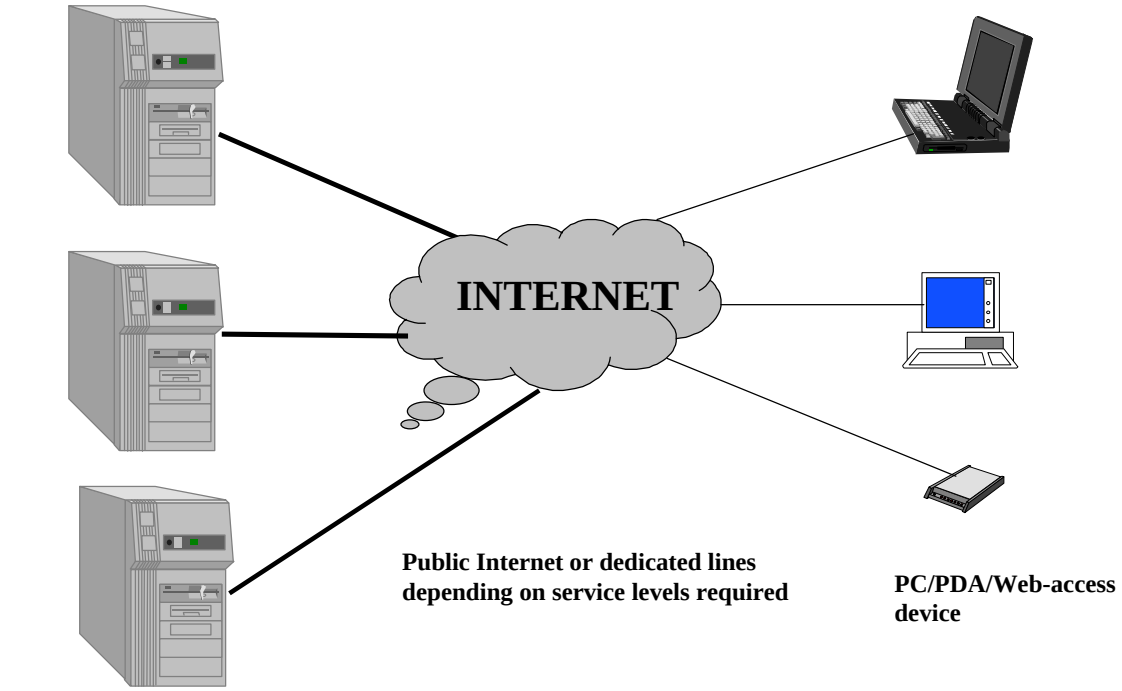
Industry Outlook
Web-Based Application Outsourcing—The Next Internet Wave



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The Web-Based Application Outsourcing Industry

Table of Contents

ADDITIONAL INFORMATION IS AVAILABLE UPON REQUEST

EXECUTIVE SUMMARY

WHAT IS AN ASP

An Application Service Provider (ASP) offers businesses and consumers the option of renting software applications from centralized data centers called server farms via the Internet or a dedicated network for a fixed monthly fee. Users access these applications through a browser without having to invest in expensive in-house information technology (IT) resources to support enterprise software applications.

GROWTH DRIVERS

The Application Service Provider (ASP) concept is a paradigm shift in business and personal computing. Forrester Research expects the market for outsourced applications to grow from $1 billion in 1997 to over $21 billion in 2001, of which $6.4 billion is expected to come from the Application Rental segment. This explosive growth is expected to be fueled by the following problems and business needs that are addressed by ASPs:

- ***Compelling economics***. ASPs allows small and mid-sized businesses to increase their productivity by making available to them previously inaccessible best-of-breed software for a monthly fee over the Internet, thereby eliminating the need for upfront investments that typically run into seven figures for new software and internal IT staff.
- ***Brand new market opportunity for Enterprise Software companies***. Over the past several years, the growth of major enterprise software companies like Peoplesoft, SAP, etc. has been slowing. Upfront costs of their software are substantial, often running into seven figures. The reason for the slowed growth is that these software companies have essentially saturated the large company market, but have not been successful at penetrating small and resource-constrained businesses. ASPs help these major enterprise software companies create and penetrate a whole new market opportunity.
- ***Flexibility***. Businesses not only can shave as much as 40% off in direct costs, but they can also experiment with new software and strategies.
- ***The IT Labor crunch***: The IT labor crunch is extremely serious and getting worse, according to a report released by the U.S. Department of Commerce. The average annual growth rate for computer systems analysts, computer scientists, and computer engineers is estimated to top 100% by 2006. This translates to more than 1.3 million new IT workers will be needed to fill job openings and replace workers leaving the field. The ASP concept greatly mitigates this problem.
- ***Virtual IT support results in significant cost savings***. Implementation of software projects has traditionally been a lucrative job for consulting firms like EDS, Andersen Consulting etc., who bill their clients by the hour. ASPs, unlike consulting firms, do not have an incentive to extend the length of a project and can cut down the time to implement a project by as much as 50%!
- ***The Internet Economy***. The emergence of the Internet as a delivery platform has boosted development of the ASP concept.

INVESTMENT POSITIVES

The Application Service Provider (ASP) market is brand new with no real dominant players today. This provides investors with an incredible opportunity to play this sector at an early stage. We have identified several pureplay private ASPs and a few public ones like US Internetworking and FutureLink that investors should take a close look at.

