Five Technologies for the Built-to-Change Business—and How You Can Monetize Them
Table of Contents

Executive Summary 3

Introduction: The Digital Transformation Imperative 3

Five Paradigm-Shifting Technologies and Services—and Why You Should Care 3
Amazon Web Services
Docker
Nutanix
OpenStack
Pure Storage

Why Emerging Technologies are Fueling Increased Demand for Service Providers 5
Emerging skills and knowledge gaps
The criticality of optimized service levels
Monitoring challenges

The Managed Monitoring Services Opportunities 6

The Solution: Deliver Compelling Managed Monitoring Services with CA Unified Infrastructure Management 7
Comprehensive capabilities that fuel unified monitoring services
Unified monitoring services powered by CA UIM

Conclusion 10
Executive Summary

Today, your customers are in the midst of a massive paradigm shift. These businesses now need to be built to change—leveraging software so they can become agile enough to respond to fast-shifting market dynamics. As they look to align their organizations with today’s digital realities, IT decision makers are increasingly gravitating toward a number of emerging technologies and services. Both for enterprises and the service providers they work with, these offerings are introducing both unprecedented opportunities and challenges. This white paper examines five of the most important technologies and services. The paper then outlines why now’s the time for service providers to incorporate these offerings into their service mix—or start losing market share to those who do.

Introduction: The Digital Transformation Imperative

In the application economy, the market victors will be the ones that are built to change. They’ll be the ones that can sense and quickly respond to changing market dynamics. They’ll be the ones that can deliver innovative applications that offer a compelling user experience—and continuously improve that experience. They’ll be the ones that bring innovations to market faster. They’ll be the ones leveraging more data to fuel better decisions and service offerings. They’ll be the ones wringing maximum returns from their infrastructures and investments.

Only through digital transformation can businesses become built to change. Digital transformation requires innovation across the spectrum of how digital services are developed, supported and delivered. As a result, businesses are adopting a wide range of new technologies and approaches. The following sections highlight five of the most significant, change-enabling technologies.

Five Paradigm-Shifting Technologies and Services—and Why You Should Care

Amazon Web Services

- **What it is.** Amazon Web Services (AWS) delivers virtualized cloud infrastructures that enable computing to be consumed as a service. The company offers complete infrastructure services, including computing, storage, content delivery, database management and networking. In addition, the company has continued to expand its offerings, which now include complete platforms, management tools and industry-specific solutions.

- **How it’s fueling digital transformation.** Through its cloud services, AWS is enabling customers across a range of industries to pursue their digital transformation initiatives, enabling breakthrough advances in such areas as big data, machine learning, Internet of Things (IoT), API management, DevOps and mobile services.
• **Why the opportunity is so significant.** Since its founding in 2006, Amazon Web Services (AWS) has emerged as the largest provider of cloud services. The organization offers the most comprehensive and broadly adopted cloud platform, with more than one million active customers in 190 countries.\(^1\) AWS accounts for 45 percent of the global public infrastructure-as-a-service (IaaS) market, while the next three companies combined account for less than half that amount.\(^2\)

Docker

• **What it is.** When leveraging containers, code is packaged with all required dependencies and configurations, so it is self-contained and portable. One reason for their rapidly growing popularity is that containers offer organizations a number of significant advantages over virtualization. Containers share some system resources, which makes them leaner and reduces system overhead. Compared to virtualized services, containers can be spun up and copied more quickly, enabling faster and easier scaling.

• **How it’s fueling digital transformation.** Through its container solutions, Docker is squarely addressing a lot of fundamental requirements for digital transformation. The company’s platform sits at the center of three foundational aspects of modern application development strategy: the moves to the cloud, microservices and DevOps. By coupling the advantages of containers with all these approaches, organizations can realize the most compelling gains in a range of areas, including improved business agility, faster innovation, greater flexibility and enhanced operational efficiency.

• **Why the opportunity is so significant.** Today, Docker is the leading provider of container technologies. Over the course of the prior two years, 450 million people have downloaded Docker’s open source software.\(^3\) Docker has emerged as the dominant container engine technology, with 94 percent of container users saying they employ Docker products.\(^4\)

Nutanix

• **What it is.** Hyperconverged infrastructure solutions from Nutanix provide complete, pre-integrated computing stacks that include networking, computing, virtualization and even applications—all in a single, unified package that is supported by a single vendor.

• **How it’s fueling digital transformation.** Organizations that leverage hyperconverged infrastructures are better equipped to pursue digital transformation initiatives. Customers that leverage these alternatives report better application uptime, faster implementation of new applications and easier incorporation of new technologies into their environments. Nutanix delivers complete solutions for virtual desktop infrastructures, private clouds, big data and more.

• **Why the opportunity is so significant.** Within a few years, Nutanix has emerged as one of the leading providers of hyperconverged infrastructure solutions. More than 3,700 customers have adopted Nutanix solutions. Between the 2015 and 2016 fiscal years, the company saw 106 percent growth in billings.\(^5\)

OpenStack

• **What it is.** OpenStack software enables organizations to instantly deploy virtual machines and other resources required to manage and operate a cloud environment. OpenStack software can control large pools of computing, storage and networking resources across a data center, and enable administrators to manage these resources through a dashboard or API.

