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December 2001

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Recommended Citation

Dewire, Dawna, "ASPs: Applications for Rent" (2001). *AMCIS 2001 Proceedings*. 433.
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ASPs: APPLICATIONS FOR RENT

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Abstract

An application service provider (ASP) offers organizations business solutions. The ASP delivers the service, handling all aspects of the service – the hosting environment, the network infrastructure, the data center, and the application itself. Organizations typically pay a monthly fee to use the service. Using an ASP allows an organization to reduce capital costs and implement applications in a timely fashion.

Introduction

The latest trend in the use of technology has spawned a new breed of companies called application service providers. An application service provider (ASP) provides a contractual software-based service for hosting, managing, and providing access to an application from a centrally managed facility. Customer companies have remote, Web-access to applications that are live on the ASP provided servers. ASPs could provide such services as their primary business or be an ISP that sells or gives away value-added services.

What are Application Service Providers?

Even the acronym isn't uniform. Some believe ASP stands for Application Service Provider; others Application Service Provisioning. International Data Corp. (IDC) describes an ASP scenario as "an end user accesses an application resident on a server, just as he or she would on a LAN or in the enterprise data center. However, the server resides at the ASP's third party data center and is reached via a dedicated line or the Internet (or extranet). The applications can range from low-end productivity programs (e.g., word processing) to high-end ERP modules. The service is provided on a subscription basis and can bundle a full range of hosted application services." (*ASP: Market Hype*) The Information Technology Association of America (ITAA) has expanded that definition to "Any 'for profit' company that provides aggregated information technology resources to clients remotely via the Internet or other networked arrangement." (Gibbons Paul – ASP Implementation Guide, 2001) Laymen's terms – a company that delivers technology services via a network (usually the Web) to multiple clients on a pay-as-you go basis.

Think of it as leasing a car. With minimal upfront money, you are able to get something you might not be able to buy outright, you pay for it monthly, and at the end of the lease, you decide what to do with the car. By just licensing a few seats from an ASP, an organization gets a full functioning application that might be something more powerful and sophisticated than they could buy outright. They have access to the application without having to pay for hardware, software or installation. The organization can realize financial cost savings, reduce capital investments, and lower IT management requirements. Such an option also allows an organization to focus on their core business and react quickly to changes in the marketplace, both opportunities and threats.

There are many other ASP-like examples as well. Kinko's is an ASP for copying, FedEx for package delivery. A company buys their own copier or uses the services of a company like Kinko's. Some companies have their own fleet of trucks (like BMW), other companies used FedEx and UPS. For a small fee, a company basically "rents" services from Kinko's and FedEx.

ASPs provide business solutions to small, medium, and large companies on a rental basis. Large companies need access to complex applications and services. Small and medium enterprises require applications with little customization. Customers of ASPs are seeing cost savings in Total Cost of Ownership and improved time to deployment. ASPs, referred to as outsourcing companies by some, are often restructured software companies or strategic partnerships between consulting groups and infrastructure providers. ASPs provide organizations an option from the high fixed costs associated with software projects as well as the impact of these projects being over-budget and over-deadline.

Traditional applications such as enterprise resource planning (ERP), e-commerce and call centers are natural markets for the ASP model. The trend is actually extending the model to include vertical as well as horizontal applications. ASPs are looking at applications within banking, retail, sales management, medical imaging, and groupware, as well as the oil and gas industries.

But an ASP service isn't the timesharing of the 1960s or the outsourcing of the 1980s. The ASP model is much more than the rental of a slice of time. The model allows an organization to decide the location of the computing capability based on economic and financial grounds. It provides an option for sharing information and conducting transactions. The ASP model uses client-server architecture and relies on secure, cost effective data communications. The IT staff does not have to have expertise in the application or the infrastructure that is being handled by the ASP. ASPs can be used to fill gaps in an application portfolio. The focus is not on cost, but on time.

In traditional outsourcing arrangements, the entire process is handed off to the outsource company – the entire business process: operations, the legacy application itself, the infrastructure it was built on, and some of the internal IT staff to support it. Today every level of the IT infrastructure (network, data, messaging, system management) can be selectively outsourced. With the ASP model, the software and its required infrastructure (including support) are provided by the application service provider but the actual business process operations are still handed by the organization. If an insurance company outsources its claims processing, the outsourcer receives the claims and processes the claims on their hardware using their software and their staff. With the ASP model, the insurance company's staff receives the claims and processes the claims on the ASP's hardware using the ASP's software and infrastructure.

