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Sprint  

Telecommunications as an IT Service  

Mr. Hammond is responsible for Sprint’s product efforts to extend and enrich Enterprise Applications with carrier capabilities. Mr. Hammond came to Sprint as part of the product management team that launched Sprint PCS. Prior to Sprint, Mr. Hammond held various positions in sales management, program management and systems engineering at Motorola where he designed and deployed wireless systems in Latin America. Mr. Hammond started his career as an engineer at General Dynamics, Valley Systems Division in the Electro Optical Systems Test and Evaluation group. Mr. Hammond holds several degrees including a Bachelors of Science Degree in Electrical Engineering from Purdue University, a Masters Degree in Engineering from West Coast University and a Masters Degree in Business Administration from the Lake Forest Graduate School of Management.

Mr. Fletcher currently leads a team responsible for the definition and delivery of the Sprint Business Mobility Framework and Sprint Business Location Based Services. Fletcher began his career at Texas Instruments in Dallas Texas. He held several positions as both a technical manager and individual contributor in the area of high performance computing. Fletcher was selected as a Senior Member of the Technical Staff in 1993. In 1998 Fletcher joined Sprint PCS as a team leader for Technical Architecture and later led a team responsible for the information technology aspects of SMS, IM, sync and other innovative products from Sprint PCS. Fletcher holds a bachelor’s and master’s degree in Mathematics from the University of Southern Mississippi.
Introduction

The Real-Time enterprise is one of the dominant themes in today’s business environment. Enterprises are required to squeeze lag time or information float from all processes so the line of business may perform most efficiently and effectively. The continuous quest for improvement is driven both by internal cost reduction needs as well as the ever-increasing need to serve the enterprise’s customers. All the while, the CIO is expected to do more with less - deliver applications faster, ensure higher availability and deliver the necessary applications to the line of business to support the very real market demands for competitive advantage. The business requires these capabilities and forward-looking enterprises are delivering the promised benefits of the real-time enterprise by focusing on integration and partners.

The real-time enterprise brings a number of benefits to the enterprise including:

- Real-time notifications of events requiring immediate action
- Real-time access to financials from sales and inventory to support more informed supply chain decisions
- Horizontal integration of business processes across multiple dissimilar architectural and business domains
- Ability to address customer satisfaction issues with pertinent, relevant data
- Integration of all customer service points (Web, voice, wireless)

Significant business process change is often required to achieve the promise of the real-time enterprise. This business process change is associated with the introduction of a new enterprise application or business transformation engagement. What may be less obvious is the critical and substantial role of the carrier in delivering the network and mobility components inherent in the total solution. Carrier components that are necessary in the real-time enterprise include;

- Highly reliable networks (wireless and wireline, voice and data)
- Transparency of access from these highly reliable networks
- Bandwidth on-demand for high capacity surges
- Application and session persistence between networks
- Integration of carrier processes into enterprise business processes
- Programmatic access to core carrier data and capabilities
- Delivery of intelligent events and notification
- Leveraged capital investments in centralized services

- Mobile-enablement of enterprise applications and workers

To participate in the value created by the real-time enterprise, carriers must learn to package these services in such manner that they are not immediately commoditized, yet are easily consumed by the central IT department.

Carriers are often viewed as suppliers of commodity and near-commodity resources that connect smart clients and servers together. This is in stark contrast to the reality of the functions required to deliver the real-
time enterprise, where the carrier is a business partner who understands the customer’s core business. The future of the relevant carrier is one that can assist the customer in achieving higher ROI for the customer’s telecommunications investments, versus offering a commodity product or service at an ever-lower price. Although easy to say, this is extremely difficult for carriers to do. A carrier’s nature has been formed by regulatory obligations and five nines reliability for the past 100 years, with a mission to do a few operations extraordinarily well. To expect a carrier to modify these genetics to meet the needs of the real-time enterprise is a tall order indeed.

