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Making the Shift From Device-Centric:

# 7 Characteristics of Service-Centric IT Organizations

# Introduction

**Remember when a typo caused one of the most pervasive and costly outages for companies? As part of a debugging effort in the billing system, a small number of servers needed to be taken offline. Instead, a larger set of servers that supported other subsystems was inadvertently removed, and 💩 hit the fan.**

The Wall Street Journal reported that a single outage "cost companies in the S&P 500 index $150 million."

**And that's the reality — IT outages cost large enterprises billions of dollars.**

Why? When you get right down to it, modern IT environments are far too complex and dynamic for traditional tools.

And although most organizations deploy a host of monitoring tools across myriad devices, applications, networks and virtual servers, the cost of outages is **still** increasing.

Progressive IT organizations have figured out the key to not only reduce downtime and IT spend but also predict and eliminate outages for hybrid IT environments. And that key is to evolve from a device-centric to a service-centric IT organization.

## Software-defined IT operations...

Here are the seven characteristics of high-performing and successful IT organizations that have made the shift from device-centric to service-centric with software-defined IT operations.

**Definition:**

# SOFTWARE-DEFINED IT OPERATIONS

Intelligent software for a lights-out data center

# They demand complete coverage

## The ability to consider all facets of a problem set through comprehensive coverage or a holistic approach is nonnegotiable in the service-centric IT organization.

This includes complete visibility across cloud and data center environments in order to quickly alert, isolate and resolve network outages and performance issues **before** they affect IT service delivery.

Regardless of physical, virtual and logical relationships and dependencies, service-centric IT organizations employ monitoring platforms that automatically discover devices and applications so they can immediately begin monitoring across multivendor environments — providing **complete visibility** into the network.

A holistic and unified view provides a comprehensive picture of IT service health and accelerates root-cause analysis, providing the ability to address network issues **before** disruptions occur.

One global management and technology consulting company has done a 180-degree turn from the days where systems were down — all the time.

**Luke Lofgren**

Expert Infrastructure Architect, Acxiom Corporation

acxiom

***"It was so bad that sometimes [issues] would only be found when somebody said, 'Well, this host is down. Why didn't we get an alert about it?' So we'd check the monitoring system and [realize] it died again."***

– Luke Lofgren, Expert Infrastructure Architect, Acxiom Corporation

Those days behind him and his team, Acxiom has gained end-to-end visibility and control across its global data centers with flexible unified monitoring, enabling better results for its 7,000+ global clients.

With complete coverage, Lofgren has seen a transformation at Acxiom.

***"Monitoring has actually come alive again at Acxiom. They trust the results they're going to get from monitoring. They trust that monitoring is not going to wake them up at night unnecessarily. They trust the information that we're giving them through our monitoring solutions, and it's completely changed the enterprise's appreciation for the monitoring service."***

– Luke Lofgren, Expert Infrastructure Architect, Acxiom Corporation

NWN Corporation, a large IT solutions provider, offers infrastructure as a service (IaaS), wrapping together compute, network and storage demands into a simple, scalable design.

***"I can't overstate the advantage and necessity of having our critical events and data in one place. We worked hard to get people to understand the value of our proactive monitoring strategy and, as a result, have seen significant efficiency gains, fewer mistakes and more satisfied customers."***

– Doug Syer, Vice President of Technology, NWN Corporation

**Doug Syer**

VP of Technology, NWN Corporation

NWN

# They rely on real-time insights

## IT organizations making the shift from device-centric to service-centric are beyond the chaotic, reactive and even proactive levels of IT maturity.

They are service- and delivery-focused organizations that include formal governance and a dedication to delivering on customer and business needs.