- ASP's leverage the Internet to deliver software applications and technology solutions to businesses and ultimately consumers anytime, anywhere, via any device, and on demand.

- ***"Red Hot" Internet sector*:** The Internet has completely transformed the communications landscape and the way business is conducted. A new Internet wave called "Application Outsourcing" is emerging. FutureLink and a few companies including USInternetworking who have helped define this industry are known as Application Service Providers (ASPs). An ASP offers businesses the option to rent common business software i.e. Microsoft, SAP, PeopleSoft etc. via the Internet by paying a monthly rental fee. The ASP is responsible to deliver, manage, and maintain the software application. We believe, over the next few years, ASPs will redefine the computer market and accelerate the rate of penetration of hardware and software solutions. Ultimately, this model will be adopted by the computer hardware and software vendors as well as the Internet Service Providers.

- ***The Next Internet Wave*:** The trend toward outsourcing began with companies outsourcing their information technology (IT) services. More recently, companies have increasingly begun outsourcing their server and website hosting functions to companies like Exodus, Verio, Abovenet and Globix. These companies have more than quadrupled in market value over the past six months reflecting investors enthusiasm for the sector. Application Outsourcing is slated to emerge as the next Internet wave.

- ***ASP Sector Attracting Smart Money*:** Top venture capital (VC) firms including Kleiner Perkins are making a bet on the ASP sector by investing in startups—Corio and Impresse. USInternetworking, another ASP backed by leading Silicon Valley VCs, raised close to $100 million in an IPO recently.

- ***Valuation*:** USInternetworking (USIX) went public recently at an initial market value of $750 million and is currently trading at a market value of $1.0 billion. FutureLink (FLNK) currently has a market capitalization of approximately $375 million.

INVESTMENT ISSUES

- ***ASP—A New Concept*:** Although there is a lot of optimism surrounding the ASP concept and its compelling business model, renting over the Web is still a largely untested practice. With technology and corporate strategies changing every day, some companies may have to decide whether to rent or buy before a solid track record is established. This may delay decision-making and increase the length of the sales cycle.

- ***Control Issues*:** Even if renting is cheaper than buying, companies need to consider control issues before they take the rental route. Once a company cedes control of an application to an outside firm by renting, it often sacrifices the opportunity to make modifications to the software.

- ***Management's Ability to Execute*:** Most pureplay ASPs are early-stage companies and their success depends a great deal on management's ability to execute.

- ***Need for Capital*:** The ASP business in capital intensive and companies need to raise considerable capital, typically more than $50 million, in order to build their server farms. Their ability to raise money is obviously dependent on the state of the capital markets and investors' appetite for Internet offerings.

PURE-PLAY PUBLIC ASPs

- ***US Internetworking*** (NASDAQ: USIX): USI, a pure-play ASP, operates and supports packaged software applications that can be accessed and used over the Internet. USI's services enable clients to use leading business software applications such as Peoplesoft, Broadvision, Siebel, etc. without the cost and burden of owning or managing the underlying technologies, such as computer servers, networking equipment, and software licenses. The company was one of the first pure play ASPs to go public. USI's market capitalization of almost $1.0 billion reflects investors' enthusiasm for its business model and potential growth. USI's revenues are expected to increase from $4 million in 1998 to $31 million in 1999.

- ***Futurelink*** (OTC BB:FLNK): FutureLink Distribution Corp. is based in Calgary, Canada and is in the process of moving its offices to Irvine, California. The company is one of the early adopters of the "Application Services Provider" (ASP) concept. FutureLink's relationships with several leading software and hardware companies including Citrix, Cisco, UUNet (Worldcom) and Compaq have helped it develop a stable and reliable ASP delivery platform. In addition, FutureLink has signed up several software vendors including Microsoft, Great Plains, Onyx and Applix for content. Although FutureLink is still in the early stages of its development, several industry research firms recently labeled FutureLink as the # 1 pure play ASP today. We believe FutureLink has to potential to compete very effectively especially by targeting small and mid-sized businesses. We recently initiated coverage on Futurelink with a "Strong Buy" and a 12-month price target of $20. We project revenues of $11.9 million in 1999 and $50 million in 2000.

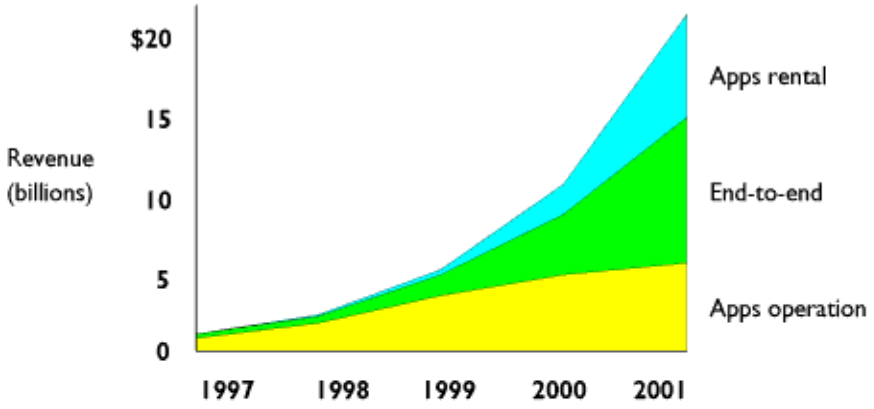
- ***Critical Path*** (NASDAQ:CPTH*)*: Critical Path hosts and manages email operations for large corporate clients like Internet service providers and Web hosting companies. Critical Path has built an industry-leading global infrastructure with data centers connected to key Internet exchange points, and currently reaches millions of end-users through its customer relationships. The company provides reliable, secure, and scalable email, and a flexible suite of enhanced messaging services to partners such as E*TRADE, CompuServe, Network Solutions, U S West, Sprint, and ICQ. Critical Path is headquartered in San Francisco, California, with offices in locations nationwide and in Germany and the UK. The company's revenues are expected to increase from $0.9 million in 1998 to $12 million in 1999.

