Redefining Infrastructure Management for Today's Application Economy

Boost Operational Agility by Gaining a Holistic View of the Data Center, Cloud, Systems, Networks and Capacity

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Executive Summary

In the application economy, the businesses that can deliver software innovation the fastest will win. As they seek to boost the pace of application innovation and optimize performance, organizations will only get as far as their supporting IT infrastructure will allow. This paper looks at the key challenges that keep IT organizations from optimizing their IT infrastructure and it outlines the critical approaches required to overcome these challenges.
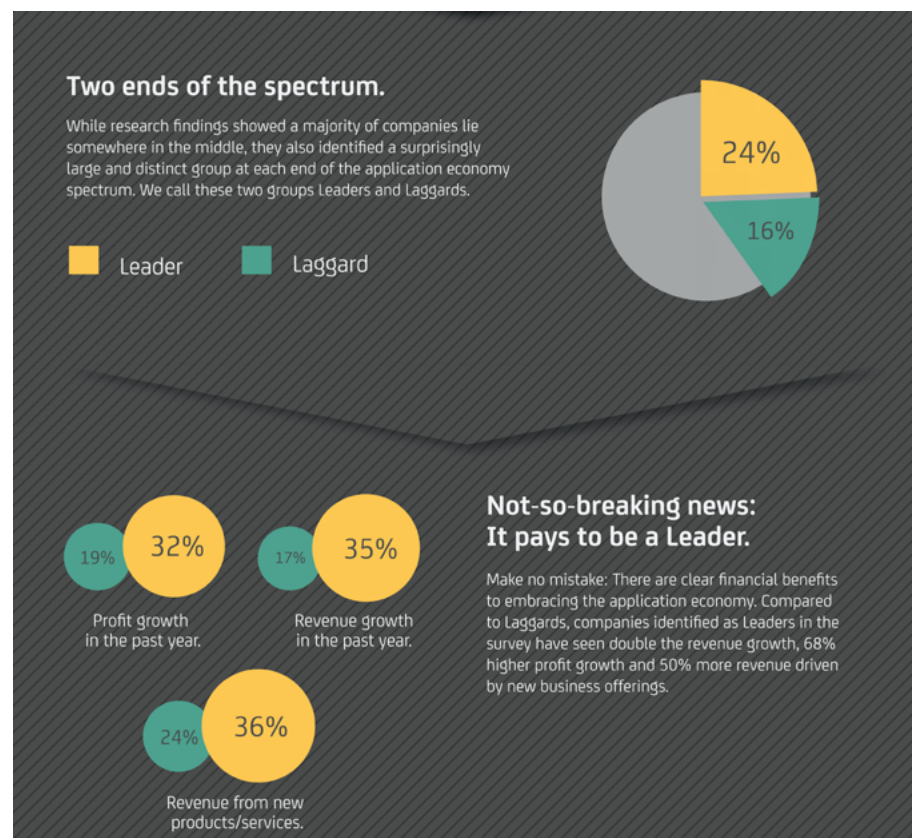
Introduction

Businesses today are operating in an application economy, an emerging paradigm in which it is applications that increasingly shape business success. Applications now play a central role in the products and services delivered, and in the operational efficiency and profits the business realizes.

To help their businesses compete, IT organizations will be under increasing pressure to speed application innovation and deliver compelling user experiences. In this effort, some IT groups have established their organizations as leaders, while others have become laggards, and this distinction is making a significant difference for businesses. In fact, compared to the laggards, companies identified as leaders saw double the revenue growth, 68 percent higher profit growth and 50 percent more revenue generated by new offerings.

Figure A.

A recent survey highlighted the difference in business performance experienced by leaders versus laggards.

(Source: Vanson Bourne survey, commissioned by CA in July 2014.)

Two ends of the spectrum.

While research findings showed a majority of companies lie somewhere in the middle, they also identified a surprisingly large and distinct group at each end of the application economy spectrum. We call these two groups Leaders and Laggards.

■ Leader   ■ Laggard

24%
16%

Not-so-breaking news: It pays to be a Leader.

Make no mistake: There are clear financial benefits to embracing the application economy. Compared to Laggards, companies identified as Leaders in the survey have seen double the revenue growth, 68% higher profit growth and 50% more revenue driven by new business offerings.

19%   32%
Profit growth
in the past year.

17%   35%
Revenue growth
in the past year.

24%   36%
Revenue from new
products/services.