Customers of ASPs usually pay a flat fee to sign up and from then on a monthly fee. For that monthly fee, the customer gets all upgrades automatically – as soon as they are released, all the new drivers, the new features, everything. However, since the ASP is monitoring the customer's payments, if they stop paying, they no longer get the use of the software. It's as simple as that.

Developers can use the ASP model to convert the infrequent buyer into a steady revenue stream customer. For example, a customer buys version 4.2 of a software product and then doesn't upgrade for two or three generations. By converting that same buyer into an ASP customer, the customer pays a monthly fee on a regular basis (a steady stream of revenue). The software vendor only upgrades the master copies on licensed ASP servers. The software vendor doesn't have to maintain old code or support multiple versions of a product. If customers don't like the upgrade, they can't go back to a prior version.

IDC estimates the ASP market will be \$7.7 billion by 2004 (Koch), Forrester Research \$6.7 billion by 2002 (Seymour). The year old Wakefield, Mass-based ASP Industry Consortium (www.aspindustry.org) has gone from 25 members to more than 700 in 30 countries. Information Technology Association of America (ITAA) did a survey of over 1,500 IT executives. Nearly one-fifth were already using ASPs. Nearly 24% were planning to evaluate their use over the next year and 19% expected that they would be using ASPs before the end of the year. (*Outsourcing & ASPs*)

Driving Forces

The growth of the ASP market can be attributed to a variety of factors. On one hand, it reduces the risk associated with buying software – no huge consulting fees, no huge capital investment in hardware, no huge software cost (as much as \$100,000 for an ERP package); just a monthly fee. It also reduces the technology complexities involved in installing such software – the hardware, the network, the support. It allows an organization to focus on selecting a business solution.

Growth of this market is also fueled by reduced network costs, the growing capabilities of communication bandwidth, and improved security on the network. As the cost of connectivity declines as predicted by Moore's law, its capabilities will increase. The ASP market is positioned to take advantage of this trend. Deloitte Research predicts a range of "xSP" companies. BSPs (backbone) will provide high capacity, long haul connectivity. ISPs (Internet) will provide access to the Internet gateways and the BSPs. SSPs (storage) will provide remote data storage locations. CSPs (commerce) will provide delivery, Web design and ISP service. ASPs (application) will rent software via the Internet to any user with a Web browser.

The negative perceptions of outsourcing and off-the-shelf software are changing. Cost benefit analysis is being used to determine the best alternative. Organizations are weighting the option of off-the-shelf software rather than custom-developed applications, of in-house production versus purchased services. The ASP model provides perpetual maintenance and latest versions of software, unlike internal efforts – typically when an application is finally tested and released, the organization has to immediately start planning for the next version that is already on the horizon.

The business climate is changing quickly with mergers and acquisitions and the rapid growth of e-business. Organizations need to find flexible solutions while still focusing on their core competencies. IT departments are already busy maintaining existing

applications and don't have the resources to respond in a timely fashion. ASPs allow an organization to respond to changes and opportunities in a user-friendly Internet-based environment. An e-commerce site can be up and running within a short time frame.

IT talent is getting harder and harder to find and to retain. Using an ASP frees IT from supporting commodity applications and allows companies to use their scarce IT resources for strategic projects. Using an ASP doesn't hold up implementing critical software while trying to find IT talent such as experienced e-commerce people.

The mid-size companies are turning to ASPs to implement high-end applications. Such companies typically do not have the IT talent or resources to deploy such software or the capital required to license the software and implement it – in some cases, implementation costs can run three to five times as much as the license fee. ASPs give these mid-size organizations access to these high-end applications at a reasonable price, at a lower risk, and in a faster time frame.

As outlined in Figure 1, there are a lot of reasons why an organization should consider an ASP for their commodity applications. The current economy forces organizations to focus on what they do best and hire others to do the rest. That's exactly what the ASP model allows an organization to do.

