Optimizing IT Operational Efficiency and the Patient Experience

How CA Unified Infrastructure Management is Fueling Success in Healthcare
Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Challenges: Addressing Critical Mandates in Healthcare</td>
<td>3</td>
</tr>
<tr>
<td>The Solution: CA UIM Enables Efficient, Proactive Patient Experience Management</td>
<td>6</td>
</tr>
<tr>
<td>Key Benefits: The CA UIM Difference</td>
<td>11</td>
</tr>
<tr>
<td>Conclusion</td>
<td>12</td>
</tr>
</tbody>
</table>
Executive Summary

In today’s healthcare market, shifting regulations, rapid technological innovation and changing expectations of patients and consumers are poised to create a perfect storm of disruption. Fundamentally, if they are to thrive moving forward, healthcare providers and payers will need to meet intensifying demands to boost efficiency and agility, while offering an enhanced user experience. In too many of the IT organizations in these healthcare companies, however, current monitoring tools and approaches are posing immediate challenges and making it increasingly difficult to adapt to emerging opportunities and threats. This paper examines the changes happening in the healthcare market and it reveals how CA Unified Infrastructure Management (CA UIM) can help provide the agility IT teams need to respond to these changes.

Challenges: Addressing Critical Mandates in Healthcare

Delivering a quality patient experience

Today, the individuals consuming services from healthcare providers and payers have very different expectations than they did just a few years ago. The following are just a few of these changes:

- **Financial transparency.** Shifting rules, increased data sharing and emerging startups are serving to provide increased visibility into the healthcare market, including financial relationships, costs, patient outcomes and more. This increased financial transparency will lead to better visibility for consumers—and increased pricing pressure for providers and payers. In response, organizations will be compelled to manage costs more closely and adopt new pricing models.

- **Preventive tools and resources.** Today’s patients are taking a more proactive role in their healthcare, and are focusing on getting the resources and tools they need to promote health and prevent injuries and illness. Both payers and providers can realize significant benefits by supporting patients and consumers in this effort. For example, by delivering online services to field inquiries or monitor symptoms, doctors can enhance patient care. By providing preventative care services to customers, insurers can reduce claims.

**Figure A.**

Several fundamental trends are dramatically shaping patient and consumer expectations and experiences.

**Implications for Providers and Payers**
- Explore new delivery models.
- Adopt new applications and technology.
- Focus on quality care and experience.
- Balance with regulatory needs, legacy systems and limited resource.
• **Wearable technology and the Internet of Things (IoT).** The proliferation of fitness trackers and other wearable technologies and the rapid innovations in mobile medical devices are opening up a range of opportunities to reduce costs, improve patient care and prevent health issues. Through consumer technologies, digitized records and sophisticated data gathering, providers and payers have massive amounts of data, including financial, operational or medical records. It will be increasingly vital to mine this data to deliver better services.

• **Mobile access.** Just like people use their smart phones for everything from getting social updates to making purchases and doing banking, they similarly expect mobile access to healthcare information and services.

• **24x7 online access.** Today, when consumers need medical information, they do searches on sites like WebMD. When they want to find a new doctor, they use apps like ZocDoc. When they are evaluating their insurance options, they’re using online healthcare exchanges and independent sources to compare plans and make selections.

Today’s consumers are used to working and living in the application economy—and the habits and expectations they’ve adopted don’t just disappear when they need healthcare services. If healthcare organizations fail to deliver winning patient experiences that are aligned with these new expectations, they’ll increasingly start to see compromised service adoption and shrinking market share.

According to one survey, improving patient satisfaction was the top priority for 87 percent of IT executives at healthcare providers.¹ The only way to achieve this objective will be to reshape services so they’re better aligned with these expectations.

### Gaining the operational efficiency and agility needed to adapt to market changes

Over the course of a relatively few years, the healthcare and insurance markets have seen fast, fundamental changes:

• **Accelerated market disruption.** In recent years, changes like evolving privacy regulation, health care exchanges and electronic health records have all had significant implications. Now, these changes are being coupled with technology advances and consumer expectations to further accelerate disruption. To compete in these markets, many healthcare providers will need to undergo radical transformation in how their services are delivered, supported and priced. To manage costs and preserve customer bases, payers will need to take a much more holistic approach to services, focusing on promoting customer health rather than processing payments for treatment.

• **More widespread complexity and integration demands.** Increasingly, services supporting business operations and patient care are being supported by a more complex ecosystem that includes on-premises, cloud, and other externally sourced infrastructures and services. Exacerbating matters is that, at the same time, requirements for continuous, 24x7 availability and optimized performance only get more critical. While the move to e-records continues, the reality is that a lot needs to be done to enable the seamless sharing of this data among the users, groups and partners that need it—which is fueling the development of integration capabilities via APIs and other approaches.

