

## Financial Summary

MindSpring

Table 3  
**MindSpring: Balance Sheet 1999-2001**

(All figures in thousands, except per share data)

MindSpring Balance Sheet	1999 Quarterly Estimates				2000 Quarterly Estimates				Full Year Estimates			
	1Q99A	2Q99E	3Q99E	4Q99E	1Q00E	2Q00E	3Q00E	4Q00E	1998A	1999E	2000E	2001E
Current Assets	40,477	435,722	438,443	428,463	422,996	434,996	451,937	470,193	175,200	428,463	470,193	508,201
Cash & Equivalents	30,571	420,350	422,502	411,602	403,757	412,908	426,731	442,025	167,743	411,602	442,025	465,377
Acct Rec.	2,900	5,633	5,841	6,179	7,050	8,094	9,237	10,322	3,278	6,179	10,322	19,168
Other current assets	7,006	9,738	10,099	10,682	12,189	13,994	15,970	17,846	4,179	10,682	17,846	23,657
Net Fixed Assets	57,593	66,901	77,401	88,156	101,060	113,115	124,320	134,614	35,841	88,156	134,614	156,547
Accumulated Depreciation	-17,601	-21,541	-26,157	-31,366	-37,267	-43,829	-51,055	-59,007	-14,106	-31,366	-59,007	-85,839
Computer and Telecom Equip.	59,584	72,832	87,948	103,912	122,717	141,334	159,764	178,010	35,580	103,912	178,010	226,776
Capital leases	9,546	9,546	9,546	9,546	9,546	9,546	9,546	9,546	9,546	9,546	9,546	9,546
Other Fixed Assets	6,064	6,064	6,064	6,064	6,064	6,064	6,064	6,064	4,821	6,064	6,064	6,064
Acquired Customer Base - Net	258,026	234,306	210,786	187,766	164,746	141,726	118,706	95,686	34,742	187,766	95,686	3,606
Other Assets	6,902	9,594	9,949	10,524	12,008	13,786	15,732	17,581	1,816	10,524	17,581	23,305
<b>Total Assets</b>	<b>362,998</b>	<b>746,523</b>	<b>736,579</b>	<b>714,909</b>	<b>700,810</b>	<b>703,623</b>	<b>710,695</b>	<b>718,074</b>	<b>247,599</b>	<b>714,909</b>	<b>718,074</b>	<b>691,660</b>
Current Liabilities	47,191	64,557	66,849	70,555	80,130	91,601	104,157	116,081	38,094	70,555	116,081	153,010
S-T Debt	0	0	0	0	0	0	0	0	0	0	0	0
S-T Portion of Capital Lease Obl.	2,666	2,666	2,666	2,666	2,666	2,666	2,666	2,666	2,695	2,666	2,666	2,666
Acct Payable	7,011	9,745	10,106	10,690	12,198	14,004	15,981	17,859	4,990	10,690	17,859	23,673
Deferred revenue	11,743	16,323	16,928	17,905	20,430	23,456	26,767	29,912	7,443	17,905	29,912	39,652
Other current liabilities	25,771	35,822	37,149	39,294	44,836	51,475	58,743	65,645	22,966	39,294	65,645	87,019
Fixed Liabilities	81,752	181,752	181,752	181,752	181,752	181,752	181,752	181,752	2,424	181,752	181,752	181,752
L-T Debt	80,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	0	180,000	180,000	180,000
L-T Portion of Capital Lease Obl.	1,752	1,752	1,752	1,752	1,752	1,752	1,752	1,752	2,424	1,752	1,752	1,752
Other L-T liabilities	0	0	0	0	0	0	0	0	0	0	0	0
Other L-T liabilities	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total Liabilities</b>	<b>128,943</b>	<b>246,309</b>	<b>248,601</b>	<b>252,307</b>	<b>261,882</b>	<b>273,353</b>	<b>285,909</b>	<b>297,833</b>	<b>40,518</b>	<b>252,307</b>	<b>297,833</b>	<b>334,762</b>
Common Stock	289	289	289	289	289	289	289	289	283	289	289	289
Paid in Capital	240,255	513,495	513,495	513,495	513,495	513,495	513,495	513,495	209,983	513,495	513,495	513,495
Retained Earnings	-6,489	-13,570	-25,806	-51,182	-74,856	-83,513	-88,997	-93,543	-3,185	-51,182	-93,543	-156,886
<b>Total Shareholders Equity</b>	<b>234,055</b>	<b>500,214</b>	<b>487,978</b>	<b>462,602</b>	<b>438,928</b>	<b>430,271</b>	<b>424,787</b>	<b>420,241</b>	<b>207,081</b>	<b>462,602</b>	<b>420,241</b>	<b>356,898</b>
<b>Liabilities and Shareholders Eqty</b>	<b>362,998</b>	<b>746,523</b>	<b>736,579</b>	<b>714,909</b>	<b>700,810</b>	<b>703,623</b>	<b>710,695</b>	<b>718,074</b>	<b>247,599</b>	<b>714,909</b>	<b>718,074</b>	<b>691,660</b>

Source: Company Data, Morgan Stanley Dean Witter Estimates. E = Estimate.

## Financial Summary

MindSpring

Table 4

## MindSpring: Cash Flow and Credit Analysis 1999-2001E

(All figures in thousands, except per share data)

MindSpring Cashflow Statement	1999 Quarterly Estimates				2000 Quarterly Estimates				Full Year Estimates			
	1Q99A	2Q99E	3Q99E	4Q99E	1Q00E	2Q00E	3Q00E	4Q00E	1998A	1999E	2000E	2001E
Net Profit	-3,304	-7,081	-12,236	-25,377	-23,673	-8,658	-5,484	-4,546	10,464	-47,997	-42,361	-63,343
plus Depreciation & Amortization	16,846	28,412	29,020	29,265	30,115	30,965	31,815	32,726	15,227	103,543	125,622	142,147
less increase in Acct Rec.	378	-2,733	-209	-337	-871	-1,044	-1,143	-1,085	-3,278	-2,901	-4,143	-8,846
less increase in other current assets	-2,827	-2,732	-361	-583	-1,507	-1,805	-1,976	-1,876	-4,179	-6,503	-7,164	-5,811
plus increase in Deferred Rev.	4,300	4,580	605	977	2,525	3,025	3,311	3,145	7,443	10,462	12,007	9,739
plus increase in Acct Payable	2,021	2,734	361	584	1,508	1,806	1,977	1,878	4,990	5,700	7,169	5,815
less increase in Restricted Cash	0	0	0	0	0	0	0	0	0	0	0	0
plus increase in other current liabilities	2,805	10,051	1,327	2,145	5,542	6,640	7,267	6,902	22,966	16,328	26,351	21,374
plus increase in other L-T liabilities	0	0	0	0	0	0	0	0	0	0	0	0
<b>Net Cashflow from Operations</b>	<b>20,219</b>	<b>33,231</b>	<b>18,507</b>	<b>6,674</b>	<b>13,639</b>	<b>30,930</b>	<b>35,769</b>	<b>37,143</b>	<b>53,633</b>	<b>78,632</b>	<b>117,480</b>	<b>101,076</b>
Chg. Tang. Fixed Assets (before dep)	25,275	14,000	16,000	17,000	20,000	20,000	20,000	20,000	35,841	52,315	46,458	21,933
Chg. Int Fixed Assets (before depr)	236,607	0	0	0	0	0	0	0	49,969	256,567	33,542	50,067
Change in other assets	5,086	2,692	355	574	1,484	1,778	1,946	1,848	1,816	8,708	7,057	5,724
<b>Net Cash Used in Investing</b>	<b>266,968</b>	<b>16,692</b>	<b>16,355</b>	<b>17,574</b>	<b>21,484</b>	<b>21,778</b>	<b>21,946</b>	<b>21,848</b>	<b>87,626</b>	<b>317,590</b>	<b>87,057</b>	<b>77,724</b>
<b>Cash Surplus/Deficit before Finan</b>	<b>-246,749</b>	<b>16,539</b>	<b>2,152</b>	<b>-10,900</b>	<b>-7,846</b>	<b>9,152</b>	<b>13,823</b>	<b>15,294</b>	<b>-33,993</b>	<b>-238,958</b>	<b>30,423</b>	<b>23,352</b>
Increase in S-T Debt	0	0	0	0	0	0	0	0	0	0	0	0
Increase in S-T Portion of Cap Lease	-29	0	0	0	0	0	0	0	2,695	-29	0	0
Increase in L-T Debt	80,000	100,000	0	0	0	0	0	0	0	180,000	0	0
Increase in L-T Portion of Cap Lease	-672	0	0	0	0	0	0	0	2,424	-672	0	0
Increase in equity	30,278	273,240	0	0	0	0	0	0	196,617	303,518	0	0
Increase in Minority Interest	0	0	0	0	0	0	0	0	0	0	0	0
Dividends	0	0	0	0	0	0	0	0	0	0	0	0
<b>Net Cash Flow from Financing</b>	<b>109,577</b>	<b>373,240</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>201,736</b>	<b>482,817</b>	<b>0</b>	<b>0</b>
Change in Cash Balance	-137,172	389,779	2,152	-10,900	-7,846	9,152	13,823	15,294	167,743	243,859	30,423	23,352
Act. Chg. in Cash Balance	-137,172	389,779	2,152	-10,900	-7,846	9,152	13,823	15,294	167,743	243,859	30,423	23,352
<b>MindSpring Credit Analysis</b>												
Cash & Equivalents	30,571	420,350	422,502	411,602	403,757	412,908	426,731	442,025	167,743	411,602	442,025	465,377
Total Debt (incl Capital Leases)	84,418	184,418	184,418	184,418	184,418	184,418	184,418	184,418	5,119	184,418	184,418	184,418
Net Debt (Cash)	53,847	-235,932	-238,084	-227,184	-219,339	-228,490	-242,313	-257,607	-162,624	-227,184	-257,607	-280,959
Shareholders' Equity	234,055	500,214	487,978	462,602	438,928	430,271	424,787	420,241	207,081	462,602	420,241	356,898
Acct Rec. (Days)	4.3	8.0	8.0	8.0	8.0	8.0	8.0	8.0	10.4	6.8	7.1	10.0
Interest Coverage (x)	-6.9	-7.6	-7.0	-14.0	-13.1	-5.0	-3.3	-2.9	8.7	-9.6	-6.1	-4.2
Current Ratio	0.9	6.7	6.6	6.1	5.3	4.7	4.3	4.1	4.6	6.1	4.1	3.3
Working Capital	-37,285	-49,185	-50,908	-53,694	-60,891	-69,513	-78,950	-87,913	-30,637	-53,694	-87,913	-110,186
Debt/(Equity+Debt) (%)	27%	27%	27%	29%	30%	30%	30%	30%	2%	29%	30%	34%
Net Debt/(Equity+Debt-Cash) (%)	19%	-89%	-95%	-97%	-100%	-113%	-133%	-158%	-366%	-97%	-158%	-370%
Total Debt/EBITDA	7.7	11.7	23.7	-13.7	-19.0	11.7	8.5	7.7	0.2	8.8	3.6	2.0

Source: Company Data, Morgan Stanley Dean Witter Estimates. E = Estimate.

## PSINet (PSIX)

### Internet Data Services

52-Wk Price	Rng	Div	Yld	Shs Out	EPS 98A	EPS 99E	P/E	EPS 00E	P/E	CEPS 98A	CEPS 99E	P/CE	CEPS 00E	P/CE	5-Yr Est Growth
51 <sup>11/16</sup>	73 <sup>3/4</sup> -8 <sup>3/8</sup>	NM	NM	76.0	\$(4.38)	\$(5.10)	NM	\$(5.52)	NM	\$(4.08)	\$(2.32)	NM	\$(1.43)	NM	NM

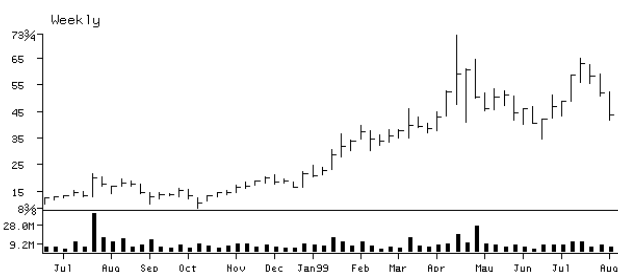
Target Price: \$72.00

Market Cap: \$3,928

Price as of July 30, 1999

### PSINet

#### Stock Price Analysis



#### Morgan Stanley Dean Witter Analyst:

Jeffrey Camp

Stephen Flynn

#### Morgan Stanley Dean Witter Stock Rating: Outperform

#### Company Description

PSINet is a leading independent global provider of Internet solutions to businesses. The company provides Internet connectivity and Web-hosting services to customers in 90 of the 100 largest metropolitan statistical areas in the U.S. and in 16 of the 20 largest global telecommunications markets. In addition to these services, PSINet offers a suite of value-added products and services that are designed to enable customers to maximize utilization of the Internet to more efficiently communicate with their customers, suppliers, business partners, and remote office locations.

#### Key Points

- We are initiating coverage of PSINet with an Outperform rating and a 12-month target price of \$72.00, implying 39% upside from current levels. Our target price implies a year 2000 EV/revenue multiple of 8.1x, and is based on a discounted free cash-flow model assuming a 13.8% WACC and a 7.5% terminal growth rate, implying an exit EBITDA multiple of 12.0x.
- A full analysis of the company's valuation, as well as the markets in which it participates, can be found in earlier sections of this report.
- We expect revenues at PSINet to grow in 1999 and 2000 by 98% and 54%, respectively. From 1999 to 2004 we ex-

pect revenues to expand by 35% annually. EPS are likely to remain negative for the next several years.

- PSINet is one of the original commercial Internet service companies, and has extensive access, network service, and hosting operations in the United States and internationally.
- We believe that PSINet is in a good position to capitalize on the growth in domestic demand from the small and medium enterprise (SME) market, as well as growth in Internet services abroad.
- The company recently aggressively acquired international route capacity to support its efforts overseas, and it now generates more than 50% of its revenues from outside the United States.

## Investment Positives and Concerns

PSINet

### Investment Positives

**Major Player in the Corporate Access/VPN Market:**

The majority of PSINet's revenue comes from corporate access services, particularly to the SME market. We expect total business Internet access revenues to increase from \$6.500 billion in 1998 to \$16.5 billion by 2003, while VPN service revenues are likely to increase from virtually nothing in 1998 to just under \$8.5 billion by 2003. Our forecast includes an increase in the penetration of active Internet seats to 65% of U.S. employees in 2003 from 30% of U.S. employees in 1998. While we expect pricing pressure in the business access market, particularly in the traditional T-1 market, we also expect demand for greater capacity per line. This should result in relatively modest declines in revenue per line.

**Significant Global Presence:** PSINet has established an ISP presence in 16 of the top 20 global telecom markets, and now generates more than half its revenues internationally. The company's goal is to be one of the top three ISPs in each of the top 20 global markets, having already established such a presence in Canada, United Kingdom, Switzerland, Hong Kong, Japan, Korea, Brazil, and the U.S. The company appears focused on expanding into Latin America, making more than six acquisitions within the region in the last few months.

**Competitive Cost Structure:** PSINet has made several significant acquisitions of network infrastructure recently. The company acquired fiber optic capacity from IXC Communications of up to 10,000 equivalent route miles of OC-48 network bandwidth across the United States, and has also purchased fiber across the Atlantic and Pacific, reducing transport costs over these routes by 90%. The company has purchased an STM-1 (155 Mbps) on the FLAG (Fiber Link Around the Globe) network, as well as STM-1s across the Atlantic.

