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First-Class Services for the Travel Industry

Managing the quality of Web services systems

AgentWare's Web services-based solutions enable travel agents to locate the best travel options with greater efficiency. By ensuring that these loosely coupled systems are meeting business requirements, AmberPoint Service Level Manager is helping AgentWare continually improve its services.

Low airfares for customers. High-quality customer service from travel agencies. Once, these objectives seemed mutually exclusive. But AgentWare's Web services-based solutions are helping travel agencies bridge the gap. AgentWare gives travel agencies the ability to quickly and easily obtain real-time, panoramic views of fare and schedule information from a single Web interface.

To proactively monitor and manage its subscription-based solution, AgentWare uses AmberPoint's Service Level Manager, which is designed specifically to bring comprehensive service-level management to Web services systems. As a result, AgentWare has been able to exceed customer service expectations, mitigate problems before they can impact business, and develop new revenue opportunities.

AUTHOR BIO

Anjan Mitra is a senior product manager at AmberPoint, Inc. He has 12 years of experience in the software industry and has worked on a broad range of products covering application servers, collaborative development platforms, and e-commerce applications. He has done product management in various capacities at Netscape, AOL, and CollabNet.

Turbulence in the Travel Industry

Not long ago, travel agents obtained all the flight and fare information they needed through Global Distribution Systems (GDSs), such as Sabre, Galileo, WorldSpan, and Amadeus. However, as new, low-cost carriers emerged, such as JetBlue Airways and AirTran, it became imperative for agencies to include these airlines in their searches as well.

Unfortunately, these airlines do not fully participate in the GDSs, requiring instead that travel agents go to their individual Web sites. Travel agencies

found themselves doing manual searches through multiple Web sites to find the best fares for their cost-conscious customers – hardly a recipe for efficiency.

AgentWare solved the problem by enabling travel agents to use a single Web interface to access fare and schedule information from airlines, hotels, and car rental companies. Not surprisingly, travel agencies have welcomed AgentWare's offering with open arms. Over a 14-month period, AgentWare's market penetration within U.S. travel agencies has skyrocketed.

Web Services Only

Because it needed a fast and flexible IT architecture that could easily accommodate this rapid growth, AgentWare built its solutions using only Web services. AgentWare provides access to these services on a subscription basis – customers purchase packages of itinerary and fare requests just as they would buy packages of cell phone minutes. Because AgentWare can spread its infrastructure costs over its entire customer base, it is able to reduce costs to customers.

The Challenges of Subscription Services

Selling subscription-based services meant AgentWare often had to guarantee its offerings through the service-level agreements (SLAs) with which it contracts itself to a combination of uptime, response times, and numbers of concurrent and aggregate transactions. AgentWare also needed to keep track of customer subscriptions and provision services accordingly. Effectively managing its Web services infrastructure was essential to meeting customer expectations.

AgentWare gathers data in real time from external sources, limiting the control the company has over much of its

extra-enterprise system. Nevertheless, they needed to proactively manage potential and unpredictable IT problems, from supplier system downtime to spikes in demand generated by high response to special offers. Whenever it added functionality, it also needed to manage these changes across several different suppliers.

AgentWare considered building its own management functionality, but chose instead to implement Service Level Manager because it offered a prebuilt, industrial-strength system. "Having the AmberPoint system between us and our subscribers suits our business and architectural model by providing real-time application-level monitoring," says David Gruber, CTO at AgentWare.

Differentiated AgentWare Services

AgentWare offers three products, all based on SOAP-compliant Web services, to assist travel agents and corporations that book their own travel: Travel Console, WebPoint, and Data Services. Travel Console, which provides travel agents with a single Web interface for creating searches for flights and fares, goes to outside sources of travel information and returns consolidated flight and fare information to the travel agent in real time. WebPoint integrates this Web fare search and itinerary information directly into Galileo Focalpoint, a widely used product that allows travel agencies to access schedule and fare information, book reservations, and issue tickets for airlines, hotel chains, car rental companies, cruise lines, and tour operators worldwide.

AgentWare Data Services enable large agencies, travel technology companies, and Web sites to integrate the core engine that drives AgentWare's Travel Console and WebPoint products into

their existing travel-related systems. Data Services furnishes both Java- and Microsoft .NET-based gateways to GDS systems, as well as accounting, reporting, point-of-sale, back-office, customer relationship management, and corporate travel management systems.