THE APPLICATION SERVICE PROVIDER MARKET OVERVIEW

MARKET SIZE: $6.4 Billion By 2001

- The emergence of the Internet, the need by small to mid-sized companies for ERP programs and IT services (mostly limited to the Fortune 500 market), has led to the rise within the past year of the Application Service Provider (ASP) market. An ASP addresses these companies' needs by providing IT services and the ability to download applications or ERP programs from a centralized offsite location via the Internet.
- Forrester Research estimates the Application Outsourcing (hosted outsourcing) industry will grow from approximately $1 billion in 1997 to over $21 billion by 2001. Included in this is the market for application rentals, which stood at zero just a few months ago, and is expected reach $6.4 billion by 2001.

Figure 5 **Packaged Applications Outsourcing Opportunity**



Apps rental	$ .01	$ .09	$ .39	$ 1.88	$ 6.37	402%
End-to-end	.22	.42	1.21	3.75	9.13	153%
Apps operation	.83	1.80	3.52	4.80	5.55	61%
Total	**$ 1.06**	**$ 2.31**	**$ 5.12**	**$10.43**	**$21.05**	**111%**
Revenue by company size (billions)						
Small companies	$ .17	$ .30	$ .78	$ 1.48	$ 3.13	107%
Medium-sized companies	$ .22	$ .47	$ 1.25	$ 3.56	$ 8.61	150%
Large companies	$ .67	$ 1.54	$ 3.10	$ 5.38	$ 9.32	93%

Source: Forrester Research, Inc.

Apps operation. This segment includes revenues generated by the IT services companies that would maintain applications for corporations inhouse.

End-to-end service. This segment includes full-service suppliers who provide operations, user support, and rich customization to fit clients' changing business process and information requirements. This may include ownership of the software license and computing infrastructure for clients that ask.

Apps rental. Apps rental providers will rent packaged applications usually for a monthly fee from servers with capacity for thousands of users.

THE PROBLEM --TRADITIONAL IT SOLUTIONS

Companies consider agility -- speed and flexibility in responding to changing market conditions and seizing new opportunities -- critical to effective business strategy. And IT is essential to delivering that agility.

The tight IT job market. The scarcity of human resources to manage Enterprise Resource Planning (ERP) applications is the largest hurdle which high-growth companies must overcome in establishing their ERP system. Recruiting, training, and retaining an IT staff knowledgeable in these particular packaged applications is extremely difficult for such companies. The IT labor crunch is extremely serious and getting worse, according to a report released by the U.S. Department of Commerce. The average annual growth rate for computer systems analysts, computer scientists, and computer engineers is projected to top 100% by 2006. This means that more than 1.3 million new IT workers will be needed to fill job openings and replace workers leaving the field.

Expensive but critical ERP software. Companies needs ERP software to run most critical internal applications - those for the front and back office such as human resources, accounting, sales force automation, and enterprise resource planning (ERP). Traditionally, implementations of these kinds of packaged applications from companies like PeopleSoft and Siebel are handled by corporate MIS departments with on-site consulting by a system integrator. The capital outlay for a typical packaged application solution can easily run into the $1M to $2M range just to procure and implement, not including the staffing, operational, and maintenance expense.

Total Cost of Ownership (TCO). Many factors go into calculating TCO, but the most significant are administration, maintenance, and software distribution. TCO includes administrative resources of a similarly configured PC environment. An additional factor in TCO is hardware price. Research firms estimate that it costs approximately $10,000 a year to buy and maintain a networked PC.

Security The possibility always exists for unauthorized access to corporate resources from outside the firewall. Companies need to take extensive security measures to safeguard the client's data from physical access, as well as access through the public Internet.

Software Upgrades As a company grows, hardware, software, and the connectivity components of the network will need to be expanded and upgraded. Upgrades are expensive for individual companies and require a significant amount of preparation time and knowledge to realize exactly what is needed. A network contains many pieces of complex technology that are continually being improved.

ASP TECHNOLOGY PLATFORMS

There are currently four leading platforms for delivering application software services.