---

2. Ibid
3. Docker, https://www.docker.com/technologies/overview
“Channel partners accounted for 80 percent of new customer wins in the company’s most recent quarter, and the top five partners are seeing triple-digit annual growth in their Pure Storage business.”

Why Emerging Technologies are Fueling Increased Demand for Service Providers

The five services and technologies above are fueling increasing demand—and massive opportunities—for service providers. The following sections outline why.

Emerging skills and knowledge gaps

While the adoption of these technologies and approaches has been widespread, they still represent new environments, and these offerings continue to evolve quickly. Acquiring and retaining internal staff that have the necessary expertise in these emerging systems can be difficult for enterprise IT teams. That’s why these emerging technologies will lead to increased reliance on service providers.

---

The criticality of optimized service levels

Once organizations start to run the technologies above in production, these services become critical to business success. If these platforms encounter downtime or performance issues, it can have an immediate and significant impact on customer-facing services, workplace productivity and company revenues.

Consequently, establishing effective, continuous monitoring of these environments is critical. IT staff members need to constantly monitor their implementations so they can identify bottlenecks and fix issues. To be effective, organizations need to gain robust capabilities for tracking and managing performance, availability, utilization and end-user service levels.

Monitoring challenges

While there may be specific monitoring tools for each of the technologies outlined above, the reality is that organizations are typically running a mix of virtualization, private cloud and traditional infrastructures—and they have tools in place for monitoring these different environments. If an organization adds monitoring tools specifically for AWS, Docker, Nutanix, OpenStack or Pure Storage, the result will be even more isolated monitoring tools, which presents a number of challenges:

- **Disjointed alerting.** With myriad monitoring tools, IT teams are exposed to inconsistent, fragmented alerting, with each tool generating unique data, alerts and escalation processes. Not only does this mean a lot of work in compiling and aggregating data for reporting but administrators may have to deal with issues like so-called alarm blizzards when one system failure has a ripple effect on other systems.

- **Time-consuming troubleshooting.** When issues arise, administrators struggle because distinct teams each need to check their own tools to try and identify the source, adding to the effort and complexity associated with managing IT environments.

- **Limited insights into service levels.** Working with multiple tools, teams lack fundamental insights into the performance of the end-to-end infrastructure and the business services that users rely on. IT teams have a hard time gaining timely, useful insights needed to pre-empt issues, so they remain consumed with reacting to problems after the fact, and service levels suffer.

- **Lack of holistic insights for capacity planning.** Relying on isolated tools, IT teams struggle to track resource utilization across various service silos. As a result, it is time-consuming and difficult to intelligently allocate workloads and make optimized infrastructure investments.

The Managed Monitoring Services Opportunities

By working with service providers to get assistance with the emerging technologies listed above, enterprises will be able to realize a number of advantages. By leveraging the services and expertise of service providers, organizations can realize faster onboarding, gain access to proven reference architectures and avoid common pitfalls.

Service providers that gain the necessary expertise can work with organizations that have already implemented these emerging technologies, and those that have yet to do so. For organizations that have yet to deploy these offerings, service providers can deliver initial consulting and engagement services, helping with such efforts as evaluating various solutions, architecting implementations and planning and managing deployments.
Ongoing managed monitoring services can represent a great complement to these offerings. In addition, these monitoring services can be an optimal way for service providers to gain entry into organizations that already have implemented these solutions. As a result, delivering managed monitoring services will enable service providers to enhance offerings, expand markets and deepen account penetration.

The Solution: Deliver Compelling Managed Monitoring Services with CA Unified Infrastructure Management

Delivering managed monitoring services represents a compelling opportunity for many service provider businesses. However, the only way service providers can establish monitoring services that stand out in the marketplace and deliver compelling value to customers is by leveraging robust, enterprise-grade monitoring platforms.

That’s why so many of the world’s most successful service providers build their monitoring services on CA Unified Infrastructure Management (CA UIM). CA UIM offers a range of technological advantages that service providers around the world are leveraging to improve service, expand offerings and boost margins.

Browse the sections below to learn more about these unique strengths and the services the solution can power.

Figure A.
With CA UIM, administrators can get at-a-glance insights into the status of AWS environments.
Comprehensive capabilities that fuel unified monitoring services

To maximize revenue potential and customer value, your service provider business needs to leverage monitoring platforms that can provide visibility across customers’ IT environments and from the top to the bottom of their IT stacks. CA UIM offers the comprehensive capabilities that are critical to establishing successful managed monitoring services:

- **The most comprehensive coverage of cloud and hybrid IT environments.** CA UIM provides a solution for monitoring all elements across a heterogeneous IT environment—all with a single product, architecture and console. CA UIM supports more than 140 technologies and services, including physical and virtual servers, networks, storage systems, databases, applications, user experience, public and private clouds and power and cooling infrastructure. The solution offers extensive coverage of AWS, Docker, Nutanix, OpenStack and Pure Storage environments. With CA UIM, you can monitor and manage virtually all business applications—whether they’re running in SaaS, hosted or virtualized environments. CA UIM enables service providers to quickly address new, high-growth markets and changing customer demands.

