility of the SAN environment that had grown up over time. This lack of a uniform, standardized, and structured approach to infrastructure management meant that IT services to the business units were inefficient and unstable. The

business units had a lack of confidence in IT to deliver an acceptable service, and change was needed to establish trust and openness between IT and the business units.

## Investment in an IPM Solution to Step-Change the Infrastructure Service and the Business Experience

Vickerman and his team resolved to introduce a set of service-led management processes that would deliver efficient, transparent, and agile storage services. It isn't the first time he has undertaken a project of this type, and in previous companies the Virtual Instruments solution played an important role.

### Why Virtual Instruments?

Previous experience shaped Vickerman's view of the Virtual Instruments solution and how it should deliver value to a business.

Before joining the Co-op, he was at Halifax Bank of Scotland (HBOS) and an early adopter of the Finisar SANtaps capability (acquired by VI), which was deployed reactively to diagnose application performance issues. As he says, "Because it worked so well, if there was a performance issue in respect of storage then the first place to look was VI. It allowed us to look from the back of the server box to the storage and back. If the problem was there we knew it was storage otherwise it was the server up. It gave us a level of insight and response that we hadn't had before."

After leaving HBOS he moved to Wm Morrison (a major U.K. supermarket group) and undertook a storage refresh similar in scope to that at the Co-op. Based on his experience at HBOS, one of his first steps was to install VI to monitor performance as the company transitioned to new storage technologies. Performance was baselined and agreed with business prior to migration, and this allowed the infrastructure team to validate a successful migration. Over the years, he saw the platform evolve to become an infrastructure analytics platform that could provide infrastructure health, utilization, and performance insights for applications. This provided the Co-op the opportunity to utilize the platform proactively from a service perspective. The VI capability allowed his team to open up the value and effectiveness of central shared infrastructure for the business by providing deep insight and understanding as to how it worked and performed.

## Renewing Storage and Introducing Best Practice Management

The team focused to rebuilding the relationship with the business and followed three key practices to enable this:

- **Work with the businesses to develop a detailed analysis of their apps and supporting infrastructure.** His team met with the technical team for each business division to understand their applications and infrastructure – i.e., which servers support which applications – and create a tailored report.
- **Establish the baseline application performance on the legacy arrays.** The Co-op implemented the VI solution on the legacy storage and recorded the performance of the application and the arrays. For example, if a given application was seeing a lowest acceptable performance at 20ms latency, that becomes its baseline performance. When migrated to the new storage, that 20ms becomes the high-level watermark for that application. After six months, it will tend to normalize, running at, say, 5ms and leaving 15ms of play.
- **Hold monthly application performance reviews with the business units.** The team creates monthly reports for each business division, reviewing the performance of each app in the shared storage environment in terms of latency, read/write performance, and other metrics. The goal is to educate the business in how the infrastructure operates and how their application performs within it.

The solution is now used very proactively because the platform is open to the business to gain detailed insights into the application infrastructure so they can see how current application workloads perform, how changes affect application performance and the underlying infrastructure, and understand how future planned application development can be accommodated. For example, it is key to a retail business to understand its ability to operate within key periods such as Christmas and Easter, and VI is continuously looking into the infrastructure, seeing how it is performing, and building its understanding of applications to allow seasonal trending.

In IDC's opinion, Virtual Instruments' offering is often seen as a technical platform for dealing with problems on a reactive basis. The Co-op, while continuing to use VI traditionally, is also exploiting the platform in a constant proactive mode, exposing the rich potential of the solution.

IDC asked if there was an efficiency/cost benefit to the VI deployment. There was, but for Vickerman cost saving was not the driver. "It was about creating a step-change within the Co-op in how IT deliver services to the business units. We wanted a platform that wasn't just a niche infrastructure tool, instead a platform that could also be used by the business and valuable to the business. By creating best practices and by putting the right foundations in place, we have started to gain the trust of the business."

Another area where VI provides benefit is through IO capacity planning. Traditionally, most customers operate the usual disk capacity (GB) based approach, but the Co-op now uses IO capacity metrics as well. When the Co-op consolidated to its new infrastructure, it used the platform to understand the current application IO profiles so that IT services could plan the consolidation activities to deliver optimal performance and mitigate risk. The VI platform was used to monitor the migration of applications to the new infrastructure, ensuring that the same performance or better was achieved.

VI was used not for financial gain but to establish best practice from a service perspective. "We haven't done it to put VI in our environment and shrink it – we could have done that without VI," Vickerman said. "What we did was to gain control, establish trust with business units, run the infrastructure based on fact, running it well, and continuing to do that."

## Learning from Experience

The key finding from this case study is the strategic benefit of making the infrastructure performance transparent, both to the IT staff and the business units. With objective and accurate performance data, there is a common foundation for collaboration and planning in a climate of trust.

As Vickerman says, "If you see VI as a technical troubleshooting tool and it's sitting in the background then you've wasted its value. Using it reactively is a waste. Used in the right way, it allows you to build the relationship with the BUs based on fact. Anybody [other vendors] that tells you that they can do what VI does, I've yet to see it."