- **Citrix**
  The most mature platform is based on technology developed by Citrix Systems for Microsoft's Windows NT server environment and is being used by FutureLink. This allows Windows terminals to access standard Windows applications running on the server. It was originally implemented on NT 3.51 as Citrix Winframe, and is now incorporated in Windows NT 4.0 Terminal Server (WTS). Citrix MetaFrame and WinFrame software and Independent Computing Architecture (ICA) technology give application service providers the independence, speed and flexibility needed to extend any application to anyone, anywhere. Providing the back-end engine for predictable and efficient application delivery, Citrix server-based computing solutions enable service providers to guarantee levels of service, including availability, security and performance, for optimal end-user experience. Citrix's technology is being broadly adopted by industry leading vendors for building server-based computing capability into Windows-based terminals, network computers, wireless devices, and a new range of information appliances.

- **Sun/Netscape**
  Sun's Java is a powerful environment for developing and running server-based applications. It has also introduced Jini, an intelligent network architecture for distributed applications. However, both technologies are still maturing and have not yet developed the robust support infrastructure required for enterprise-class application services. Netscape has developed support for server-based applications on its Internet platforms for e-commerce, messaging and other applications. Following its acquisition by AOL, it has now formed an alliance with Sun and the two companies will converge their server products over the coming year.

- **Oracle**
  The new Oracle8i database platform has been designed to act as a platform for Internet-based applications. It looks set to be a strong contender once developers have had a chance to come to grips with the platform, which shipped in March 1999.

- **Lotus**
  Lotus was the earliest vendor to begin supporting hosted applications on its Notes and Domino server platforms, but its focus was on entry-level rented applications. Therefore, it has not prioritized development for enterprise-class application services.

- **Marimba**
  Marimba’s Castanet technology can be used as the application distribution and management (ADM) infrastructure tool. Corio recently selected this technology to deliver software applications to its clients.

Buy vs Rent Comparison

	1yr cash outflow	Traditional Annual Amortized	ASP/Futurelink Pricing
Hardware	**$350,000**	**$175,000**	
Software	**600,000**	**200,000**	
IT Personnel	**350,000**	**350,000**	
Other	**78,000**	**78,000**	
Total	**$1,378,000**	**$803,000**	**$530,400**
Total / Seat	**13,780**	**8,030**	**5,304**
Per Seat / Month	**$1,148**	**$669**	**$442**

Futurelink allows companies to save up to 30% of their fully amortized costs of installing and managing software applications in-house without having to fork out a typical seven figure upfront investment.
The above example shows the cost comparison per seat/month for an application that requires upfront costs of $600,00 for software and $350,000 for hardware.

Source: FutureLink

9

MAKING THE CASE FOR ASPs

1. For a fixed monthly fee, ASPs offer the following value proposition:
   - Provide the use of a packaged software application;
   - Provide the use of the required computing hardware if required;
   - Provide secure network connectivity to authorized users;
   - Depending on the level of service needed, assume total responsibility for the ongoing operation;
   - Provide automatic software upgrades as well as assistance in scaling and upgrading the system.
2. Due to the large upfront capital expenditures associated with purchasing and licensing software, as well as the technical staffing requirements of installing and supporting it, leading business applications have been out of reach for all, but the largest businesses.
3. Small and medium-sized companies looking for an alternative to time-consuming, resource-intensive package implementations and ongoing management will adopt the ASP model quickly. These smaller, resource-constrained, organizations will opt to rent software applications on a monthly basis from ASPs. Such firms will, thereby, realize the business benefits of previously inaccessible best-of-breed applications without making upfront investments in internal systems administration or IT staff.
4. Suppliers will preinstall a limited choice of applications on their own servers, preconfigure them for generally accepted best practices, and eliminate custom development as an option. As a result, these suppliers will get companies up and running in one-third to one-half of the time and cost of typical package implementations. Large companies will also rent applications, but mainly administrative applications like accounting. (Source:Forrester Research)
5. Compelling Ecomomics: Application rental suppliers will deliver these services for a single, monthly fee of roughly $500 per user for a complete ERP suite. This is well below the end-to-end service offering and even lower than most companies' internal costs.
6. Security, scalability, and capacity utilization: To make a profit at these prices, rental players will support dozens of customers at centralized data centers with pools of support staff. Providers will use application and network security features to deliver the customers' applications and data to users' Web browsers over the Internet.
7. Software vendors like SAP, PeopleSoft, Microsoft etc. benefit from the ability to open their applications to an entirely new and potentially lucrative market.
8. Renting makes sense for companies with the following traits:
   - Can't afford to buy
   - Fast growth
   - Small to medium-size company with annual revenues of less than $1 billion
   - Don't need extensive software customization
   - High IS turnover
   - Skills shortage
9. Renting also eliminates the need for companies to invest in expensive hardware and regular upgrades to faster servers and PCs because the processing is being done at the ASP’s servers and clients do not need powerful machines to access the software applications.

VALUATION METRICS

Over the next three years, we expect successful ASPs to generate over 100% top-line growth. Revenue growth is expected to be fueled primarily from strong demand by small and mid-sized businesses for enterprise software rental solutions, the shortage of high-end IT personnel, and the emergence of the Internet as a stable and reliable delivery platform for centrally hosted software.

Revenue Derivation: ASP revenue models are based on the number of seats under management. This number varies from $100--$1500 or higher per seat depending on the kind of applications and services the customer chooses. Once the ASP model has been tested for a few quarters, investors will have a better feel for the monthly average revenue per seat.

Earnings per Share: Most ASPs are not likely to show profits until early 2001. This is due to the need to invest in infrastructure and sales and marketing in order to capitalize on the rapidly growing ASP industry. However, the high-margin recurring business should enable them narrow losses quickly and attain profitability.