To help ensure their companies become leaders rather than laggards, IT organizations must speed the application innovation that fuels profitable, differentiated services. In this effort, ensuring an optimal user experience will grow ever more critical, which means it will be of paramount importance to ensure the highest levels of performance and availability are delivered at all times.

To optimize the service levels of applications, the IT infrastructure will have to be optimized. The performance of IT Infrastructure is directly tied to the quality of applications, powering every phase of the application lifecycle, from development through to testing and delivery. Put another way, as organizations look to deliver the applications they need to win in the marketplace, they'll only get as far as their IT infrastructure takes them.

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Challenge

While optimizing the performance of applications and supporting IT infrastructure has never been more critical, it's also never been more challenging. For starters, today's enterprises are reliant upon a more distributed, diverse mix of technologies, environments and service models than ever before.

This complexity is being compounded by the isolated and fragmented nature of managing a hybrid IT infrastructure that spans the data center and the cloud. Historically, teams have been built around specific elements within the ecosystem, with one team managing servers, one team managing networking, one team managing capacity, one team managing data center power and cooling and so on. Further, each of these teams may have amassed any number of complex point tools for monitoring and managing specific pieces of the environment.

This siloed, fragmented approach imposes significant penalties in these key areas:

"Among responders who reported using more than five tools, scalability, jumping from tool to tool and siloed monitoring approach are top challenges."
(Source: Gatepoint Research, "**Strategies for Monitoring IT Infrastructure and Services**," May 2014)

- **Problem detection and resolution**. When outages and performance issues arise, fire drills ensue. Different teams need to get involved in assessing their respective tools to see whether it's "their problem." Each individual looks at different data sets and uses different performance criteria. A network administrator looks at his piece of the LAN. A server administrator checks her servers' metrics. An architect reviews analytics to check capacity. A data center administrator checks energy utilization. All these efforts happen in parallel, representing a massive loss in staff productivity. Further, while all this reactive troubleshooting is occurring, the outage duration continues to grow, meaning the customer experience, sales, employee productivity and many other areas of the business can take a significant and expanding hit.

- **Administration**. Over time, each team has to make significant investments in their respective tools. Beyond up-front procurement, implementation and training costs, they continue to sink a lot of time, energy and focus into managing these tools. This includes efforts associated with managing backups, upgrades and so on—and this is human capital that can't be invested in the business' strategic efforts.

- **New application deployment and maintenance**. When a new application or infrastructure element is rolled out, disparate teams all need to do the configuration and integration needed to ensure their existing monitoring and management tools can support the new element. The more tools employed, the more costs and effort that have to be spent to support the initial rollout and ongoing maintenance. Further, the more configuration or integration efforts that are implemented on each tool, the more possible failure points there will be for the application. This approach is highly inefficient and doesn't scale.

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▪ **Reporting and forecasting**. When managers need to do ongoing reports or analysis to support planning efforts, each specific team involved needs to pitch in, running a number of reports to gather the data required. Ultimately, someone has to manually aggregate all this data from disparate databases and spreadsheets. In spite of all the effort invested, executives ultimately don't get timely information or accurate insights on business service performance and capacity. It remains difficult to effectively track current capacity, usage and performance—and even more so to identify trends and make educated projections in terms of future requirements. Consequently, plans and investments have to be made based on guesswork. Because it's next to impossible for administrators to track and predict infrastructure capacity, the organization's costs escalate due to overprovisioning.

All told, this siloed approach prohibits the optimization of IT infrastructure. It increases the risk of downtime. It increases costs. And it decreases efficiency. In the application economy, managing hybrid IT infrastructure and capacity in silos—and all the challenges that arise as a result—will represent an increasingly significant barrier to success.

The Opportunity

Today, different teams don't need to be operating in isolation. Instead, IT organizations can take a unified approach that gives administrators visibility across all IT infrastructure elements, both inside and outside the data center. By ridding the business of its reliance on myriad point vendors and tools, IT organizations can significantly boost team productivity. They can leverage the streamlined administration that enables more agile operations and faster delivery of new capabilities and services. They can gain the insights they need to improve the customer experience, and better align IT investments and efforts with the strategic needs of the business.

How to Capitalize

Unify monitoring of all IT systems, networks and services

To break down operational silos, it is critical to gain unified and comprehensive visibility of all IT systems and services, including physical servers, virtualized environments, networks, applications, databases, storage and public and private cloud environments. Today's applications span multiple infrastructure elements and environments. Consequently, IT administrators need to have an end-to-end view that spans all these different elements in order to quickly pinpoint the specific cause of an issue and resolve it. By gaining a unified view, administrators can:

▪ Spend less time finger pointing or jumping from screen to screen and more time focusing on fixing issues.