### Investment Concerns

**Pricing Pressures for Access Services:** Almost all of PSINet's domestic revenues are derived from dedicated access services, as, we estimate, are the majority of those generated internationally. Dedicated prices could come under pressure, as DSL services become more widely available. We expect dedicated access prices to fall by over 20% per year from 1998 to 2003, although demand for greater capacity per connection will mean that APRU per line will fall by only 5% per year in the same period. PSINet will resell xDSL services to its corporate client base. The company expects some pricing pressure in the T-1 market as DSL services roll out, but, as we have seen elsewhere, customers are also increasing their demand for bandwidth, allowing average revenue per user to remain relatively stable.

**Limited Hosting Presence:** Although PSINet has placed considerable emphasis on developing its application and Web-hosting business, the company generates only about 8% of total revenues from these services. While the company appears to be promoting these services aggressively today, it may find itself at a competitive disadvantage against companies who were earlier to market with these services.

**Competition is Strong and Getting Stronger:** PSINet operates in a highly competitive market. While we expect demand for more bandwidth and new revenue opportunities from areas such as hosting and international operations to alleviate some of the pressure, PSINet will have to contend with a diverse and often well-funded set of competitors.

**Integration Risks:** Over the last 22 months, PSINet acquired 32 different ISPs. We expect PSINet will continue to acquire companies to reach its goal of a top three ISP ranking in the world's 20 largest markets. There is a risk that PSINet will not successfully integrate all of the company's planned and completed acquisitions, particularly in the international arena. However, recent preferred and common equity offerings in excess of \$800 million plus an additional \$1.2 billion high yield debt placement give PSINet the financial flexibility to make strategic acquisitions, in our view.

## Earnings Summary

PSINet

Table 1  
**PSINet: Income Statement, 1998-2001E**

(All figures in \$ thousands, except per share data)	1999 Quarterly Estimates				2000 Quarterly Estimates				Full Year Estimates			
	1Q99A	2Q99A	3Q99E	4Q99E	1Q00E	2Q00E	3Q00E	4Q00E	1998	1999E	2000E	2001E
<b>Revenues</b>												
Domestic Carrier Services	12,500	17,100	19,099	19,994	21,140	22,186	23,133	24,141	30,700	68,692	90,601	102,118
Domestic Access Services	35,000	40,400	43,230	46,533	50,775	56,078	62,396	69,726	115,700	165,163	238,976	344,554
Domestic Appl. & Web Services	2,800	3,533	4,494	5,839	7,723	10,097	13,070	16,610	9,200	16,666	47,499	92,874
<b>Domestic Revenues</b>	<b>50,300</b>	<b>61,033</b>	<b>66,823</b>	<b>72,366</b>	<b>79,639</b>	<b>88,361</b>	<b>98,600</b>	<b>110,477</b>	<b>155,600</b>	<b>250,522</b>	<b>377,076</b>	<b>539,546</b>
Canada	8,800	8,967	9,990	11,098	12,463	13,932	15,603	17,496	27,400	38,855	59,495	85,227
Latin America	-	3,300	3,677	4,084	4,587	5,128	5,742	6,439	-	11,061	21,896	31,366
Europe	15,900	18,700	20,834	23,145	25,992	29,056	32,540	36,489	40,003	78,580	124,077	177,742
Asia	29,900	31,800	35,429	39,360	44,200	49,411	55,336	62,051	36,697	136,489	210,998	302,256
<b>International Revenues</b>	<b>54,600</b>	<b>62,767</b>	<b>69,930</b>	<b>77,688</b>	<b>87,242</b>	<b>97,527</b>	<b>109,222</b>	<b>122,475</b>	<b>104,100</b>	<b>264,984</b>	<b>416,466</b>	<b>596,591</b>
Eliminations/Other	(54)	-	-	-	-	-	-	-	186	(54)	-	-
<b>Total Revenues</b>	<b>104,846</b>	<b>123,800</b>	<b>136,752</b>	<b>150,054</b>	<b>166,881</b>	<b>185,888</b>	<b>207,822</b>	<b>232,952</b>	<b>259,886</b>	<b>515,452</b>	<b>793,542</b>	<b>1,136,137</b>
% Chg QoQ	11%	18%	10%	10%	11%	11%	12%	12%	NM	NM	NM	NM
% Chg YoY	136%	131%	102%	59%	59%	50%	52%	55%	NM	98%	54%	43%
<b>Direct Costs</b>												
COGS	76,018	86,300	94,232	100,754	107,696	115,077	122,965	131,683	199,372	357,304	477,421	629,825
Gross Margin	27%	30%	31%	33%	35%	38%	41%	43%	23%	31%	40%	45%
<b>Operating Costs</b>												
Sales and Marketing	18,572	21,900	23,048	24,207	25,398	28,149	30,543	33,029	57,026	87,727	117,118	172,211
General and Admin	17,089	15,400	17,048	18,173	19,745	21,453	23,309	25,325	45,288	67,710	89,831	120,284
Depr & Amort	26,818	34,400	52,500	56,960	61,160	65,360	69,560	75,873	63,424	170,678	271,953	284,243
In-process R&D	-	-	-	-	-	-	-	-	70,800	-	-	-
<b>Total Operating Costs</b>	<b>62,479</b>	<b>71,700</b>	<b>92,596</b>	<b>99,340</b>	<b>106,302</b>	<b>114,961</b>	<b>123,411</b>	<b>134,227</b>	<b>236,538</b>	<b>326,115</b>	<b>478,901</b>	<b>576,737</b>
<b>EBITDA</b>	<b>(6,833)</b>	<b>200</b>	<b>2,424</b>	<b>6,920</b>	<b>14,042</b>	<b>21,210</b>	<b>31,006</b>	<b>42,915</b>	<b>(41,800)</b>	<b>2,711</b>	<b>109,173</b>	<b>213,818</b>
% Chg YoY	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
% Mrg.	NM	0%	2%	5%	8%	11%	15%	18%	NM	1%	14%	19%
<b>Operating Profit</b>	<b>(33,651)</b>	<b>(34,200)</b>	<b>(50,076)</b>	<b>(50,040)</b>	<b>(47,117)</b>	<b>(44,150)</b>	<b>(38,554)</b>	<b>(32,958)</b>	<b>(176,024)</b>	<b>(167,967)</b>	<b>(162,780)</b>	<b>(70,425)</b>
% Chg YoY	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
% Mrg.	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
<b>Non Operating Income (Expenses)</b>												
Interest Income	4,720	8,100	24,017	24,796	23,416	21,687	20,017	18,509	19,638	61,632	83,629	71,327
Capital Leases and Interest Exp.	(29,581)	(31,900)	(60,780)	(65,939)	(65,769)	(65,597)	(65,255)	(64,914)	(63,914)	(188,200)	(261,534)	(266,787)
Other Non-Operating Items	(175)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	6,833	(775)	(800)	(800)
<b>Pre-Tax Profits</b>	<b>(58,687)</b>	<b>(58,200)</b>	<b>(87,039)</b>	<b>(91,383)</b>	<b>(89,670)</b>	<b>(88,259)</b>	<b>(83,992)</b>	<b>(79,564)</b>	<b>(213,467)</b>	<b>(295,309)</b>	<b>(341,485)</b>	<b>(266,685)</b>
less Taxes	-	400	-	-	-	-	-	-	848	400	-	-
Effective Tax Rate	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Net Profits</b>	<b>(58,687)</b>	<b>(57,800)</b>	<b>(87,039)</b>	<b>(91,383)</b>	<b>(89,670)</b>	<b>(88,259)</b>	<b>(83,992)</b>	<b>(79,564)</b>	<b>(212,619)</b>	<b>(294,909)</b>	<b>(341,485)</b>	<b>(266,685)</b>
<b>Preferred Dividends</b>	<b>(574)</b>	<b>(4,200)</b>	<b>(6,500)</b>	<b>(6,500)</b>	<b>(6,500)</b>	<b>(6,500)</b>	<b>(6,500)</b>	<b>(6,500)</b>	<b>(3,079)</b>	<b>(17,774)</b>	<b>(26,000)</b>	<b>(26,000)</b>
Payout Ratio to Pfd	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
<b>Profit Attributable to Common</b>	<b>(59,261)</b>	<b>(62,000)</b>	<b>(93,539)</b>	<b>(97,883)</b>	<b>(96,170)</b>	<b>(94,759)</b>	<b>(90,492)</b>	<b>(86,064)</b>	<b>(215,698)</b>	<b>(312,683)</b>	<b>(367,485)</b>	<b>(292,685)</b>
<b>Avg. Diluted Shares Outstanding</b>	<b>53,358</b>	<b>61,956</b>	<b>63,800</b>	<b>66,000</b>	<b>66,250</b>	<b>66,500</b>	<b>66,750</b>	<b>67,000</b>	<b>49,293</b>	<b>61,279</b>	<b>66,625</b>	<b>67,625</b>
<b>EPS</b>	<b>(\$1.11)</b>	<b>(\$1.00)</b>	<b>(\$1.47)</b>	<b>(\$1.48)</b>	<b>(\$1.45)</b>	<b>(\$1.42)</b>	<b>(\$1.36)</b>	<b>(\$1.28)</b>	<b>(\$4.38)</b>	<b>(\$5.10)</b>	<b>(\$5.52)</b>	<b>(\$4.33)</b>
<b>Depreciation Expense</b>	<b>19,400</b>	<b>25,400</b>	<b>42,000</b>	<b>46,460</b>	<b>50,660</b>	<b>54,860</b>	<b>59,060</b>	<b>65,373</b>	<b>63,424</b>	<b>133,260</b>	<b>229,953</b>	<b>242,243</b>

Source = Company Documents

E = Morgan Stanley Dean Witter Research Estimates

## Second Quarter Earnings Review

PSINet

### Key Points

- PSINet reported positive EBITDA for the first time in 2Q99 and a quarter ahead of previous guidance.** The company reported 2Q99 EBITDA of \$200,000 compared to an EBITDA loss of \$6.8 million in 1Q99 and a loss of \$11.1 million in 2Q98. We look for PSINet to post sequential EBITDA improvements going forward with an EBITDA margin of 18% by 4Q00.
- Total revenues surged 18% sequentially and 131% year-over-year.** The rapid revenue gains were due to a combination of strong organic growth and customer acquisitions. Revenues attributable to organic operations accounted for 14% of the sequential growth with acquisitions accounting for the remaining 4%. We look for revenues to increase 10% sequentially in 3Q99 due to a combination of acquisitions not fully reflected for 3 months in 2Q99 and continued strong organic growth slightly impaired by typical seasonal weakness in the third quarter.
- Customer additions were driven by PSINet's multiple distribution channels and acquisitions.** PSINet added 13,700 business accounts in the quarter to end with 73,400 in total. Of the 13,700 additions, 10,500 came from the 10 ISPs acquired in the quarter and 3,200 from the company's sales channels. The company ended the quarter with 1,041,000 carrier/ISP end-user customers – up 143,000 from 1Q99. For the carrier/ISP market 135,000 of the additional end-user customers are due to the ISPs acquired in the quarter and 8,000 from the company's sales channels.
- PSINet is extremely well capitalized after raising over \$2 billion since April-1999.** The company raised \$864 million in April-1999 through the issuance of common and preferred equity. In July-1999, PSINet raised \$1.2 billion through a senior note offering. We estimate the company's pro-forma cash position is approximately \$2 billion. We look for the company to spend approximately \$500 million on acquisitions and \$1 billion in capital expenditures over the next 2 ½ years.
- PSINet reported 2Q99 EPS of \$(1.00) compared to \$(1.11) in 1Q99 and \$(1.07) in the year ago quarter.** Our EPS estimates are \$(5.10) for 1999 and \$(5.52) for 2000.

### Details:

Total revenues increased 18% sequentially to \$124 million with solid contributions from all regions. Acquisitions accounted for 4% of the increase with organic growth behind 14% of the increase. By comparison, 1Q99 increased 11% sequentially with almost all of the revenue growth from organic business channels. Revenues from the US accounted for 49% of total revenues and increased 20% sequentially due to organic growth and the addition of the Internet Access Co., a Boston-based ISP.

The addition of Latin American businesses in the quarter led to \$3.3 million in revenue from the region. Prior to the acquisition of the seven ISPs located in Brazil (3), Mexico (2), Argentina (1) and Puerto Rico (1), PSINet did not have a presence in Latin America. European operations increased a strong 18% sequentially driven predominantly by organic growth with a minimal impact from the acquisitions of the Internet Co., a Swiss ISP, and CSO.net, an Austrian ISP, in the quarter. Finally, Asia experienced organic growth of 6% sequentially as strong growth in Korea was offset by a slow quarter in Japan. The company recently integrated the three Japanese ISPs acquired in late-1998, including the relocation of several sales teams. This, we believe, led to a temporary slowdown during the quarter.

PSINet now has a major ISP presence in 16 of the world's top 20 telecom markets. Acquisitions for the third quarter are already under way with the announced acquisition of two Spanish ISPs in July-1999. The acquisitions of Intercomputer and Abaforum places PSINet as the second largest ISP for business customers in Spain.

In addition to acquiring customers around the globe, PSINet has been actively building the facilities to serve its global customer base. The company opened a 100,000 gross square foot Web hosting facility in London and plans to open 12 new centers around the world over the next 18 months. In addition, PSINet continues add network capacity. The company activated portions of its dark fiber network acquired from Metromedia Fiber Network and continues to deploy IXC fiber-optic bandwidth as it is delivered.

Table 2

**Revenues by Region (\$000's)**

Region	1Q99	2Q99	% Chg
US	\$50,300	\$61,000	22%
Canada	8,800	9,000	3
Latin America	0	3,300	NM
Europe	15,900	18,700	18
Asia	29,900	31,800	6
<b>TOTAL</b>	<b>\$104,800</b>	<b>\$123,800</b>	<b>18%</b>

Source = Company Documents

The company has received approximately 34% of IXC's total commitment.

Applications and Web-hosting revenues were \$9.9 million for the quarter or 8% of total revenues – up slightly from 1Q99. During the quarter PSINet entered into a partnership with Hewlett Packard to offer fully managed e-mail services to PSINet customers. In addition, the company entered into a strategic alliance with e-commerce and WorldPlay Plc. to offer e-commerce solutions to its customers. We look for applications and Web-hosting revenues to reach 20% of revenues within the next few years as the company sells value-added services into its large access customer base. We estimate fewer than 20% of PSINet's corporate customers also purchase additional Internet related services from PSINet.

Gross margins increased to 30% of revenues from 27% in 1Q99 and 22% in 2Q98. The gross margin improvements were derived through the benefits of scale and the movement of traffic onto capitalized leases or IRU facilities, and despite a significant increase in local port capacity. PSINet installed over 1,160 PRI lines in the quarter to support the company's wholesale and retail dial-up business. We look

for gross margin to reach 33% of revenues by 4Q99 and 43% of revenues by 4Q00 as the company continues to increase scale and migrate traffic onto capitalized leases or IRU network facilities.

Sales and marketing costs increased to \$21.9 million or 18% of total revenues compared to 18% in 1Q99 and 23% in 2Q98. The company now has 770 sales and marketing employees throughout the world with plans to add 80-100 more by year-end 1999. We look for a majority of the new hires to be in the US as the company expands its direct sales force to 35-40 new cities for a greater local presence. We look for sales and marketing expenses to fall to 16% of revenue by 4Q99 and 14% of revenue by 4Q00.

General and administrative expenses were \$15.4 million — a \$1.6 million decline from 1Q99, but on par with previous quarters. These costs fell to 12% of revenues due to a one-time \$400,000 bad-debt catch-up in 1Q99 and \$800,000 in synergies from consolidating several European offices. We look for general and administrative expenses to remain in the 11-12% of revenue range through 2000.

PSINet posted positive EBITDA for the first time in the quarter at \$200,000. We look for steady sequential improvements in EBITDA going forward with EBITDA reaching 5% of revenues in 4Q99 and 18% of revenues in 4Q00.

Capital expenditures were \$118 million for the quarter, of which \$48 million was paid for in cash and \$70 million was non-cash (IXC bandwidth delivered and capital leases). The company has announced plans for 12 new data centers accounting for 700,000 gross square feet over the next 18 months. We look for total capital expenditures of \$445 million in 1999 and \$600 million in 2000.