Valuation: As the ASP industry matures, analysts will use different valuation methods to arrive at price targets and investment ratings. Since ASP companies are still in embryonic, high-growth stages, revenue multiples and comparable valuation methods are more appropriate at this stage of their growth cycle. We also believe these companies could eventually be valued on a "value per subscriber or seat" basis as the industry matures and ASP services become more prevalent.

Over time, we believe that earnings power and cash flow multiples will be the most relevant benchmarks for valuing these companies, and ASP stocks deserve to trade in line with their respective three-year EPS growth rates.

We have shown below the comparable valuation metrics for US Internetworking, FutureLink—the only two publicly traded ASPs. We have also included major Web hosting and Web Service companies. These companies trade on average at 22x 1999E revenues and 10x 2000E revenues.

Company	9/24/99 Share Price	Shares O/S (million)	Market Value ($ million)	Net Debt ($ million)	Enterprise Value ($ million)	1999E Rev. ($ million)	EV/ 1999E Rev.	2000E Rev. ($ million)	EV/ 2000E Rev.	EPS($) 1999(E)	EPS($) 2000(E)
US Internetworking (USIX)	$22.75	40.00	910.00	43.00	953.00	30.00	31.77	106.00	8.99	(1.55)	(1.07)
Futurelink	$8.00	47.00	376.00	17.00	393.00	11.90	33.03	50.90	7.72	(1.39)	(0.61)
Interliant (INIT) *	$12.75	43.00	548.25	0.00	548.25	40.00	13.71	NA	NA	NA	NA
Exodus Communications (EXDS) *	$76.00	83.00	6308.00	100.00	6408.00	165.00	38.84	310.00	20.67	(1.91)	(0.67)
US Web (USWB) **	$30.38	85.50	2597.06	4.00	2601.06	418.00	6.22	608.00	4.28	0.35	0.53
Sapient (SAPE) **	$92.00	27.10	2493.20	0.00	2493.20	266.00	9.37	376.00	6.63	1.05	1.50
						AVERAGE	*22*		*10*		

Note: " LTM" indicates last twelve months
* Interliant and Exodus are primarily Web-hosting companies
** US Web and Sapient provide Web-based consulting services

SUMMARY

1. The ASP concept is a paradigm shift in business and personal computing. Forrester Research expects the market for outsourced applications to grow from $1 billion in 1997 to over $21 billion in 2001, of which $6.4 billion is expected to come from the Application Rental segment.

2. The explosive growth in the ASP market is expected to be fueled by the following problems and business needs that are addressed by ASPs:

    (a) ASPs allow small and mid-sized businesses to increase their productivity by making available to them previously inaccessible best-of-breed software for a monthly fee over the Internet thereby eliminating the need for up-front investments that typically run into seven figures for new software and internal IT staff.
    (b) Over the past several years the growth of major enterprise software companies like PeopleSoft, SAP, etc. has been slowing. The reason for the slowed growth is that these software companies have essentially saturated the large company market but have not been successful at penetrating small and resource-constrained businesses. ASPs help these major enterprise software companies create and penetrate a whole new market opportunity.
    (c) Businesses not only can shave as much as 40% off in direct costs but they can also experiment with new software and strategies. (4) Implementation of software projects has traditionally been a lucrative job for consulting firms like EDS, Andersen Consulting etc., who bill their clients by the hour. ASPs, unlike consulting firms, do not have an incentive to extend the length of a project and can cut down the time to implement a project by as much as 50%.
    (d) The emergence of the Internet as a delivery platform has boosted development of the ASP concept.

3. The ASP industry is relatively new and investors should keep an eye on companies that are likely to emerge as leaders and innovators in this rapidly growing space.

PLAYERS IN THE ASP MARKET

Agillion (Private)
7600 B N. Capital of Texas Highway
Suite 220
Austin, TX 78731

Description

Headquartered in Austin, Texas, Agillion, Inc., is a new Web software and services company using the Internet to deliver the power of customer-focused business applications and the competitive leverage of sophisticated information technology to small and medium-sized businesses on a pay-as-you-grow basis. The company has been funded by seed investments from Strategic Software Ventures LLC and Powershift Group, venture development groups headed by Agillion's founders Frank Moss and Steve Papermaster respectively. Agillion is expected to launch its ASP services in October 1999.

AristaSoft (Private)
800 West El Camino Road
Suite 280
Mountain View, CA 94040

Description

AristaSoft is a privately held organization founded in 1998. AristaSoft is financed by a first-tier venture capital firm, CrossPoint Ventures. The company operates from two locations worldwide - Mountain View, California and Hyderabad, India. AristaSoft offers ERP functionality of J.D. Edwards' (NASDAQ:JDEC) OneWorld product. OneWorld integrated applications give customers control over their customer service, manufacturing, logistics/distribution, human resources and financial processes. Java and HTML enabled OneWorld allows customers to change their enterprise software quickly and easily during and after implementation.

