

Seven steps to ASP selection

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With the proliferation of application service providers (ASPs) over the past year, demand for ASP services has soared to significant heights, and the ranks of ASPs have mushroomed. Little more than a year ago, ASPs numbered about a dozen. Today, several hundred ASPs abound, and the market is ripe for contraction as companies merge to create powerful alliances, or buy out smaller ASPs who complement an existing provider's repertoire.

Given the hyperactivity, users need to proceed with caution when selecting an ASP. Not only do you want a provider who will stick around into next month, next year and beyond, but you need one that can deliver the applications you need over the network connections that will ensure unmitigated access to your data.

Tolly Research explores facets of ASP computing, such as the thin-client delivery mechanisms many ASPs use and the viability of moving multimedia data over thin-client nets. (See our ITclarity reports at .) We have yet to identify a single tried-and-true formula to picking an ASP winner today. But there are several factors you can consider that will protect your interests and put you on the path to selecting the ASP that best serves your needs.

Think globally, not locally. Contrary to the popular environmental slogan, thinking locally can get you into trouble later with ASPs. Department managers may be tempted to end-run corporate IT departments and move in an ASP swiftly due to time-to-market constraints. But consider the long-term implications of such an approach. Twenty years ago, when departmental users ran out and installed LANs, they did so without the knowledge of corporate standards, consideration of integration issues, or an understanding how the purchase would affect other enterprise systems. The result? They wound up with islands of computing that strained, at best, to communicate with enterprise-class systems.

With ASPs, it would be a shrewd move to invite corporate IT departments to help a department establish a relationship with an ASP. IT liaisons can help establish connectivity needs, identify security requirements that don't put business data at risk and ensure an ASP deployment fits within the context and integration of other business systems.

Examine the application delivery approach.

Application-delivery mechanisms vary among ASPs. Although almost every ASP will offer delivery of applications via the Internet or via private facilities such as frame relay or asynchronous transfer mode (ATM) nets, you need to zoom in closely and inspect the degree of connectivity offered.

Consider Internet connectivity. Some ASPs offer Internet connections via single provider, or via multiple ISPs that peer at private connection facilities called network access points (NAP) or metropolitan area exchanges (MAE). There are several issues to consider here.

Action items for potential ASPs

- Determine the number and location of the ASP's data centers
- Investigate the measures an ASP takes to protect access to client data (firewalls, security facilities, etc.)
- Find out what kind of reliability the ASP offers on its Internet connections and over its private frame relay or ATM connections.
- Examine the ASP's technical-support capabilities.
- Negotiate an SLA with provisions for uptime and application access.
- Ask the ASP to explain the incremental value-add it offers beyond the traditional application delivery mechanism.
- Understand your exit-strategy options.

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First, NAPs and MAEs are facilities where multiple ISPs connect to a high-speed LAN to exchange data destined for users on each other's networks. But NAPs and MAEs are public facilities, and, like a restroom at intermission of a concert or a sporting event, they get congested. So, latency and congestion may be a concern at the peering facilities your ASP uses to connect with other network providers. It's not enough to know that your ASP provides Internet access; pay close attention to the ISPs they use, and the peering facilities traffic must negotiate. Look at the latency and incident reports for these facilities to ensure your data isn't derailed by traffic jams over the ASPs Internet congestion. Work with ASPs on traceroutes from your prospect client site to their data center and count the number of intermediate hops. Pay attention to whether the vendor offers direct peering relationships with national Internet backbone carriers or relies upon NAP/MAE connections. As a rule of thumb, expect that ASPs with direct peer connections to Internet backbone providers will route Internet traffic over half as many hops as those that rely upon public peering points. Ultimately, that translates into a dramatic reduction in latency. Insist on provisions in your service-level agreement (SLA) that cover Internet traffic jams and the impact that will have on your application performance. Moreover, insist on an ASP that utilizes multi-transit ISP access – meaning the ASP should offer private peering to each of the major Internet backbone providers, from each of its data centers.

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Such a multi-transit approach will ensure reliability of transit for your application data, as well as offer an extra layer of resiliency in the event of an outage. Should one backbone provider's network experience and outage or brownout, traffic may be redirected over an alternate provider's network.

On the private network side, frame relay services seem to dominate at ASPs, with a smattering of support for ATM as well. With regards to frame services, make sure you negotiate proper committed information rate (CIR) levels to guarantee adequate bandwidth for bursting applications. And understand the self-healing nature of the frame relay service and the degree of resiliency it provides to route traffic around a failed link.