For example, virtual environments require a real-time management approach. In virtual environments, IT teams need to be able to:

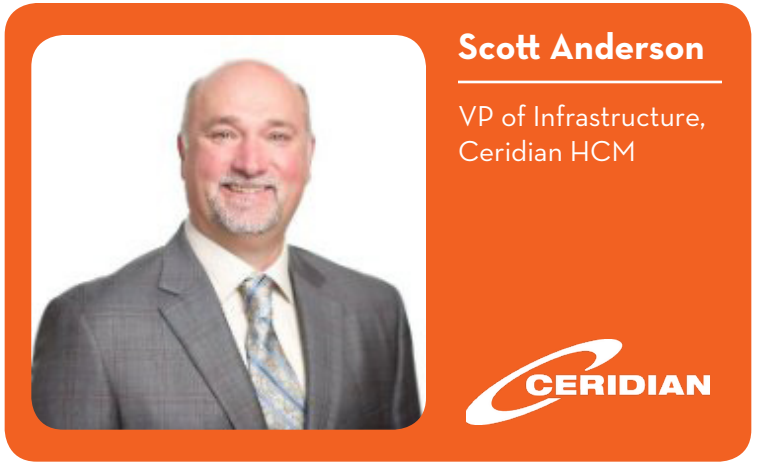
- **Capture and track ongoing changes as they occur**
- **Monitor events, e.g., the creation or deletion of virtual machines (VMs)**
- **Pause or stop VMs**
- **Provision or deprovision resources**
- **Track compute and storage assignments moving from host to host**

Millions of metrics are being collected in real-time. And visibility into the real-time health and performance of the systems is paramount to service-centric IT organizations.

Just ask Ceridian Human Capital Management (HCM), a cloud-based human resources company with over 25 million users in over 50 countries. When they were challenged with an aggressive timeline to purchase and deploy new hardware, optimize aging legacy hardware, and maximize IT capacity, their first priority was to the customer.

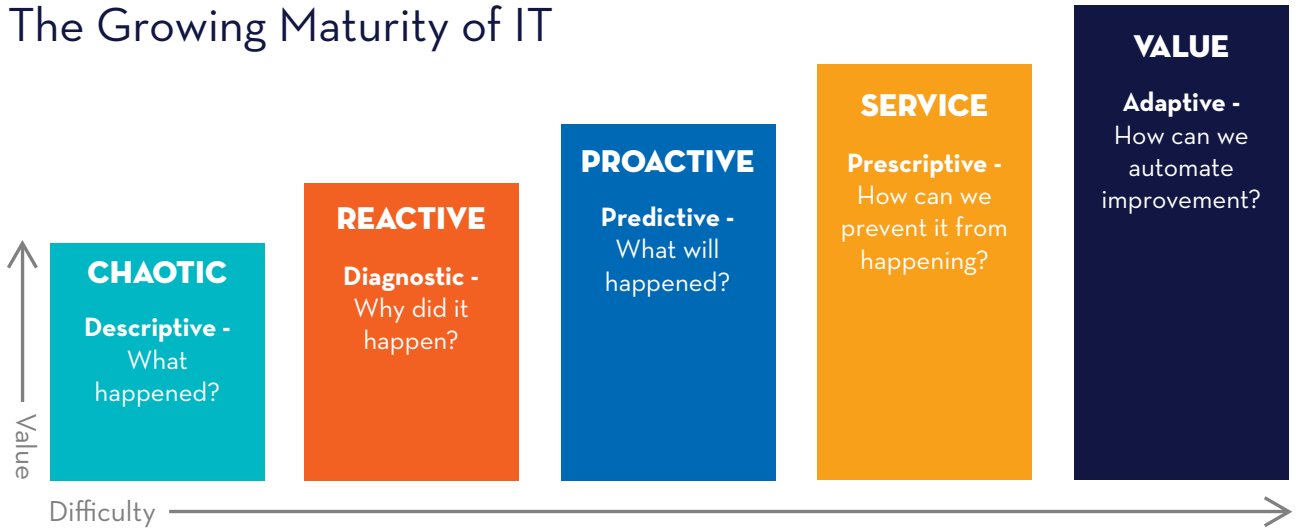
***"We have to be holistic and proactive about our IT infrastructure to make sure we can continue to serve our customers' growing needs,"***
– Scott Anderson, Vice President of Infrastructure, Ceridian HCM

But a massive data center consolidation project often puts customer service levels at risk during and after the transition. So, top of mind for the Ceridian HCM team was to be able to detect potential and actual service disruptions **before** any customers were impacted throughout the transition and beyond.