## Revenue Analysis

PSINet

We estimate 49% of PSINet's total revenues are domestically originated, with the remaining 51% from international operations. Both the domestic and international revenues can be segmented into wholesale ISP or carrier, retail Internet access, and Web hosting and managed applications. We forecast a slight increase in the percentage of revenues from international operations over the next few quarters with the addition of Latin American businesses contributing to the growth. Of the 14 acquisitions completed so far in 1999, only one was domestic and seven were in Latin American. We look for total revenues of \$515 million in 1999 and \$793 million in 2000 — up from \$260 million in 1998.

**Wholesale access** provides network services to ISP and carrier customers. We estimate PSINet has signed up over 360 wholesale customers, providing services to more than 1,040,000 dial-up subscribers. Among PSINet's largest customers are EarthLink, MindSpring, FlashNet, and WebTV.

We model a roughly even split of domestic and international wholesale subscribers, with average revenue per dial-up subscriber per month of \$9-10. We look for the wholesale dial-up business to remain a core part of PSINet's overall business strategy, but we believe wholesale services will decline as a percentage of total revenues in favor of the high-growth hosting and managed applications services.

**Retail Internet access** accounts for 68% of PSINet's revenues and is the company's main business. PSINet provides

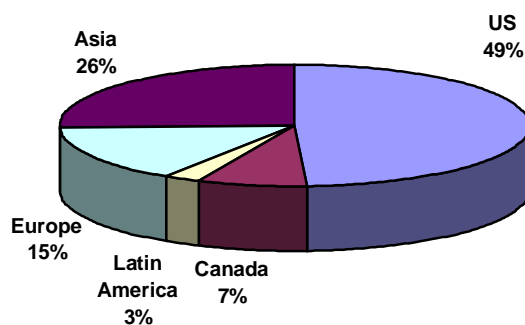
Internet access primarily to medium-sized business customers. The company's Internet access services include dial-up, ISDN, dedicated, DSL, and wireless. The goal of PSINet's U.S. retail operations is to provide access, hosting, and e-commerce services to small and mid-sized businesses. A majority of the company's retail consumer customers are located outside the U.S.

Although PSINet announced a wholesale partnership with Covad Communications in April-1999, the company has not indicated the timing of market entry for DSL services or the number of potential subscribers. In our view, PSINet is an excellent candidate to benefit from the introduction of DSL services, given the company's large base of dial-up Internet business customers. We forecast what we believe is a conservative 1,000-3,000 net DSL adds per quarter through 2000.

PSINet may be lagging the other business ISPs in DSL deployment, but the company is leading the pack in the deployment of fixed wireless services. We believe fixed wireless will be just one weapon in PSINet's arsenal of high-speed access technologies. PSINet's Intersky wireless access service utilizes unlicensed spectrum in the 2.4GHz range to offer fixed, line-of-sight Internet access. The company currently offers access at 128 kbps, but we look for the introduction of 512 kbps service by year-end. Potential access and hosting bundles include \$595 per month for 512 kbps of Internet access plus basic Web-hosting services. PSINet has launched wireless services in more than 12

Figure 5

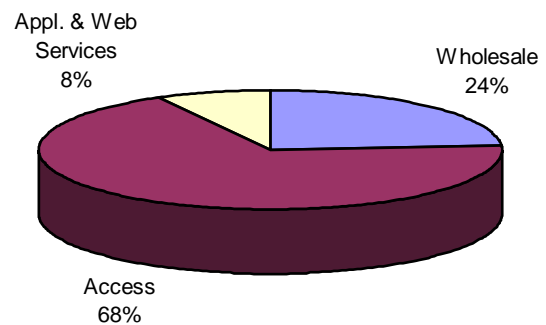
### PSINet 2Q99 Revenue Mix, by Region



Source = Morgan Stanley Dean Witter Research Estimates

Figure 6

### PSINet 2Q99 Revenue Mix, by Service



Source = Morgan Stanley Dean Witter Research Estimates

southeastern U.S. cities. We expect more than 1,000 wireless subscribers by early 2000.

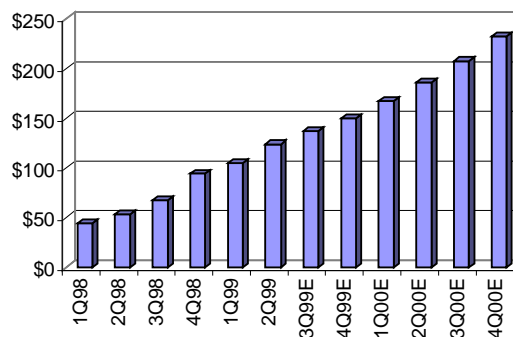
We estimate Web-hosting and managed applications account for only 8% of PSINet's total revenues today. PSINet's hosting services include shared, dedicated, co-location, and e-mail. In the managed applications area, PSINet is offering multi-currency e-commerce services and security solutions with voice-over-IP (VOIP) and video streaming on the horizon.

In our view, the ability to sell these services into PSINet's large wholesale and retail subscriber base presents an extremely attractive revenue opportunity. We estimate PSINet has over 17,000 hosting and managed application customers, with approximately 9,400 from outside the U.S. We

look for Web-hosting and managed applications to account for more than 15% of revenues by year-end 2000.

Figure 7

#### Quarterly Revenue Forecast, 1Q98-4Q00



Source = Morgan Stanley Dean Witter Research Estimates

## Cost Analysis

PSINet

We forecast sequential quarterly improvements in EBITDA for PSINet, with the company reaching EBITDA margins of 5% in 4Q99 and 18% in 4Q00. In addition to rapid gains in revenues, we look for improvements in gross margins and other operating expense ratios. The main drivers behind expense ratio improvements include merger synergies and an increase in Web-hosting and managed applications revenues.

PSINet should see improvements in gross margin over the next several quarters due to a more favorable revenue mix and lower network costs. We expect the share of PSINet revenues attributable to Web hosting and managed services to increase over time, thereby boosting the company's overall gross margin.

We expect significant improvements in PSINet's gross margin (and EBITDA) as the company migrates domestic traffic onto its own network. Capacity acquired from IXC in February 1998 should help reduce the company's cost of bandwidth domestically, while PSINet has already been able to

move companies acquired internationally from the red into the black simply by moving traffic off of leased international circuits onto its own network.

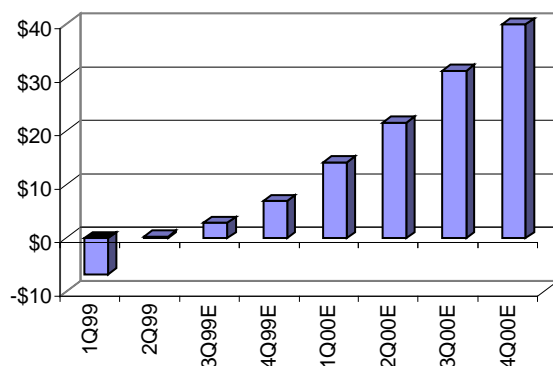
We forecast sales & marketing expenses will remain at about 16-18% of total revenues throughout 1999. Our forecast for 2000 includes sales & marketing expenses falling to 14% of revenues by year-end. We look for cost improvements to be derived from the increasing scale of the business and efficient marketing channels.

PSINet has 600 local direct sales executives and 1,700 value-added resellers (VARs) and referral partners. We estimate the cost of acquiring a wholesale customer at \$24,000-28,000, with each account servicing more than 2,800 dial-up subscribers. We model less than \$3,000 to acquire a retail access subscriber and less than \$2,000 for a Web hosting and managed applications customer.

We expect general and administrative costs will fall from 12% of revenues in 2Q99 to 11% of revenues in 4Q00, due to cost savings from the increasing scale of the business.

Figure 8

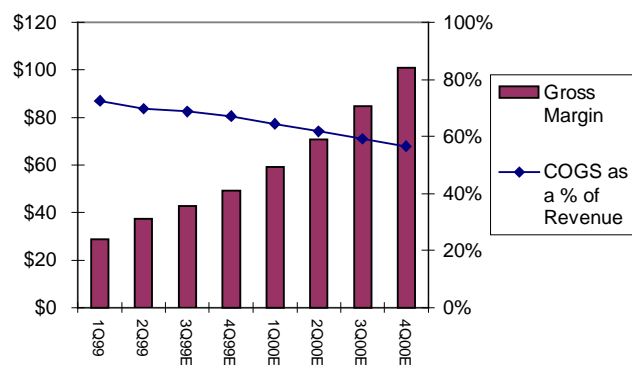
### Quarterly EBITDA Trend, 1Q99-4Q00E



E = Morgan Stanley Dean Witter Research Estimates

Figure 9

### Quarterly Gross Margin Trend, 1Q99-4Q00E



E = Morgan Stanley Dean Witter Research Estimates

## Company Overview

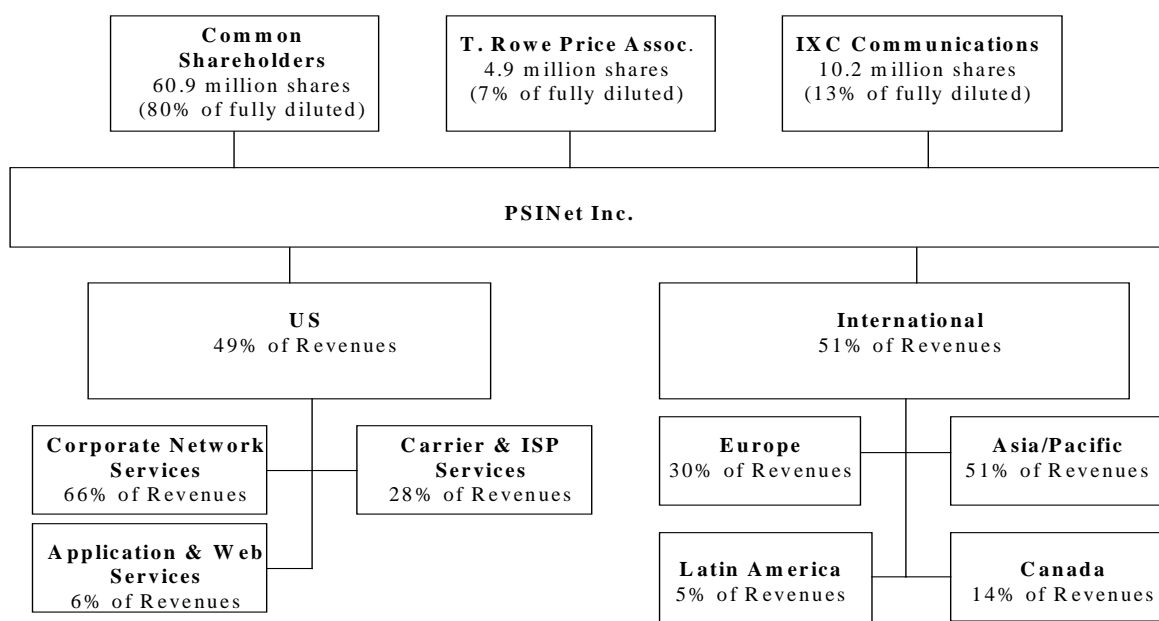
PSINet

PSINet services and products include the following:

- **Access services** that offer dedicated, dial-up, wireless, and digital subscriber line, or xDSL, connections that link customers' networks to the Internet;
- **Web-hosting services** that provide cost-effective solutions for the management and maintenance of customer Web sites and Web-based applications;
- **Intranets and virtual private networks, or VPNs**, that provide customers secure and seamless wide-area networks, or WANs, connecting remote offices and employees, customers, and suppliers;
- **E-commerce services/application hosting** designed to enable customers to transact business securely over the Internet;
- **Voice-over-Internet protocol (VOIP) services** that enable companies with multiple business locations to transmit voice conversations over PSINet's network at a significant savings to traditional long-distance calling; and
- **Managed security services** designed to protect, monitor, and maintain the integrity of customer networks.

Figure 1

### PSINet: Organizational Structure



Source = Company Documents

### The Network Architecture

PSINet has bolstered its network significantly in the past year. Domestically, the company has a combination of leased and owned network assets that give it national coverage. Internationally, PSINet has made several acquisitions of capacity that make the company's international infrastructure almost wholly owned (Table 2).

In the U.S., for example, PSINet acquired from IXC Communications IRUs in up to 10,000 equivalent route miles of OC-48 network bandwidth in February 1998, with IXC taking approximately 20% of PSINet common stock in exchange. At the end of the first quarter of 1999, approximately 20% of this capacity had been placed in operation (8,452 route miles of OC-12 fiber, equivalent to approximately 2,113 route miles of OC-48). PSINet anticipates delivery of the remaining OC-48 bandwidth from IXC over the next 18 to 24 months.

Internationally, the company has also made several acquisitions of fiber capacity to enhance the quality of service and service level agreements (SLA) it can offer to its customers. It also has been able to lower costs relative to that of leasing capacity by as much as 90%, the company estimates.

The company's network is connected to approximately 600 points of presence globally, 220 of which are located in the United States. These PoPs allow the company's customers

Table 2

### International Capacity Standards

Non-Synchronous	Capacity	US Equivalent
E-0	64 kbps	DS-0
E-1	2,048 kbps	1.33x DS-1
E-3	34 Mbps	0.76x DS-3
SONET/SDH Hierarchies	Capacity	US Equivalent
STM-1	155 Mbps	OC-3
STM-4	622 Mbps	OC-12
STM-16	2,488 Mbps	OC-48
STM-64	9,953 Mbps	OC-192

to access PSINet via a local connection in 150 countries, making it one of the largest networks in the world in terms of local presence.

PSINet was one of the original Tier 1 network providers, and is still one of the primary connection points on the Internet. The company has a come-one, come-all peering strategy, giving network peering to any ISP that asks. PSINet has 67 contractual arrangements with other ISPs to connect at close to 140 points along the Internet.

Finally, in addition to network access services, PSINet is developing its hosting facilities. The company operates three global Internet hosting facilities, in the U.S., Switzerland, and Canada, containing a total of about 25,000 square feet. The company is constructing additional data center capacity in London (100,000 square feet) and New York (25,000 square feet.)

Table 3

### PSINet Global Network

Location	Capacity	Connection Points	Ownership
<b>North America</b>	8,452 route miles of OC-12	New York--Chicago--Dallas--Los Angeles	IRU
		-- Washington, DC--Atlanta--Houston	IRU
		--San Francisco	
	18 high capacity dark fibers	New York (operational)--Washington, DC (Q2 1999)	Capital lease
	4 high capacity dark fibers	San Francisco Bay Area (during 1999 and 2000)	Capital lease
	20 high capacity dark fibers	Vancouver, B.C.--Seattle, WA (beginning in Q2 1999)	IRU
	T-3	Intercontinental	Leased
<b>Trans-Atlantic and Europe</b>	14,000 km of STM-1 (OC-3)	New York--U.K.--Amsterdam	IRU
	12,600 km of STM-1	New York--U.K. (during Q2 1999)	IRU
	21,000 km of STM-1	30 European cities (during 1999 and 2000)	IRU
	E-1	Intercontinental	Leased
<b>Trans-Pacific and Asia</b>	6,000 miles of 6 DS-3s	US--Japan (3DS-3s operational; 3DS-3s in Q2 1999)	IRU/Capital lease
	22 STM-1s (increasing to 30)	Japan-Hawaii-US (during Q2 2000)	IRU
	27,300 km of STM-1	Japan-China-Southeast Asia-India-Middle East-Europe (beginning in Q2 1999)	IRU

Source =Company Documents

Figure 2  
PSINet Global Network



Source: PSINet



### Business Strategy

The company's goal is to be one of the top three providers of Internet access and related services in each of the 20 largest global telecommunications markets. In the company's words, it plans to do this by "purchasing significant commercial Internet companies in the world's top 20 markets, as well by building or buying state-of-the-art fiber and e-commerce Web-hosting centers in all 20 markets".