Breakaway (Private)
50 Rowes Wharf
6th Floor
Boston
MA 02110

Description

Breakaway Solutions Inc. is a Full Service Provider (FSP) of e-business solutions that allow growing enterprises to capitalize on the power of the Internet to reach and support customers and markets. As an application service provider (ASP), systems integrator and consulting firm, Breakaway offers four key services to its clients: Breakaway strategy solutions, Breakaway Internet solutions, Breakaway customer relationship management solutions for the Internet and Breakaway application hosting. Headquartered in Boston, Mass., Breakaway has seven regional offices and three Internet solutions centers in the U.S., along with application hosting facilities in North America, Europe, Asia and Australia.

Bright Star (Nasdaq: BTSR) $3.63 52-Wk.Hi: 11 Lo: 2 7/8
Total Shares Outs. 9.0M 1998 Revenues: $80.0 MM
Avg. Daily Volume 55,000
Market Capitalization $33M

Description

BrightStar, based in Pleasanton, Ca, is an information technology services company providing enterprise-wide business and technology solutions to Fortune 1000 companies and other large organizations. BrightStar's enterprise applications services include Enterprise Resource Planning (ERP) and Web solutions, custom application development, and application support and hosting. Brightstar installs packaged software solutions from SAP, PeopleSoft, J.D. Edwards and Platinum Technology. The company recently announced an ASP program.

Corio (Private)
700 Bay Road
Suite 210
Redwood City
CA 94060

Description

Corio is an early entrant in the ASP market and holds partnerships with other leading software, networking and hardware vendors such as Exodus, PeopleSoft and Sun Microsystems. CORIO, another application service provider, hosts enterprise resource planning, sales force automation, and electronic commerce software. Headquartered in Redwood City, California, Corio is backed by Kleiner Perkins Caufield and Byers and its KPCB Java Fund.

Critical Path (NASDAQ:CPTH) $37 52 Wk. Range: $150--$28
Total Shares O/S 40 MM 1998 Revenues: $0.90MM
Avg. Daily Volume 700,000
Market Capitalization $1.48 Billion

Description

Critical Path (NASDAQ:CPTH*)*: Critical Path hosts and manages email operations for large corporate clients like Internet service providers and Web hosting companies. Critical Path has built an industry-leading global infrastructure with data centers connected to key Internet exchange points, and currently reaches millions of end-users through its customer relationships. Critical Path is headquartered in San Francisco, California, with offices in locations nationwide and in Germany and the UK.

FutureLink (OTC BB:FLNK) $8.00 52 Wk. Range: $9.5--$1.2
Total Shares O/S 47MM 1998 Revenues: $2.43 million
Market Capitalization $376 MM

Description

FutureLink Distribution Corp. is based in Calgary, Canada and is in the process of moving its offices to Irvine, California. The company is one of the early adopters of the "Application Services Provider" (ASP) concept. FutureLink's relationships with several leading software and hardware companies including Citrix, Cisco, UUNet (Worldcom) and Compaq have helped it develop a stable and reliable ASP delivery platform. In addition, FutureLink has signed up several software vendors including Microsoft, Great Plains, Onyx and Applix for content.

InfoCast (OTC BB:IFCC) $8.93 52 Wk. Range: $13--$0.05
Total Shares O/S 18.2 MM 1998 Revenues: $43,000
Avg. Daily Volume 18,545
Market Capitalization $162 MM

Description

InfoCast Corporation, an Application Service Provider (ASP) that delivers proprietary software solutions to businesses. InfoCast content will be delivered through a North American network of strategically placed information hubs. These hubs are implemented on Sun Microsystem's Enterprise 10000 computing platform and based on Sun Solaris, Netscape and Java related technologies. Infocast is partnering with AT&T Canada to take advantage of AT&T's global telecommunication network

Interliant (NASDAQ: $13) 52 Wk. Range: $23.5 -- $10.5
Total Shares O/S 43.5 MM 1998 Revenues: $4.9 Million
Avg. Daily Volume 155,000
Market Capitalization $557 MM

Description

Interliant is a provider of a comprehensive suite of hosting and enhanced Internet services that enable customers to deploy and manage their Web sites and network-based applications more effectively. For the 6 months ended 6/99, revenues totaled $16.1M, up from $858K. Revenues benefited from the acquisition of 16 various businesses. Interliant developed AppsOnline to provide small to mid-sized businesses with a one-stop source for hosted software solutions and information and provides round-the-clock remote access to Lotus Domino and Notes applications as well as customized network application services for the legal, pharmaceutical, and education markets.

Interpath Communications (Private)
P.O. Box 13961
Research Triangle Park,
NC 27709

Description
Founded in January, 1998 Interpath is an independently managed subsidiary of Carolina Power & Light. Interpath has built a carrier-class network with a first-rate network operations center in Research Triangle Park, N.C., and has grown in 18 months to 550 employees. Its clients include Blue Cross/Blue Shield, Nucor, and the Centennial Campus of North Carolina State University. Interpath said it will offer the SAP financials application by the third quarter to businesses in North Carolina, South Carolina, Georgia, Tennessee, and Virginia. The SAP human resources application will be available in the fourth quarter.

NetLedger (Private)
1800 El Camino Real,
Menlo Park,
CA 94027

Description
NetLedger, Menlo Park, Calif., was formed in September with sole funding by Ellison, chairman and CEO of Oracle Corp., Redwood Shores, Calif. The 10-person company has developed accounting software based on Oracle 8i that will be hosted by Business OnLine, Oracle's application hosting division. The software, called NetLedger, is in beta now, and the company said the hosted program will be available for a monthly fee. NetLedger is designed to work with modem speeds as slow as 28.8K. The program is targeted at companies with up to 50 employees and will start at $4.95 per month for 1,000 transactions entered by 10 end users.