The organization is a startup and doesn't have the capital resources to make significant IT investments
The organization is undergoing rapid growth and needs to scale its IT infrastructure quickly.
The organization is undergoing mergers and acquisitions and needs a flexible IT infrastructure.
The organization can't afford a huge IT capital outlay at the time.
The organization needs to be able to switch environments in the future.
The organization needs to deploy applications rapidly.
The organization is finding it difficult to attract and retain IT staff.
IT isn't a core competency.

Figure 1. When to Consider an ASP

ASP Business Model

The most common features of an ASP are:

- The ASP own/licenses and operates a software application (or more than one application).
- The ASP operates and maintains the servers the application(s) are running on or has outsourced its data center.
- The ASP employs the people needed to maintain the software.
- The ASP provides connectivity to the application via the Internet through a browser or through a thin client architecture.
- The ASP bills either on a per-use basis or on a monthly/annual fee basis.

Application service providers provide the access to and management of an application. An ASP owns the software or has a contractual agreement with the software vendor to license it. Customers gain access to the environment without making investments in application license fees, hardware, and staff. The application is managed from a central location (the ASP site) rather than the customer's sites. Customers access the application via the Internet or leased lines. The ASP is responsible for delivering on the customer's contract (regardless of its structure – sole provider or partnered). If a problem arises, the ASP is responsible for resolving the issue. Service guarantees usually address availability, security, networked storage, and management and are spelled out in service level agreements (SLAs). ASPs enforce these guarantees by closely monitoring the server environments and often add proprietary modifications to ensure performance uptime and security.

ASPs may also offer various levels of service.

- **Core services** would include the basic level of services – managing the application environment, monitoring the application, network support, and providing upgrades, as they are available.
- **Managed services** would enhance the core services by offering additional services and guarantees related to security, application performance, and data redundancy.
- **Extended services** would further enhance the managed services by providing professional services such as strategic planning and application configuration.

An ASP provides the application service as its primary business. The service may be delivered from beginning to end by a single vendor or via partnerships among several vendors. A single source vendor controls everything from implementation to ongoing operations and maintenance of the application. The customer deals with only one vendor and that vendor has complete control over the process. Oracle Corp. is offering ASP services using this model. Under this model, the vendor must have expertise in a variety of areas, maintain a data center infrastructure, and has high capital requirements.

In the best-of-breed model, the company partners with other organizations to leverage expertise. In effect, the ASP has its own supply chain. One partner might be providing data storage, another the web hosting services, and another the application itself. Two successful ASPs use this model. USinternetworking (USi), recently listed on NASDAQ has partnered with Cisco to supply the networking infrastructure and operates its own data centers. USi currently has four data centers around the world. Corio has a partnership with Sun Microsystems to supply the infrastructure and with Exodus Communications and Concentric for the storage of data. With this model, a customer has many players to deal with but should, ideally by contract, have only one interface point and it should be to the ASP itself.

Categories of ASPs

ASPs can be used for commodity applications that would require huge amounts of maintenance and support or used to fill a specialized niche in an organization's application portfolio. Application service providers can be categorized based on the types of applications they offer.

Enterprise

These ASPs offer high-end applications that require customization. This category of ASP is offering ERP, customer relationship management (CRM), Supply Chain Management (SCM), or workflow and imaging software services. The software vendors would include SAP, Baan, PeopleSoft, Oracle, and Siebel. ASPs in this market segment might also offer professional services for design, implementation, systems integration, and ongoing operations management.

General Business

These ASPs are targeting the small to mid-sized companies that need general business applications that require little or no customization. These are relatively simple applications such as E-mail. Templates are used by the user to configure the application to their specifications.

Specialist

These ASPs are focused on a particular type of application such as human resources or CRM.

Vertical

These ASPs provide packaged or specialized applications for a vertical market segment such as the medical practice management software for medical practices and claims processing for insurance companies.

ASP Architecture

The keys to an ASP's success of an application's delivery are reliable, remote data access and network management. The technology requires four different architectures to work together efficiently and effectively as shown in Figure 2.