We believe that PSINet offers one of the best opportunities to invest in the growth of the Internet internationally, but that executing on this strategy may be difficult. The principle elements of PSINet's strategy are:

- **Dominate the World's Top 20 Internet Markets:** In 1998 PSINet acquired significant assets domestically and internationally to position itself in 12 of the top 20 markets, and has subsequently added four more to the this list. The company made a total of 17 acquisitions in 1998, adding

20,200 new business accounts and 208,800 SOHO/consumers (Table 4).

- **Reduce Costs by Controlling Strategic Assets:** PSINet believes that controlling one's network is a critical competitive advantage. To this end, the company has made eight strategic acquisitions of network capacity. Its most significant acquisitions were 10,000 OC-48 route miles in the U.S., SMT-1 IRU capacity between the U.S. and Europe, as well as between the U.S. and Asia. This allows the company to control its network quality and reduce transmission costs by as much as 90% relative to leasing costs.

- **Broaden Product Offering:** The company believes that by offering multiple services to the same customer it can increase its revenue from that customer, while reducing churn. The company has recently broadened its service menu to include, hosting, voice and fax over IP, and xDSL services.

Table 4

### Recent PSINet Acquisitions

Company Acquired	Date of Acquisition	Principal Market	Business Accounts <sup>(1)</sup>	Consumer Accounts <sup>(1)</sup>	Global Mkt. Ranking <sup>(1)</sup>
CalvaCom	Oct-97	France	1,500	2,300	5
Iprolink	Jan-98	Switzerland	2,400	2,600	14
iSTAR	Feb-98	Canada	2,700	47,000	10
ITL	Apr-98	Jersey, Channel Islands	-	-	N/A
INX	May-98	Germany	650	15,600	3
ioNet	Jun-98	U.S.	2,300	21,500	1
LinkAge	Jun-98	Hong Kong	1,100	-	19
CalvaPro	Jun-98	Sub-Sahara Africa	425	30	N/A
Interlog	Jul-98	Canada	2,100	41,000	10
Rimnet	Aug-98	Japan	260	56,000	2
TWICS	Sep-98	Japan	70	1,700	2
HKIGS	Sep-98	Hong Kong	200	-	19
Inet	Sep-98	Korea	1,100	13,000	12
Tokyo Internet	Oct-98	Japan	6,500	10,000	2
IXE/USN	Oct-98	Netherlands	85	-	13
AsiaNet	Nov-98	Hong Kong	180	250	19
Spider Net	Dec-98	Hong Kong	30	100	19
Huge Net	Dec-98	Hong Kong	90	-	19
Planete.net	Feb-99	France	190	780	5
Satelnet	Feb-99	France	110	-	5
Horizontes Internet	Apr-99	Brazil	220	10,000	9
Openlink	Apr-99	Brazil	1,100	18,000	9
STI	May-99	Brazil	400	34,000	9
Internet de Mexico	May-99	Mexico	260	11,800	15
Data Net	May-99	Mexico	430	7,500	15
Internet Co.	Jun-99	Switzerland	1,300	3,800	14
The Internet Access Co.	Jun-99	U.S.	6,300	33,200	1
Caribbean Internet	Jun-99	Puerto Rico	210	12,800	NA
Argentina On-line	Jun-99	Argentina	90	2,900	16
CSO.net	Jun-99	Austria	240	1,400	NA
Intercomputer	July-99	Spain	-	50,000	NA
Abaforum	July-99	Spain	1,500	1,500	NA

(1) As of the respective dates of acquisition. Source = Company Documents

## Balance Sheet and Cash Flow

PSINet

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In our view, PSINet has adequate financial flexibility to expand its business through organic channels and strategic acquisitions. We estimate PSINet has over \$2 billion in cash on its balance sheet. In April 1999, the company raised over \$800 million through the sale of public equity and convertible preferred securities. The \$400 million of 6.75% Series C cumulative convertible preferred stock may be converted into PSIX common shares at a conversion rate of 0.8017, subject to adjustment. In July 1999, the company raised \$1,200 million through the placement of high-yield bonds. Morgan Stanley Dean Witter's High Yield team rates PSINet's bonds Outperform.

We look for capital expenditures (including capital leases) of \$445 million in 1999 and \$600 million in 2000. Included in our capital expenditure forecast is the construction of data centers throughout the world. The data centers will support PSINet's push into Web hosting and managed applications services. We expect PSINet's data center capacity to reach 150,000 square feet by year-end 1999 — up from 40,000 square feet in early 1999.

We estimate depreciation expenses of \$133 million in 1999 and \$230 million in 2000. We depreciate gross plant over a seven-year life on average.

## The Management Team

PSINet

**William L. Schrader** is the founder of PSINet and has served as Chairman of the Board of Directors and CEO since inception and as President from inception to September 1998. Prior to forming PSINet, Mr. Schrader served as President and CEO of NYSERNet Inc., a provider of data networking services in New York State, from January 1986 to December 1989. Mr. Schrader also was a co-founder, and, from May 1984 until February 1987, served as Executive Director of the Cornell Theory Center, a National Science Foundation supercomputer center.

**Harold S. Wills** has served as President since September 1998 and as a director of PSINet and Chief Operating Officer since April 1996, and served as Executive Vice President from April 1996 to September 1998. Mr. Wills served as COO of Hospitality Information Networks, Inc., a provider of information services for the hospitality industry, from July 1995 through January 1996. Mr. Wills also held various positions, including Managing Director, International Computer Services, Technical Service Director and Sales Director of Granada Group PLC, a computer services provider, from September 1991 through September 1995.

**David N. Kunkel** has served as Executive Vice President since 1998, as Senior Vice President since September 1996, as a director of PSINet and Secretary since September 1995, as Vice President since July 1995, and as General Counsel since June 1995. Mr. Kunkel also served as Vice President of International Operations from April 1996 to September 1996 and as Senior Counsel to Nixon, Hargrave, Devans & Doyle LLP, outside counsel to PSINet, from July 1995 through December 1995. Prior to July 1995, Mr. Kunkel was a partner with the law firm of Nixon, Hargrave, Devans & Doyle LLP for 16 years and served as outside counsel to NYSERNet from 1986 until 1989 and to PSINet from inception until July 1995.

**Edward D. Postal** has served as Senior Vice President and CFO since August 1997 and served as Vice President and CFO since October 1996. Prior to joining PSINet, Mr. Postal served as Senior Vice President, CFO and a director of The Hunter Group, Inc., a systems integration consulting firm, from March 1995 to October 1996, as Vice President and CFO of The Wyatt Company, an international employee benefits and human resources consulting firm (currently Watson Wyatt Worldwide), from December 1991 to October 1994, and as controller/treasurer of The Wyatt Company from November 1985 to December 1991. From 1981 to November 1985, Mr. Postal served in various financial management positions at Satellite Business Systems, a satellite communications company acquired by MCI in 1985, and, prior thereto, held various positions at Touche Ross & Co. (currently Deloitte & Touche LLP).

**E. A. "Ted" Davis** has served as Senior Vice President and President, PSINetworks Company since October 1998. Prior to joining PSINet, Mr. Davis served as Vice President of Customer Technical Support for Lucent Technologies (formerly the network services division of AT&T), from January 1995 to April 1998. Prior to that, Mr. Davis served in various technical and management positions with AT&T since beginning his career there in June 1968.

Table 5

### Other Key PSINet Management

Name	Division	Title
Geoffrey Axton	Business Div.	Sr. VP
Harry Hobbs	PSINet Europe	President
Philippe Kuperman	PSINet Latin Am.	President
C.H. Kwan	PSINet Asia/Pacific	President

Source: PSINet

Table 6  
**PSINet: Balance Sheet, 1998-2000E**

(All figures in \$ thousands)

	1999 Quarterly Estimates				2000 Quarterly Estimates				Full Year Estimates			
	1Q99A	2Q99E	3Q99E	4Q99E	1Q00E	2Q00E	3Q00E	4Q00E	1998	1999E	2000E	2001E
<b>Current Assets</b>	495,245	1,114,433	2,209,269	2,131,716	2,001,206	1,869,654	1,752,502	1,652,466	565,263	2,131,716	1,652,466	1,764,126
Cash & Equivalents	25,131	665,766	1,766,193	1,693,977	1,566,242	1,435,881	1,317,795	1,214,502	56,842	1,693,977	1,214,502	1,506,970
Short-term Securities	240,830	240,830	240,830	240,830	240,830	240,830	240,830	240,830	265,666	240,830	240,830	-
Restricted Cash	132,898	117,898	102,898	87,898	72,898	57,898	42,898	27,898	162,469	87,898	27,898	-
Acct Rec.	54,687	40,701	44,960	49,333	54,865	61,114	68,325	76,587	50,211	49,333	76,587	124,508
Goodwill and other Intangibles	-	-	-	-	-	-	-	-	-	-	-	-
Other current assets	41,699	49,237	54,389	59,679	66,371	73,931	82,654	92,649	30,075	59,679	92,649	132,648
<b>Net Fixed Assets</b>	823,482	928,135	975,635	991,876	1,080,717	1,165,357	1,245,797	1,319,924	672,257	991,876	1,319,924	1,241,084
Net Tangible Fixed Assets	503,522	617,175	675,175	701,916	801,257	896,397	987,337	1,071,964	389,476	701,916	1,071,964	1,079,721
Net Intangible Fixed Assets	319,960	310,960	300,460	289,960	279,460	268,960	258,460	247,960	282,781	289,960	247,960	161,363
Restricted Cash Net of Current	-	-	-	-	-	-	-	-	-	-	-	-
Other Assets	52,486	61,974	68,458	75,117	83,541	93,056	104,036	116,616	46,711	75,117	116,616	166,962
<b>Total Assets</b>	<b>1,371,213</b>	<b>2,104,542</b>	<b>3,253,362</b>	<b>3,198,709</b>	<b>3,165,463</b>	<b>3,128,067</b>	<b>3,102,335</b>	<b>3,089,005</b>	<b>1,284,231</b>	<b>3,198,709</b>	<b>3,089,005</b>	<b>3,172,172</b>
<b>Current Liabilities</b>	378,706	417,126	443,380	470,342	504,450	542,978	587,437	638,375	289,617	470,342	638,375	842,234
S-T Debt	166,184	166,184	166,184	166,184	166,184	166,184	166,184	166,184	59,968	166,184	166,184	166,184
S-T Portion of Capital Lease Obl.	-	-	-	-	-	-	-	-	-	-	-	-
Acct Payable	168,197	198,604	219,382	240,720	267,715	298,208	333,393	373,708	181,234	240,720	373,708	535,048
Deferred revenue	20,521	24,231	26,766	29,369	32,663	36,383	40,676	45,595	19,427	29,369	45,595	65,279
Other current liabilities	23,804	28,107	31,048	34,068	37,888	42,204	47,183	52,889	28,988	34,068	52,889	75,722
<b>Fixed Liabilities</b>	1,167,791	1,161,147	2,356,299	2,351,615	2,359,477	2,357,359	2,356,707	2,357,549	1,114,788	2,351,615	2,357,549	2,529,542
L-T Debt	950,513	950,513	2,150,513	2,150,513	2,150,513	2,150,513	2,150,513	2,150,513	943,963	2,150,513	2,150,513	2,150,513
L-T Portion of Capital Lease Obl.	168,288	152,788	141,888	130,988	130,988	119,988	109,088	98,188	120,670	130,988	98,188	223,188
Other L-T liabilities	48,990	57,846	63,898	70,114	77,976	86,858	97,106	108,848	50,155	70,114	108,848	155,841
<b>Total Liabilities</b>	<b>1,546,497</b>	<b>1,578,273</b>	<b>2,799,679</b>	<b>2,821,956</b>	<b>2,863,927</b>	<b>2,900,337</b>	<b>2,944,144</b>	<b>2,995,924</b>	<b>1,404,405</b>	<b>2,821,956</b>	<b>2,995,924</b>	<b>3,371,776</b>
Minority Interests	-	-	-	-	-	-	-	-	-	-	-	-
Bandwidth to be Delivered (IXC)	(146,672)	(125,719)	(104,766)	(83,813)	(62,859)	(41,906)	(20,953)	-	(158,550)	(83,813)	-	-
Common Stock	435,720	819,820	819,820	819,820	819,820	819,820	819,820	819,820	400,507	819,820	819,820	819,820
Preferred Stock	-	358,500	358,500	358,500	358,500	358,500	358,500	358,500	28,802	358,500	358,500	358,500
Deferred Compensation	22,526	22,526	22,526	22,526	22,526	22,526	22,526	22,526	36,664	22,526	22,526	22,526
Retained Earnings	(486,858)	(548,858)	(642,397)	(740,280)	(836,450)	(931,210)	(1,021,701)	(1,107,765)	(427,597)	(740,280)	(1,107,765)	(1,400,450)
<b>Total Shareholders Equity</b>	<b>(175,284)</b>	<b>526,269</b>	<b>453,683</b>	<b>376,753</b>	<b>301,536</b>	<b>227,730</b>	<b>158,191</b>	<b>93,081</b>	<b>(120,174)</b>	<b>376,753</b>	<b>93,081</b>	<b>(199,604)</b>
<b>Liabilities and Shareholders Eqty</b>	<b>1,371,213</b>	<b>2,104,542</b>	<b>3,253,362</b>	<b>3,198,709</b>	<b>3,165,463</b>	<b>3,128,067</b>	<b>3,102,335</b>	<b>3,089,005</b>	<b>1,284,231</b>	<b>3,198,709</b>	<b>3,089,005</b>	<b>3,172,172</b>

Source = Company Documents E = Morgan Stanley Dean Witter Research Estimates

Table 7  
**PSINet: Cash Flow Statement, 1998-2000E**

(All figures in \$ thousands)