Consider QoS. There aren't many ASPs these days offering true quality-of-service mechanisms. (QoS facilities guarantee bandwidth availability for delay-sensitive applications, or mission-critical applications.) But that should change as mission-critical, bandwidth-intensive applications proliferate. Here you need to pay particular attention to the internal switching fabrics deployed by ASPs. Many of these ASP infrastructures are based upon Cisco Systems Inc. routers and Fast Ethernet or Gigabit Ethernet switches. No doubt you'll see other brand switching gear, too, from Nortel Networks, Foundry Networks, Alteon Networks and others.

Each of these vendors may support QoS mechanisms like IP Differentiated Services or 802.1p and 802.1Q VLAN Tagging, but tread carefully. Those standards provide a wide berth of flexibility in how the standards are implemented. That means you may well find significant differences in the degree of QoS supported and the resulting bandwidth guarantees offered by the ASP. Moreover, as you begin to deploy multimedia for in-house training, or for others uses, and as voice over IP becomes a viable means to reduce telecom costs, you'll want to find an ASP that can support real-time data streams with the appropriate bandwidth guarantees, while still preserving some capacity for less bandwidth-sensitive application streams.

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Also, pay attention where ASPs offer QoS guarantees. In all likelihood, such guarantees will be offered over private network links, such as frame relay or ATM services, which are proven, network-wide mechanisms. Be wary of ASPs that offer QoS over Internet connections. The Internet is a best-effort delivery network; traffic is handed off from one ISP to another via so-called "hot-potato routing." It is so named because traffic destined for another providers' network is passed from one network to another until it reaches the destination network. Such hand-offs make it nearly impossible to offer end-to-end bandwidth guarantees.

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Due diligence in data centers. ASPs that offer their services from a single data center leave clients exposed to the possibility of an outage at the data center, or within the tail circuits linking the data center to either the Internet or private carrier facilities. Ideally, ASPs that support enterprise-class clients should offer multiple geographically dispersed data centers, and services by multiple Internet and private network facilities that are routed over physically distinct paths to protect against a backhoe taking out a fiber circuit to the data center.

Understand the facilities usage. Expect to find two tiers of service at prospective ASPs. Some will offer entry-level server support – meaning you pay for applications and data that resides on a shared server resource. The other alternative is a premium service in which the ASP dedicates server resources to just your applications and data. Any medium to large enterprise should utilize dedicated server facilities, if for no other reason than you don't want another client's usage to impact the performance of your applications running on the same machine. The lower cost of shared facilities might appeal to small clients with fewer than 50 users, but small clients should query the ASP regarding their policies for sharing server resources. In general, users should expect a single-processor, Pentium-based server to deliver service to anywhere from 15 to 60 users, where the upper end of the range supports predominantly light or infrequent users and low-utilization applications.

Users requesting premium service should pay attention also to the extent of the dedicated facilities. Some ASPs will go so far as to dedicate not only the servers, but also the cabling and the switches your application streams move across. This gives you complete flexibility over the type of security and performance you expect to obtain from the service provider. Another adjunct issue here is the type of storage for your application's data. Some ASPs employ storage area networks, while others use enterprise-class storage subsystems that provide real-time backup at the data center, and in parallel off site.

Take a long look at support staffs. These days, ASPs are courting new clients at a rabid pace and feverishly throwing all available resources at new prospects. The result may well drain available support staffs from ministering to the needs of established clients. Pay close attention to an ASP's support infrastructure and understand how resources are applied to clients. Incorporate technical support requirements into your SLA, including negotiated response times and penalties for substandard technical support – including ultimately a provision for service bailouts should that become necessary.

Demand flexibility with SLAs. Service-level agreements act as an insurance policy that guarantees your ASP will follow-through on its promises – or literally pay the price for not doing so. An SLA is a contract that commits an ASP to a specified level and/or quality of service. SLAs typically require ASPs to provide 98.9% service availability, which equates to just under three hours of downtime per month. How does that mesh with your availability needs? Also, be careful what the vendor guarantees. Some ASPs guarantee application availability only, which leaves you high and dry in the event of an underlying network outage. Make sure your ASP's SLA contains provisions for uptime and maximum outage durations, for application response-time guarantees, for network reliability, and for some indication of guaranteed bandwidth.

Setting SLA requirements in place is a necessary first step, but due diligence on the part of customers is required to insure that they obtain the negotiated service. Users should understand how ASPs will

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collect performance metrics and report them to customers. Serious customers should also consider deploying their own monitoring and benchmarking tools to provide a cross check on ASP measurements.

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