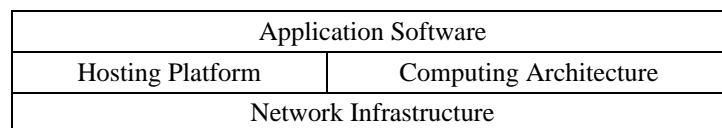


Figure 2. ASP Architecture Components

The applications being delivered use client-server architecture. Client-server architectures consume large amounts of bandwidth between PCs and servers. To provide a high level of quality network service, ASPs tend to partner with telecommunications providers. The choice of the network platform ultimately determines the level of service that the ASP can actually deliver.

Hosted application environments require a different architecture than internally hosted environments since the external environment can't rely on the high bandwidth of the internal LAN. Internet connections can vary from dial-up to T1 lines. Internet connectivity directly affects the way an ASP can provide access to the hosted application.

The network platform drives the architecture choices for the computing architecture as well as the choices for hosting the application itself. The computing architecture must support the management of the software as if it resided locally. It must also support remote management of the application and desktops.

For organizations with high bandwidth, an ASP can use regular PC clients and traditional client-server software architecture to deliver the application over the high bandwidth, corporate connections. Users access the application via their browsers using a portal site. The ASP manages the browser application and the individual desktops.

If the network is a limiting factor, an ASP has to look at alternative computing architectures: Java applications or thin client architectures. With Java, an ASP can simplify the Web-based environment. The application is downloaded and run transparently on the user's machine. However, Java downloads work best with high bandwidth and may not perform as well as thin client-server architectures.

Thin client architectures can be used with low bandwidth, including dial in. The application is run within the data center. Users run the application remotely with the network transporting only keystrokes and screen updates. The ASP administers and manages the desktops from the data center. Thin client architecture is also viewed as the best way to provide the level of reliability and security required by the ASPs.

Service Level Agreements

As mentioned earlier, service level agreements (SLAs) spell out the customer's expectations for service, which might range from expected response times to minimum bandwidth. Some ASPs include guarantees such as 99.9% uptime and disaster recovery. ASPs will add security to an already secure platform such as Windows NT to guarantee security levels.

An SLA details the day-to-day expected service. There should be means to reward exceeded minimum requirements that can be offset against days that didn't meet expectations. The SLA might also include provisions for days when the ASP's servers are off-line for maintenance. An SLA should also include a clause that allows the customer to terminate the contract without penalty if they receive poor service. A customer should also make sure they can get out of the deal with whatever they need to bring a new ASP on board – such as data and customized software.

As a customer, keep the contract term as short as possible – no more than three years. It is difficult to know what hosting will look like in five years. Make sure the performance penalties truly motivate the ASP to address your issues (remember, you aren't their only customer) and that penalties escalate each time the problem occurs. Establish metrics that truly measure your growth. Choose two simple ones and agree on a firm price for the service as usage grows.

Don't try to trade less service for lower monthly fees. The only way for your ASP to lower your costs is to cut service levels. The quality of the service is key to the customer's successful use of, and therefore derived benefit from, the A

Due Diligence

The ASP market is still in its infancy but its potential benefits are obvious. Companies can have access to a variety of application with little upfront investment and implement them quicker and at a guaranteed service level. Companies can also minimize the impact of a shortage of IT staff. But before a company signs a contract with an ASP, there are some issues to consider.

Most ASPs are only a few years old (if that old). Ask a lot of questions about their stability. Talk to references for sure but also talk to other companies that use ASPs. Understand what it's like to be in that environment.

ASPs with multiple applications are more likely to be around longer than those that host a single application. It's easier for them to achieve critical mass.

Make sure you have provisions if you need to change ASPs or the ASP goes out of business. If the data center is outsourced, make sure you can function at the data center itself if something happens to the ASP.

Whose Customer Is It?

An interesting question that remains to be answered is Who owns the customer – the end user? Is it the software vendor of the application itself or the ASP, or some combination? Software agreements might give the ASP a master license, which can be leveraged across multiple customers, or might give the ASP a discounted license fee and the ability to resell the application directly to the end customer. However, as software vendors are beginning to realize the potential of the ASP market, agreements are being restructured.

The initial agreement between Siebel and USi was as a reseller. The agreement has since been restructured so that Siebel sales force is the main distribution point for its ASP offering. Under the new agreement, USi fulfills the back-end hosting role. Oracle decided to maintain complete control over its ASP offerings from software sale to implementation and hosting. This way Oracle maintains full control over the customer.