- **Intelligent alarms and predictive analytics.** CA UIM provides 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, with CA UIM, you can leverage predictive analytics capabilities that help you proactively identify issues before the user experience suffers. The solution can provide a prioritized list of problems that represent situations administrators should watch.

- **Multitenancy support.** CA UIM provides true multitenancy—enabling service providers to use a single instance of the solution to centrally and efficiently monitor and manage all customer environments. At the same time, the solution enables you to deliver secure, tailored reports, dashboards and portals to each customer.

- **Scalability to support large-scale deployments.** Many of the world’s largest cloud providers, service providers and hosting providers rely on CA UIM to deliver the high scalability required. With CA UIM, organizations get the monitoring scalability they need to serve more clients with existing staff, serve
larger clients and monitor more devices and simultaneous events. CA UIM features an efficient, high-performance event-processing engine that can scale to support event volumes generated from tens of thousands of servers. Plus, it offers a secure, reliable and efficient client access model that can support hundreds of concurrent connections.

• **Automation for elastic environments.** With CA UIM, you can efficiently manage monitoring of highly dynamic, elastic virtualized and cloud environments. The solution lets you use templates and set up automated, agentless monitoring of virtual machine and cloud-based instances. You can automatically deploy monitoring through predefined templates, and gracefully retire monitoring when VMs and hosts are intentionally decommissioned.

**Unified monitoring services powered by CA UIM**

By delivering comprehensive coverage of the entire IT infrastructure, CA UIM can help your organization maximize the business opportunities presented by the rise of emerging technologies and services in your markets. By leveraging CA UIM, your organization can deliver a range of monitoring services:

• **Unified technology monitoring.** Combine CA UIM and your domain expertise to provide around-the-clock monitoring services of customers’ critical technology implementations—whether they’re running on AWS, Docker, Nutanix, OpenStack or Pure Storage. With CA UIM, you can deliver a compelling monitoring service that offers deep coverage of all aspects of customers’ implementations—and provide the vital insights needed to optimize service levels. Monitor availability, performance, usage and more.

• **Unified custom application stack monitoring.** Customers may deploy their applications in a broad range of environments. Ultimately, all the heterogeneous elements that make up the environment need to be performing optimally if service level commitments are to be met. With CA UIM, you can deliver monitoring visibility that spans the customer’s entire application stack, including all the elements running

---

**Figure C.**

With CA UIM, administrators can get at-a-glance insights into the status of Docker environments.
within on-premises or externally hosted computing platforms, any applications and databases that may be running on top of these platforms and the underlying network. In addition, you can use synthetic transaction monitoring to track performance from the end user’s perspective.

**Unified business service monitoring.** Today, any given business service your customers operate may rely on different technology stacks and hybrid IT environments, including various hosted infrastructures, AWS and other cloud services and on-premises data centers. Tracking service levels across these composite, hybrid environments can present a real challenge for customers, particularly if they’re relying on a collection of point tools. By leveraging CA UIM, you can deliver unified visibility across these environments and track service levels from end to end, no matter where underlying components reside. As a result, your organization can provide significant, strategic value to customers.

Within each of these offering categories, your organization can provide multiple levels of service. For example, in addition to standard performance and availability monitoring, your organization can offer advanced, predictive analytics, dashboards and remediation services. With CA UIM, your organization can also provide advanced capacity planning services that leverage comprehensive visibility across technology and service silos.

### Conclusion

Regardless of the markets you serve, chances are good that the customers you work with have implemented, or will soon adopt, solutions from AWS, Docker, Nutanix, OpenStack or Pure Storage. By establishing managed monitoring services around these offerings, your business can provide significant value—and help accelerate customers’ digital transformation. Through these services, your organization can expand its revenues, margins and market share.

CA has recently published several new white papers that offer service providers comprehensive information on the managed monitoring services opportunities that service providers can capitalize on today. These white papers offer an in-depth look at market drivers, customer challenges and the specific service offerings that service providers can deliver. To learn more about these opportunities, be sure to download the following white papers:

- Amazon Web Services Monitoring
- Docker Monitoring
- Nutanix Monitoring
- OpenStack Monitoring
- Pure Storage Monitoring

For more information about CA UIM, please visit the [product page](https://www.ca.com). For more details on how CA supports service providers, see the [CA service provider page](https://www.ca.com).
CA Technologies (NASDAQ: CA) creates software that fuels transformation for companies and enables them to seize the opportunities of the application economy. Software is at the heart of every business, in every industry. From planning to development to management and security, CA is working with companies worldwide to change the way we live, transact and communicate—across mobile, private and public cloud, distributed and mainframe environments. Learn more at ca.com.