Simple, centralized and visible real-time monitoring was a central pillar of their holistic approach. And with software-defined IT operations, Ceridian was able to stay ahead of potential issues and address disruptions before customers noticed them.

In fact, after learning about issues from end users, technicians have transitioned from hours of wasted time tracking down the root cause to real-time detection in order to fix issues proactively.




# They know that being predictive is the path to being prescriptive

## Predictive insights are like gold to any IT organization. But service-centric IT organizations with software-defined IT operations know that the ability to predict is the first step toward being able to make prescriptive recommendations.

It's not enough to know that something **will** happen. Service-centric teams want to know how they can **prevent** it from happening in the first place.

In fact, when deploying software-defined IT operations, service-centric IT organizations shift from task-based box-checkers to strategic business partners across the entire organization.

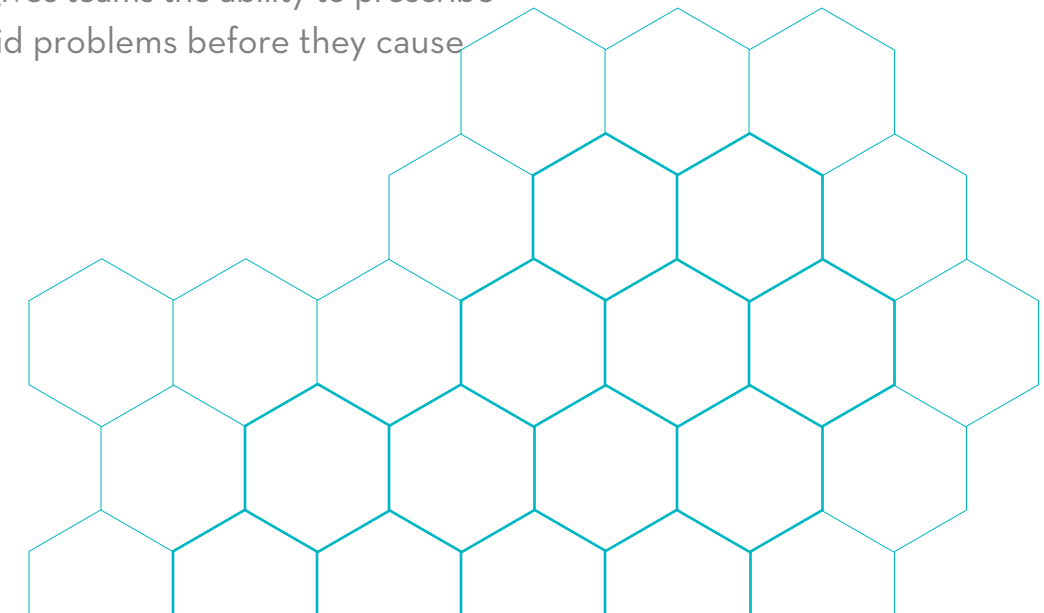
And the difference is in how they turn analytics into predictive insights in order to:

- **View capacity utilization trends in real time and configure dynamic thresholds**
- **Forecast problematic trends in order to correct and plan**
- **Receive alerts weeks in advance of reaching capacity**
- **Prepare to take corrective actions ahead of the procurement process**
- **Mitigate outages by collecting and analyzing real-time health and performance metrics**

Service-centric IT organizations don't wait for problems to arise — they get ahead of issues before they happen. And that's important. At least it was for one premier energy conglomerate that embraced software-defined IT operations last year. This Fortune 100 company shared its experience despite opting to remain anonymous.

According to the company's systems analyst, ***"For the first time, we will be able to get ahead of issues so that we will be able to grow our infrastructure exponentially. We call this our 'single-pane-of-glass' effort — a coveted monitoring dashboard that analyzes and delivers the comprehensive, predictive analysis report with segmented data and immediate notification of failure to the right people for immediate resolution."***

Being able to detect and diagnose issues arms IT teams with the knowledge to resolve a problem. But, predicting an issue with software-defined IT operations gives teams the ability to prescribe actions to avoid problems before they cause a disruption.




# They operate with future growth in mind

## Service-centric IT organizations have the ability to not only address today's needs but plan for future growth as well.

A guiding principle for system design is to take future growth into consideration.

