



Building a solid e-business infrastructure for ASP service delivery.

Key Topics

Assessing opportunities and risks in the ASP marketplace

Exploring requirements for success

Considering service level agreements (SLAs) and the ASP value chain

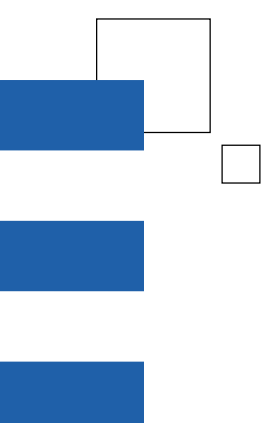
Understanding the benefits of partnership

Introduction

With the application service provider (ASP) market ready to explode, companies in this emerging arena must deliver on service quality and customer support to survive the transition from startup to a fully operational and profitable e-business. Making sure your information technology (IT) systems and networks are up to the demands of your service level agreements (SLAs) is no small feat.

If your IT infrastructure is not adequately designed, you can quickly lose the competitive advantage you gain by being early to market. That's because customers measure your performance based on their total online experience, not just the features and functions of your applications. Your infrastructure doesn't just support service delivery—it is an essential component of your product. This means the success or failure of your business depends on the reliability, availability and performance of every infrastructure layer involved in delivering that application to the user's desktop—from the peering points in your Internet service provider's (ISP) network to the servers that host your offerings and the core application code itself.

Problems in any one layer can take their toll on the customer's experience, whether or not those problems are within your control. Analysts at the Gartner Group predict that as the marketplace for application services matures over the next two years, more than half of the ASPs in business today will fail or be bought out by the end of 2001! Gartner also predicts that more than 70 percent of ASP contracts will be terminated or renegotiated by 2002 because of performance problems.²



The ASP marketplace: Opportunities and risks

Despite the high risk of failure, independent software vendors (ISVs), ISPs, network providers—even IT service providers—are entering the field to compete with “pure play” ASPs. These are the companies that partner with software developers, implement a solution for a vertical or horizontal market and deliver the hosted service to end-user customers. Analysts put the global market between US\$1 billion and US\$3 billion today, growing to US\$25 billion and up within four years.³ It's easy to see why interest in this emerging marketplace is so strong.

The need for rapid implementation, the lack of available technical expertise, increased complexity of IT and the high cost of building and managing an internal IT infrastructure are the key drivers behind the rapid growth of the ASP industry. Although conventional wisdom holds that demand from small business is propelling today's market expansion, Legg Mason Equity Research contends that influential early adopters have primarily been large enterprises. Their IT departments are overextended—consumed with complex enterprise resource planning (ERP) and e-commerce applications—and are typically happy to hand over new applications to ASPs. Additionally, dot-com startups that have rapid time-to-market requirements and little in the way of existing internal resources have also been key adopters.⁴

But winning over the vast market of small- and medium-sized businesses—where most analysts foresee the strongest demand for ASP services—will be key to the future of the industry. What will it take to convert prospects into customers? In a recent online survey by Information Technology Association of America, both current and prospective ASP users cited security and vendor stability as top on their list of concerns.⁵ Other barriers to broad market acceptance include not enough flexibility in services offerings, reluctance to lock into long-term contracts, and issues surrounding overall quality of service and support.

Requirements for success

Because the customer's online experience is so critical to the success of any ASP, it is important not to shortcut operational investments. As the winners and the losers in the first wave of ASPs know all too well, building a solid e-business-enabled infrastructure requires a sophisticated understanding of performance thresholds, scalability, load balancing, security issues and rapidly changing Web-based technologies.

