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InFocus: Beyond the IP Pipe

By Larry Neumann

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No one wants to compete on price. So why do telecommunications companies–-some of the world's largest high-tech, business-savvy companies in the world--find themselves advertising ever-faster connections at ever-lower prices? Carriers were once known for providing "five nines" (a reliable phone line, 99.999% of the time). Now, the modern service provider risks being known for "three nines," as they advertise faster and faster connectivity: "Superfast, ubër-Internet for only $9.99 a month!" Voice and data services markets were the traditional territory of the large carriers, but now, the market is soft, and they largely compete on price.

The solution is textbook: offer new services, differentiate yourself from the competition, and everyone--particularly your shareholders--will be happy. The solution is not that easy, unfortunately. The reality is that technical problems with legacy networks are keeping many providers from developing and selling new, value-added services. The high-tech world has a highly compressed business cycle: innovate, invest, offer new services and compete. The time and expense required to innovate, to invest in new technology and to overhaul the network and roll out new services is a major barrier that has stalled service provider growth and profitability.

However, the future for service providers looks brighter, thanks to application-aware networking. It holds the promise of helping service provider networks become "smarter" by identifying, prioritizing and moving traffic faster, without incurring tremendous cost, technical problems or long development cycles. The advantage for

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service providers is access to new higher-margin markets. They will be able to respond faster and roll out new, differentiated services to financial, supply chain, enterprise and consumer customers. In fact, they may well regain a competitive advantage they have not enjoyed in some time.

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full agenda and registration info here.



Figure 1.

Application-aware networking: Enabling value-added services

Application-aware networking addresses two current distributed technology challenges: inefficiencies associated with middleware and speed/scale. Speed is obvious--networks always have a need for speed--but the speed required for today's real-time networks such as in financial services markets is a truly demanding benchmark (see financial services sector, below). Middleware--the software that connects network applications--is an integral part of most enterprise data centers. Middleware acts as a translator between incompatible applications by exchanging a common format, usually XML, to distribute messages between applications, distributed geographies or even different companies. These middleware deployments are very complex, add performance overhead and are challenging to operationally manage. Industry experts have recently called for this middleware function to be moved into core network as a shared resource to simplify the task of running distributed applications. Today's applications become value-added services that take advantage of application-aware, silicon-based hardware to manage information distribution at wire-speed, and add a layer of intelligence to the network.

Most service providers have spent the last few years upgrading their core networks to the latest IP standards at great financial expense. Although service providers are very aware of the critical need to develop new revenue-generating services, they are naturally reluctant to make any additional changes to the core of their network. A successful application-aware networking approach should overlay existing networks and avoid the risk associated with once again upgrading the entire network. To capture new revenue quickly, value-added services must be delivered over the existing infrastructure.

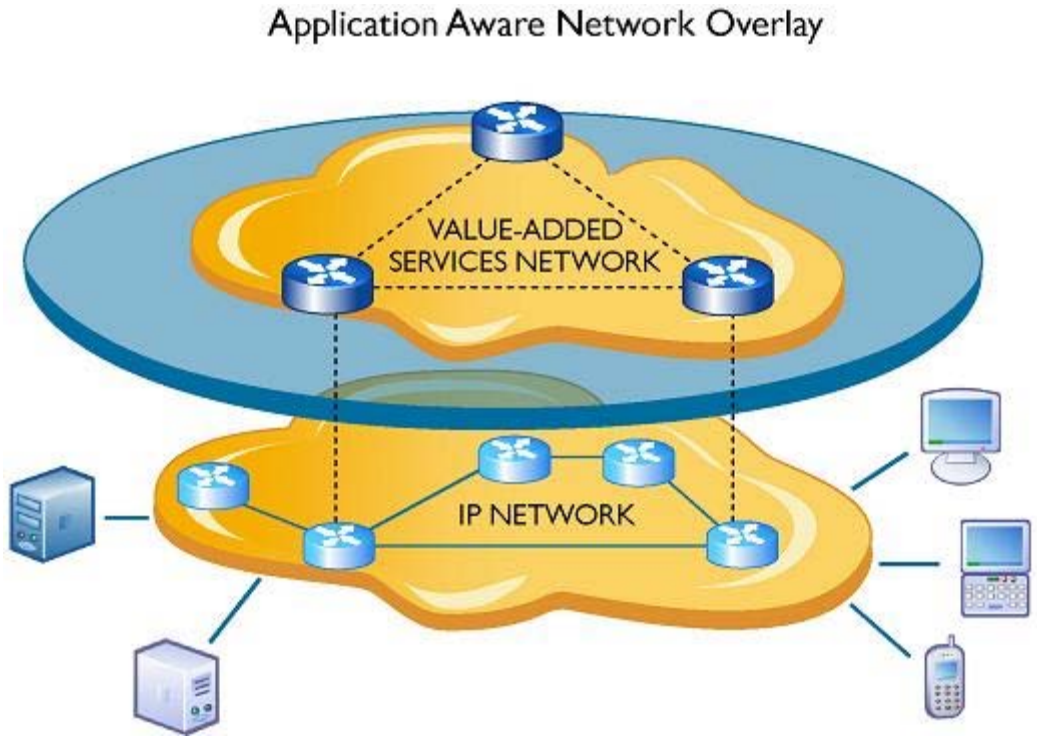


Figure 2.