And software-defined IT operations is, by definition, extensible.

The level of effort and ability to extend a system with new functionality or the modification of existing functionality is an important component in software-defined IT operations.

The ability to monitor every element of the enterprise is directly related to the ability to extend functionality to monitor new types of systems and applications. software-defined IT operations should also add advanced monitoring functionality for systems and applications that are already covered, including:

- **monitoring servers**
- **networking systems**
- **storage systems**
- **virtual environments**
- **containers**
- **converged infrastructure**
- **applications**

The University of Maryland University College (UMUC) is the largest online public university in the world.

With 70 years of business, they are the epitome of keeping an eye on future growth. As a strategy, the university deploys many best-of-breed SaaS providers to deliver an overall learning environment and learning experience by utilizing a plethora of tools.

***"So if you can imagine, trying to monitor SaaS is a lot different than trying to monitor on-premises infrastructure. SaaS providers are not going to open up and give you access to their logs or give you access to monitor their infrastructure."***

– Scott Reece, Director of Technical Operations, University of Maryland University College (UMUC)

The solution they selected enabled the IT team to not just see if a learning environment website was up or down — it allowed the team to view a virtual classroom, log in as a student, go through a number of exercises, and monitor not only the performance but also the availability of what the student experience would be like.

Extensibility plays a critical role in the success of UMUC's vision of providing classrooms and learning experiences around the world. Reece describes their solution as an open platform.

***"It's used across various engineering teams within the university. Our server engineering team utilizes it, our DBAs, our application administrators and certainly our monitoring team. It's so open, and it's utilized by all of those different groups so that we can have a consolidated view of system status and everyone can work on that platform to build out monitoring capability to make it more robust."***

– Scott Reece, Director of Technical Operations, University of Maryland University College (UMUC)


# Their true north is scalability

## IT organizations often find themselves monitoring effectively at small scale, but few have implemented solutions with the flexibility and capability to operate in elastically scaling environments.

Service-centric IT organizations start with a solid foundation and may also:

- **Use an elastic approach to scale monitoring platforms and data collection**
- **Store monitoring data using an enterprise-ready big data back end (e.g., OpenTSDB, Apache HBase)**
- **Optimize manageability and reduce footprint with agentless collection**
- **Load balance monitoring services across a pool of resources**
- **Store a virtually unlimited amount of performance/availability data**

The purpose of **elasticity** is to match the resources allocated with the actual amount of resources needed at any given point in time.

**Scalability** handles the changing needs of an application within the confines of the infrastructure via statically adding or removing resources to meet application demands as needed.

In a service-centric IT organization, both are required to maximize the use of resources and often result in infrastructure cost savings, but they are also critical for cloud-scale service infrastructure. Containers, like Docker, also allow for more efficient deployment and create a consistent running environment.

And who would know better than a global IT innovator delivering technology-enabled services and solutions to clients around the world?

NTT DATA provides consulting, managed services, projects, outsourcing and cloud-based solutions to midsize and large enterprises in all major industries.

***"We believe in a philosophical cadence of where you open a heterogeneous ecosystem. The other factor is the heterogeneous nature of being able to monitor any device anywhere on the planet. It doesn't have to be locked-down, proprietary technology that we manage. Our customers are in vertical industries, so we really wanted to look at something that could scale and be elastic in nature."***

– Manish Patil, Vice President of Technology Strategy & Alliances, NTT DATA

**Manish Patil**

VP of Technology Strategy & Alliances, NTT DATA

NTT DATA

# They automate whenever and wherever possible

## For software-defined IT operations, automation is a key pillar because it increases productivity, quality and consistency.

To achieve these goals, service-centric IT organizations look to automation to:

- **Reduce cycle time in operations**
- **Achieve a high degree of accuracy**
- **Reduce repetitive work for human operators**
- **Perform tasks that reach beyond human capabilities (e.g., processing speed, endurance, correlation, etc.)**
- **Reduce operation time and work-handling time**

All of these free up time for team members to take on other roles.

When it comes to automation, for TransUnion, whenever they can, they do. TransUnion goes beyond a credit data company. The company offers the insights businesses and consumers need to make informed decisions and achieve great things.