New Customers, New Demands, New Partners

The carrier’s new customer is quite different than the carrier’s traditional customer. Historically, the carrier’s main point of contact within the enterprise was the telecom services vice president. Unfortunately for the carrier, the telecom services vice president position has been diminished to become a manager of networks who is routinely relegated to focusing on costs and is not asked to contribute to ROI or revenue growth. However, with the promise of the real-time enterprise, the carrier is being asked to participate in return on investment driven line of business decisions executed by the IT department. As with most market discontinuities, change is required.

Using an electrical engineering term, there are several impedance mismatches here. The carrier will not be able to provide deep subject matter expertise in enterprise application domains consistently and broadly. Vertical knowledge is historically the domain of the Systems Integrators (SIs), Value Added Resellers (VARs) and Independent Software Vendors (ISVs). The SIs, VARs and ISVs have provided sales support for consultative selling, long sales cycles and deep knowledge of the enterprise business. Secondly, the rhythms of the business processes of the carrier are fundamentally different from those of the market-driven enterprise and are unlikely to substantially change, given regulatory and reliability requirements carriers face. Product development cycles, testing cycles and the foundational definitions of what constitutes a product are different between a service-driven company and a product-driven company. As illustrated below, the carrier cannot on its own match the cycle-time needs of the real-time enterprise. In short, the carrier needs partners to bridge the different cultures of the IT enterprise and the carrier.

In order to meet the needs of the real-time enterprise a carrier must partner with companies that have the vertical knowledge and are familiar with the IT environment. The carrier must meet these partners
more than half way and build the foundational elements required to take advantage of these partners’ deep customer and application knowledge. Delivering the expected benefits of the real-time enterprise requires joint delivery and integration between the partner and the carrier. The carrier has critical components required by the real-time enterprise. The carrier creates tremendous value by engineering the network to be “plug and play” compatible with IT standards and leading computing infrastructure. It is through this one-time effort (albeit a large and expensive effort) that the carrier is able to add continuing value to the real-time enterprise and its IT-based products.

**Carrier Strengths, Carrier Weaknesses:**

Do what you do and do it well!

Carriers provide a number of services very well. The hundreds of billions of dollars invested by carriers over the years provide reliable call processing, wireless voice, wireless data, text and multimedia message delivery, location services, robust IP backbones and more. However, carriers are not adept at providing great numbers of rapidly changing applications for consumers and businesses to purchase. Speed to market is decreased by the scalability and reliability expected from the carrier. In turn, carriers require large markets to recover their substantial costs and development time. The costs for regulatory compliance and to achieve five nines reliability are steep. For those products that do have a good business case, the time it takes to navigate the product development process means there is a good chance the market has changed and the product is marginalized. Obviously, it costs a lot for the carrier to be wrong. As a result, carriers focus on a few products and deliver carrier grade and carrier scale; it is what they know how to do. While there are some applications an enterprise should consider obtaining from a carrier, it is unlikely an enterprise will consider the carrier as the primary source for key enterprise applications such as sales force automation application, customer relationship management, enterprise resource management or other typical IT / computing-centric enterprise applications. Carriers must partner with key systems integrators and software vendors to realize the full value for their services.
The Total Solution: A complete ecosystem to service the enterprise

As mentioned earlier, the enterprise IT department is faced with decreasing budgets, decreasing headcount and increasing demands. In addition, there appears to be a trend away from IT doing best-of-breed solutions. Today, many IT departments are insisting on total solutions provided by (or integrated by) a single partner – the famous “one throat to choke” (or infamous if it is your throat). It is this environment that defines the value chain for the new carrier and by extension, the carrier network architecture to service the enterprise.

