In the business world - and particularly in operational areas - the term “mission critical” is frequently used in an exaggerated fashion. But few applications truly merit the term more than those systems that run a payments environment - where every second of downtime has significant cost.
A payment system is the integrated system that payments organizations use to acquire, authenticate, route, switch and authorize financial transactions across multiple channels, including card usage at the ATM, point of sale (POS) or e-commerce transactions. Given the critical nature of what’s at stake, financial institutions have no tolerance for downtime or substandard performance.

Many IT organizations are finding that infrastructure monitoring tools are not enough to manage the complex demands of payment systems and are turning to a new breed of solutions that monitor the application and infrastructure in real time from a payments perspective.

The pains and challenges of managing a payments network

IT organizations are very familiar with the nightmare scenarios that can happen when managing payment networks. Transactions are being declined and IT doesn’t even know about the problem until customers start calling to complain. A critical ATM is almost out of money during a peak holiday shopping day – and customers will be stranded without access to cash. Transaction authorization has slowed to a crawl – and IT cannot determine the root cause and solve the problem quickly.

Too often, IT organizations try to manage payments environments using infrastructure monitoring tools – the popular enterprise system management frameworks that provide general-purpose monitoring. But these monitoring tools are not specific to payments environments and fail to understand their critical nuances. They simply assess the physical state of the individual components of the payments system and don’t take into account the business impact of the complete process. For example, a line to a network may be operational with transactions passing over it, but if all the transactions are being declined, the system is not operating correctly. In this case, a physical check on the individual components will not highlight any irregularities. A second example would be a busy ATM machine approaching its out-of-cash limit. The event, however, remains unrecognized until the first few customers who are frustrated with the inability to access their cash begin calling. By the time the dispatched operator reaches the ATM, both the transactional revenue and the customer’s loyalty has been lost. With payment service management, the payments organization could have configured the alerts engine to dispatch the appropriate personnel, so out-of-cash events would never have become a reality.

With so many moving parts – applications, systems, networks and infrastructure components like switches and servers – it can be almost impossible to see what’s actually happening in real time. Problems that affect even a small subset of transactions can fly under the radar, but still quickly affect many customers. Where problems occur, IT needs to drill into the underlying causes quickly and fix problems immediately to reduce service disruptions and potential lost revenue.

And that’s where infrastructure monitoring tools fall short – with huge costs at stake. Even brief outages are incredibly costly, both from a financial perspective as well as a brand perception perspective. Indeed, many payments organizations, especially independent processors, have financial penalties for breaching service-level agreements (SLAs).

Financial institutions are regularly launching new products and services. But in many cases, they don’t have a way to measure adoption rates and the impact of those new products. They need to ensure these operate smoothly without disrupting the larger payments environment. What’s more, business intelligence and analytical tools might take months before they show the business performance of these products and services. In an environment of real-time analysis, extreme competition and high customer expectations, a complete business-centric view of the most current product performance is a non-negotiable requirement.
Ultimately, the pains and challenges for financial institutions boil down to the essentials. Consumers expect and rely on the ability to utilize payment services at any time – day or night. So IT organizations must ensure they are available. Operationally, IT organizations must minimize unplanned downtime, improve time-to-resolution and optimize service levels to improve customer satisfaction and loyalty.

**Knowledgeable monitoring and management of payment networks**

In response to these challenges, many IT organizations are increasingly turning to a new breed of monitoring solutions: payment service management. These solutions provide IT organizations with the ability to monitor applications and infrastructure from a payments perspective. By unifying the many disparate processes and tools to create quantifiable improvements in efficiency, these solutions provide a view of technology as it relates to payment processes. For instance, they can provide IT with perspectives by service (the way businesses operate), rather than by technology (the way IT traditionally thinks). This improves and strengthens the services IT delivers to the business units. With payment service management solutions, it’s about improving payment services – not simply optimizing underlying technology performance.

Unlike infrastructure monitoring tools, payment service management solutions provide exceptionally clear and complete real-time insight into the health and performance of the entire payments environment. These solutions have knowledge of the content of the transactions and can apply intelligence to the analysis. This ensures proper system functionality and allows potential problems to be identified and dealt with immediately. With payment service management solutions, IT organizations can proactively monitor and diagnose the end-to-end payments activity from the transaction stream down to the underlying hardware and software.