The ownership issue will be an interesting one to watch. It is expected that most software vendors will enter this market by partnering with an ASP that wishes to leverage its existing data center infrastructure. Consequently, the two organizations would have to work together to balance customer ownership. However, if the customer's point of interface is the ASP (and you would expect it to be, after all, the ASP is implementing and hosting the application) and not the software vendor, the ASP will have ownership tipped in its favor.

Challenges and Risks

In order to reach its projected revenue levels, the market has many challenges to overcome and risks to manage.

ASPs need to gain customer acceptance as well as IT acceptance. The selling focus is usually to business management – pitching a business solution or business service. The focus is on value-added. The IT organization often comes into the discussions to address security and network issues. IT needs to view the ASP as an alternative, not an interloper. IT needs to become the advisors, not turf protectors.

Potential customers need to be convinced that their application and its data will be available to them 24x7 but yet secure from outsiders. As the Internet traffic continues to grow, potential customers must also be convinced that their access will not slow down. As mobile use escalates, ASPs need to deal with the needs of employees out of the office and the security requirements mobile access demands.

Customers also have to be willing to forego customization. ASPs use a one-to-many delivery model – the same application is hosted for a number of customers. Customers also have to determine integration strategies between the ASP offering and the existing in-house applications.

How well the market grows will also demand on how well ASPs can deliver on promised service levels. Can they meet or exceed customer expectations? Since USinternetworking had its successful IPO, ASPs have been springing up seemingly overnight, fueled by venture capital money.

Some ASPs aren't going to make it. GartnerGroup estimates that only 40% of current ASPs will survive in their initial form until mid-2002. (Paul – Picking a Winner, 2001) ASPs need to build configurable software for use by multiple customers. The ASP doesn't begin to recoup their costs until their customers have been online for months or even years.

Current Trends

While the ASP model leans towards small and medium-sized businesses, larger organizations are using ASPs for non-mission critical applications, such as mail services, thus freeing up their strained IT staff.

Many ASP customers are no longer renting software. They are opting to buy the license themselves and have the ASP host it. So if the ASP goes away, they still own the software.

New Players to Watch

As the ASP market matures and proves itself, more players will try to join in. We will continue to have ASPs that focus solely on the ASP market. Traditional systems integrators will begin to enter the ASP market using their integration expertise as their strength. IBM Global Services and EDS have already announced they are adding application hosting to their service portfolios. EDS has a partnership with SAP. Qwest Communications and KPMG have a joint venture named Qwest Cyber Solutions. Qwest provides the data network infrastructure and KPMG provides nearly 500 application developers and integrators.

However, systems integrators are not noted for their ability to change gears quickly. ASPs are smaller organizations and more agile. The systems integrators are also used to long projects, not the mindset of an ASP turnkey service. The entry of systems integrators into the ASP market could be viewed as validation of the concept rather than a threat.

Web hosting companies will need to improve their professional service capabilities before they become major players in the ASP market. Many will find their way into the market by partnering with other ASPs as back-end data center providers.

The same holds true for telecommunications companies. The ASP market would help them leverage their large infrastructure investments. To enter the ASP market they will have to improve their value-added capabilities and improve their service capabilities. Telecomm companies will also most likely end up as partners in the ASP marketplace.

Summary

An application service provider offers organizations business solutions. The ASP delivers the service, handling all aspects of the service – the hosting environment, the network infrastructure, the data center, and the application itself. Organizations typically pay a monthly fee to use the service. Using an ASP allows an organization to reduce capital costs and implement applications in a timely fashion.

Certainly the trick is picking the right application and the right supplier – in this case an ASP, but isn't it always? So if you saw your own organization as you read the statements in Figure 2, start researching which application service providers can supply your needs. Don't wait for the competition to pass you by.