▪ Move their focus beyond specific devices and elements and start focusing on what really matters—the end-user experience.

▪ Start leveraging unified and actionable analytics and alerting, so they can more proactively manage performance and start resolving issues—before end users ever notice them.

Figure B.

To effectively resolve issues and optimize service levels, administrators need unified views that span a range of infrastructure elements.
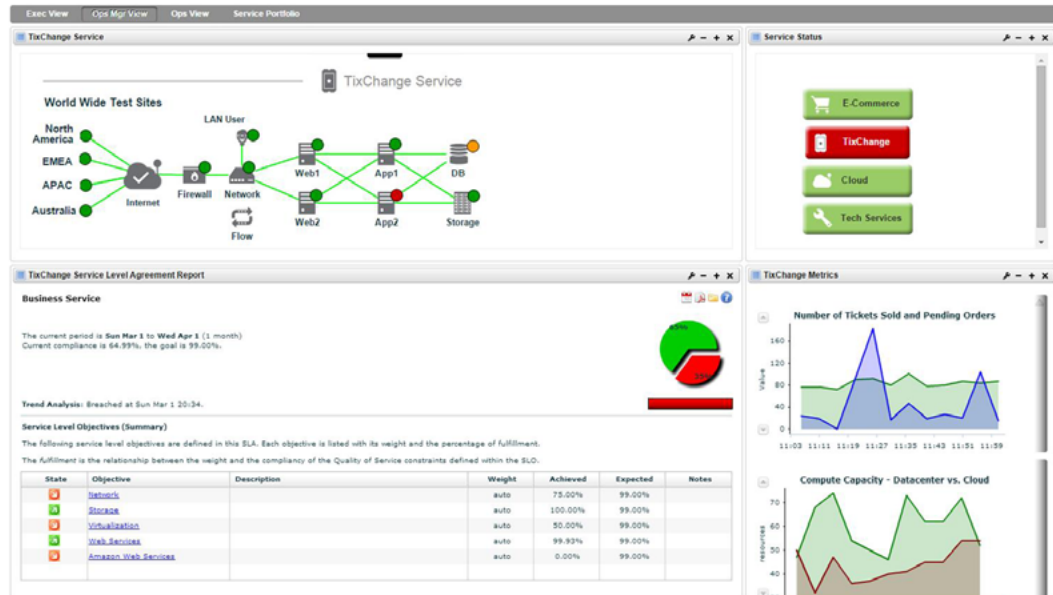
To fully capitalize on the advantages of unified monitoring, IT teams need more than unified visibility. In addition, they need to have a single backend architecture that is resilient, scalable and flexible enough to meet both their immediate and long-term needs. With this unified solution in place, IT won't have to implement, manage or maintain dozens of point monitoring tools.

This unified backend architecture also needs to be easy to operate. For example, any time a new infrastructure element or application is introduced, setting up the monitoring of that item should be a simple, point-and-click process. Further, no lengthy integration efforts or staff training should be required. This kind of efficiency is essential in helping IT teams contend with the rising costs and complexity they face in the application economy.

Align IT services and capacity planning

In the application economy, capacity management is more important than ever. Capacity management represents a vital means for IT personnel to understand how resource usage is changing. Without the insights effective capacity management provides, IT executives can't understand how capacity is being used, and they can't predict how much capacity will be needed to meet future workload demands. This lack of visibility can lead to two unpleasant scenarios: Either IT environments are under provisioned—which can introduce performance degradation, increased risks and poor user experiences—or they are over provisioned—which leads to escalating costs and wasted resources.

By employing a unified approach that supports both capacity management and IT Infrastructure performance monitoring, organizations can much more intelligently and efficiently manage the performance of their IT environments today, while effectively predicting the capacity needs of tomorrow. Armed with these capabilities, IT leadership can confidently ensure that they can provide the infrastructure headroom needed to support business growth. Further, this converged capability can help IT organizations gain the quick and accurate insights they need to optimize the data center and IT infrastructure so it can better support business service execution and results.

Figure C.