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To contend with these intensifying demands, healthcare organizations and insurers will need to realize fundamental improvements in efficiency, wringing maximum value from their operations, staff and expenditures. The tough reality for many healthcare organizations today is that significant percentages of staff time and budgets continue to be invested in efforts that don’t have an impact on the patient experience. This represents a status quo in many organizations that will have to be changed in the near term.

The implications for IT teams and infrastructures

In today’s environment, the use of technology will be increasingly core to providers’ ability to achieve their missions of delivering quality patient care—and doing so cost effectively. Likewise, it will be technological acumen that will fuel the payer’s ability to adapt to market shifts and consolidation, emerging business models, new service delivery and more. The providers and payers that begin to leverage and lead technological innovation will be the ones to lead the way in service improvements and market growth.

The changes above have created massive implications for IT teams within healthcare organizations, who’ll play an increasingly central role in their organization’s success. For their organizations to succeed, these IT teams will need to support the following operational requirements:

- **Proactive management and optimization of the user experience.**

  As outlined above, healthcare organizations will face an urgent mandate to deliver winning user experiences. Fundamentally, this will require proactive management and optimization of service levels, including availability and response time. To gain this proactive control, IT teams will need to establish a holistic view across all the environments and systems upon which patient services rely. They’ll need to gain the timely insights and targeted intelligence that fuel faster response when issues arise. Perhaps even more importantly, administrators will need insights into emerging trends so they can preempt issues before they have an impact on service levels.

- **Adoption of agile operations.** IT teams will face an imperative to proactively manage the user experience while at the same time boosting operational agility to adopt new technologies and processes. This will require that IT operations and development teams collectively embrace DevOps approaches. DevOps approaches will prove increasingly essential as organizations look to accelerate the time it takes to get new capabilities delivered. IT operations and development teams therefore need to ensure their tools and processes embrace DevOps, rather than hindering it.

“Digitally enabled care is no longer nice-to-have, it’s fundamental for delivering high-quality care. Just as the banking and retail sectors today use data and technology to improve efficiency, raise quality and expand services, healthcare must either do the same or lose patients to their competitors who do so.”

—Daniel Garrett, health information technology leader for PwC

(source: Fortune, “5 trends that will redefine your healthcare experience in 2015,” Laura Lorenzetti, January 14, 2015)
Maximize operational efficiency across complex, hybrid infrastructures. As they seek to address rapidly increasing complexity, expectations, demands and requirements, the reality is that most IT teams will need to do so with minimal growth in budgets and resources. Consequently, a premium will be placed on the efficiency of IT teams. More than ever, IT organizations will need to ensure staff, resources and investments deliver the maximum results possible.

Criticality of service levels and how current monitoring approaches are failing

As outlined above, a mix of dynamic and complex technologies will be fueling the services that will be relied upon by patients, medical staff, business partners and other users. As a result, ensuring service levels are optimized at all times will be both increasingly critical and challenging. Therefore, monitoring capabilities will play a central role in these organizations as they seek to respond to these demands. However, in too many healthcare provider and payer organizations, current monitoring capabilities represent a significant impediment, leaving IT teams struggling to contend with current demands and ill-equipped to adapt to the fast-changing dynamics outlined above.

CA recently commissioned a survey of executives in healthcare provider and payer organizations, and the findings clearly convey the limitations many are struggling with:

- **Siloed point tools.** More than half of respondents (53 percent) use more than five tools to monitor their infrastructure. Not surprisingly, 44 percent cite “too many siloed IT monitoring and management tools” as a challenge.

- **Costly, complex and reactive efforts.** Respondents chose “staff spending too much time in firefighting and manual processes (59 percent)” and “rising cost and complexity of managing heterogeneous IT environments (36 percent)” as two of the top three challenges affecting their organizations. In addition, 41 percent indicated that a top challenge with their current tools was the “effort required for reporting, integrations and customizations.”

- **Limited visibility.** When asked specifically about the limitations of their current monitoring tools, two of the top three responses were “lack of a single unified view (68 percent)” and “lack of predictive and actionable analytics (51 percent).” Only about one-third of respondents were highly satisfied with their ability to monitor and manage the end-user experience and cloud and big data environments.

The Solution: CA UIM Enables Efficient, Proactive Patient Experience Management

Now, your organization can stop battling all the challenges of relying on reactive approaches and disjointed, complex tools. With CA UIM, you can start leveraging a solution that delivers the end-to-end visibility needed to proactively manage service levels, optimize the user experience and support agile IT operations.

