

THE LAST MILE: MEASURING, MEETING AND EXCEEDING THE USERS' EXPECTATIONS

by Kevin Johnson

If your IT organization is like most, you are probably monitoring the performance of applications, routers, servers, and other components that support critical business transactions so that you are alerted when performance degrades or failures occur. Nonetheless, when a user calls to report a problem with a business system, you may still be struggling to rapidly pinpoint which tier of the infrastructure is causing the transaction failure and to determine if a break is an isolated incident affecting a single user or a systemic problem with far-reaching impacts to a business service. And perhaps you can detect a performance issue at a particular tier in the transaction, but you may not always have the visibility to separate a breakdown that inconveniences a few users and one that shuts down a critical application that drives 80 percent of the business.

What's missing is the "last mile." In the telecommunications and cable television industries, the last mile is the final leg of delivering connectivity to a customer. You might also think of the "last mile" as the 26th mile in a marathon. In the context of your IT infrastructure, the last mile is the process of connecting what the end user experiences with the performance of underlying systems that support transactions, so that you can ensure that you are meeting and exceeding expectations and contractual agreements. The last last mile in IT can be an analogy for maturity of the related ITIL service support and service delivery processes. Fortunately, achieving the last mile in your IT infrastructure is not nearly as grueling as completing the last mile in a marathon.

STARTING THE RACE

Experienced runners agree that pacing yourself is the key to a successful marathon. In a marathon, you need to establish a baseline pace as a starting point, and then you can measure where you are compared to that baseline. Similarly, before you get started with end-user experience monitoring, you'll need to establish baseline measures and collect data related to the performance of various systems that support transactions initiated by the end user.

Once you have established the baseline system performance, link that data to your service desk to identify any missing performance measures. If someone placed a call to the service desk, what type of business service user were they? Did your infrastructure monitoring solutions detect the problem before the user? If not, why not? What measures can you establish so that, in the future, your monitoring solutions will identify this sort of

issue before the user experiences a problem? Having and monitoring the right metrics in place up front will help you to resolve issues before the business knows a problem exists, thus reducing the total calls, cost of the incident, time to resolution, and effectively preventing a brownout from becoming a service blackout.

THE MIDDLE MILES

The middle miles of a marathon are the transition miles. You must maintain your pace while you work toward meeting your definition of successfully finishing the race. Similarly, in IT, you will need to work toward your goal of successfully meeting the needs of the business. To do so, you need to identify the IT services that support the critical business services and then agree on service levels that make sense both to the business and to IT.

To effectively meet service level agreements (SLAs), you need to look at new ways to instrument the environment so you can measure the user experience as well as the underlying infrastructure performance. SLAs fall into two camps: external-facing SLAs that external customers use to measure the quality of a company's service delivery, and internal-facing SLAs that apply to users within the enterprise. External SLAs are derivatives of the company's services contracts and sales agreements with customers. Internal SLAs typically are related to support of a business process. For example, in retail brokerage trading, an SLA might call for the ability to clear a trade in a certain number of clicks and within a specified time frame.

The SLAs themselves are composites of underlying capabilities and related service metrics that are rolled up to enable transactions initiated by end users. These metrics often have a certain amount of grayness to them. Availability, for example, might seem like an easy enough metric to capture. In reality, however, creating an availability metric is complicated because you must look at much more than just whether the system or the application is operational. You have to determine if the user is actually able to *reach* the system or application and *use* it to initiate and complete a transaction. Without adequate tools in place to capture data about system access, you may have to approximate infrastructure-level performance as a proxy for availability as you roll up the data. You may be forced to substitute operability as an availability number in a service agreement because you have no way to capture the user experience data that matters most.

These are critical miles both in a race and for meeting IT customer expectations. If you approach the finish line far behind the pace you set, there is nothing you can do to make up the lost time at the end of the race. Similarly, if you don't work with the business to set realistic expectations about what IT should deliver, there is no way to make it up at the end if user expectations are not met.

THE LAST MILE: MEETING OR EXCEEDING EXPECTATIONS

During the last mile of a marathon, you're really putting in the extra effort to meet or exceed your goal. If your definition of success in the marathon is finishing the race in a certain time frame, then your performance in the last mile is critical. If you can't run strongly across the finish line, then it doesn't matter what pace you set during the first 25

miles. Similarly, if your end users can't process a critical business transaction, they really don't care if the underlying individual infrastructure components appear to be working properly.

To most effectively manage SLAs that relate to the user experience, you need to combine data from the service desk and the performance data from the various transaction tiers, and merge that information with end-user-facing transaction monitoring data. You may already have various types of end-user experience monitoring in place. For example, some sniffers with advanced capabilities are available to capture intelligence about how the user experiences a service and how the transaction progresses through various points in the infrastructure. This information helps you infer what the customer is experiencing in terms of transaction availability and transaction response time, and also gives you insight into whether the incident resolution process is working efficiently.

