ACHIEVING A
SINGLE CUSTOMER VIEW

White Paper
January 2007

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Executive Summary

Have you ever received a solicitation to purchase a product you already own? Have you ever been offered a special upgrade discount for a product you don't own? Have you ever called a technical support line and answered the same questions over and over as your call is passed from one customer service agent to the next?

At one time or another, everyone has experienced the frustration of dealing with companies that do not integrate their customer information. From a personal perspective, it can be frustrating. But from a business perspective, it can be extremely damaging — resulting in poor customer service, missed opportunities for cross-selling and up-selling, expensive and poorly targeted marketing campaigns, a tarnished corporate image and reputation, and — most devastating of all — a lack of customer loyalty.

Establishing a single customer view should be an urgent priority for companies in all industries today — whether the "customer" is a consumer, patient, citizen, or even another business. Yet the ever-increasing complexity of today's IT environments, combined with the increasingly distributed nature of today's businesses and their consumers, can easily create inertia.

This paper takes a closer look at the impacts of dispersed customer information, as well as the potential benefits of implementing a single customer view. It presents Sun's approach to achieving a single customer view: building composite applications on a service-oriented architecture (SOA) — an approach that overcomes the complexity and limitations of previous tactics. The paper also provides cross-industry examples of companies that have achieved the benefits of implementing a single customer view.

Chapter 1

The “Single Customer View” Defined

Many companies are extremely good at gathering customer data. They consistently collect customer information at the point of sale. They track customer buying habits and preferences over time. They survey their customers and diligently record the results. They manage customer information from multiple sources, including contact details, customer valuation data, results of direct marketing campaigns, and so on.

But all too often, they don’t *consolidate* or *integrate* this information. The data resides in multiple systems, or “silos,” managed by multiple departments or lines of business, in multiple geographic locations. The data is never cross-compared, cross-pollinated, or updated in any consistent way.

As a result, these companies do not or cannot create a single customer view.

> “Organizations typically have customer data spread across many systems. It is fragmented and often inconsistent. This makes it difficult for organizations to understand the true value of customers, their likely behavior, their needs, and also the risks associated with them. Without a single view of those customers, organizations are in the dark and cannot effectively retain customers, cross-sell to them, deliver the right customer experience to them, or manage the risk associated with them. Some form of single customer view is, therefore, fundamental to managing customer relationships.”
>
> *— Gartner, “Creating the Single Customer View with Customer Data Integration,” by John Radcliffe, 2006*

Chapter 3

The Problems of Piecemeal Customer Knowledge

Most companies are aware that the lack of a single customer view can diminish customer satisfaction levels and lead to cost inefficiencies. But few have considered the complete range of costs — hard-dollar and soft-dollar — that are a direct result of poorly integrated customer information.

From a customer perspective

When companies don't seem to know their customers or "remember" past interactions, the message received by the customer is that they don't value their business. This leads to a lack of loyalty and potentially serious financial consequences. According to "The Loyalty Effect," the landmark book printed by Harvard Business School Press it costs five to ten times as much to win a new customer as it does to keep a customer, and a five-percent increase in customer loyalty can translate into a 75-percent increase in profitability. Losing a customer's loyalty equals losing substantial business.

Equally important, bad news travels fast on the Internet. One poor experience, one story about a company's poor treatment of a regular customer, can instantly be transmitted to countless thousands of other customers or prospects, compounding the damage.

From an IT perspective

The lack of a single customer view is a symptom of inefficiencies in IT planning and ineffectiveness in IT infrastructure — a sure sign that money is being wasted. The cost of purchasing, administering, managing, and maintaining all of the various systems that store customer information can be considerable, and if the net result is splintered customer data that isn't integrated and can't be used to maximum business advantage, then that infrastructure is a highly suboptimal investment.

From a business perspective

In addition to the loss of customer loyalty and the expense of inefficient IT infrastructure, the lack of a single customer view can result in added expense and wasted opportunities for the corporation as a whole. For example:

- **Missed opportunities for cross-selling and up-selling.** When a company doesn't have current or complete information about what their customers have bought before, they can't make informed predictions about what the customers will buy in the future. Companies can't target their advertising and direct-mail campaigns with precision; they waste money on offers or advertising that won't appeal to their recipients; they can't cross-sell and up-sell to maximize the total value of each customer to the business. And in the end, customer satisfaction and brand loyalty is reduced.