Supporting a successful ASP enterprise means managing a continuous process of infrastructure expansion—even total technology redesign—to keep pace with business growth, deliver new features to end users and support new product offerings. And it takes traditional, time-proven IT skills. Your IT organization must be able to:

- Develop and implement an e-business infrastructure strategy and architecture
- Develop, customize and deploy applications
- Manage accelerated change and content
- Test changes quickly but thoroughly
- Reconfigure capabilities to respond quickly to customer need

- Align, improve and transform operational processes for faster speed and for greater ability to identify and respond to customer needs
- Collaborate in new ways with partners and suppliers
- Anticipate and solve potential problems before they occur
- Support customer requirements for end-user registrations and terminations
- Proactively explore the impact of evolving technologies on your business, such as the wireless Web services.

SLAs and the ASP value chain

ASPs of all sizes are using service level agreements (SLAs) as a key strategy for overcoming customer concerns about service quality. Written into customer contracts, SLAs guarantee performance for service elements such as installation time frames, network availability, application uptime and customer support, with financial penalties levied against the ASP for failure to meet the agreed-upon service levels.

Vertically integrated ASPs that provide every element of their service delivery infrastructure in-house—from application code to network connectivity—have the tightest control over service delivery. Nonetheless, an ASP's ability to live up to its SLA promises depends on seamless application, systems and network management.

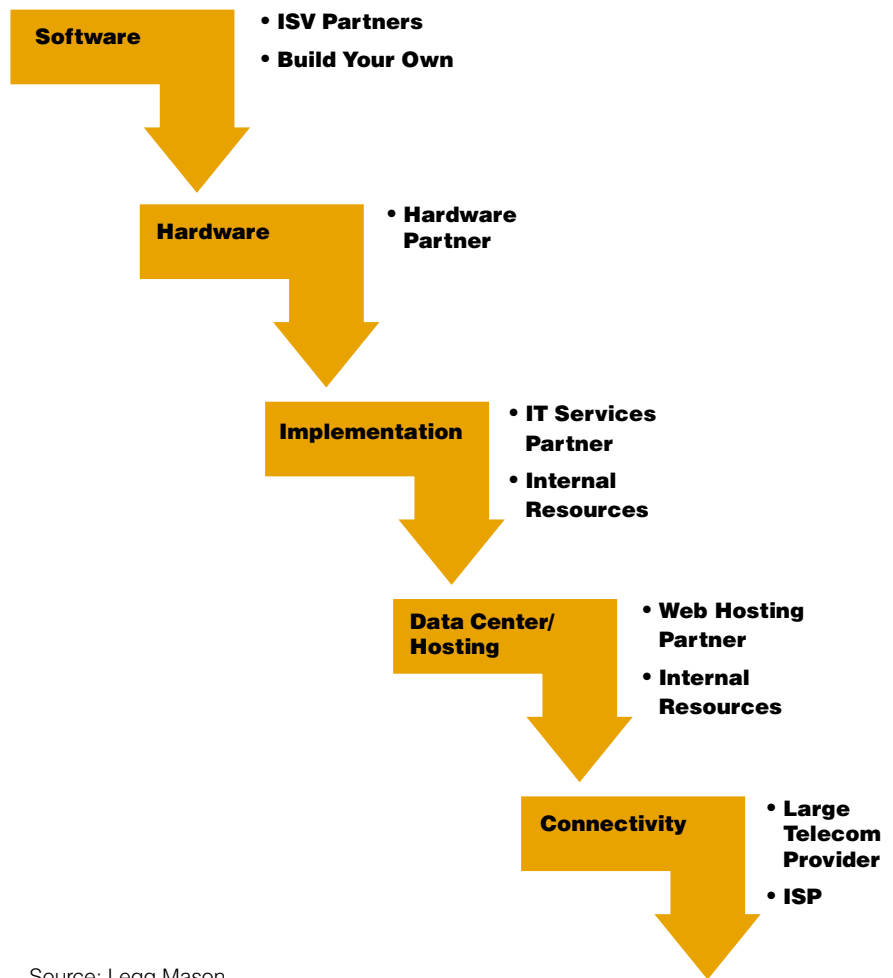
In actual practice, few ASPs handle every component of the ASP value chain, depicted in Figure 1. That means assembling and managing a complex set of internal and service-provider SLAs within a comprehensive SLA management scheme—and making realistic guarantees to your customers. According to industry portal ASPnews.com, the end-to-end service delivery axiom—that you're only as strong as your weakest link—does not apply in the ASP realm. In fact, an ASP is not even as strong as its weakest link. That's because total service availability is comprised of the guaranteed availability of each individual component, multiplied together.