*"We've been through a technology revolution, and we're about to have an automation revolution. That's really what my life is about – pivoting everything we're doing at TransUnion through a lens of automation. Can we automate it? Does it make sense to automate it? If so, let's do it. So, it's consistent, repeatable over and over and over. We believe that the more we automate, the more consistency we get and that all of our operators and all of our capabilities get a lift every time we automate."*
– Art Rogers, Director of Enterprise Services, TransUnion


NTT DATA, global IT innovator and premier professionals services provider – including consulting, system development and business IT outsourcing – looks at automation as the next frontier. Machine learning is the obvious next step in their automation efforts.

*"The evolution of automation and the evolution of, you know, cognitive machine learning aspects to that automation is kind of the next frontier for us in terms of making that more real. And so, we're really looking at the partnership in terms of how do we take the constructs of what we have today as the base and kind of keep evolving that into this machine learning, cognitive, automated world of the future."*
– Manish Patil, Vice President of Technology Strategy & Alliances, NTT DATA


# They get the to root cause, quickly and easily

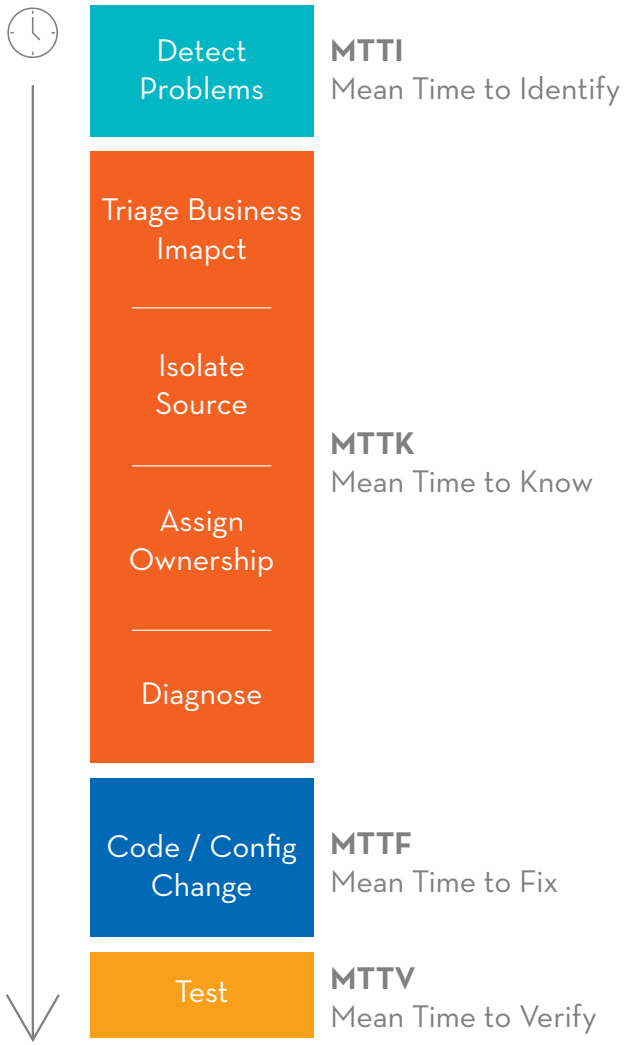
## Service-centric IT organizations are differentiated from their device-centric peers by their ability to accelerate root cause identification.

Instead of spending their time treating recurring symptoms, they attack problems at their core. And they use software to help them throughout their deductive problem-solving process.

For example, they are able to:

- **Isolate probable cause sooner with confidence ranking**
- **Identify resources affecting service availability and performance**
- **Triage issues faster without the frustration of event storms**
- **Prioritize responses based on event severity**

Because most problems in complex systems aren't typically attributed to a single cause but a series of casual interlinked factors, service-centric IT organizations rely on software that will accelerate diagnosis by ranking causal culpability while maintaining the context that the combination of factors caused the issue.




**Mean Time to Know (MTTK) is 70% of Mean Time to Resolution (MTTR)**

***"We probably had the same problem as most folks have, which is a bunch of monitoring tools that aren't connected — that are islands on their own and cost a lot of money."***

– Art Rogers, Director of Enterprise Services, TransUnion

Now, Rogers describes how his team is able to distill thousands of events from distributed infrastructures worldwide and boil them down to a red light or green light for performance and availability.