  > "Targeting customers with one-to-one marketing campaigns based on their unique spending activities is a holy grail for all retailers. To achieve this aim, retailers need a single view of customers across multiple channels."
  >
  > — *Retail Week, Technology: Multi-channel, March 2006*

- **Tarnished reputation for customer service.** Without a consolidated view of their customers' previous interactions, products purchased, and so on, customer service agents aren't able to serve customers effectively — whether it's providing technical support, offering promotional prices and discounts to preferred customers, or other customer-facing activities. The image of their company's service is diminished, and the word spreads rapidly.
- **Poor employee productivity.** Customer service agents are just as frustrated as customers when they have to ask redundant questions or request that customers wait while they scramble to piece together information from multiple records.

Chapter 4

The Opportunities of Customer Data Integration

Where piecemeal customer information creates problems, a single customer view creates opportunities. And the opportunities go beyond merely fixing the problems caused by the lack of a single customer view. A single customer view can enable new capabilities that lead to competitive advantages. Following are just a few examples of the opportunities.

From a strategic perspective

With a single customer view, companies can improve customer service, customer satisfaction, and customer loyalty while cutting IT inefficiencies today. They can also position themselves for higher growth and profitability in the future.

One example is the ability to expand business operations. To operate efficiently in multiple locations or countries, companies must ensure that they can serve customers just as reliably from branch locations as they can from their home base. With the systems and technologies in place to ensure a single customer view, companies can expand into new geographies with full confidence that they will be able to manage the customer experience effectively, tracking preferences and buying patterns both on an individual basis and on a location and cultural basis.

A single customer view also helps improve communications with partners, leading to additional strategic opportunities such as joint selling through the partner ecosystem, customized offers and "package deals" involving products from multiple vendors, special discounts that apply to preferred partner products, and so on.

In addition, a single customer view can be critical to meeting regulatory compliance and privacy management requirements. If a company can audit and substantiate all of their customer interactions, they can more easily comply with regulations such as Sarbanes-Oxley, the Gramm-Leach-Bliley (GLB) Act, the European Union (EU) Data Protection Directive, and the Health Insurance Portability and Accountability Act (HIPAA).

From a vertical industry perspective

The definition of "customer" varies from one industry to the next, but the opportunities for better serving customers through a single customer view apply across all industries. For example:

- **Healthcare**: The ability to deliver the right information to the right person at the right time is critical to providing safe, effective patient care. Hospitals and clinics are also under pressure to cut costs, and by moving to the "single patient view" model, they can accomplish both goals at the same time.
- **Government**: There is a tremendous opportunity for government agencies at the federal, state, and local levels to dramatically increase customer service with a "single citizen view." By consolidating citizen interactions with the government, they can implement citizen self-service portals — providing easy assistance for everything from driver license renewals and library book fines to jury duty and voter registration.
- **Telecommunications**: Under intense financial and competitive pressures, telecommunications companies must distinguish themselves through customer service. With so many product and service options and so many partnerships and delivery channels, gaining a single customer view is both more difficult and more critical for them. It is an opportunity and a strategic imperative.
- **Retail**: With multiple stores, call centers, campaigns, and delivery channels to coordinate, retailers can benefit tremendously from the single customer view. They can target their marketing campaigns more precisely based on the customer's unique spending activities, improve the speed and personalization of their customer service, and understand and maximize the value of each customer.
- **Financial Services**: Commercial banks, retail banks, insurance companies, and brokerage firms are all branching out and encroaching into each other's business. To serve customers effectively, they need the ability to integrate customer information across portfolios and financial services products. With a single customer view, they can deliver a seamless, real-time, cross-organizational transaction flow so that they can tailor special premium service packages to their best customers, as well as unify policies and permissions that determine which services a given customer receives.

Chapter 5

The Challenge: Integrating Data Silos, Bridging Islands of Information

While the benefits of a single customer view are well understood by many companies, the technological complexities of achieving a single customer view are not always fully appreciated. This section examines the issues that make customer data integration so difficult; the following section takes a closer look at a new approach that has yielded excellent results for many Sun Microsystems customers.

Limitations of previous integration alternatives

Businesses have been fighting the battle of poorly integrated customer data for decades. The trouble begins the minute customer information is stored in a second system. Unfortunately, most enterprises today have customer data distributed across literally hundreds of systems, using multiple operating systems, database technologies, storage subsystems, file formats, and so on.

The approaches to ensuring data consistency across platforms have ranged from enforcing strict IT governance policies, to creating point-to-point integration between systems, to having employees manually synchronize records across systems. These approaches have all broken down in the face of increasingly distributed information, inadequate middleware infrastructure, increased operational costs, and rising customer expectations.