Oracle Corp.(NASDAQ: ORCL) $43.50 52 Wk. Range: $46.94 -- $14.88

Total Shares O/S	1.45 Billion	1998 Revenues: $7.2 Billion
Avg. Daily Volume	155,000	
Market Capitalization	$600MM	

Description
Oracle is working on what it calls its Business Online program, which will provide companies with as few as 20 employees hosted access to Oracle applications, including financials, manufacturing, distribution and human resources. The program is current under beta testing. Oracle believes that within the next five years its Business Online enterprise resource planning service (ERP) will account for 50% of its application business. Currently, Oracle generates about $2 billion from its ERP applications and related services business and this is expected to grow to $8 billion in the next five years.

Planet Computer (Private)

Description

Planet Computer is a private Denver-based Internet office hosting service, that enables users to access a full Windows NT desktop hosting solution, including email, printing, faxing, Internet access, offices suites such as MS Office, Corel WordPerfect Suites and database applications. The company focused on businesses with small, widely dispersed offices that needed technical support and administration, centralized databases, and office productivity software. Planet Computer launched PlanetUplink last September with five beta companies and a total of 75 end users. It now serves 15 companies and 180 end users. Planet Computer charges a minimum of $1,500 to set up a basic database, and $45 per user per month.

Telecomputing ASA

Norway

Description

Telecomputing Inc., the Fort Lauderdale, Fla.-based arm of Norwegian ASP Telecomputing ASA, plans to move 100 percent of its services in this country via resellers and integrators. It named a number of top channel players to resell the company's software hosting/leasing services, including CompuCom Systems, IKON Office Solutions Technology Services, InaCom Information Systems, and Syscom Technologies. Telecomputing is aiming at providing mid- to enterprise-size customers with complete desktop-to-back-end applications. Telecomputing already has forged four major strategic partnerships: UUNet/MCI WorldCom for backbone and collocation services; Compaq Computer Corp., which resells Telecomputing's ASP service; Marimba, which embeds Castanet for systems management; and Citrix Systems for the thin-client software needed for back-end access. The company was founded in 1997 and currently has more than 50 customers at 180 locations.

US Internetworking (NASDAQ:USIX) $22.75 52 Wk. Range: $60--$14.5
Total Shares O/S 39.8MM 1998 Revenues: $4 million
Market Capitalization $1.0 Billion

Description

Headquartered in Annapolis, MD, USinternetworking Inc. (Nasdaq: USIX) is one of the leading Application Service Providers (ASP) outsourcing business applications over the Internet for a flat monthly fee. USi's Internet Managed Application Provider (iMAP) solutions include: Financial Management and Human Resources, powered by PeopleSoft; Enterprise Relationship Management, powered by Siebel Systems; Electronic Commerce, powered by BroadVision and Microsoft; Business Intelligence, powered by Sagent Technology; and USi Web Site Management.

Hardware and Software Companies

Several hardware and software companies plan to provide packaged application solutions with network infrastructure, such as:

- Oracle Corp., Sun Microsystems Inc., IBM, which are among the growing list of developers working to give customers, especially small to midsize businesses, full software functionality while cutting the cost and support hassles of running the system in-house.

Systems Integrators:

- Many systems integrators are seriously considering moving into the application service provider market, through partners. Examples include CompuCom Systems Inc., Inacom Corp., which are partnering with established ASPs.
- Arthur Andersen will provide ASP service featuring JD Edwards ERP financial software - Arthur Andersen Process Solutions (AAPS), an off-the-shelf outsourcing package based on JDE software for customers who want to outsource their financial processes. The package is intended to appeal to companies with sales between $0.5 billion up to $3 billion, and
- ERP software vendor SAP America and EDS have teamed to bring SAP's ERP applications to small and mid-size businesses. SAP will provide its R/3 software and, through EDS's 80 data centers around the world. Costs for using R/3 under EDS will range from $425 to $660 per user per month.

ISPs/Web Hosting Companies

Internet Service Providers are also considering getting into the ASP market.

- ***USWeb/CKS*** (NASDAQ: USWB) is a professional services firm provides a broad selection of services from brand development and advertising to business process automation, e-commerce solutions, and has just announced a new ASP service. The ASP service will include Communications and Knowledge Management services, which are available immediately. An e-Commerce and Customer Relationship Management offering are expected to be available in Q2 1999, and a Back Office offering is expected to be available later this year. In 1998, USWeb/CKS generated $229 million in revenue and produced a net loss of $188 million.

- ***Exodus Communications***, (www.exodus.net) of Santa Clara CA, (NASDAQ: EXDS), offers a range of services such as server hosting and Internet connectivity, the company lets businesses outsource the management and operation of their Internet sites. It has six US data centers (more US centers and a UK center are planned) at which clients can store their servers in refrigerated holding areas and receive other services such as maintenance, security, and high-speed network connections. Its clients include GeoCities, Hotmail, Inktomi, and Lycos.