A partnership of the carrier, the systems integrator (or internal IT) and the software vendor can provide the total solution to the customer. The software vendor provides the deep vertical application knowledge, the systems integrator provides the deep knowledge of the customer’s business processes and the carrier provides network and mobility assets. As depicted in the picture above, it is important to view the solution from the enterprise point of view – center out. What IT values is now what the carrier must value. This includes Web services data exchange standards based data schema, and common authentication mechanisms – in short, a carrier abstraction layer that separates an enterprise from its multiple carrier partners, allowing interoperability at the application layer.

The enterprise values an implementation that does not mean single carrier or proprietary technology lock-in. There are several critical requirements when providing solutions to the IT enterprise. Solutions must be IT standards based. For computing vendors, this requirement has been non-negotiable, and carriers must now also comply. This requirement has multiple implications for the carrier. The enterprise values pre-integration, flexible and adaptable architectures that demonstrate scalability, low risk and fast deployments. Another key element of a successful solution is minimizing the customer’s initial capital expenditure.

From the carrier’s perspective, the infrastructure required to meet all of
the above mentioned requirements is clear.

- The carrier must expose carrier services and capabilities via Web services.
- The carrier must adopt a standards-based data format for exposing location, messaging, presence, call control and other key carrier services.
- The carrier must allow for the pre-integration of these services to standard IT application services such as IBM WebSphere, BEA WebLogic and Microsoft Servers.
- The carrier must not require the enterprise developer to learn telecom protocols.
- The carrier must allow the mobile device to be treated as an extension to the IT network and allow it to be managed as the enterprise desktops are managed.

The relevant carrier’s new customer has a different value system and the carrier must change.

**Metcalfe’s Law: Why open systems will work**

Some carriers will balk at the idea of exposing their networks with a standards-based gateway such as Parlay and ParlayX. These carriers prefer a “walled garden” approach, believing the need to protect their installed customer base outweighs the potential revenue from new customers. However, the exact opposite is true. Metcalfe’s Law, which states that the value of the network rises by the square of the connections to the network, proves true time and time again. For example, when North America finally decided SMS was not a fad and agreed to inter-carrier message delivery, SMS traffic grew quickly.

The ability to communicate easily creates scale and that is what drives profits for carriers. Carriers must differentiate on services, execution, quality and innovation, not on artificial barriers.

**What can the enterprise do? Extend, Enrich and Enforce**

The enterprise is a powerful force in driving behavior in the carrier. The enterprise issues the requests for proposals and awards the contracts. Here are some actions the enterprise can implement that will enhance their ability to obtain telecommunications as Web services, in order to extend the enterprise network to the wireless network and to enrich mobile applications with carrier services and capabilities through standards-based carrier interfaces that are familiar to IT programming staffs. These behaviors will drive increased ROI and decrease the total cost of ownership.

- Insist on ease of implementation. The enterprise should not be required to implement a telecommunications gateway in order to integrate with their carrier partner. The gateway to the carrier network should be their existing application server from their computing infrastructure provider.
• Insist on pre-integration with the application server in the corporate data center. (As this integration is done via Web services, the potential integration issues promise to be minimal.)

• Insist on pre-integration of carrier Web services into the enterprise software development environment. Do not require enterprise software developers to learn telecommunications protocols.

• Insist on pre-integration of over-the-air middleware onto business-quality mobile devices. Just as IT has implemented middleware to meet the adaptability needs of the enterprise, mobile applications must use middleware to support disconnectedness, secure connections, synchronization, device and configuration management.

• Insist on the ability to have secure connections. For mobile applications to be truly meaningful they must be secure.

• Insist on carrier grade scalability and reliability. The enterprise cannot risk application integrity on haphazard infrastructure outside the corporate firewall.

• Insist on high wireless data performance. The wireless network may not equal the wireline network, but an advanced wireless data work will require fewer accommodations within the application.

• Insist on access to the carrier’s complete set of services through a single framework of IT-friendly Web services.

Your carrier should be easy to do business with and should have deep relationships with the enterprise systems integrator and enterprise software vendors.