Consider the following scenario to see how this multiplier formula works:

$$\begin{aligned} & 99.95\% \text{ network availability (5 minutes downtime per week)} \\ & \times 99.50\% \text{ data center availability (50 minutes downtime per week)} \\ & \times \underline{99.00\% \text{ application availability (100 minutes downtime per week)}} \\ & = 98.46\% \text{ Total Service Availability (155 minutes downtime per week)} \end{aligned}$$

The weakest link in this scenario, the application platform, is guaranteed to be available for all but 100 minutes of downtime each week. But if each component were to fail at a different time, the overall service may be unavailable for more than two and one-half hours a week.⁶

Figure 1. ASP Value Chain



Source: Legg Mason

The ASP value chain defines all the components necessary to deliver an ASP solution. ASPs can implement the entire value chain in-house, or look to service providers for help with selected components.

Partner or perish

Whether your business model calls for building an end-to-end service delivery platform or outsourcing components to a services partner, the implications for ASPs are clear: Team with an infrastructure expert, or potentially perish under the weight of your customers' service-level, technology and speed requirements. SLAs are only as strong as the partnerships you form. And to customers and investors alike, those partnerships can be as important as the application services you're bringing to market.

Cahners In-Stat Group reports that ASPs are expected to spend nearly US\$1 billion on infrastructure in 2000 to support their growing businesses.⁷ Partnering with an infrastructure services provider can help you specialize in application development and customer support while technology experts focus on building an e-business infrastructure that is scalable, reliable, responsive and secure. Here are some of the ways ASPs are using infrastructure service providers to help meet customer performance expectations:

Address critical skills shortages

Finding and retaining IT talent is a continual challenge. In fact, most ASP customers cite lack of technological expertise and resources as a main factor behind their adoption of application services. With highly skilled IT resources in such short supply, ASPs themselves have to go outside for help with critical skills. Look for services providers who have a stable workforce specializing in key infrastructure and Web technologies.

Evaluate your infrastructure

Outside experts can assess your current IT systems to help you determine baseline infrastructure capabilities and limitations, comparing them to current and future business requirements. A knowledgeable IT consultant can explain how new technologies, applications and rapid growth will affect your current environment and outline changes you need to make to maximize efficiency.

Build scalability into your systems

Considering the phenomenal growth projections for the ASP marketplace, the most difficult hurdle can often be maintaining an architecture that will scale as quickly as your business grows. Identifying design and scalability issues early in the planning stages can reduce project life-cycle costs and minimize risk. As your business grows, revisiting technology decisions such as the number, the placement and capacity of servers, network topology and the distribution of network traffic can be critical to meeting your future capacity requirements.

Bring performance up to speed

An infrastructure services provider can help you assess the performance of your current application hosting environment and, just as important, develop procedures that will help you monitor and analyze performance on an ongoing basis. A detailed study should evaluate server performance, network infrastructure and design, network traffic and application capacity. Tools used can include modeling, simulations and realtime monitoring. In addition to identifying problem areas, the service provider can recommend improvements that will optimize existing resources while reducing support costs.

Implement sound security practices

Security and privacy are critical issues for ASPs. Running a security-rich environment based on sound privacy practices effectively requires specialized expertise and knowledge. What's more, infrastructure design must take into account the impact that security technologies will have on network, server and application performance. For example, can your internal staff accurately anticipate and design around the traffic limitations inherent in hardware firewalls? How will you determine which encryption methods will have the least impact on the throughput of your transaction servers? If you don't have the answers, invest in outside help. You can also take advantage of emergency response services that can help protect your systems from hackers, viruses or Internet intrusions.