- ***DIGEX***, Inc., is a subsidiary of Intermedia Communications (NASDAQ: ICIX), is one of the US's leading independent Internet carriers. DIGEX works exclusively with business customers and government agencies, including Amtrak, CIGNA, Southwestern Bell, NIKE, Anheuser-Busch, Ernst & Young, KRAFT Foods and the World Bank. DIGEX's Internet services include high-speed dedicated connectivity (including telecommute connectivity), corporate Web server hosting and security, and private-label connectivity (for telecommunications providers). Digex has grown its Web hosting business to 40% of the Company's revenue, operating 800 servers for about 620 customers. DIGEX charges between $1,200 to $250,000 per month for its service. For the fiscal year end December 1997 (the latest year available Intermedia generated $248 million in revenue and produced a net loss of $241 million.

- ***Verio Inc***. (NASDAQ: VRIO) Verio is the world's largest domain-based (e.g. yourcompany.com) Web-hosting company and a leading provider of comprehensive business Internet services. The company offers customers a broad range of Internet solutions, including high-speed access, Web hosting, e-commerce, virtual private networks and other enhanced services. With the completion of its IPO and major venture capital backing, Verio has been buying regional and local Internet service providers (ISPs) across the US. It owns or has majority stakes in more than 35 business-oriented providers across the US. The firm's customers include General Electric, Microsoft, Princeton University, and Ziff-Davis. Brooks Fiber Properties, a unit of MCI WorldCom, owns approximately 17% of Verio. In 1998,Verio generated $120 million in revenue and produced a net loss of $123 million.

Telecommunications Carriers

The telecommunications carriers will eventually begin to address this the ASP market aggressively. The following companies have recently announced ASP initiatives:

Frontier Delivering web hosted applications, including calendar and scheduling, e-mail, fax, unified messaging, video streaming, voice and workgroup collaboration.

Sprint: Offering hosted applications, the first of which is a workgroup collaboration application.

Qwest Communications: Joining with Hewlett-Packard and SAP to deliver internet-based applications and services to businesses around the world. Qwest will soon begin offering Oracle's Business OnLine service to business customers. The carrier will host Business OnLine within its network of CyberCenters, which are under construction. The service is expected to be available within the next three months. Business OnLine, introduced last November, is designed to give customers access to Oracle's suite of business applications through a browser front end. Qwest will handle all the management and hosting of the applications.

U S West: Partnering with USinternetworking to offer integration, hosting, management and support of e-commerce applications.

GLOSSARY OF TERMS

ASP	A service that allows anyone, anywhere to access computer applications hosted on a third-party server via the Internet or dedicated telecom line. Utilizing client/server software including a web browser, a user can run applications on any platform, over multiple bandwidth types and store data locally or from a managed data storage facility.
Applets	Small software application programs that can be retrieved from a network and used as needed. Could allow computer users to do word processing, spreadsheets or interactive games without storing the software on their own systems.
Computer Utility	A business model for computer network use and management similar to a phone or power company model.
Electronic Commerce	The process where consumers or corporations conduct business over the Internet.
ERP	A packaged business software system that lets a company automate and integrate the majority of its business processes, share common data and practices across the enterprise and produce and access information in a real-time environment. Following is an example of how an ERP program operates: A sale is completed, the program makes the necessary entries in the company's general ledger, adjusts the company's inventory records, reorders the product and allows the sales and marketing department to analyze the transaction - in real-time.
Extranet	A private Internet connection for a company's suppliers.
Hosted Outsourcing	The complete outsourcing of a company's IT department to an ASP.
ICA	Independent Computing Architecture--A three-part Server-based computing technology by Citrix that separates an application's logic from its user interface and allows 100% application execution on the server.
ISV	Independent Software Vendor--Independent third party software companies that sell software (ie. Corel, PeopleSoft, SAP, etc.)
Intranet	A private Internet connection for a company's employees.
IT Outsourcing	Computer or information technology ("it") outsourcing refers to the process by which a company hires a third party to manage all or part of their computer hardware, software and information systems. The third party manages these services for a preset fee.
Server Farm	A group of servers that are linked together as a "single system image" to provide centralized administration and horizontal scalability.

Server-based Computing	A server-based approach to delivering business applications to end-user devices, whereby an application's logic is deployed, managed, supported and executed 100% on a server and only the user interface is transmitted across a network to the client.
SOHO Market	Small Office/Home Office Those companies with less than19 employees.
TCO	Total Cost of Ownership--A model that assists IT professionals in understanding and managing the direct and indirect costs incurred for acquiring, maintaining and using an application or a computing system such as training, upgrades, administration, as well as the purchase price.
Thin Client	A low-cost computing device that works in a server-centric computing model.
User Interface	The graphic portion of the application that is split from the program being executed and "pushed" to the end user so they can manipulate their data.
VAR	A person or entity that acts as an intermediary between software/hardware producers and the end users. Resellers frequently "add value" by performing consulting, system integration and product enhancement work.
Vertical App. Hosting.	Hosting of an application or ERP program remotely via a Server Farm.
VPN	Virtual Private Network A secure, encrypted private Internetconnection.
Web Hosting	When all file, print, database and application servers are managed remotely via the internet.
Winframe	Citrix multi-user extension to Microsoft Windows NT Server which allows a User Interface to be "pushed" to the end-user.