Flexible, comprehensive coverage that fuels maximum insights and value

Whether you’re working in a health care provider or payer, CA UIM enables you to proactively manage the performance of physical and virtual servers, applications, networks, storage devices, databases, end-user services, cloud and big data environments—all through a single view and architecture. With this visibility,
By leveraging a single, unified solution that offers complete infrastructure coverage, your organization can stop having to rely on dozens of piecemeal, disjointed point tools. Consequently, your organization can streamline administration and more quickly and effectively support the new services, applications and technologies that will be required in today's dynamic health care market. With CA UIM, organizations can leverage these capabilities:

- **Patient or user experience monitoring.** Monitoring the user experience is vital. You can be armed with vast amounts of performance metrics, but if you don’t know what patients or internal users are actually experiencing, you don’t have the real performance picture. CA UIM allows you to measure a patient’s experience across various applications or touch points. Capabilities like application response time analytics and synthetic transaction monitoring help you rapidly identify the bottlenecks in your IT infrastructure that can cause a poor user experience.

- **Holistic infrastructure monitoring of complex healthcare applications.** Critical healthcare applications, such as electronic medical records (EMR) have to be supported by complex, highly available and compliant IT infrastructures. CA UIM provides out-of-the-box support for most of the technologies that support these applications. The solution offers support for virtual application and desktop infrastructures, such as Citrix XenApp and XenDesktop, which are increasingly essential in meeting security and compliance requirements. In addition, you can gather additional application information through log monitoring capabilities to gain a comprehensive view of the experience your applications and infrastructure deliver to users.

- **Powerful, flexible APIs and SDKs.** CA UIM provides an open API architecture and software development kits (SDKs) that enable users to create custom data collectors, also known as probes. These probes can be used to pull data from custom applications and devices. In addition, this architecture enables efficient integration with other IT operational management tools, such as service desks and configuration management databases.
CA UIM offers the sophisticated capabilities needed to maximize the value of the solution’s comprehensive coverage. IT professionals, medical staff and business users can gain intuitive, end-to-end visibility into their IT-powered medical and business services using the solution’s customizable portals, dashboards and reports. CA UIM can aggregate monitoring data from disparate sources and correlate business-centric data to provide current, holistic views of critical business and patient services.

CA UIM delivers the insights that help you quickly identify and correct problems across your entire IT infrastructure, before they introduce performance issues. The solution also enables you to speed resolution times through built-in, best-practice-based workflows, intuitive dashboards, reporting and alarms.

CA UIM offers these capabilities:

- **Unified views and dashboards.** With CA UIM, your organization can leverage unified, pre-packaged dashboards and custom views that deliver visibility into all the IT systems, networks, services and devices that matter to the organization. Through this visibility, you can intuitively and efficiently track status, monitor performance, spot trends and more.

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**Figure C.**

CA UIM provides comprehensive coverage of all your infrastructure elements, offering pre-packaged dashboards for virtual desktop infrastructure technologies such as Citrix XenApp.

**Unified analytics, dashboards and alarms that enhance reliability and the patient experience**

CA UIM delivers intelligent alarm capabilities that speed issue resolution.
• **Correlational analysis.** With the solution’s correlational analysis, you can identify and track relationships between performance variables and IT infrastructure elements, and spot patterns over time. These insights make it easy and fast for your IT teams to find the root cause of issues—whether they arise in a networking platform, server, application or any other element—resulting in a lower mean time to resolution.

• **Intelligent alarms.** CA UIM offers sophisticated alarm functionality that enables fast, effective response when issues arise. The solution offers dynamic thresholds that minimize false alarms and improve staff productivity. In addition, CA UIM features maintenance mode capabilities that eliminate the false alarms associated with system administration. The solution offers granular, automated alarm routing policies and, through its integration with service desk platforms, the solution can automatically open service tickets that include all relevant details on an issue.

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**Figure E.**
CA UIM offers user experience monitoring along with infrastructure performance metrics to provide a holistic view.

**Figure F.**
Sample dashboard for an EMR application and supporting infrastructure.
Robust, predictive analytics. With CA UIM, you can leverage predictive analytics capabilities that help you proactively identify issues before the performance of business services or the user experience suffers. The solution can equip administrators with a prioritized list of problems that represent situations they should watch. It also places these items in order of time remaining before a problem is expected to occur, bringing attention to immediate problems first. CA UIM features time-over-threshold analytics that help you identify real, persistent performance issues and eliminate false alarms associated with occasional spikes. The solution’s time-to-threshold analytics help identify threats of potential performance degradation, and issue an early warning—before patients, internal staff or other users are affected.