Decoupling the Management Layer

Because AgentWare must manage so many Web services that it does not control, its management solution could not require any change to the managed applications or to the XML messages. Service Level Manager is built as a Web services intermediary that intercepts Web services traffic to provide the necessary management capabilities, when needed. By abstracting the management from the Web services, AmberPoint allows the application management system to be decoupled from the Web services. This makes it easy for AgentWare to manage pre-existing and external Web services, as AmberPoint's approach does not require additional coding to those Web services.

New Revenue Opportunities

Today, AgentWare leverages Service Level Manager's application-level monitoring to meet – and exceed – its customers' service requirements. AgentWare has also streamlined its operations by using AmberPoint to provision new services, speed development, and track usage trends to proactively head off system problems.

Perhaps the most surprising outcome of AgentWare's use of AmberPoint is that it can leverage detailed information on how customers are using its services to develop new revenue-generating services. For example, says Gruber, "If we see a lot of activity with JetBlue or AirTran, product development might say, 'We need to expand our activity with JetBlue or AirTran by developing a service that enables travel agents to check their commissions with those airlines.'"

Better Customer Service

By providing targeted, valued-added services for customers, AgentWare enjoys greater repeat business. For example, because it tracks the subscription for each customer, AgentWare can proactively offer renewals or additional services to customers who are approaching the usage limits specified in their contracts. It helps customers to avoid service interruptions by alerting them when they are about to bump up against these limits. AgentWare also uses the information provided by

AmberPoint to feed their billing system.

AmberPoint's reporting capabilities allow AgentWare to provide customers with useful business information as well. For example, AgentWare can use Service Level Manager to furnish select customers with custom reports about their airline bookings. Whereas previously individuals within a particular company might have purchased airline tickets on an ad hoc basis, the AgentWare reporting service allows travel agents to determine the extent to which the entire company uses each airline's services. With this information, the company might choose to negotiate volume discounts with the airline.

Customer service representatives can configure a personalized portal view to display information about specific services, alerts, agreements, reports, customers, and business dashboards. These views can incorporate custom dashboards with charts, numbers, graphs, and so on, that can be targeted to very specific monitoring requirements. These dashboards can be created and incorporated in the Service Level Manager portal without any programming, allowing each end user to interact with the UI in a manner that is most suited to his or her responsibilities.

AmberPoint provides the ability to rapidly assign and remove services based on subscriptions for new and existing AgentWare customers. Additionally, AmberPoint integrates with a system AgentWare had previously implemented to authenticate each client. If the requester is not a valid customer then the request is blocked or returned with an appropriate message.

Faster Troubleshooting

AgentWare has streamlined its development and testing processes as well. Prior to using Service Level Manager, AgentWare stored all data about XML traffic in either a database or a log file. But it had no easy way to identify or locate the particular message or content that developers thought might be causing a problem on the network. Developers had to export data from the database and manually comb through the log files.

Service Level Manager's informative alerting and reporting capabilities make it easy for developers to find the information they need in order to troubleshoot their systems more quickly and easily. For example, says Gruber, "When we sign up new customers, we can give them an AgentWare test environment with AmberPoint running between their systems and our services. When the cus-

tomers call and says, 'We sent you a message 30 minutes ago and we're not sure we sent it right,' AmberPoint Service Level Manager helps us easily pinpoint the customer, the corresponding SLA, and the Web service that was affected. By providing us with detailed impact analysis, logs, timely alerts, and online views, the product helps us rapidly identify and actively address existing, or even potential, problems."

These capabilities have dramatically improved the effectiveness of AgentWare's troubleshooting efforts. Says Gruber, "AmberPoint has reduced the time it takes to troubleshoot by 25%."


Correlating System and Application Data

AgentWare's data center uses Service Level Manager to correlate system information, such as network traffic, TCP/IP bandwidth utilization, and CPU utilization, with what's going on in the application at a business level. By providing a context for system-level network traffic, Service Level Manager helps the AgentWare data center better manage its network, as well as proactively plan for future growth. For example, AgentWare can now determine whether usage spikes are due to increased business or network problems that are causing the system to send duplicate messages about the same root problem.

Proactive Capacity Planning

Data center managers use AmberPoint to proactively address potential problems in delivering service levels before they occur. For example, AmberPoint might indicate that AgentWare's network is receiving an extraordinary number of extra requests for JetBlue or AirTran during a certain time frame. With this information AgentWare might choose to increase the capacity of the network link to these airlines before problems occur.

Service Level Manager capabilities such as e-mail alerts, which automatically contact operations managers when the application is encountering problems, also help AgentWare to maintain system uptime and performance to better comply with its service level agreements.

"The bottom line," says Gruber, "is that the AmberPoint Service Level Manager provides technology that allows us to provide innovative new business services to our customers, better manage our service, and operate more efficiently and effectively." 

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