Fostering enterprise and service provider partnerships

Service provider customers, especially enterprises, can benefit from this move to the network. As the trend towards outsourcing parts of the data center grows, the pull from the enterprise market seeking trusted third-party hosts is increases rapidly. A prime example of the success of the outsourcing trend is Salesforce.com which has been providing outsourced Customer Relationship Management (CRM) solutions since 1999. Salesforce.com recognized that most CRM requirements were the same from company to company. For the average organization, it makes little sense to spend years and millions of dollars building a custom system with SAP or Siebel. A shared instance with slight configuration saves companies much time and expense. This same conceptual business model is a key opportunity for service providers to help companies outsource and focus on core business requirements.

As a service provider hosts application-level services for enterprises, they naturally become a more trusted partner with deeper and closer relationships. As a result, the service provider becomes more knowledgeable of the customer's business operations, problems and needs, and will be able to offer additional solutions proactively. In turn, customers will be less likely to switch providers for discounted connectivity, enabling service providers to forge long-term, profitable relationships.

This new and expanded service relationship may also provide a basis for service providers to earn additional revenue from consulting currently performed by vendors like IBM and Cisco. These network vendors often have a three to one (or even 10 to one) revenue ratio for consulting fees versus products because enterprises trust the vendor to help them effectively deploy the solutions. With increased interaction and understanding between service providers and enterprises, service providers will be able

to provide guidance on more efficient and cost effective deployments. However, before this opportunity is realized, service providers must prove to enterprises that they are capable of stepping up and providing a level of service comparable to these software and hardware vendors.

Beyond connectivity: The new service revolution

While the promise of new revenue streams is highly attractive, service providers know there are technical challenges that must be solved to deliver new services to financial, supply chain, enterprise and consumer markets.

Financial services

A core area of focus in the financial services market (including banks, brokerages and investment firms) is reducing information latency. Currently, market data is sent from trading floors to aggregators like Reuters, which then distribute it to subscribers. However, this middleman system is not only expensive, it delays delivery. Although the lag is a second at most, a financial services company relying on increasingly popular algorithmic trading software needs to know that shares in Google have changed before their competitor does. This short lag can mean the difference between making and losing millions. With value-added service routing systems, carriers can provide a wire-speed, direct link between trading floors around the world. They can deliver traffic, including these algorithmic trading applications, between trading offices or to remote locations. Not only does this method of distribution reduce latency times, it is more efficient. Unlike traditional direct feeds, the solution is completely interest-driven: only the data streams that traders or applications have requested flow across the network, saving bandwidth.