Dashboard shows actionable and comprehensive capacity metrics within a unified management console.
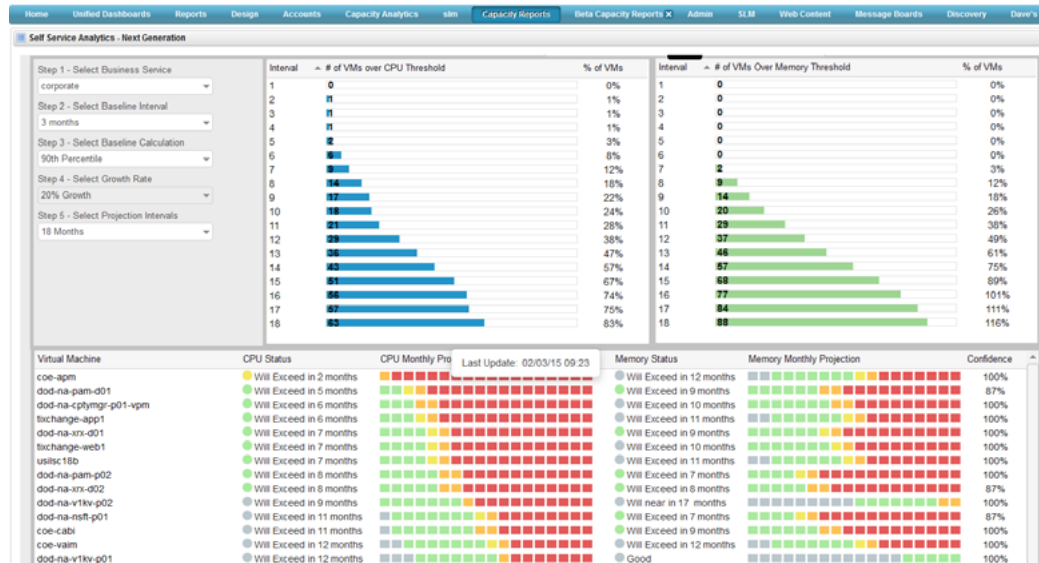
This converged approach can provide especially powerful benefits for IT teams that are just starting to employ capacity management. Instead of having to invest the time and effort needed to procure and learn a new tool specifically for capacity management, these teams can leverage a single platform for managing IT infrastructure performance and capacity. This fundamentally limits the configuration, integration and training effort required, helping organizations realize rapid time to value.

Figure D.

By combining data center and infrastructure metrics in an intuitive dashboard, IT teams can give administrators fast, actionable insights.
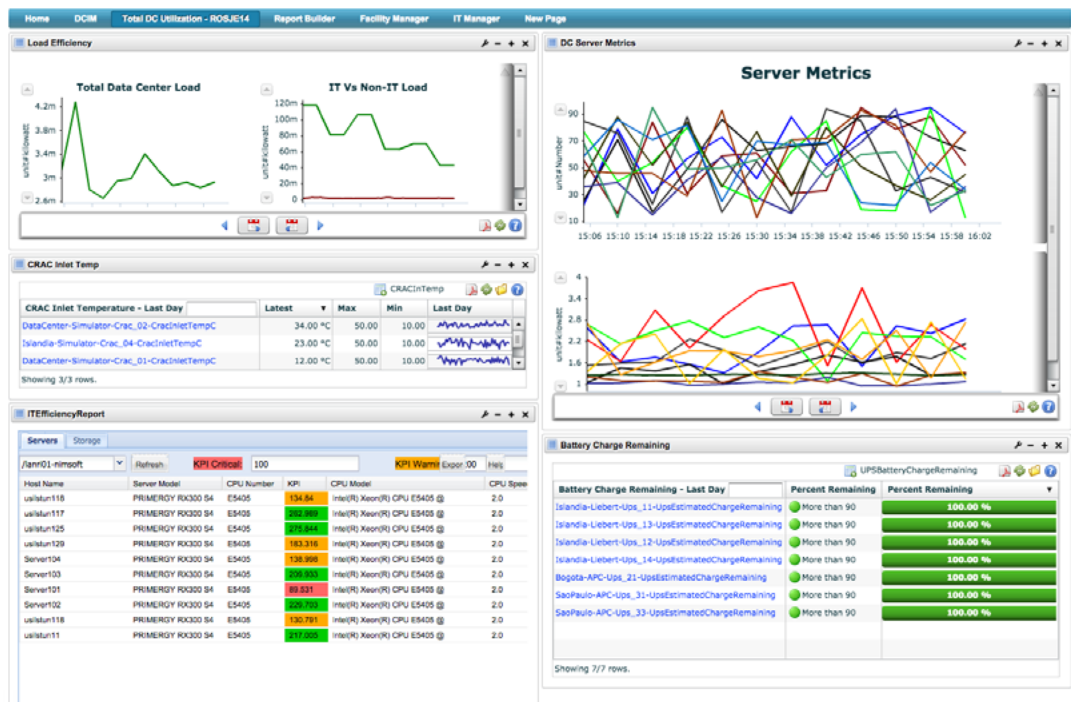
> "DCIM tools offer value to IT organizations because they Integrate IT and facilities management of a data center. This helps bridge the gap between the IT manager and the facilities manager by supplying each with information and analysis, bringing back together these two interrelated positions." (Source: Gartner, Inc., "Magic Quadrant for Data Center Infrastructure Management Tools," Pultz et al., September 22, 2014)