	1999 Quarterly Estimates				2000 Quarterly Estimates				Full Year Estimates			
	1Q99A	2Q99E	3Q99E	4Q99E	1Q00E	2Q00E	3Q00E	4Q00E	1998	1999E	2000E	2001E
<b>PSINet Cashflow Statement</b>												
Net Profit	(59,261)	(57,800)	(87,039)	(91,383)	(89,670)	(88,259)	(83,992)	(79,564)	(264,948)	(294,909)	(341,485)	(266,685)
plus Depreciation & Amortization	26,818	34,400	52,500	56,960	61,160	65,360	69,560	75,873	63,424	170,678	271,953	284,243
less increase in Acct Rec.	(4,476)	13,986	(4,258)	(4,373)	(5,532)	(6,249)	(7,211)	(8,262)	(39,189)	878	(27,254)	(47,921)
less increase in other current assets	(11,624)	(7,538)	(5,151)	(5,290)	(6,692)	(7,560)	(8,723)	(9,995)	(16,211)	(29,604)	(32,970)	(39,999)
plus increase in Deferred Rev.	1,094	3,710	2,535	2,603	3,293	3,720	4,293	4,919	13,483	9,942	16,225	19,684
plus increase in Acct Payable	(13,037)	30,407	20,778	21,339	26,994	30,493	35,186	40,314	149,185	59,486	132,987	161,341
less increase in Restricted Cash / ST Secs	54,407	15,000	15,000	15,000	15,000	15,000	15,000	15,000	(407,445)	99,407	60,000	268,728
plus increase in other current liabilities	(5,184)	4,303	2,941	3,020	3,820	4,315	4,980	5,705	28,988	5,080	18,821	22,834
plus increase in other L-T liabilities	(1,165)	8,856	6,052	6,215	7,863	8,881	10,248	11,742	48,849	19,959	38,735	46,993
<b>Net Cashflow from Operations</b>	<b>(12,428)</b>	<b>45,323</b>	<b>3,357</b>	<b>4,090</b>	<b>16,236</b>	<b>25,702</b>	<b>39,340</b>	<b>55,734</b>	<b>(423,864)</b>	<b>40,917</b>	<b>137,012</b>	<b>449,217</b>
Chg. Tang. Fixed Assets (before depr)	133,446	139,053	100,000	73,201	150,000	150,000	150,000	150,000	293,857	445,700	600,000	250,000
Chg. Int Fixed Assets (before depr)	44,597	-	-	-	-	-	-	-	341,530	44,597	-	(44,597)
Change in other assets	5,775	9,488	6,484	6,659	8,424	9,515	10,980	12,580	39,722	28,406	41,499	50,346
<b>Net Cash Used in Investing</b>	<b>183,818</b>	<b>148,542</b>	<b>106,484</b>	<b>79,860</b>	<b>158,424</b>	<b>159,515</b>	<b>160,980</b>	<b>162,580</b>	<b>675,109</b>	<b>518,703</b>	<b>641,499</b>	<b>255,749</b>
<b>Cash Surplus/Deficit before Financing</b>	<b>(196,246)</b>	<b>(103,218)</b>	<b>(103,126)</b>	<b>(75,769)</b>	<b>(142,188)</b>	<b>(133,814)</b>	<b>(121,639)</b>	<b>(106,846)</b>	<b>(1,098,973)</b>	<b>(477,786)</b>	<b>(504,487)</b>	<b>193,467</b>
Increase in S-T Debt	106,216	-	-	-	-	-	-	-	20,335	-	-	-
Increase in S-T Portion of Cap Lease	-	-	-	-	-	-	-	-	-	-	-	-
Increase in L-T Debt	6,550	-	1,200,000	-	-	-	-	-	910,143	-	-	-
Increase in L-T Portion of Cap Lease	47,618	(15,500)	(10,900)	(10,900)	-	(11,000)	(10,900)	(10,900)	120,670	10,318	(32,800)	125,000
Increase in equity/pfd	4,151	763,553	20,953	20,953	20,953	20,953	20,953	20,953	71,345	742,600	-	-
Increase in Minority Interest	-	-	-	-	-	-	-	-	-	-	-	-
Dividends	(574)	(4,200)	(6,500)	(6,500)	(6,500)	(6,500)	(6,500)	(6,500)	(3,079)	(17,774)	(26,000)	(26,000)
<b>Net Cash Flow from Financing</b>	<b>163,961</b>	<b>743,853</b>	<b>1,203,553</b>	<b>3,553</b>	<b>14,453</b>	<b>3,453</b>	<b>3,553</b>	<b>3,553</b>	<b>1,119,414</b>	<b>735,144</b>	<b>(58,800)</b>	<b>99,000</b>
Change in Cash Balance	(32,285)	640,635	1,100,427	(72,216)	(127,735)	(130,361)	(118,086)	(103,293)	20,441	257,358	(563,287)	292,467
<b>PSINet Credit Analysis</b>												
Cash & Equivalents	25,131	665,766	1,766,193	1,693,977	1,566,242	1,435,881	1,317,795	1,214,502	56,842	1,693,977	1,214,502	1,506,970
Total Debt (incl Capital Leases)	1,284,985	1,269,485	2,458,585	2,447,685	2,447,685	2,436,685	2,425,785	2,414,885	1,124,601	2,447,685	2,414,885	2,539,885
Net Debt (Cash)	1,259,854	603,719	692,392	753,708	881,443	1,000,804	1,107,990	1,200,383	1,067,759	753,708	1,200,383	1,032,915
Shareholders' Equity	-175,284	526,269	453,683	376,753	301,536	227,730	158,191	93,081	-120,174	376,753	93,081	-199,604
Acct Rec. (Days)	47.6	40.0	40.0	40.0	40.0	40.0	40.0	40.0	17.6	40.0	40.0	40.0
Interest Coverage (x)	(1.1)	(1.1)	(0.8)	(0.8)	(0.7)	(0.7)	(0.6)	(0.5)	(2.8)	(0.9)	(0.6)	(0.3)
Current Ratio	1.3	2.7	5.0	4.5	4.0	3.4	3.0	2.6	2.0	4.5	2.6	2.1
Working Capital	257,592	197,725	165,881	133,582	96,698	56,979	13,454	-34,228	278,772	133,582	-34,228	-418,894
Debt/(Equity+Debt) (%)	116%	71%	84%	87%	89%	91%	94%	96%	112%	87%	96%	109%
Net Debt/(Equity+Debt-Cash) (%)	116%	53%	60%	67%	75%	81%	88%	93%	113%	67%	93%	124%
Total Debt/EBITDA	(188.1)	6,347.4	1,014.3	353.7	174.3	114.9	78.2	56.3	(26.9)	903.0	22.1	11.9

Source = Company Documents E = Morgan Stanley Dean Witter Research Estimates



## Verio (VRIO)

### Internet Data Services

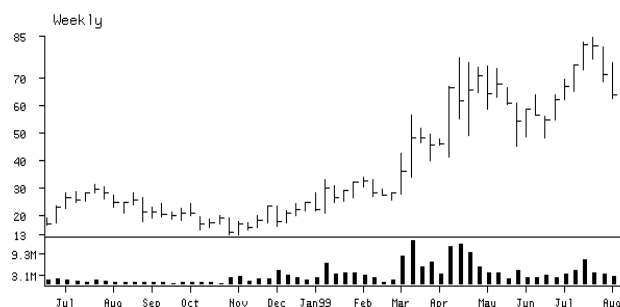
52-Wk Price	Rng	Shs Div	EPS Yld	EPS Out	EPS 98A	CEPS 99E	CEPS P/E	CEPS5-Yr Est 00E	P/E	98A	99E	P/CE	00E	P/CE	Growth
\$71	\$85-13	NM	NM	46.6	\$(5.75)	\$(5.25)	NM	\$(4.84)	NM	\$(3.88)	\$(2.28)	NM	\$(0.99)	NM	NM

Target Price: \$97.00

Market Cap: \$3,308

Price as of July 30, 1999

### Verio Stock Price Analysis



### Morgan Stanley Dean Witter Analyst:

Jeffrey Camp

Stephen Flynn

### Morgan Stanley Dean Witter Stock Rating: Outperform

### Company Description

Verio is a leading provider of comprehensive Internet services with an emphasis on serving the small and medium-sized business market. The company provides customers with the telecommunications circuits that permit them to make connections to and transmissions over the Internet. Verio is the #1 Web-hosting company in the world in terms of number of Web sites hosted. Finally, the company utilizes its connectivity and Web-hosting services as platforms for an expanding package of enhanced Internet tools such as electronic commerce, managed security and virtual private networks.

### Key Points

- We are initiating coverage of Verio with an Outperform rating and a twelve month target price of \$97.00, implying 37% upside from current levels. Our target price implies a year 2000 EV/Revenue multiple of 12.4x, and is based on a discounted free cash flow model assuming a 14.8% WACC and a 8.2% terminal growth rate, implying an exit EBITDA multiple of 12.0x.
- A full analysis of the company's valuation, as well as the markets in which it participates, can be found in earlier sections of this report.
- We expect revenues (excluding future acquisitions) at Verio to grow in 1999 and 2000 by 112% and 53% respectively. From 1999 to 2004 we expect revenues to expand by 37% annually. EPS is likely to remain negative until 2003, when we estimate earnings will hit \$0.09 per share.
- Verio is the world's largest Web-hosting company with over 250,000 subscribers, focusing primarily on the SME market. The company also offers business as well as dial-up access services.
- We believe that Verio's strong position in the small and medium enterprise (SME) market will bode well for the company as that segment of the economy goes online in earnest. In particular, we expect SMEs to exhibit considerable demand for Web and application hosting, as well as xDSL services, areas where Verio is currently strong.
- The company has entered into several strategic partnerships that we believe will help it execute on its business plan. Verio has reached an exclusive arrangement with AOL to advertise its Web-hosting and e-commerce products to AOL's business customers, and has also reached an arrangement with Qwest for fiber capacity.

## Investment Positives and Concerns

Verio

### Investment Positives

**Leader in the SME Hosting Market:** Verio is the #1 Web-hosting company in terms of customers, providing Web-hosting services to businesses in over 170 countries. Verio had 250,000 hosting customers in June 1999, more than 50,000 of which were in Europe. The company's specialty is offering shared hosting services to the small and medium enterprise (SME) market. We expect this market to grow from just over \$500 million at the end of 1998 to \$8,100 by the end of 2003, a 73% annual increase. SMEs have yet to embrace firmly the Internet with only 10-15% of small businesses having an active Web site. We believe that this group is ideally suited for shared hosting services, both for Web sites and software applications, and that Verio's position as a leader in this market bodes well for the company's long-term prospects.

### Key Product Set and Global Distribution Capabilities:

Verio has assembled the products required by SMEs to establish a presence and grow their business on the Internet. The company provides a full range of connectivity solutions, Web-hosting products, and enhanced services. In addition, Verio has the global distribution system required to channel products to the end-users. Verio utilizes direct marketing channels (i.e. AOL), direct sales (200 account executives), resellers (more than 4,000), and private label partners.

**Key Strategic Partnerships:** Partnerships will be key to successful implementation of Verio's business plan. In June 1999, Verio announced an exclusive agreement with AOL for co-branded Web-hosting and e-commerce services. The agreement provides Verio the opportunity to sell into AOL and CompuServe's more than 19 million members, including nearly 4 million small and mid-sized business customers. In addition, the company also has key partnerships with such companies as Qwest for fiber capacity, Northpoint for xDSL services and Verisign for user authentication and encryption technology.

### Investment Concerns

**Price Pressures in Dedicated Access Business:** We estimate just under 40% of Verio's revenues were derived from dedicated access services in 1998. Dedicated prices could come under pressure as DSL services become more widely available. We expect dedicated access prices to fall by over 20% per year from 1998 to 2003, although demand for greater capacity per connection will mean that APRU per line will fall by only 5% per year in the same period. In addition, Verio appears to have been successful in persuading its dial-up and ISDN access subscribers to upgrade to xDSL services, as well as in enticing new users onto its xDSL services, rather than cannibalize its existing dedicated revenues.

**Competition is Strong and Getting Stronger:** Verio operates in a highly competitive market. Barriers to entry in the hosting and access markets are low, and margin and pricing pressure is possible. While we believe that Verio's scale, brand awareness and experience can make it more difficult for new companies to enter the market, we expect the market to remain highly competitive for the foreseeable future. While we expect demand for more bandwidth and higher performance Web sites and software applications to alleviate some of the pressure on revenues from falling prices, there may be a lag effect between the fall in prices and the jump in demand, hurting Verio's revenues and margins.

**The Challenge of Acquisitions:** Verio has acquired more than 45 different ISPs, Web hosting, and e-commerce companies in the past two years, leaving the company with \$60-80 million in amortization costs and a heavy task of network integration. We are concerned with acquisitions that are predominantly for subscribers that might otherwise be acquired more cheaply through sales and marketing. Verio has, however, slowed its acquisition spree, and demonstrated that it can grow revenues internally, and appears to have completed most of the primary huddles of integration.

## Earnings Summary

Verio

Table 1  
Verio: Income Statement, 1998-2001E

(All figures in \$ thousands, except per share data)	1999 Quarterly Estimates				2000 Quarterly Estimates				Full Year Estimates			
	1Q99	2Q99E	3Q99E	4Q99E	1Q00E	2Q00E	3Q00E	4Q00E	1998	1999E	2000E	2001E
<b>Revenues</b>												
Dedicated Access	21,470	23,506	26,017	28,792	32,565	36,960	41,980	47,625	53,274	99,785	159,130	245,050
Dial-up Access	6,614	6,741	6,866	6,987	7,089	7,173	7,255	7,334	22,865	27,208	28,850	29,472
Enhanced Services/Other	27,040	29,426	31,968	36,228	39,415	43,733	48,600	53,942	44,514	124,662	185,690	264,280
digitalNATION	-	-	1,583	2,907	3,657	4,457	5,257	5,630	-	4,490	19,000	26,600
Total Revenues	55,124	59,673	66,434	74,914	82,726	92,323	103,091	114,531	120,653	256,145	392,670	565,401
% Chg QoQ	49%	8%	11%	13%	10%	12%	12%	11%	NM	NM	NM	NM
% Chg YoY	160%	109%	97%	102%	50%	55%	55%	53%	NM	112%	53%	44%
<b>Direct Costs</b>												
COGS	19,406	19,930	20,498	22,167	24,159	26,972	30,314	34,115	54,023	82,001	115,560	162,738
Gross Margin	65%	67%	69%	70%	71%	71%	71%	70%	55%	68%	71%	71%
<b>Operating Costs</b>												
Sales and Marketing	14,831	15,340	15,501	16,278	18,150	19,930	21,851	23,567	30,280	61,950	83,498	101,433
General and Admin	28,805	29,239	30,424	31,187	31,657	32,133	32,941	33,770	84,602	119,655	130,501	142,496
Depr & Amort	21,614	27,222	30,722	31,759	33,959	36,159	38,359	40,833	39,726	111,317	149,310	154,141
digitalNATION	-	-	1,583	2,761	3,108	3,655	4,205	4,335	-	4,345	15,303	19,950
Other	-	-	-	-	-	-	-	-	3,040	-	-	-
Total Operating Costs	65,250	71,801	78,230	81,986	86,874	91,877	97,357	102,505	157,648	297,267	378,613	418,020
EBITDA	(7,918)	(4,836)	(1,572)	2,520	5,652	9,633	13,780	18,744	(48,252)	(11,806)	47,808	138,784
% Chg YoY	NM	NM	NM	NM	124%	70%	43%	36%	NM	NM	NM	190%
% Mrg.	NM	NM	NM	3%	7%	10%	13%	16%	NM	NM	12%	25%
Operating Profit	(29,532)	(32,058)	(32,294)	(29,239)	(28,307)	(26,526)	(24,579)	(22,089)	(91,018)	(123,123)	(101,502)	(15,357)
% Chg YoY	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
% Mrg.	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
<b>Non Operating Income (Exp.)</b>												
Interest Income	4,778	3,904	5,201	6,502	6,261	6,025	5,789	5,564	14,628	20,385	23,639	16,209
Interest Expenses	(20,358)	(20,979)	(20,471)	(20,762)	(21,053)	(21,337)	(21,480)	(21,490)	(35,946)	(82,570)	(85,361)	(85,262)
Other Non-Operating Items	-	-	-	-	-	-	-	-	-	-	-	-
Minority Interests	-	-	-	-	-	-	-	-	482	-	-	-
Accretion of Preferred Stock	-	-	-	-	-	-	-	-	(87)	-	-	-
Extraordinary Profits (losses)	-	-	-	-	-	-	-	-	(10,101)	-	-	-
Pre-Tax Profits	(45,112)	(49,133)	(47,564)	(43,499)	(43,100)	(41,839)	(40,270)	(38,015)	(122,042)	(185,308)	(163,223)	(84,410)
less Taxes	-	-	-	-	-	-	-	-	-	-	-	-
Effective Tax Rate	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Net Profits	(45,112)	(49,133)	(47,564)	(43,499)	(43,100)	(41,839)	(40,270)	(38,015)	(122,042)	(185,308)	(163,223)	(84,410)
Preferred Dividends	-	-	(5,063)	(6,075)	(6,075)	(6,075)	(6,075)	(6,075)	-	(11,138)	(24,300)	(24,300)
Payout Ratio to Pfd	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Profit Attributable to Common	(45,112)	(49,133)	(52,627)	(49,574)	(49,175)	(47,914)	(46,345)	(44,090)	(122,042)	(196,446)	(187,523)	(108,710)
Avg. Diluted Shares Outstanding	36,448	37,400	37,700	38,000	38,300	38,600	38,900	39,200	21,236	37,387	38,750	39,719
EPS	(\$1.24)	(\$1.31)	(\$1.40)	(\$1.30)	(\$1.28)	(\$1.24)	(\$1.19)	(\$1.12)	(\$5.75)	(\$5.25)	(\$4.84)	(\$2.74)
Depreciation Expense	7,974	11,000	12,000	13,037	15,237	17,437	19,637	22,111	19,453	44,011	74,422	70,589

Source = Company Documents E = Morgan Stanley Dean Witter Research Estimates

## Revenue Analysis

Verio

Verio generates the majority of its revenues from dedicated Internet access and Web-hosting services, both aimed at the SME market. Dedicated Internet access services accounted for approximately 39% of total revenues in the last quarter, followed closely by Web hosting (Figure 3).