**Payment service management in action**

A large global bank in Asia Pacific, monitoring in excess of 25 million POS transactions and more than 4 million ATM transactions per week, implemented a payment service management solution to create a more efficient and proactive system to monitor its payments infrastructure. Previously, the bank relied on granular details such as log data to monitor its payments infrastructure. The payment service management solution allowed the bank to monitor POS, ATM, transaction input and multiple communication carriers, and see impacts in a time-flow sequence, allowing for faster incident diagnostics. The bank was also able to have complete graphical insight into transaction performance, availability and response time both in real time and historically. With the payment service management solution, the bank was able to locate the cause of issues on the GUI interface and shortly restore full service.

“The improvement we have seen since we started using ACI Payment Service Management™ is the ability to be proactive around support.”

In addition, payment service management solutions enable reporting and analysis on the performance and profitability of payment systems. Typical payment service management solutions provide in-depth payment-centric performance monitoring and complete visibility into the systems, middleware and financial applications in the payments environment from a single dashboard. It’s the ultimate tool for service assurance and troubleshooting for the highly demanding world of payments.
An effective payment service management solution aggregates – on a single dashboard view – all events and underlying components from a payments perspective. By correlating these components, root causes of problems can be identified and resolved faster. This means that multiple layers of monitoring should be included. The underlying payments infrastructure components should be monitored in real time, including the CPU, memory, network, and disk performance and usage. The solution should provide out-of-the-box integration with existing enterprise infrastructure management frameworks. In addition, the solution should provide complete insight into transaction performance, availability and response times.

Real-time transaction data should be presented across multiple dimensions such as excessive response times, denials, reversals and stand-ins across any dimension including the card issuer, card BIN and terminal. A separate layer should provide ATM fault monitoring and

### Key components of effective payment service management solutions

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**How does your bank monitor payments system downtime?**

Please select all that apply

- Tracks system availability
- Tracks payment failure rates
- Tracks total business costs associated with system downtime (e.g., loss of business)
- Tracks direct business cost associated with system downtime (e.g., compensation and payment repair operational costs)
- Tracks payment failure rates by value of payments lost

Research conducted by Ovum on behalf of ACI Worldwide
management. This simplifies ATM problem management by automating many of the processes and empowering in-house personnel to better manage and track the response of ATM service teams so that they can troubleshoot a potential ATM network or infrastructure problem before it ever escalates into an actual event.

In addition to monitoring, effective solutions should enable administrators to set thresholds on an array of different metrics and receive proactive alerts by email, pager or mobile phone with built-in, multi-level escalation. This should include alerts about critical ATM problems such as excessive denials, transaction failures, stand-ins, slow response times or when machines are out of cash. Solutions should automatically dispatch, monitor, update and close the associated trouble tickets. Some solutions provide automatic multi-level escalation for overdue tickets and automated responses for specific problems.

Business-specific, real-time insight into payments applications can help decision-makers. This can include monitoring the performance of card products such as average transaction rates, average purchase values, locations and more. Analyzing usage trends can also help financial institutions make vital business decisions such as identifying the most and least profitable ATMs, assessing customer satisfaction with the ATM network or reporting on the uptake of new products and services. Historical reports should be included so that operations managers can get insight into critical information such as ATM/POS usage and transaction trends, badly performing card bases and underutilized ATMs.

Solutions should also be highly configurable so that new dashboards and graphs can be easily created in minutes without spending thousands of dollars on professional services. Standard dashboard views should be configurable to match SLAs. A drag-and-drop interface should enable easy customization without requiring consulting or operations resources.

Payment service management in action

Managing 4,000 ATMs and 84,000 POS devices, a major network provider ensures the reliability, efficiency and optimization of its extensive network using payment service management to proactively monitor 2.3 million transactions every day. With a payment service management solution, the company was able to uncover usage trends, allowing them to make business decisions that maximize revenue and profit. In addition, they were able gain a holistic view of critical payments applications that run across multiple servers and platforms while increasing customer satisfaction.
Benefits of effective payment service management

With a well designed payment service management solution, payment processors can achieve a range of important business benefits that improve the speed, quality and reliability of their operations.