Many companies today are experiencing a “silo problem.” They have deployed multiple systems and networks, each chartered and funded by a single line of business or division, each with a narrowly focused goal, and each using different technologies and platforms. As a result, multiple silos or “stovepipes” have emerged, with little integration and minimal ability to exchange data and information. The problem is compounded by mergers and acquisitions, because the silos of each of the combining companies must be brought together, creating “silos of silos.”

Confronted with these problems, companies have tried data warehouses, portals, and business-to-business (B2B) exchanges — each of which came with its own limitations and challenges. Many companies recently adopted a strategy of Web-enabling each silo independently. While achieving the short-term objective of making these systems available over the Web, the resulting Web presence is often fractured and difficult for customers to navigate. More seriously, this approach can make it extremely difficult to combine the functionality of various silos and create new value-added services.

Enterprise application integration (EAI) solutions have emerged over the past few years, enabling multiple applications running on systems from multiple vendors to communicate and interoperate. EAI enables companies to integrate different information systems into new applications, create new value-added services, and dynamically adapt to change. For example, through EAI, a bank teller could notify a customer that it's time to refinance, recommend a specific loan, and initiate the transaction — increasing revenue and customer satisfaction simultaneously. Yet even EAI has limitations for customer data integration, because it does not address business processes; it typically does not provide built-in business process management capabilities.

A smarter approach: composite applications built on a service-oriented architecture (SOA)

A new approach to achieving a single customer view has emerged recently: building "composite applications" (applications created by combining multiple services) on top of a standards-based SOA. This approach, described in more detail in this section, overcomes the limitations of previous tactics by addressing both the technological requirements of data integration and the business process requirements of delivering the right data to the right people at the right time.

SOA overview

SOA is a new architectural approach that enables IT to integrate and manage data across legacy, packaged, and new applications. Building an SOA is the critical first step in achieving a single customer view — a step that also allows the organization to preserve and leverage existing IT assets and rapidly develop new functionality in composite applications. Through the integration of siloed disparate systems, streamlined business processes, and an alignment of IT with business processes, companies can achieve complete visibility of customer information across the organization.

Composite applications on SOA

SOA using composite applications is a development approach that focuses on accelerating new application development by leveraging and reusing existing assets. In contrast to the "tight coupling" or machine-dependence of previous development techniques, it leverages industry standards to provide loosely coupled applications, driving flexibility, agility, and reusability.

Composite application development is process-centric and based on SOA principles. It combines the benefits of custom development with those of a packaged application (prebuilt functionality) by extending existing applications and siloed application process fragments. This approach separates the business process into its own layer, so changes can be made either to the business process or any of the systems supporting that business process — with predictable ripple effects.

The process-driven, composite application approach enables companies to integrate customer data from multiple sources and achieve a single customer view. Equally important, it provides for better enterprise-wide alignment between IT capabilities and business goals, further supporting business agility.

Chapter 6

Sun's Solution: Sun Java™ Composite Application Platform Suite

Sun offers a combination of products and services to help companies achieve a single customer view by deploying an SOA platform and building composite applications. The cornerstone product offering is the Sun Java™ Composite Application Platform Suite (Java CAPS).

Overview

Java CAPS provides a comprehensive integration platform to build and manage SOA-based composite applications that enhance, aggregate, and leverage the customer data within them, enabling companies to achieve a single customer view.

Using service-oriented process integration, a single-view composite application can access customer data held in customer relationship management (CRM), enterprise resource planning (ERP), financial, and legacy applications. It employs intelligent data standardization and matching algorithms to recognize related customer information distributed across these applications, and link the siloed, application-centric customer identities to a universal customer ID, building a master customer index.

As customer information is loaded into the single-view application, each customer's data is cleansed and distilled into a single best-record view that can be used to improve source system data quality, identify and build programs around the most valuable customers, and serve as the foundation for a new generation of customer-centric services.

Implementing this approach to customer data integration is a relatively low-risk undertaking and can be done incrementally, at your own pace.