**Dedicated access services** are generated primarily from T-1, fractional T-1, frame relay and xDSL sales. Nationally, we estimate that business Internet access revenues will reach \$8.6 billion in 1999. Included in our 1999 estimate is \$4.6 billion in dial-up access revenues and \$2.2 billion in fiber-based access revenues. We look for the remaining \$1.8 billion to represent alternative broadband technologies (i.e. xDSL, copper T1s, fixed wireless). We expect the alternative broadband market to grow 31% on average over the next several years, hitting \$5.4 billion by 2003. xDSL revenues, should grow quickly, lifting overall broadband penetration in addition to some cannibalization of RBOC copper T1s.

For Verio, we expect xDSL revenues to contribute significantly by mid-2000. This should help total dedicated revenues to expand by 66% per year to 2001 when xDSL revenues are likely to be one-third of total dedicated sales. We believe that the company will continue to take share in the dedicated T-1 market as it feeds its Web and application hosting customers hunger for bandwidth. This, and the likelihood that the company will continue to consolidate its position in the industry, should lead to above industry average in its existing dedicated revenue base. Offsetting some of this, however, is our belief that average revenue per user will trend down over time. Averages, however, can be slightly misleading. While we expect sharp pricing pressure

in the dedicated access market, particularly in the T-1 and frame relay segments, we also believe that users will demand higher levels of bandwidth overtime, leaving average revenue per user largely flat. However, as low cost xDSL lines increase in proportion to total sales, average revenue per line is likely to fall.

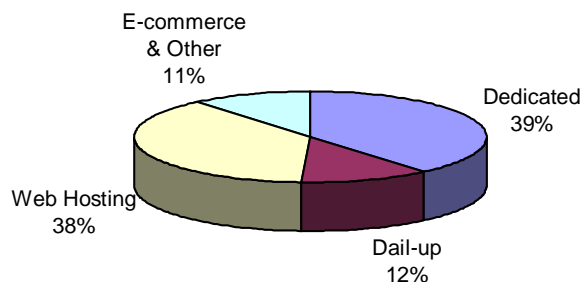
**Dial-up access** services account for about 12% of total company revenues. The company has just over 100,000 dial-up subscriber today, but does not expect significant growth from this segment. The company's dial-up subscriber base includes both business and residential customers with the mix evenly split at 50% business, 50% residential. **Web and application hosting services** are almost equal in size in terms of revenues as dedicated services, although represent an equally if not more attractive market opportunity. As the leader Web-hosting services by number of sites registered, Verio is in a strong position to capitalize on the expected growth in demand for application and Web-hosting services from the SME market.

We estimate that only 10% of small companies maintain an active Web site, and only 2% conduct E-commerce transactions over the Internet. The figures for the medium-sized business market are slightly higher at 45% and 12% respectively. We believe that the SME market has begun to embrace the Internet in earnest, realizing its potential for improved efficiency and new market opportunities. Overall, we expect the SME market for Web and application hosting services to grow from just under \$800 million in 1998 to \$9,600 million in 2003 (+65% per year). Much of this will come from new services such as Verio's E-commerce package which sells for \$100 per month on average, more than double the average selling price for Web-hosting services.

With 260,000 sites, Verio is the largest hosting company in terms of number of domain name sites. We expect the

Figure 3

### Verio 1Q99 Revenue Mix



Source = Morgan Stanley Dean Witter Research Estimates

Table 3

### Verio: Dedicated Access Revenues

\$000s	1998A	2001E	CAGR %
xDSL Rev.	0	85,675	NA
Other Dedicated Rev (T-1 etc.)	53,274	160,375	44%
Total Dedicated Rev.	53,274	245,050	66%
Average Rev/Line/Month (\$)	634	339	-19%

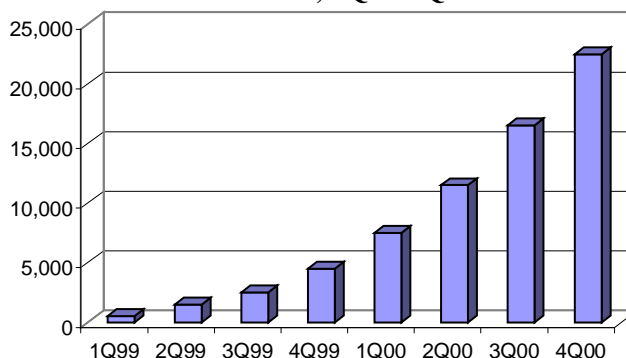
Source: Verio Inc, Morgan Stanley Dean Witter Estimates

company to add more than 10,000 new sites per month, helped in part by its relationship with AOL. In June 1999, Verio announced an agreement with AOL for co-branded Web-hosting and e-commerce services. Verio will be the exclusive Web-hosting and e-commerce firm on AOL's platform, which affords the company an opportunity to sell into AOL and CompuServe's more than 19 million members, including nearly 4 million small and mid-sized business customers. The table below highlights Verio's hosting and commerce pricing packages.

The packages offered range from \$25 to \$199 per month (not including a one-time set-up fee.) In addition to browsing the Web site, we placed a call into the customer service number listed on the Web site and were very impressed by the level of service. An informed Verio representative answered our call within 15 seconds and the representative provided thorough answers to all of our questions. Furthermore, the representative informed us that our site would be activated within four hours of completion (if required a new domain name it would take 3-5 business days to register). While we have assumed that Verio's average revenue per Web site falls to approximately \$30 per month as more (largely AOL) customers take the company's basic package, some of this decline will be offset by added revenue from the firm's new e-commerce packages.

We also see an opportunity for Verio to cross sell products. A large number of Verio's customers were obtained through acquisitions. The companies acquired often only offered one product line. We estimate only 10-15% of Verio customers subscribe to more than one Verio product today. By

Figure 4

**DSL Subscriber Forecast, 1Q99-4Q00**

Source = Morgan Stanley Dean Witter Research Estimates

bundling of services under one pricing plan, Verio should be able to enhance revenue per customer, and lower churn.

Given Verio's large number of SME customers, we believe the application service provider (ASP) market represents a potentially significant revenue opportunity for Verio. In our view, Verio is in a great position to offer its customers an affordable alternative to procuring, installing, and managing complex software systems. Verio may offer financial management, inventory control, human resources, and other software applications from Verio's servers via the Internet. We look for Verio to work with the application developers, system integrators, and industry consortiums to develop the ASP market. Chuck Phillips, Morgan Stanley's Enterprise Software Analyst, estimates the packaged applications market will reach \$16 billion in 2002 – up from \$10 billion in 1998.

Table 4

**Verio Web and Application Hosting Pricing Packages**

	<b>Basic Package</b>	<b>Enhanced Package</b>	<b>Powered Package</b>
<b>Web Hosting</b>			
Price per Month	\$24.95	\$49.95	\$99.00
Disk Space (MB)	50	70	120
Data Transfer per Month (GB)	4	5	7
E-Mail Accounts	6	11	22
CGI Scripts <sup>(1)</sup>	Free	Free	Free
Technical Support	24x7	24x7	24x7
Other	Real Audio/Video	Real Audio/Video MSQL & MySQL	
<b>E-Commerce Hosting</b>			
Price per Month	\$34.95	\$74.95	\$124.95
Web Hosting Package	Included	Included	Included
# of Products on Site	10	10-100	>100
Site Builder Templates	Yes	Yes	Yes
Secure Order Processing	Manual	Manual	Online/Real Time
Other	Unlimited Tax/Ship Zones	Unlimited Tax/Ship Zones	

<sup>(1)</sup> Common Gateway Interface scripts - provides detailed Web usage statistics and real-time discussion/chat forum.

Source: Verio Inc.

## Cost Analysis

Verio

We forecast continued sequential quarterly improvements in EBITDA for Verio with the company passing the EBITDA breakeven point in 3Q99. In addition to rapid gains in revenues, we look for improvements in gross margins and other operating expense ratios. The main drivers behind expense ratio improvements include scale and merger synergies.

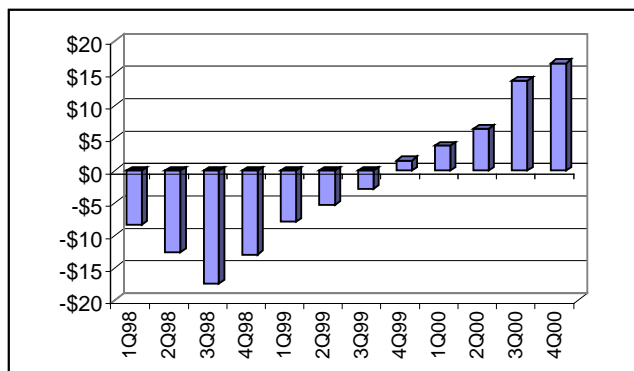
We expect Verio's recent agreement to lease fiber capacity from Qwest to improve the company's gross margin going forward. In January 1999, Verio extended its fiber lease agreement with Qwest Communications from 7 years to 10 years and increased the minimum commitment to \$160 million over the first 10 years of the contract from \$100 million. The agreement gives Verio the ability to deploy customer circuits from DS-3 to OC-48 speeds at low, fixed prices. We expect Qwest will carry approximately 75% of Verio's traffic, giving Verio the flexibility to use other network providers with the stability of the Qwest network deal. Verio will account for costs related to the Qwest lease agreement as a cost of goods sold. Even though Verio has the functional equivalent of an IRU, the expenses will not be capitalized unless prepaid. Verio's cost of goods sold includes only telecom operating costs, it does not include related depreciation charges or expenses associated operations and maintenance personnel.

We forecast sales & marketing expenses will drop as a percentage of revenue from 27-28% today to 21% by 4Q00. We look for cost improvements derived from the increasing scale of the business and efficient marketing channels. Verio has over 200 local direct sales executives, over 300 local engineers and customer support technicians, and more than 4,000 resellers and referral partners. We estimate the cost of acquiring a dedicated, dial-up, DSL, and Web-hosting subscribers at 3 to 6 times monthly revenues.

We forecast general and administrative costs will fall from 52% of revenues in 1Q99 to 29% of revenues in 4Q00 due in large part to merger synergies. Again, the increasing scale of Verio's business is the most significant driver behind our improving general & administrative expense forecast. Since late-1998 Verio realized cost synergies from the migration of customers onto a single, integrated billing system. In late-1998, all of Verio's access customers were on the company's Keenan billing system, but a majority of the Web-hosting and other customers were not. Verio expects to complete the migration of all Web-hosting and other customers onto the integrated Keenan billing system by year-end 1999. We believe the company has already completed 80-90% of the move and realized a majority of the cost savings.

Figure 5

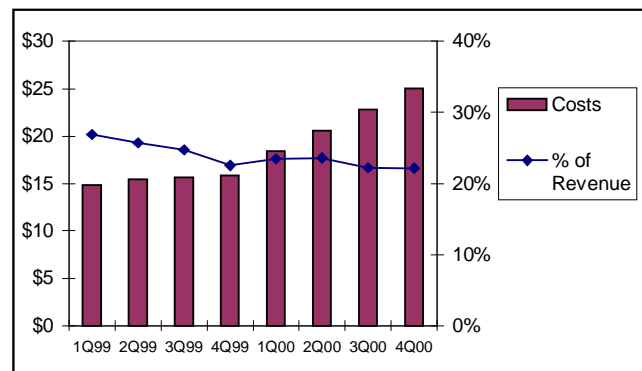
### Quarterly EBITDA Trend (\$Millions), 1Q99-4Q00



Source = Morgan Stanley Dean Witter Research Estimates

Figure 6

### Quarterly Sales & Marketing Expenses (\$Millions), 1Q99-4Q00



Source = Morgan Stanley Dean Witter Research Estimates

## Company Overview

Verio

Verio's electronic commerce services enable customers to conduct transactions with their customers and vendors over the Internet. The company's virtual private networks permit customers to engage in private communications with their employees, vendors, customers and suppliers, with whom secure Internet communication capabilities are important.

Verio provides locally based sales and engineering support for Internet services in 41 of the top 50 metropolitan statistical areas in the U.S. and Web-hosting services to customers in over 170 countries. Through the acquisition of iServer, TABNet and Hiway, Verio has established itself as the largest Web-hosting company in the world based on the number of domain names hosted.

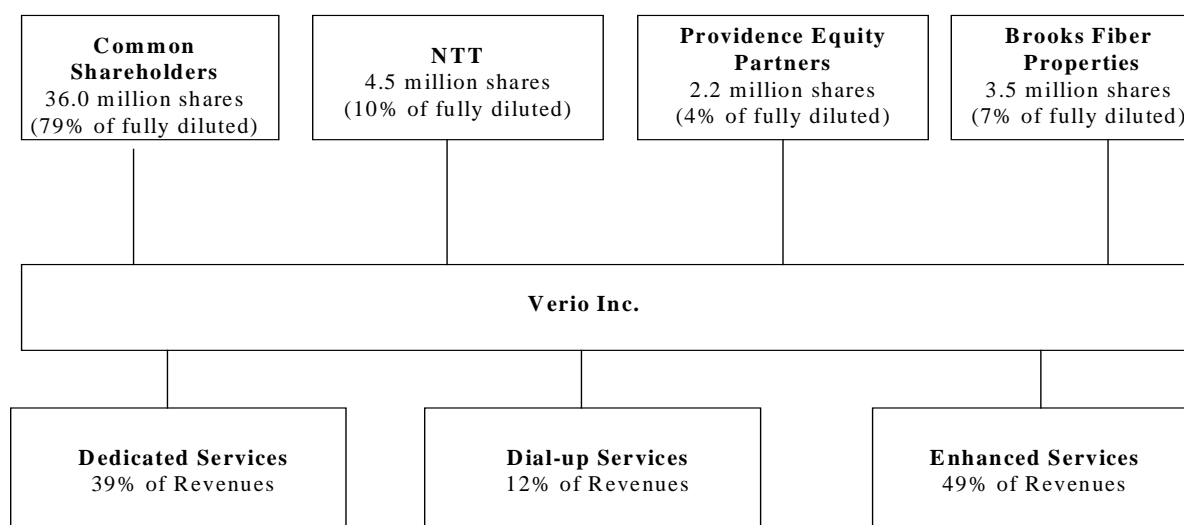
Verio distributes its services on a global basis through a combination of direct marketing, direct sales, channel resellers and private label partners. The direct marketing channel accounts for 40% of new revenues and includes

direct mail, online sales (AOL), and telemarketing efforts. Verio's direct sales presence includes 200 sales executives and accounts for 35% of new revenues. The reseller channel includes over 4,000 VARs, Web design firms, and system integrators, more than twice the amount of Verio's closest competitor. Verio's smallest, but fastest growing distribution channel is private label. The company's private label partners include NTT, SwissCom, and the RBOCs. Strategic Shareholders: NTT and Brooks Fiber

On April 7, 1998, Verio entered into agreements establishing a strategic relationship with NTT. Under these agreements, upon the consummation of its IPO, NTT acquired 4,493,877 shares (10%) of Verio's common stock for approximately \$100.0 million in aggregate consideration and is entitled to designate one member to serve on Verio's board of directors. Brooks Fiber Properties also owns approximately 8% of the company.

Figure 1

### Verio: Organizational Structure



Source: Company Documents

**The Network Architecture**

Verio offers its hosting, VPN and access services over a national network of 29 nodes and over 200 local points of presence. To ensure the company has adequate backbone capacity, Verio entered into a 15-year capacity and services agreement with Qwest Communications Corporation in March 1998, and upsized the agreement in December 1998. The company has access to unlimited capacity at a fixed price per DS0 mile from Qwest. The company has implemented nationwide OC-3 capacity and, on some routes, OC-12 links to handle current traffic requirements (Figure 2).