If you are looking at the information separately, you may be able to see how many users are on a system at a given time, but not how much more capacity you need before you start to drop sessions or connections. You need to examine this area to get to the next level of maturity. An actual change in the architecture will likely be required to capture and combine the right data and publish it to the dashboards.

If you've already instrumented up to the network edge and have synthetic testers in place, then you should now tap into the transactions so that you can better understand what's happening with them. To do this, you need to go beyond pinpointing the source of an incident to understanding the root cause. Applying IT service management (ITSM) quality improvement processes can help. A quality improvement program involves investigating how you can remediate the problem to prevent future incidents, and it requires a thorough understanding of your service architecture, so you can ensure that the fixes you make aren't simply bandages on an underlying service architecture that needs to be altered.

The combination of end-user-facing measures, transaction data, and underlying system performance data all comes together to let you know whether you are meeting the customer expectations you have set. It also gives you information that you can use for improving the customer experience. How? By using a (knowledge) process to combine the sampled user experience metrics with the reports of problems to the service desk over time, data on how to correlate measurements indicates primary events, which cause service outages.

MAINTAINING PEAK PERFORMANCE

The value of transaction management and SLA data goes beyond visibility that helps you address current incidents and problems. This data also enables you to identify application and service architecture enhancements that will "make the service better." For example, one of our clients in the financial services industry wanted to establish a system of metrics to improve service levels. We collaborated with this client to develop 400 metrics about the service performance. Although IT operations leveraged some of that data, the

biggest consumer was the service portfolio manager who wanted to gain insight into user reaction, primary features and functions used, peak hours, and timeliness of service response. Those metrics helped this application owner identify enhancements for future releases as well as capacity expansion that was needed to improve service levels.

Another client's user community was frustrated due to poor performance of a trading application. We developed a service improvement program that immediately applied more instrumentation at the end-user and business process level to discover how many trades were in flight, how quickly they were clearing, and what was the end-to-end latency across the network. This type of data helped uncover areas of the network that did not effectively support the current or future expected volume of transactions.

Yet another client is tracking how much revenue is generated in 15-minute intervals throughout the business day to identify the financial impact of each service degradation as it occurs. The functions provided by this service have a unit cost associated with them, and that cost is interpreted by various systems and displayed on a business owner's desktop dashboard to provide visibility into not only service availability and performance through the day but also the cost of any disruptions.

WINNING THE RACE

It takes a lot of planning and effort to put together the pieces of a winning marathon. The pace, the middle miles, and the strong finish all need to happen according to plan so a runner can achieve a desired race time. It also takes a lot of planning and effort to bring together user data, system data, and support information to achieve service levels that meet the needs of the business. Business and IT are definitely in the race together. Connecting the last mile with all the work already in place is what is needed to sprint across the finish line.

5 BENEFITS SERVICE LEVEL MANAGEMENT BRINGS TO TRANSACTION MANAGEMENT

1. Greater insight into incidents and problems and their impact on the business
2. Understanding the user's perception of the services IT provides
3. Faster restoration of service; through definition of run-book automations
4. Enhanced ability to isolate and resolve the root cause of recurring incidents
5. Greater visibility into where to invest to improve the architecture

ABOUT THE AUTHOR

Biography: Kevin Johnson is the Founder and CEO of Seamless Technologies, Inc. - At Seamless, he is responsible for creating the technology and process architecture required to rapidly deliver the value of the Seamless solutions to customers and partners. He also manages the strategic alliances and OEM relationships. He has designed many solutions for BSM, ITSM and Infrastructure management, and packaged them into solutions such as **Seamless' Digitally Managed End-to-End Service Management Solutions and BSM-in-a-Box(tm) Solutions** - these packaged ITIL best practices based business

transformation solutions offer companies step-function incident/problem, asset, change ITIL service enablement, implementation and operational cost advantages, and IT to Business alignment with better business awareness, much of which is determined in real-time.

Prior to starting Seamless Technologies, he advanced through a series of roles with responsibility to deliver, manage and launch new-generation managed services, and carrier solutions, such as ESM/NSM remote management services, automated content and new user service provisioning, VoIP based telephony services, application and web hosting, SaaS, and other web transaction and global message-based services. He has used COTS combined with Seamless' services, and software products for over 10 years in ultra high availability customer service environments, and managed in real-time.

Mr. Johnson holds a Bachelor's degree in Computer Science, is a member of IEEE and itSMF USA, and resides in the New York Metropolitan area. He is a frequent speaker at industry conferences and has over 15 years of technical and management experience.