Summary

This paper has discussed how the needs of the real-time enterprise can only be met by an alliance of the carrier, systems integrator and software vendor. Without a total solution comprised of the best work of each of these groups, none of the constituents will be successful. The enterprise will fall short in their quest for efficiency and cost reductions, the system
integrator and software vendor will not have access to mobility extensions and the carrier will not realize the value created by its services for the real-time enterprise.
Sprint

Company Profile
Sprint is a global integrated communications provider serving more than 26 million customers in over 100 countries. With approximately 65,000 employees worldwide and over $26 billion in annual revenues in 2003, Sprint is widely recognized for developing, engineering and deploying state-of-the-art network technologies, including the United States’ first nationwide all-digital, fiber-optic network and an award-winning Tier 1 Internet backbone. Sprint provides local communications services in 39 states and the District of Columbia and operates the largest 100-percent digital, nationwide PCS wireless network in the United States. For more information, visit www.sprint.com.

Sprint Value Proposition

Why Sprint?

When companies choose Sprint, they are in good company. More than 90 percent of the Fortune 500 use Sprint for data, Internet, voice or wireless solutions. Companies that select Sprint are doing business with a global company that:

- Has a rich heritage more than a century strong and remains one of the most financially stable companies in the telecom industry
- Can meet virtually any communications need through a broad portfolio and interoperable network infrastructure, allowing for integrated custom solutions that can transform the way companies work
- Has won industry and customer accolades for service reliability, cost effectiveness, customer satisfaction and product innovation

Strong Partnerships for Powerful Solutions

Sprint is partnering with leading systems integrators and independent software vendors to deliver a total solution for mobile enablement. Sprint and IBM have forged a long-term business alliance which brings together Sprint’s leading-edge network and integrated communications service provider capabilities with the unparalleled applications, process engineering and customer management capabilities of IBM. Together, Sprint and IBM can provide a total solution for mobile-enabling enterprise applications with the Sprint Business Mobility Framework which includes: end-to-end precertified integration with the developer environment, the runtime environment, the over-the-air environment and the integration to the Sprint wireless network.

The Sprint Business Mobility Framework can fulfill the promise of the real-time enterprise by extending applications to the mobile workforce and enriching applications with valuable network elements such as location, presence and messaging. Users can quickly implement mobility extensions to business applications by leveraging widely used IBM development tools and middleware.
Key Benefits of the Sprint Business Mobility Framework

- Increase productivity and revenue through application enrichment and real-time connectivity with mobile workers
- Reduce costs with a single extensible infrastructure for mobile deployments — from simple e-mail and calendar access to more complex field force and sales force automation applications
- Increase customer satisfaction with improved communications and expedited response to customer needs and integration services

Key Features of the Sprint Business Mobility Framework

- Pre-integration and certification to reduce implementation time and help ensure interoperability
- Free software development kit for IBM WebSphere® Studio, allowing developers to quickly and easily add and test mobility extensions
- Secure and extensible infrastructure with open standards to protect the enterprise investment and minimize total cost of ownership
Sprint

Products and Services
Products

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| **Sprint Business Mobility Framework** | Sprint Business Mobility Framework is an open-standards based platform that can extend enterprise applications to the mobile workforce and enrich those applications with valuable network elements such as location, presence and messaging.  

Sprint Business Mobility Framework can take the complexity and uncertainty out of mobile-enabling applications for the real-time enterprise. Developers can enrich their end products by incorporating mobile capabilities that Sprint has already tested and incorporated into its wireless network. First available are:

- Location – provides cell sector, latitude/longitude and location of mobile devices with multiple levels of precision
- Messaging – provides intelligent alerts through Sprint devices from within the enterprise application based on business process or event triggers
- Presence – gives the status of end-user devices in real time as to whether they are online or offline

Enterprise developers without specialized telecom programming experience can easily incorporate all of these capabilities and more to come, using standard Web services. No new training is required. | GA- June 2004 |