Payment service management solutions help IT organizations monitor the entire payments system in real time to ensure it delivers on the targets expected by the business. Those targets could be volumes, response times, average transaction values or total transaction value by merchant, interchange partner or terminal.

By centrally monitoring the infrastructure from a payments perspective, payment service management solutions help operations staff identify transaction problems as they happen, drill down to uncover root causes and respond to issues relating to excessive denials, transaction failures or response times.

Most systems produce extensive availability and service-time analyses, so the operations team can set SLAs based on historical data and receive alerts about situations that have the potential to impact SLAs – before a breach occurs. What’s more, the team is in a stronger position to ensure levels with service providers and interchange partners are met and eliminate the financial risk of violations.

Payments service management solutions should alert administrators as soon as a problem occurs – before customers or merchants call to complain. That helps them solve problems before they become widespread.

When monitoring the entire payments environment with a single solution instead of a different application for each layer, payments organizations save on application fees, training for different applications and the additional resources required to maintain the different layers of applications.
Conclusion
Without question, today’s banking customers have extremely high expectations for their financial institutions. Without a payment service management solution, payment networks are vulnerable to quality and performance issues that can lead to customer churn and profitability pressures. A payment service management solution provides the opportunity to continually improve payment performance so that customers can enjoy the consistently high quality products that they expect and rely on. Financial institutions can also achieve lower product fees due to operationally more effective and efficient software. What’s more, stronger payment-network performance improves competitive positioning and provides solid, defensible data trails for SLAs, auditors and regulators.

Payment service management in action
With terminal transactions growing at the rate of 10 percent per week and adding 600 new POS devices every day, one acquirer ensures the availability and performance of its rapidly growing network using payment service management to proactively monitor more than 1 million transactions a month. This allowed the company to detect problems immediately and fix them before they impacted customers. The solution also provided visibility into the usage and revenue being generated from different products, services, channels and networks.
How payment service management solutions improve the performance of payment processors

• Quickly and automatically learn about any problems in your transaction processing environment – before customers start calling.
• Find out about the small subset of failed processes for certain cards/products/channels much sooner. Auto-trigger corrective actions steps and advise operators of the outcome.
• Differentiate yourself by offering a higher level of customer service.
• Use smart dashboards to see the value your payments infrastructure brings to the business. Demonstrate how efficiently and profitably the payments environment is operating by showing the actual value of transactions flowing through the system.
• Understand usage trends to make business decisions that maximize revenue and profit.
• Get visibility into the usage and revenue being generated from different products, services, channels and networks.
• Uncover usage trends such as the uptake of new products/services and the revenue from different channels, interchange partners and card schemes.
• Ensure that your systems are correctly scaled to meet your processing volume with a complete view of the availability and performance of all of the components of the payments environment. Eliminate excess capacity as well.
• Improve your support and management of heterogeneous payment environments and ensure availability and performance – even if many components are running across different platforms or systems – all from a single screen.
• During systems migrations, view actual transactions flowing through the systems in real time to be sure that processing is correct and efficient.
• Get a holistic view of critical payment applications that run across multiple servers and platforms (and avoid piecing together disparate views and tools).
• Detect latent and emerging problems in critical systems by picking up the symptoms before they impact the business.
• Easily describe complex situations in your environment and get alerts when they happen. Apply any of the 1,000 metrics available to your alerts, screens and dashboards.
• Easily configure the solution to your needs so you can monitor what matters the most to you.

About ACI Worldwide

ACI Worldwide powers electronic payments for financial institutions, retailers and processors around the world with the broadest, most integrated suite of electronic payment software in the market. More than 90 billion times each year, ACI’s solutions process consumer payments. On an average day, ACI software manages more than US$12 trillion in wholesale payments. And for more than 160 payments organizations worldwide, ACI software ensures people and businesses don’t fall victim to financial crime. We are trusted globally based on our unrivaled understanding of payments and related processes. We have a definitive vision of how electronic payment systems will look in the future and we have the knowledge, scale and resources to deliver it. Since 1975, ACI has provided software solutions to the world’s innovators. We welcome the opportunity to do the same for you.