Integrate data center infrastructure management with IT system management

As a fundamental next step, it's critical to begin to integrate data center infrastructure management (DCIM) capabilities into the IT management platform. Through these integrated capabilities, IT teams can leverage a centralized solution for monitoring power, cooling and environmental factors across facilities and IT systems in the data center. This approach also enables administrators to track and manage the consumption of data center space, resources and energy.

By integrating DCIM with IT management capabilities, administrators can gain unified capabilities for optimizing not only energy and cooling consumption—but also the end-user experience and the performance of virtualized resources, cloud services and more. With these insights, IT organizations can realize breakthroughs in administrative efficiency and resource optimization.

Benefits

By gaining a holistic view of the entire IT infrastructure and all its components, characteristics and usage, organizations can realize a number of significant benefits:

- **Enhanced problem detection and resolution**. With a comprehensive view of service levels—and all the elements that are relied upon to deliver those services—administrators can much more quickly spot where in the environment an issue is arising, what the cause is and how to address it. Further, administrators can more proactively track service levels and spot potential issues before they result in outages. As a result, service levels, availability and resolution times can all be improved.

- **Streamlined administration**. By leveraging a unified platform, each individual team, and the organization as a whole can dramatically reduce the costs and efforts associated with deploying and supporting many complex and disparate tools. Further, a single platform enables organizations to exploit more opportunities to automate ongoing tasks, for example, extending automation of provisioning from IT into the infrastructure.

- **Improved reporting and forecasting**. With a holistic view of the entire IT ecosystem, managers can identify unused power, space and cooling capacity as well as under- or over-utilized servers, networks and more. With integrated views, organizations can more effectively match IT demand with the available supply of critical infrastructure, including power and cooling. Through these improved insights, managers can reduce cost and maximize resource utilization, improve capacity planning productivity and accurately and confidently forecast capacity headroom needed to support critical business initiatives.

- **Increased operational agility**. When the entire IT organization starts working with a centrally managed platform, it can fundamentally improve operational efficiency and agility. These teams can respond much more rapidly when new services, technologies and devices are adopted, so they can ultimately better support changing business demands.

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Conclusion

In the application economy, innovation can't happen fast enough. However, without an optimized data center running behind them, winning applications won't get to market in time and they won't deliver the service levels required when they're released. By establishing unified visibility into applications, IT and data center infrastructure and capacity, organizations can realize breakthroughs in service level optimization, operational efficiency and cost savings.

About CA Solutions

Today, CA delivers integrated solutions that offer capabilities for managing IT, data center infrastructure and capacity. With these solutions, organizations can leverage a single solution to manage IT Infrastructure across multiple vendors and domains, so IT teams don't need to work with dozens of point tools.

With these combined solutions, customers can leverage a unified view and approach that reduces costs, improves mean time to repair and increases efficiency and agility. These solutions can track and optimize servers, networks, databases, applications and storage—across physical, virtualized and hybrid cloud environments. Further, administrators can get real-time visibility into power usage and data center capacity.

Customers that have implemented CA infrastructure management solutions have reported the following benefits[1]:

- Improved mean time to repair by up to 40 percent

- Reduced system and network outages by up to 40 percent

- Increased staff productivity by 50 percent

- Decreased reporting time and cost by more than 50 percent

- Reduced hardware usage by up to 50 percent

- Sped capacity planning times by a factor of 10

For more information, please see the **CA infrastructure management page**.

1 TechValidate Research on CA Technologies Infrastructure Management, http://www.techvalidate.com/product-research/ca-infrastructure-management/case-studies

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