Key advantages

Java CAPS provides the backbone to enable your organization to:

- Combine existing back-end services such as billing into a single customer experience
- Integrate existing and custom applications and enable them to share information and data
- Provide a single point of entry for online customer self-service
- Lower operational costs by enabling once-and-done processing across lines of business
- Identify most valuable customers and leverage this awareness within operational systems

Chapter 7

Services

Consulting experts from Sun and its partners can assist customers with every facet of developing, deploying, and managing enterprise integration and composite applications in a service-oriented architecture. Sun's approach to SOA includes:

- Expert technologists and architects with many years of SOA experience to help you adopt SOA in your environment
- Focus on aligning business objectives and technology with a pragmatic SOA approach refined from years of hands-on experience and best practices
- Vertical industry expertise that shortens "ramp-time," lowers project risk, and provides industry-specific problem resolution
- Hands-on knowledge transfer to ensure critical success factors are in place for implementation and long-term management success
- Sun SOA Repeatable Quality (RQ) Methodology for an iterative and incremental approach to discovering, enabling, and realizing SOA

Chapter 8

Cross-Industry Scenarios

The scenarios below, based on actual Sun customer experiences, provide examples of the benefits of using Java CAPS to achieve a single customer view — whether the "customer" is a consumer, patient, or citizen.

Telecommunications

Situation

A large international telecommunications company was faced with customer satisfaction issues due to frequently erroneous and inconsistent customer data. The company needed a single customer view to help improve customer service and loyalty, as well as a more efficient application development approach to help decrease time to market for new services while maximizing the flexibility and adaptability of its customer service systems.

Solution

The company is now using Java CAPS to integrate and manage business processes across systems, including customer care applications, order management, financials, and network management systems. The implementation spans domestic systems and its pan-European network.

Benefits

The Java CAPS implementation has enabled the company to gain real-time access to integrated customer information for a single customer view. At the same time, it has helped enhance data accuracy and reduce IT costs. The Java CAPS solution has also helped the company open new partnership channels, expand efficiencies, and increase revenue levels.

Healthcare

Situation

A major health services firm needed to gain a single customer view to deliver more accurate and consistent patient information at the point of care. This organization — which manages inpatient and outpatient services, rural clinics, a research facility, and a health plan with more than 65,000 members and 5000 physicians — needed to provide secure information access while maintaining privacy, aggregating information from disparate systems.

Solution

To enable integration of legacy systems, the company implemented Java CAPS. This enabled the organization to utilize Web tools that allowed them to give information to providers faster and at a lower cost. It also enabled them to build incrementally without having to rebuild the underlying infrastructure and change legacy systems.

Benefits

Using Java CAPS and Sun development tools, the healthcare organization has been able to take information in disparate systems and aggregate it at the enterprise level so that it rolls up to the patient level and is available across the enterprise for that patient. Having the information available improves healthcare because clinicians can make more informed decisions. In addition, the Java CAPS solution has helped reduce maintenance and support costs while preserving investments in legacy systems.

Government

Situation

The Department of Water and Power for a major U.S. metropolitan area wanted a "single point of contact" so that they could have a unified view of all the "child" accounts of a parent company or track the history of individual accounts when they move (there was no automated matching of subsidiaries to parent companies). A lack of continuity in data resulted in their inability to effectively address all customer problems on one call. The department also wanted to implement customer self-service for program enrollment and offer discounts and conservation incentives to the 3.8 million citizens it serves.

Solution

The Department implemented Java CAPS as the essential integration platform to connect its various systems and applications. This solution has helped the Department achieve a single customer view and provide consistency in customer data — whether the customer was an individual citizen or an organization.

Benefits

The Department is now able to process over 150,000 service records a day. They have been able to set up business process logic to determine active versus inactive records, commercial versus residential, and new versus updates. The system has improved their customer service with complete visibility and matching of incoming service accounts to parent accounts, and they have been able to eliminate erroneous transactions. The Department is also now able to offer conservation incentives to its customers.

Chapter 9

Summary

Achieving a single customer view is no longer a luxury or a “wish-list” item for companies. It is an urgent matter. Companies of all types and sizes in all industries have found that the lack of coherent integrated information about customers is far more expensive than they imagined, and the opportunities engendered by a single customer view are far greater than they thought.

By building composite applications on top of a standards-based SOA, companies can achieve a single customer view and make their applications more flexible and agile at the same time. Sun can facilitate the move to this new approach with Java CAPS, a comprehensive integration platform that enables real-time application connectivity, data synchronization, and process-centric composite applications. With Java CAPS, companies can deliver end-to-end customer data integration across legacy and new applications — and dramatically improve customer satisfaction and loyalty.

About Sun

A singular vision, The Network is the Computer™, drives Sun in delivering industry-leading technologies that focus on the whole system — where computers, software, storage, and services combine. With a proven history of sharing, building communities, and innovation, Sun solutions create opportunities, both social and economic, around the world.

For more information

To learn more about achieving a single customer view with Sun products, services, and technologies, visit sun.com/singlecustomerview. For additional information on Java CAPS, visit sun.com/software/javaenterprisesystem/javacaps.

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Printed in USA 01/07 SunWIN#491799