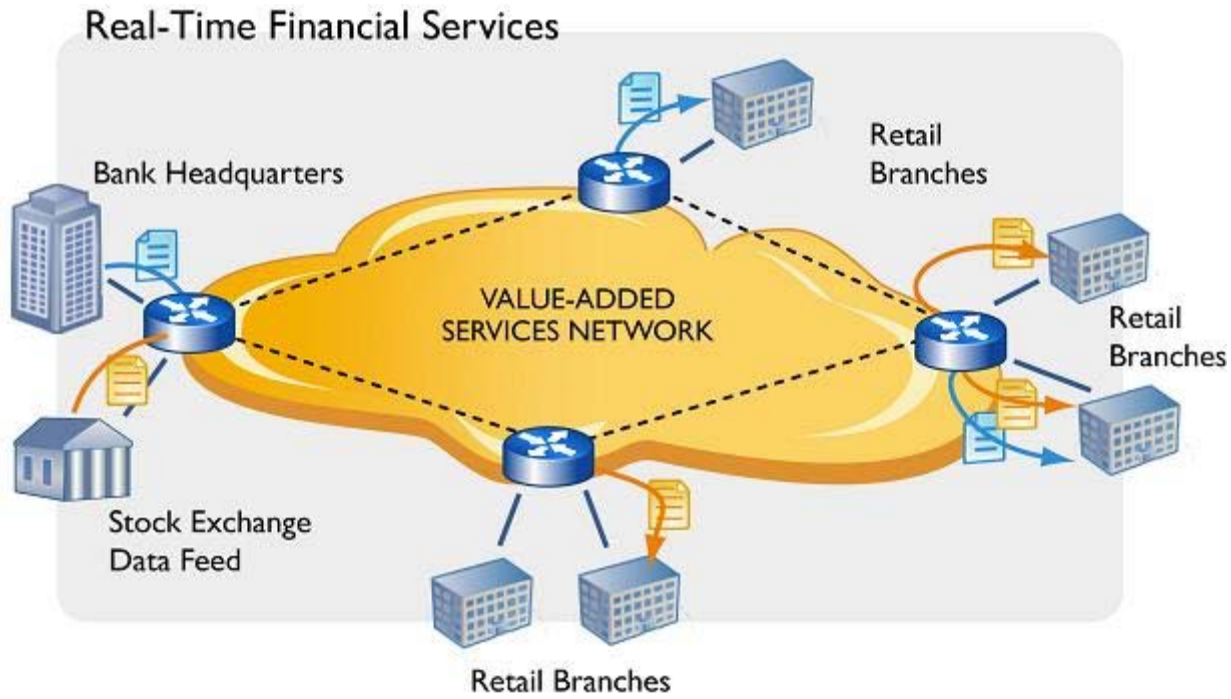


Figure 3.

Supply chain services

As companies begin to implement radio frequency identification (RFID) to its fullest potential to track goods in real-time through the supply chain, they encounter a massive increase in data traffic. Supply chain managers need to know when their pallet of cola leaves the warehouse, when it passes key milestones in transit, and when it arrives at its destination. However, enterprise networks are ill-equipped to quickly transmit this data and provide the level of monitoring required. Value-added services routing systems allow service providers to develop outsourced RFID monitoring solutions and track shipments at wire speed.

Business monitoring services

Application-aware networking will give service providers an edge in delivering secure real time business monitoring. As networks go from simple connections that blindly carry data to intelligent networks that understand the content flowing through them, new services that monitor and report on enterprise business activity becomes possible. Customers can define business rules that represent intended behavior and the network can track actual traffic against these metrics. This kind of monitoring technology allows SLAs to move from simple uptime and bitflow guarantees to application-level SLAs assuring high quality behavior of individual transactions. It can also give service providers new opportunities to offload the burden of increasing corporate regulatory compliance initiatives.

Enhanced consumer services

Although the primary pull for application-aware networks are service providers' enterprise customers, the consumer market is a massive and growing segment that is also hungry for on-demand information. One of the most pressing problem facing service providers in the consumer market is how to compete against cable companies in delivering on-demand video content--specifically IPTV. Service providers know they have to differentiate their service and deliver a compelling experience to consumers. Application-aware networking enables service providers to deliver value-added services such as personalized scrolling news updates, call-display, or advertising information tagged within video content. These are displayed on a customer's TV screen, and enabled by direct communication between the service providers' network and the consumer's set-top box.

These services are just a snapshot of the possibilities presented by moving messaging onto service provider's networks. Since value-added service routers can identify and deliver any kind of content intelligently, at wire speed, to interested parties, the potential is infinite.

Moving forward: Making application-aware networking a reality

Today, service provider networks are lacking awareness of what is happening inside its own IP pipes. The network acts as a conduit for information, but does not have the capability to understand the content of the information it transports or who could be benefiting as information changes. The next step in global service provider network infrastructure is to build additional intelligence into the network with hardware that is aware of the content and nature of the traffic moving through it. As carriers take this step, they will become true service providers, enabling commercialized services and gaining new revenue.

The end result of this network intelligence will be to blur the line between the enterprise and the service provider, or the data center and the outsourcer to a point where it's almost invisible. Services like email are already offered in a virtual, outsourced way, but the move towards services oriented architecture (SOA) in all sectors will increase this location transparency and undoubtedly improve the functionality of the applications we depend on and enjoy today. However, a traditional software approach is simply unable to provide the functionality needed.

As Jason Maynard, software analyst at investment bank CSFB recently stated, "It is no exaggeration to say that traditional software is already dead… The only way (software) vendors will be able to make money is by delivering functional services and business processes." Service provider customers will increasingly want to call their provider and enable a service, thereby skipping lengthy and costly design and deployment of software. This lowers the cost of operations for enterprises, and improves business agility.

Service provider carpe diem: Seizing the intelligent network opportunity

The opportunity for service providers to solve problems in major market segments with value-added services is here; there are easily deployed, scaleable and affordable hardware solutions available today. All service providers are well positioned to be leaders in application-aware networking, and to develop new revenue streams by adding intelligence to their global networks. Most of the major global and many regional service providers are evaluating this technology and will have revenue-generating services deployed by 2007.

Only then will we hail the end of "compete on price" basic connectivity game and its narrow profit margins.

Larry Neumann is vice president of marketing at Solace Systems.

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