Health index. CA UIM features a health index capability that enables the tracking of infrastructure performance using a simplified scale. With this capability, it is easy to quickly identify underperforming assets and track system health trends over time.

Fast deployment and streamlined administration that boosts productivity

CA UIM is easy to deploy, manage, maintain, scale and adapt. The solution features pre-packaged monitoring templates that help reduce setup and administration time—so you can realize benefits and a return on your investment more quickly. In addition, CA UIM delivers features like dynamic thresholds and automatic deployment, discovery and monitoring. By leveraging these capabilities, customers can rapidly install and deploy CA UIM.

CA UIM provides pre-packaged and custom monitoring capabilities through a single, native management console that delivers a seamless, intuitive user experience. Because everyone is working through a consistent interface, your team can speed issue resolution time and boost staff efficiency.

The solution offers a plug-and-play, probe-based architecture that enables fast delivery of new monitoring services, without having to disrupt the existing deployment, do bolt-on workarounds or wait for new product releases.

By reducing time spent on ongoing administration and speeding deployment and adaptation, CA UIM enables you to better deliver innovation and respond more quickly to changing patient and market demands, while you quickly realize maximum value from your monitoring investment.
Scalable, resilient architecture that helps you thrive in the application economy

CA UIM delivers the simplicity associated with most point solutions, yet at the same time it offers powerful, enterprise-grade scalability and robust multi-tenancy features that enable the solution to support the largest healthcare providers and payers. CA UIM can go from supporting hundreds to thousands of devices. As a result, with CA UIM you don’t have to worry about outgrowing your monitoring solution.

CA UIM is a service-oriented solution that enables aggregation of monitoring data from disparate sources and enables the effective correlation of this data to provide powerful views of critical business services that impact the user experience.

The solution is highly resilient. Adding or removing an application has no impact on the existing applications, thanks to the unique message bus architecture. Each application has a single connection to the message bus, which eliminates the complexities and interdependencies associated with other monitoring platforms.

The CA UIM message bus architecture:

- **Offers extensibility.** With CA UIM’s architecture, adding or removing specific monitored elements does not have any impact on the existing environment.

- **Fosters application simplicity.** The message bus architecture reduces application complexity. Each application instance needs to support only one connection to the message bus, and no connections to other instances need to be supported.

- **Delivers flexibility.** CA UIM makes it easy to change configurations and routing parameters.

- **Enables scalability.** The solution’s architecture can simultaneously handle multiple requests.

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Key Benefits: The CA UIM Difference

By leveraging CA UIM, your healthcare or payer organization can realize a number of significant benefits:

- **Boost patient experience and IT service reliability.** CA UIM provides proactive, unified insights into user experience, service quality and performance across hybrid infrastructures. As a result, IT can better understand and optimize the experience of patients, medical staff, employees, partners and other users. The solution also supports the delivery of more objective, detailed and timely reporting, helping improve transparency between the user community and IT. Ultimately, CA UIM enables IT organizations to respond more effectively to the needs of users, and helps improve their perception of your organization’s value.

- **Reduce cost and complexity.** CA UIM helps you eliminate the cost and complexity of maintaining multiple platforms. With the solution, you don’t have to purchase, install, maintain, deploy, update and train for multiple point tools. The solution helps you automate monitoring and align it to your dynamic IT environment. By leveraging the solution, your team can stop spending so much time managing their existing management tools so they can spend more time focused on the strategic efforts that help the organization adapt and thrive in the application economy.
• **Support faster application and technology adoption.** Through its streamlined administration, automation and flexibility, CA UIM puts IT teams in a position to much more effectively support agile operations and DevOps initiatives. With CA UIM, providers and payers can develop, deliver and leverage the innovative technologies and models that fuel improved services, better patient outcomes and improved business performance.

• **Be ready for tomorrow’s technological requirements.** When you need to start investing in cutting edge technologies, you need your management solution to support them. CA UIM can currently monitor more than 140 technologies and systems—and support for more technologies is added regularly. With its broad coverage of emerging technologies—and continued innovation—CA UIM enables your organization to gain the management capabilities needed to speed application deployments and most fully leverage emerging innovations.

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### Conclusion

In the application economy, every company is a technology company, and that is very much true for healthcare providers and payers. Increasingly, the quality of technology will inform the quality of business services and the patient experience. In too many organizations, however, disjointed point monitoring approaches are hampering health care providers and payers from adapting to emerging threats and opportunities. With CA UIM, these organizations can gain the unified monitoring coverage that fuels improved operational efficiency, scalability and agility—so they can maximize their ability to harness technology to deliver maximum business benefits.