## FUTURE OUTLOOK FOR VIRTUAL INSTRUMENTS — CHALLENGES AND OPPORTUNITIES

IDC believes that Virtual Instruments' decision to merge with Load DynamiX in March 2016 is a key game changer, opening newer opportunities for the company.

The expanded Virtual Instruments has secured $22 million capital via an investment round led by HighBar Partners. Other investors in the new company include Azure Capital Partners, Kinetic Ventures, and Benhamou Global Ventures (the investment fund founded by Eric Benhamou, former CEO of 3Com). This cash injection is proof that investors too are confident about the

potential opportunities arising out of the synergy. The company is pledging to use the funding to enrich the analytics capabilities, expand protocol support, expand offerings into the cloud, and build an end-to-end infrastructure performance management solution. This development, IDC believes, will instill further confidence among its enterprise customers.

IDC believes Virtual Instruments will need to continue expanding its capabilities around storage performance management to further grow the business and to make its technologies more compelling in the complex and heterogeneous datacenters of today. By merging the technologies each company has built painstakingly since 2008, they have saved years of investment and development work and instead can immediately capitalize on individual strengths and focus on future product development.

We expect enterprise and service provider infrastructure architectures to become more complex, pushing organizations to prioritize solutions that can seamlessly integrate across multiple resources and provide robust and customizable performance insights, root cause analysis, and resource optimization recommendations. Monitoring and Performance Management platforms that span the full infrastructure – storage, networking, and servers – will become ever more important for organizations that want to simplify their monitoring and analytics environment to anticipate and avoid problems, proactively identify and remediate root cause, optimize SLAs and operational costs, and smoothly cater to 3rd Platform-based workloads.

IDC also believes that the joint company has the potential to more easily leverage newer storage trends and technologies such as all-flash arrays, software-defined storage, hyperconverged infrastructures, and cloud storage trends.

In our opinion, the company should lend itself further competitive advantage by expanding beyond infrastructure performance management to the application performance management (APM) segment. Expanding the vision beyond infrastructure performance management to address the growing APM market will make Virtual Instruments' solutions even stickier for organizations.

In addition, with the deeper workload and infrastructure insights, the new company can effectively target the service provider market. IDC believes that the cloud service provider segment represents a growing market offering newer opportunities for storage and infrastructure vendors.

One challenge that Virtual Instruments faces is that the IPM space is seen as a lucrative market by storage and virtualization vendors, with many big storage providers looking to innovate and integrate performance management features within their solutions. As IPM's significance within the virtual datacenter grows, the market opportunities grow too with more vendors entering the space with competing technologies.

But IDC believes that with a big customer base and an early mover advantage as a pure-play IPM solutions provider, Virtual Instruments will be able to keep up the momentum of innovation and remain a strong player in the segment. But that is not all. The company has already demonstrated its appetite for a broader vision by moving into the storage performance validation and analytics space with Load DynamiX.

## ESSENTIAL GUIDANCE

## Guidance for Buyers

Infrastructure performance management platforms are no longer a nice to have solution but one that is becoming a necessity in a heterogeneous datacenter environment where there is pressure to optimize infrastructure resources and deliver on-demand IT as a service to line-of-business units.

When investing in IPM solutions, organizations need to:

- Assess the complete capability of the solution and evaluate solutions that offer end-to-end infrastructure management solutions
- Assess solutions that are not limited to specific virtual infrastructures but can support a broad and varied range of virtualization and storage technologies
- Assess the technology provider's roadmap and product innovation strategy
- Evaluate solutions that can be deployed non-intrusively and that require little or no training for line-of-business departments to use directly

## Guidance for Virtual Instruments

Moving forward, Virtual Instruments should:

- Demonstrate how IPM platforms and the insights they provide can help enterprises cut infrastructure downtime, improve IT staff productivity, deliver consistent and stable services to business units, and save inefficiencies around over-provisioning. This, IDC believes, will help datacenter architects build a compelling business case to win budgets for IPM solutions.
- Emphasize how Virtual Instruments' solutions are differentiated from the rest of the market and how the addition of Load DynamiX technologies will further enhance value to the customer.
- Explore opportunities to expand solutions around the growing applications performance monitoring and analytics market for an expanded growth opportunity.

The leadership team in the newer and bigger Virtual Instruments will need to be sure to maintain the culture of innovation and workforce quality even as it focuses on taking the company to the next level of growth and expands both functionally and geographically.

IDC believes that Virtual Instruments, especially with the newly expanded product portfolio, can truly alleviate enterprise datacenter performance monitoring and management challenges. It offers a value proposition that customers will find attractive. The company will need to execute effectively across all aspects of the business and further empower its channel community to take full advantage of the strong growth opportunities that lie ahead.

## About Virtual Instruments

Virtual Instruments is a specialist in application-centric infrastructure performance management. It provides infrastructure instrumentation and performance management for enterprise datacenters. The company's solutions are designed to give IT teams deep workload visibility and actionable insights into their end-to-end systems across the hybrid datacenter. Virtual Instruments empowers companies to maximize the performance, availability, and utilization of their production IT infrastructure. Virtual Instruments has over 500 customers, including enterprise IT, cloud service providers, and storage vendors. The privately held company is headquartered in San Jose, California. For more information, visit https://www.virtualinstruments.com.

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