***"When those graphs change colors, you can get to root cause within three clicks — and that's faster than we can do with our people."***

– Art Rogers, Director of Enterprise Services, TransUnion

For Rodney McCarter, Vice President of infrastructure engineering operations at Newgistics, agility is essential. And the ability to get to root-cause analysis quickly is paramount to his team's success.

***"We are changing our software development processes to be more agile — more continuous deployment. And with change comes instability sometimes, and so our goal is to get a complete view of our environment — to know how things are interconnected — so when there is a problem, when change is introduced, we can get to that root cause as quickly as possible."***

– Rodney McCarter, Vice President of Infrastructure Engineering Operations, Newgistics

**Rodney McCarter**

VP of Infrastructure Engineering Operations, Newgistics

newgistics

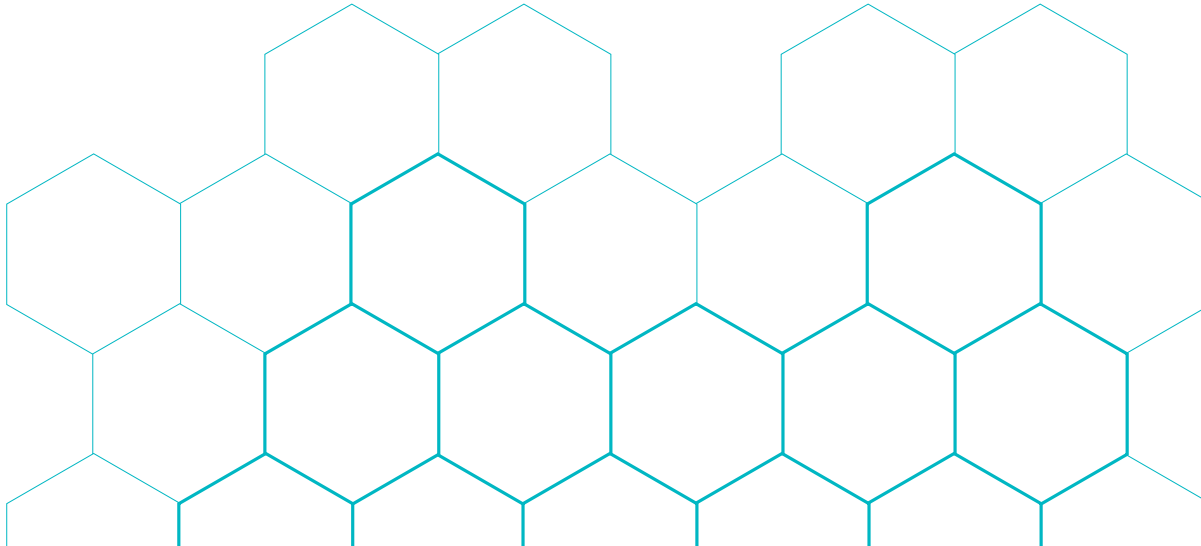
# One thing in common: Zenoss

Zenoss software uniquely predicts and eliminates outages for hybrid IT environments. As the leader in software-defined IT operations, Zenoss typically reduces downtime by 50 percent and IT spend by 15 percent for the largest companies in the world.

- **Complete coverage**
- **Real-time insight**
- **Predictive analytics**
- **Extensibility**
- **Scalability**
- **Automation**
- **Patented root-cause analysis (RCA) Engine**

Zenoss software-defined IT operations provides organizations with a holistic approach to managing IT services in an extensible and scalable way.

With Zenoss, customers can build and maintain real time models of their entire hybrid IT infrastructure, determining all physical, virtual and logical relationships and dependencies.



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## ABOUT ZENOSS:

Zenoss works with the world's largest organizations to ensure their IT services and applications are always on. As the leader in software-defined IT operations, Zenoss develops software that builds comprehensive real-time models of hybrid IT environments, providing unparalleled holistic health and performance insights. This uniquely enables Zenoss customers to predict and eliminate outages, dramatically reducing downtime and IT spend.


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