The agreement gives Verio access to Qwest's national fiber network. Verio has agreed to spend a total of \$160 million of capacity from Qwest at a fixed, but undisclosed, prices over the next ten years. The contract gives Verio flexibility in procuring circuits from Qwest ranging from DS-3 (45mbps) to multiple OC-48 (2.4gbps) speeds.

Verio peers with other network service providers at all of the major Internet Access Points, and claims to have Tier-1

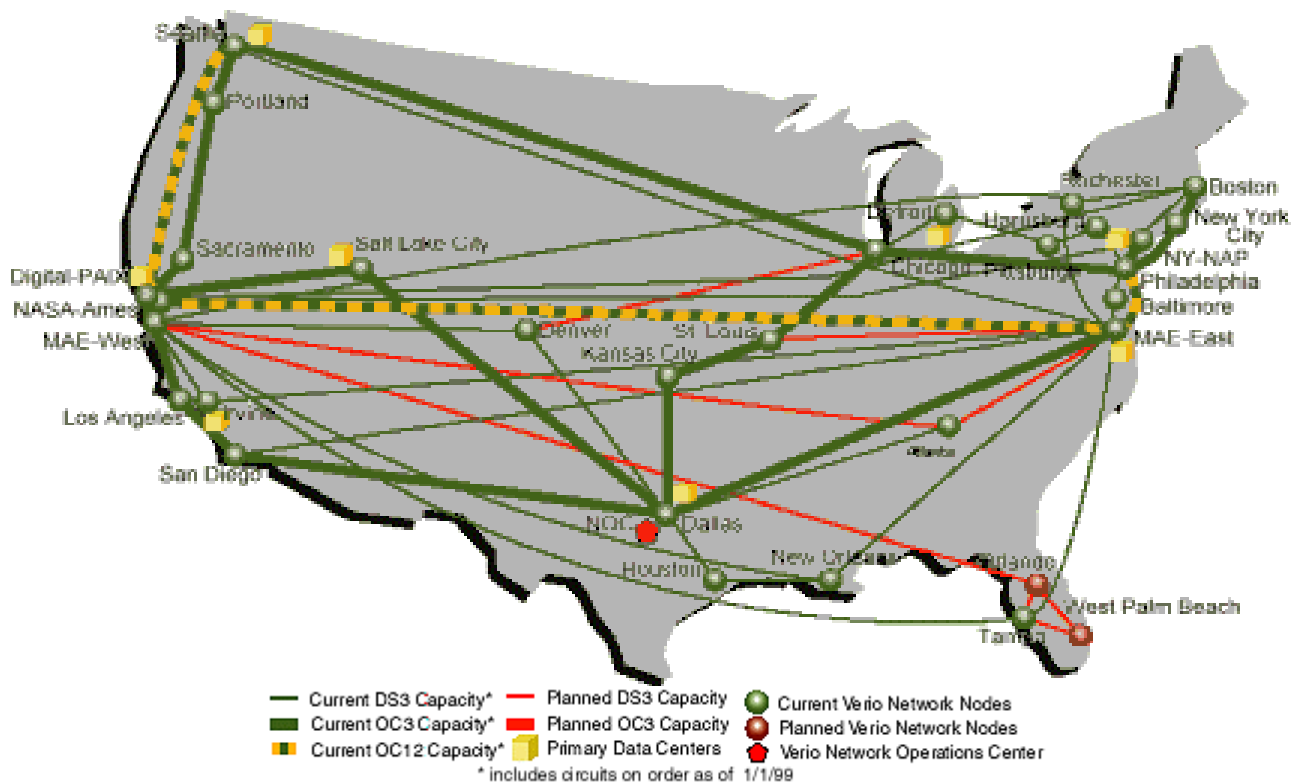
status. The Tier-1 designation allows Verio to exchange traffic with other Tier-1 providers at private peering points around the country free of cost. Other Tier-1 providers include UUNet, Sprint, PSINet, BBN, and Cable & Wireless. We estimate 85% of Verio's traffic will be exchanged through private peering points by year-end 1999 – up from 70% today. As of December 31, 1998, the company's network included connectivity at:

- the major public national exchange points -- MAE West, MAE East and the NY NAP;
- the Palo Alto Internet Exchange (PAIX);
- NASA Ames; and
- other regional connecting points

Verio maintains redundant paths over all of its primary routes and peering points, and runs a combination of clear channel circuits and ATM. The company continues to add national access nodes to serve additional parts of the Midwest, Southern California, the Southeast and the Northeast, all of which the company plans to put on-line during 1999.

Figure 2

**Verio: National Network Infrastructure**



Source: Verio Inc.

### Business Strategy

Verio's goal is to be the premier, full-service provider of Internet services to small and medium-sized businesses by combining national scale with a local presence. The key elements of Verio's strategy are:

- **Achieve Scale and Market Presence:** Verio has established its presence in the shared Web-hosting and SME Internet services market through 45 acquisitions as well as through organic growth. The company believes that scale helps to reduce costs, increase brand awareness and enhance customer service. We expect Verio to continue to be acquisitive, but believe that a larger proportion of its growth will come from existing assets than previously.
- **Integrate and Leverage Operations:** Verio is able to reduce costs by aggregating traffic from small, acquired networks onto its high capacity backbone. In addition, the company hopes to enhance efficiency and quality by streamlining its national hosting operations, as well as rationalizing its points of presence. Furthermore, by leveraging its sales force to sell multiple products on a regional basis, the company hopes to enhance productivity.
- **Build Brand Recognition and Sales Channels:** Brand, the company believes, will be critical to cost effectively penetrating the SME market. To create a national brand image and enhance its distribution the company has re-branded consolidated regional operations under the Verio name, and developed a network of 200 local direct sales executives, over 300 local engineers and customer support technicians, and over 4,000 resellers and referral partners.
- **Develop a Multi-Product Menu of Services:** To increase revenue per customer, as well as profitability, Verio believes that it must expand its service menu. Of particular importance to the company is application hosting services such as E-commerce packages, as well as xDSL services and Web-based value-added services (i.e. VPNs, managed security). By increasing the number of services the company

can sell to each customer, Verio can increase revenue per subscriber, lower churn and lift profit margins.

### Acquisition Strategy

Part of Verio's strategy has been to acquire smaller Internet access and hosting companies to build scale. Previously, Verio's acquisition strategy was to acquire less than 100% of its Internet service providers. It has made 45 acquisitions to this end, and has been able to integrate the majority of these successfully into the company.

While we believe that the company will continue to acquire small companies as it looks to enhance its scale, we believe that this will be done with diminishing value to the company. As we pointed out earlier, acquiring customers in the dedicated or hosting markets can be done either through acquisitions of companies or through internal marketing and sales channels. As Verio expands its presence and builds its brand image the cost of acquiring customers through sales channels will fall. While we believe that corporate acquisitions can serve the company well in (1) entering new markets, (2) entering markets where it does not have a meaningful distribution strategy, or (3) to expand Verio's product offerings. We believe that the company will grow through internal sources to a greater extent than it did previously.

In July 1999, Verio announced the acquisition of digitalNATION for \$100 million in cash. digitalNATION, a leading provider of dedicated server hosting, will provide Verio an entrance into servicing large, high-traffic Web sites. digitalNATION offers e-commerce and managed applications services to the more than 1,200 dedicated servers hosted at the company's Alexandria, VA data center.

Verio currently holds an approximately 75% fully diluted equity interest in VIA Internet, Inc. ("VIANet"), which was formed in 1997 to pursue a strategy similar to that of Verio's outside of the U.S. and Canada. Verio has no contractual right to acquire the remaining equity of VIANet, and has no present plan to integrate the operations of VIANet with those of its own.

Table 2

**Verio Acquisitions by Region**

Operating Region	Top 50 MSAS Served	Acquisitions
<b>Verio Northwest</b>	Seattle, WA Portland, OR RAINet, Inc. Internet Engineering Associates, Inc. Pacific Rim Network, Inc. Structured Network Systems, Inc.	NorthWestNet, Inc. Access One, Inc.
<b>Verio Northern California</b>	San Francisco Sacramento San Jose Oakland	Aimnet Corporation CCnet Inc. West Coast Online, Inc. NSNet, Inc.
<b>Verio Southern California</b>	Los Angeles San Diego Riverside/San Bernardino Orange County	Compute Intensive Inc. ATMnet
<b>Verio Texas</b>	Houston, TX Dallas, TX San Antonio, TX Ft. Worth, TX	On-Ramp Technologies, Inc. Signet Partners, Inc. National Knowledge Networks Sesquinet
<b>Verio East</b>	Washington, DC Baltimore, MD New York, NY Boston, MA Philadelphia, PA Pittsburgh, PA Hartford, CT Newark, NJ Buffalo/Niagara, NY Providence, RI Nassau/Suffolk, NY Bergen/Passaic, NJ LI Net, Inc. Matrix Online Media Inc. (d/b/aSpaceLab) TerraNet, Inc.	Clark Internet Services, Inc. Monumental Network Systems, Inc. Internet Online, Inc. Smart.Connect, a division of FiberServices, Inc. Global Enterprise Services Pioneer Global Telecommunications, Inc. ServiceTech, Inc. Surf Network, Inc. PREPnet Wingnet
<b>Verio Midwest</b>	Chicago, IL St. Louis, MO Detroit, MI Kansas City, MO Milwaukee/Waukesha, WI STARnet, L.L.C. Computing Engineers Inc. (d/b/a	Verio Chicago(2) Global Internet Network Services, Inc. RustNet, Inc. Branch Information Services, Inc.  Worldwide Access)
<b>Verio Rocky Mountain</b>	Denver, CO Salt Lake City, UT	Verio Colorado(3)
<b>Verio Southeast</b>	New Orleans, LA Miami, FL Fort Lauderdale, FL Orlando, FL Tampa/St. Petersburg, FL	Communique, Inc. Florida Internet Corporation PacketWorks, Inc. MagicNet, Inc.
<b>Verio Web Hosting</b>	National Product Offering	Internet Servers, Inc. NTX, Inc. (d/b/a TABNet)

Source = Company Documents

## Balance Sheet and Cash Flow

**Verio**

In our view, Verio has adequate financial flexibility to grow the business through organic channels and through strategic acquisitions. We estimate Verio has over \$550 million in cash on the balance sheet, pro forma for the recent \$300 million convertible preferred placement. On July 13, 1999, Verio placed \$300 million 6.75% Series A Convertible Preferred Stock with a conversion price of \$96.5625. Verio has approximately \$700 million in debt outstanding. Morgan Stanley's High Yield research team rates Verio's bonds an Outperform.

Analysis of the company's balance sheet and credit situation shows that the company has significant, but not unmanageable, levels of debt. The company had net debt of \$350 million at the end of 1Q99, and that debt and net debt to total capital stood at 75% and 60% respectively. Interest coverage remained negative in the quarter.

Nonetheless, we expect Verio will reach cash flow (EBITDA) break even in 3Q99 and post positive EBITDA

for 4Q99. Our EBITDA forecast for 2000 is \$48 million. This should help to improve the company's debt position, and give it more flexibility to develop its business plan going forward.

We look for capital expenditures (including capital leases) of \$60 million in 1999 and \$63 million in 2000. Included in our 1999 capital expenditure forecast are several non-recurring items. For example, in 1999 Verio will install new sales automation tools, complete a national network overlay to support the various access technologies, build a middle-ware platform to bring several systems together (i.e. billing, provisioning, customer support, and sales order entry), and complete the conversion of all customers onto the Keenan billing system. We estimate depreciation expenses of \$44 million in 1999 and \$74 million in 2000. We depreciate gross plant over a four year life on average.

## The Management Team

Verio

**Steve C. Halstedt** has served as Chairman of the Board of Directors of Verio since the company's inception in March 1996. Mr. Halstedt is a co-founder of The Centennial Funds. Mr. Halstedt has 17 years of direct venture capital experience and serves as a general partner of each of the Centennial Holdings' partnerships. Prior to co-founding The Centennial Funds in 1981, he was Executive Vice President and Director of Daniels & Associates, Inc., a private communications service company involved in cable television system operations. Mr. Halstedt is a member of the Board of Directors of several companies, including Formus Communications, Inc., Pluto Technologies and V-I-A Internet, Inc. Mr. Halstedt received a Bachelor of Science with distinction in management engineering from Worcester Polytechnic Institute, and earned a Master of Business Administration from Dartmouth College, where he was named an Edward Tuck Scholar. He attended the University of Connecticut School of Law.

**Justin L. Jaschke** has served as Chief Executive Officer of Verio since the company's inception in March 1996. He is also a member of the company's Board of Directors. Prior to forming Verio, Mr. Jaschke served as Chief Operating Officer for Nextel Communications ("Nextel") following its merger with OneComm in July of 1995. Mr. Jaschke served as OneComm's President and a member of its Board of Directors from the time that he joined that company in April 1993 until the merger with Nextel. Mr. Jaschke currently serves as Chairman of the Board of Directors of V-I-A Internet, Inc. and also serves on the Board of Directors of Metricom, a leading wireless data communications provider, and on the Board of Directors of Dobson Communications, a rural cellular and local exchange provider. From May 1990 to April 1993, Mr. Jaschke served as President and CEO of Bay Area Cellular Telephone Company. From November 1987 to May 1990, Mr. Jaschke was Vice President of Corporate Development of PacTel Cellular, and from 1985 to 1987 was Director of Mergers and Acquisitions for PacTel Corporation. Mr. Jaschke received a Bachelor of Science degree summa cum laude in mathematics from the University of Puget Sound and a Master of Science degree in management from the Sloan School of Management at MIT.

**Herbert R. Hribar** has served as President and Chief Operating Officer of the company since July 1998. Mr. Hribar joined the company from Ameritech Corporation, where he served as President of Ameritech Corporation's cellular services business unit and was responsible for all aspects of the business, including strategy, marketing, sales, network, customer service, IT and business development. He was promoted to that position in 1997 after working for Ameritech for two years, first as Vice President of International Operations beginning in early 1995, and later as Managing Director of Ameritech Europe. He also served as Chairman and Chief Executive Officer of ADSB Telecommunications, a consortium of international telecommunications companies headed by Ameritech. Before joining Ameritech, Mr. Hribar served in various capacities with Sprint Corporation from 1988 to 1995. Mr. Hribar previously worked in senior management positions at GTE Telenet and served in the U.S. Navy. Mr. Hribar holds a Bachelor of Science degree in Ocean Engineering from the U.S. Naval Academy, a Master of Science degree in Civil Engineering from the University of Illinois, a Master of Business Administration from George Washington University and a Master of Science degree in Computer Science from Johns Hopkins University.

**Peter B. Fritzing** has served as Chief Financial Officer of the company since June 1997. From September 1993 until June 1997, Mr. Fritzing served as Chief Financial Officer of Louis Dreyfus Natural Gas Corp., an independent, publicly held oil and gas company headquartered in Oklahoma City. From 1991 to 1993, he was Vice President-Finance and Treasurer of Louis Dreyfus Energy Corp., a diversified, global enterprise with investments in oil and gas reserves and other petroleum-related industries. Mr. Fritzing joined Louis Dreyfus Energy Corp. from J.P. Morgan, where he was a Vice President in its corporate finance group, having held various positions with Morgan Guaranty Trust Company of New York since 1980. Mr. Fritzing received his Bachelor of Arts degree in math and psychology from Amherst College.