References

- ASPStreet.com, *A 'Qwest' for SLAs*, undated, <http://www.aspstreet.com/archive/d.taf/what/show/id,4303>
- ASPStreet.com, *ASP Industry Consortium Produces SLA Guide for End Users*, undated, <http://www.aspstreet.com/archive/d.taf/what/show/id,4107>
- ASPStreet.com *Xevo, RSA Security to Provide ASPs with Security Provisioning*, undated, <http://www.aspstreet.com/archive/d.taf/what/show/id,7802>
- Brain, Marshall, *How ASPs (Application Service Providers) Work*, undated, <http://www.howstuffworks.com/asp.htm>
- Briere, Daniel and Gage, Beth, *Are ASPs the next dot-coms?*, Network World's The Edge, 2000, <http://www.nwfusion.com/edge/columnists/2000/1120bleeding.html>
- Butler, Michelle, *Supply Chain Management: Eliminating the Weak Links*, June 5, 2000, <http://www.aspstreet.com/archive/default.taf/what/show/1,pv/sid,14/id,969/cid,110>
- Carter, Todd W., *ASP Arena: Annual Reports Offer Glimpse Inside xSPs*, ASPStreet.com, undated <http://www.aspstreet.com/archive/d.taf/what/show/sid,11/id,8062>
- Carter, Todd W., *Beginner's Guide to ASP: SLA*, May 23, 2000, <http://www.aspstreet.com/resources/stores/default.taf/what/show/id,865>
- Carter, Todd W., *Executive Q&A: with Full Telecom Suite, Winstart Says It's Easier to Find New ASP Customers*, ASPStreet.com, undated, <http://www.aspstreet.com/archive/d.taf/what/show/id,6501>
- CIO, *ASP & Ye Shall Receive*, May 1, 2000
- CIO, *Monster in a Box?*, May 1, 2000
- Dewire, Dawna Travis, "Application Service Providers," *Information Systems Management* 17 (4): 14-19 (Fall 2000). ©2000 CRC Press LLC. Adapted and reprinted by permission.
- Deloitte Consulting and Deloitte & Touche *The Internet-based ASP Marketplace*, undated
- Gibbons Paul, Laura, *ASP Implementation Guide*, NetworkWorldFusion, <http://www.nwfusion.com/research/2001/0122feat.html>
- Gibbons Paul, Laura, *Cymerc is sold on msp*, NetworkWorldFusion, undated, <http://www.nwfusion.com/research/2001/0122featside5.html>

- Gibbons Paul, Laura, *Delayed gratification*, NetworkWorldFusion, undated, <http://www.nwfusion.com/research/2001/0122man.html>
- Gibbons Paul, Laura, *Picking a winner*, NetworkWorldFusion, undated, <http://www.nwfusion.com/research/2001/0122featside1.html>
- Gibbons Paul, Laura, *Sweating the Details*, NetworkWorldFusion, undated, <http://www.nwfusion.com/research/2001/0122featside3.html>
- International Data Corporation, *ASP: Market Hype or a Real Option for your Business?*, an IDC White Paper, Computerworld, undated
- Legg Mason Equity Research – Technology Group *Application Hosting Market*, August 2, 1999,
- McPherson, Amanda, *Application Service Providers – A new software distribution model*, May 13, 1999, http://www.greatconnect.com/transofmr/projects_s99/amcpherson_project.html
- Mears, Jennifer, *ASPs Wooing the Big Guys*, PCWorld.com, undated, <http://www.pcworld.com/resource/article/0,aid,42042,00.asp>
- Pappalardo, Denise, *ASPs can help a start-up quickly gain altitude*, NetworkWorldFusion, undated, http://www.nwfusion.com/archive/2000/114210_12-11-2000.html
- Rutherford, Emelie, *ASP Primer*, CIO, undated, http://www.cio.com/forums/asp/edit/030600_primer_content.html
- Seymour, Jim, *How Application Service Providers Will Change Your Life*, TheStreet.com, undated, <http://www.wsaccess.com/theStreet/comment/techsavvy/759956.html>
- Stardock Corporation *Application Service Providers*, undated, http://www.stardock.net/media/asp_primer.html
- TRG International, *How ASPs Deliver Value: Next generation Portals for Business Applications*, May 3, 1999, <http://www.trginternational.com/HTML/giotto.htm>
- Wainwright, Phil, *ASP insider: An application service primer*, ASPnews.com, undated, http://www.aspnews.com/news/article/0,,4191_373981,00.html
- Whitmarch, John C., *Apps on Tap*, SoftwareMag.com, 1999, <http://www.softwaremag.com/archive/1999decappsOnTap.html>