Deploy advanced storage solutions

Storage area network (SAN) technology can help you expand your business opportunities and competitive position by making it easier to manage large volumes of customer data and make it available quickly and reliably. But while SANs can make your ASP infrastructure more robust, they can often be complex, requiring skilled resources and support to plan, design, test, implement and run.

Reduce the risk of system upgrades

Achieving consistent, reliable productivity and performance begins with adequate hardware, software and network capacity. In addition, a network-based business needs to be free of infrastructure defects such as misconfigured servers and firewalls, outfitted against application instability and protected from database contention issues. While modeling-based projections can assist you in future capacity planning, nothing can replace full-blown, production-level stress and performance testing—especially for validating your technology decisions. Engaging a testing services partner during the strategic planning and development stages of an e-business infrastructure upgrade can help prevent costly and embarrassing performance problems or failures.

Plan for business continuity

For an ASP, downtime can spell disaster for your business. Experts in business continuity and disaster recovery can help you identify the critical business processes that must be preserved in an emergency situation and develop a plan that will help you turn a potentially devastating situation into a controlled recovery process.

Out-task routine functions

Letting outside IT professionals manage certain functions and processes can allow you more time and resources to concentrate on the main thrust of your business. Today it is widely accepted to "out-task" standard or routine functions—from asset management to help desks to network operations—to qualified service providers.

Fundamental e-business infrastructure services

IBM Global Services has tailored a set of infrastructure services to meet the fast pace and business model requirements of e-businesses. These e-business infrastructure services are configured to help growing Web companies plan, design and implement architecture and capacity upgrades, achieve continuous operations and strengthen their online offerings. These offerings consist of:

e-business infrastructure assessments that determine baseline infrastructure capabilities and limitations, compare them to current and future business requirements and create a road map of activities to lead customers to a business-specific solution

Performance management and capacity planning services to help optimize the performance of Web-based business applications and provide for scalability as your business grows

Testing to help determine the “breaking points” of new or existing Web sites or applications with services that include consulting, technical reviews, workshops, planning, and performance, and stress testing execution in a production environment, before going live

Security and privacy services that include consulting assessments and planning; architecture, design, and implementation management; denial-of-services alert and response; realtime intrusion detection; site scans and vulnerability testing; incident management services, and Internet emergency response

Business continuity and recovery services to help protect an e-business from significant, unplanned IT disruption by creating a backup infrastructure site that can encompass multivendor production operations and vaulting services for critical data

Storage area network (SAN) services that enable the sharing of information across networks— regardless of vendor technology— by integrating complex networks and storage systems into cohesive, responsive and cost-effective solutions

Network consulting and integration services that help create a network strategy driven by business objectives, including product consulting, logical design and physical design, such as network closet designs, floor plans and plans for the interconnection of components

Remotely delivered services that provide hardware and software support for IBM and other OEM equipment, including installation, automation or consolidation of help desks, plus out-tasking or outsourcing of help desk operations

Asset support services to help you manage IT assets with inventory services, order entry systems and order management processes.

Multivendor service capabilities including network design, implementation, remote diagnostics and onsite troubleshooting for the products of Cisco Systems. Additional services may include product planning, installation, performance tuning, capacity planning, migration and ongoing support for Sun® Solaris™ and VA Linux® systems.



Summary

In today's rapidly growing ASP marketplace, companies must quickly establish a track record for high-quality service and customer support to succeed. Faced with intense competition, marketplace flux and incredible opportunity, ASPs are increasingly looking to e-business infrastructure service providers for help in increasing performance and availability and meeting service level commitments. Superior infrastructure support, including performance management, capacity planning, security services and IT technical expertise, can help ASPs successfully scale up for business growth and make a smooth transition from startup to long-term success.

For more information

For information on how IBM Global Services can help your growing company enhance your e-business infrastructure, call 1-800-IBM-4YOU (in the U.S.) or 404-238-1234 (from outside the U.S.), or visit our Web site at:

ibm.com/services

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