Table 5  
Verio: Balance Sheet, 1998-2000E

(All figures in \$ thousands)	1999 Quarterly Estimates				2000 Quarterly Estimates				Full Year Estimates			
	1Q99	2Q99E	3Q99E	4Q99E	1Q00E	2Q00E	3Q00E	4Q00E	1998	1999E	2000E	2001E
Current Assets	385,459	361,165	597,941	579,600	562,408	549,440	534,068	523,901	613,931	579,600	523,901	449,425
Cash & Equivalents	338,598	318,960	556,982	538,012	516,483	498,187	476,838	460,319	433,424	538,012	460,319	350,131
Short-term Securities	0	0	0	0	0	0	0	0	143,963	0	0	0
Restricted Cash	14,078	9,078	4,078	0	0	0	0	0	13,629	0	0	0
Acct Rec.	20,304	19,619	21,841	24,629	27,197	30,353	33,893	37,654	15,084	24,629	37,654	61,962
Goodwill and other Intangibles	0	0	0	0	0	0	0	0	0	0	0	0
Other current assets	12,479	13,509	15,039	16,959	18,727	20,900	23,338	25,928	7,831	16,959	25,928	37,333
Net Fixed Assets	552,452	540,952	626,452	611,415	594,678	575,741	553,103	527,993	287,142	611,415	527,993	560,404
Net Tangible Fixed Assets	71,842	75,842	84,342	87,305	88,568	87,631	82,993	75,883	50,446	87,305	75,883	180,294
Net Intangible Fixed Assets	480,610	465,110	542,110	524,110	506,110	488,110	470,110	452,110	236,696	524,110	452,110	380,110
Restricted Cash Net of Current	1,278	878	478	0	0	0	0	0	1,176	0	0	0
Other Assets	86,164	91,037	98,631	108,339	117,225	128,307	140,830	154,179	31,463	108,339	154,179	185,124
<b>Total Assets</b>	<b>1,025,353</b>	<b>994,032</b>	<b>1,323,502</b>	<b>1,299,354</b>	<b>1,274,311</b>	<b>1,253,487</b>	<b>1,228,002</b>	<b>1,206,072</b>	<b>933,712</b>	<b>1,299,354</b>	<b>1,206,072</b>	<b>1,194,953</b>
Current Liabilities	105,380	113,367	125,236	140,125	153,840	170,689	189,595	209,679	56,052	140,125	209,679	298,131
S-T Debt	957	957	957	957	957	957	957	957	3,329	957	957	957
S-T Portion of Capital Lease Obl.	7,643	7,643	7,643	7,643	7,643	7,643	7,643	7,643	5,848	7,643	7,643	7,643
Acct Payable	7,658	8,290	9,229	10,407	11,493	12,826	14,322	15,911	10,501	10,407	15,911	22,910
Deferred revenue	17,519	18,965	21,113	23,808	26,291	29,341	32,764	36,399	12,512	23,808	36,399	52,411
Other current liabilities	71,603	77,512	86,294	97,309	107,456	119,922	133,910	148,769	23,862	97,309	148,769	214,211
Fixed Liabilities	690,295	700,120	710,347	720,885	731,302	741,543	743,497	745,572	674,618	720,885	745,572	754,711
L-T Debt	672,431	672,431	672,431	672,431	672,431	672,431	672,431	672,431	668,177	672,431	672,431	672,431
L-T Portion of Capital Lease Obl.	7,864	16,864	25,864	34,864	43,864	52,364	52,364	52,364	6,441	34,864	52,364	52,364
Other L-T liabilities	10,000	10,825	12,052	13,590	15,007	16,748	18,702	20,777	0	13,590	20,777	29,916
<b>Total Liabilities</b>	<b>795,675</b>	<b>813,487</b>	<b>835,583</b>	<b>861,010</b>	<b>885,142</b>	<b>912,232</b>	<b>933,092</b>	<b>955,251</b>	<b>730,670</b>	<b>861,010</b>	<b>955,251</b>	<b>1,052,843</b>
Minority Interests	0	0	0	0	0	0	0	0	361	0	0	0
Common Stock	448,306	448,306	508,306	508,306	508,306	508,306	508,306	508,306	376,197	508,306	508,306	508,306
Preferred Stock	0	0	300,000	300,000	300,000	300,000	300,000	300,000	0	300,000	300,000	300,000
Deferred Compensation	0	0	0	0	0	0	0	0	0	0	0	0
Retained Earnings	-218,628	-267,761	-320,387	-369,962	-419,137	-467,051	-513,396	-557,485	-173,516	-369,962	-557,485	-666,195
<b>Total Shareholders Equity</b>	<b>229,678</b>	<b>180,545</b>	<b>487,919</b>	<b>438,344</b>	<b>389,169</b>	<b>341,255</b>	<b>294,910</b>	<b>250,821</b>	<b>203,042</b>	<b>438,344</b>	<b>250,821</b>	<b>142,111</b>
<b>Liabilities and Shareholders Eqty</b>	<b>1,025,353</b>	<b>994,032</b>	<b>1,323,502</b>	<b>1,299,354</b>	<b>1,274,311</b>	<b>1,253,487</b>	<b>1,228,002</b>	<b>1,206,072</b>	<b>933,712</b>	<b>1,299,354</b>	<b>1,206,072</b>	<b>1,194,953</b>

Source = Company Documents E = Morgan Stanley Dean Witter Research Estimates

Table 6  
**Verio: Cash Flow Statement, 1998-2000E**

(All figures in \$ thousands)	1999 Quarterly Estimates				2000 Quarterly Estimates				Full Year Estimates			
	1Q99	2Q99E	3Q99E	4Q99E	1Q00E	2Q00E	3Q00E	4Q00E	1998	1999E	2000E	2001E
<b>Verio Cashflow Statement</b>												
Net Profit	-45,112	-49,133	-47,564	-43,499	-43,100	-41,839	-40,270	-38,015	-122,042	-196,446	-187,523	-84,410
plus Depreciation & Amortization	21,614	27,222	30,722	31,759	33,959	36,159	38,359	40,833	39,726	111,317	149,310	154,141
less increase in Acct Rec.	-5,220	685	-2,223	-2,788	-2,568	-3,155	-3,540	-3,761	-15,084	-9,545	-13,025	-24,308
less increase in other current assets	-4,648	-1,030	-1,531	-1,920	-1,768	-2,173	-2,438	-2,590	-7,831	-9,128	-8,968	-11,405
plus increase in Deferred Rev.	5,007	1,446	2,149	2,695	2,483	3,050	3,422	3,636	12,512	11,296	12,591	16,011
plus increase in Acct Payable	-2,843	632	939	1,178	1,085	1,333	1,496	1,589	10,501	-94	5,504	6,999
less increase in Restricted Cash	-551	5,400	5,400	4,556	0	0	0	0	-14,805	14,805	0	0
plus increase in other current liabilities	47,741	5,909	8,782	11,015	10,147	12,466	13,988	14,859	23,862	73,447	51,460	65,442
plus increase in other L-T liabilities	10,000	825	1,226	1,538	1,417	1,741	1,954	2,075	0	13,590	7,187	9,140
Net Cashflow from Operations	25,988	-8,043	-2,099	4,535	1,655	7,583	12,971	18,627	-73,161	9,243	16,535	131,609
Chg. Tang. Fixed Assets (before depr)	29,370	15,000	20,500	16,000	16,500	16,500	15,000	15,000	69,899	80,870	63,000	175,000
Chg. Int Fixed Assets (before depr)	257,554	722	95,722	722	722	722	722	722	256,969	354,720	2,888	11,552
Change in other assets	54,701	4,873	7,594	9,708	8,886	11,082	12,523	13,348	31,463	76,876	45,840	30,946
Net Cash Used in Investing	341,625	20,595	123,816	26,430	26,108	28,304	28,245	29,070	358,331	512,466	111,728	217,498
Cash Surplus/Deficit before Financing	-315,637	-28,638	-125,915	-21,896	-24,453	-20,721	-15,274	-10,443	-431,492	-503,223	-95,193	-85,888
Increase in S-T Debt	-2,372	0	0	0	0	0	0	0	3,329	-2,372	0	0
Increase in S-T Portion of Cap Lease	1,795	0	0	0	0	0	0	0	5,848	1,795	0	0
Increase in L-T Debt	4,254	0	0	0	0	0	0	0	668,177	4,254	0	0
Increase in L-T Portion of Cap Lease	1,423	9,000	9,000	9,000	9,000	8,500	0	0	6,441	28,423	17,500	0
Increase in equity / pfd	72,109	0	360,000	0	0	0	0	0	324,723	432,109	0	0
Increase in Minority Interest	-361	0	0	0	0	0	0	0	361	-361	0	0
Dividends	0	0	-5,063	-6,075	-6,075	-6,075	-6,075	-6,075	0	-11,138	-24,300	-24,300
Net Cash Flow from Financing	76,848	9,000	363,938	2,925	2,925	2,425	-6,075	-6,075	1,008,879	452,711	-6,800	-24,300
Change in Cash Balance	-238,789	-19,638	238,023	-18,971	-21,528	-18,296	-21,349	-16,518	577,387	-50,513	-101,993	-110,188
<b>Verio Credit Analysis</b>												
Cash & Equivalents	338,598	318,960	556,982	538,012	516,483	498,187	476,838	460,319	433,424	538,012	460,319	350,131
Total Debt (incl Capital Leases)	688,895	697,895	706,895	715,895	724,895	733,395	733,395	733,395	683,795	715,895	733,395	733,395
Net Debt (Cash)	350,297	378,935	149,913	177,883	208,412	235,208	256,557	273,076	250,371	177,883	273,076	383,264
Shareholders' Equity	229,678	180,545	487,919	438,344	389,169	341,255	294,910	250,821	203,042	438,344	250,821	142,111
Acct Rec. (Days)	33.6	40.0	40.0	40.0	40.0	40.0	40.0	40.0	11.4	8.8	8.8	40.0
Interest Coverage (x)	(1.5)	(1.5)	(1.6)	(1.4)	(1.3)	(1.2)	(1.1)	(1.0)	(2.5)	(1.5)	(1.2)	(0.2)
Current Ratio	3.7	3.2	4.8	4.1	3.7	3.2	2.8	2.5	11.0	4.1	2.5	1.5
Working Capital	-57,562	-70,204	-83,321	-97,579	-106,958	-118,479	-131,407	-145,141	127,784	-97,579	-145,141	-197,880
Debt/(Equity+Debt) (%)	75%	79%	59%	62%	65%	68%	71%	75%	77%	62%	75%	84%
Net Debt/(Equity+Debt-Cash) (%)	60%	68%	24%	29%	35%	41%	47%	52%	55%	29%	52%	73%
Total Debt/EBITDA	(87.0)	(144.3)	(449.6)	284.1	128.3	76.1	53.2	39.1	(13.3)	(60.6)	15.3	5.3

Source = Company Documents E = Morgan Stanley Dean Witter Research Estimates

## Internet Data Services: Glossary

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**ADSL (Asymmetric Digital Subscriber Line):** A member of the digital subscriber line family of copper loop enhancing technologies (see “DSL”), ADSL is asymmetric, meaning that it provides faster transmission rates downstream than upstream. It is therefore well suited to fast Internet access, where requests for Web pages and e-mail sent generally require less bandwidth than the receipt of multimedia and Web pages. ADSL is not well suited for business applications that require symmetric communication, such as videoconferencing and two-way file transfer.

**All-optical networks:** Networks that are entirely optical, and therefore avoid the cost and time delays inherent in converting optical signals to electric signals and *vice versa*.

**AM (Amplitude Modulation):** The simplest carrier modulation technique, where the radio frequency carrier’s amplitude envelope is modulated.

**Application:** A software program that carries out some useful task. Database managers, spreadsheets, communications packages, graphics programs and word processors are all applications.

**ARPAnet (Advanced Research Projects Agency Network):** A Department of Defense data network which tied together many users and computers in universities, government and businesses. It was the forerunner of many developments in commercial data communications, including packet switching, which was first tested on a large scale on this network. The predecessor of the Internet, it was started in 1969 with funds from the Defense Department’s Advanced Projects Research Agency.

**ARPU (Average Revenue Per User):** A primary element of valuation and analysis of wireless companies. It reflects the average amount of revenue generated by each subscriber.

**Asynchronous Transmission:** Mode of data communications transmission in which time intervals between transmitted characters may be of unequal length.

**ATM (Asynchronous Transfer Mode):** A high-bandwidth packet switching and multiplexing technique. Each cell in a stream is presented to the network on a “start-stop” basis (asynchronously), rather than having a circuit or a regular time slot reserved for the stream.

**Attenuation:** Weakening of the radio frequency signal due to being partially blocked or absorbed.

**Backbone:** Network of broadband connections between switches.

**Bandwidth:** A measure of data sent through a connection.

**Bit (Binary Digit):** A single digit number in base-2, either a 1 or 0. The smallest unit of computerized data.

**Broadband:** Transmission facility having a bandwidth greater than 20 KHz; capable of high-speed data transmission.

**Browser:** A software program that generally resides on a user’s computer and is used to view different aspects of the Internet.

**Cable Modem:** Offers high-speed, broadband access service over hybrid coaxial cable, providing up to 27Mbps of bandwidth.

**Capacity:** The highest possible reliable transmission speed that can be carried on a channel, a circuit, or piece of equipment.

**Carrierless Amplitude Modulation/Phase Modulation.** A technology that can be used in ADSL. Current standards put emphasis on discrete multitone (DMT) technology.

**Central Office (CO):** The switching office that connects the mobile telephone switching office (MTSO) to the public switched telephone network (PSTN).

**CGI (Common Gateway Interface):** Programs or scripts, usually executed on the Web server, that perform actions

(like searching or running applications) when the user clicks on certain buttons or parts of the Web screen.

**CLEC (Competitive Local Exchange Carrier):** A competitive access provider (see CAP) that also provides switched local telecommunications services. (Also see LEC)

**Coaxial Cable:** Cable capable of carrying much higher bandwidth than copper wire due to its fabrication with one or more pairs in a single sheath.

**Co-carrier Status:** A relationship between a CLEC and an incumbent LEC that gives each entity the same access to the other's network and provides access and services on an equal basis.

**Contention:** The process whereby multiple users make requests for transmission bandwidth across a transmission link but the pool of bandwidth is less than the aggregate amount of bandwidth the users could request.

**Copper Twisted Pair:** A standard phone line made up of two copper wires wrapped around each other.

**Customer Premises Equipment (CPE):** All telecommunication devised (except pay phones) and wiring that are at the user's location.

**DARPA (Defense Advanced Research Project Agency):** The branch of the United States Defense Department that is dedicated to the research and development of military defense systems.

**DARPAnet (Defense Advanced Research Project Agency Network):** The network developed in 1969 by the United States Department of Defense. The name was later changed to ARPAnet. It is a predecessor of the Internet.

**Data Packets:** Information requested on the Internet that is broken down into hundreds of smaller pieces or "packets" by TCP/IP. These packets travel separately through different routes over the Internet to their destination where they are reassembled upon arrival.

**Dedicated Access:** Connection between a customer's premises and a long distance carrier.

**Dedicated Lines:** Telecommunications lines dedicated to or reserved for use by particular customers along predetermined routes (in contrast to telecommunications lines within the LEC's public network).

**Digital:** A method of storing, processing, and transmitting information through the use of distinct electronic or optical pulses that represent binary digits (0 and 1).

**Digital Modulation:** A method of encoding information for transmission that we expect will eventually replace analog transmission.

**Domain Name:** A unique name or address that identifies any given location on the Internet.

**Domain Name System (DNS):** This maps Internet addresses registered with Network Solutions, the worldwide coordinator of addresses for the Internet. Each Internet host connected to the Internet, such as a computer, is given a unique Internet address. The DNS translates address names, such as <http://www.ms.com> or [campj@ms.com](mailto:campj@ms.com), into numerical Internet addresses. This allows users of the Internet to route information from one address to another using names, rather than numerical addresses.

**Downstream Transmission:** The transmission coming into a consumer's residence or business. Often used with cable modems and DSLs to describe the data rate that can be achieved by the line coming into the home or office.

**DSL (Digital Subscriber Line):** A family of technologies that provides high-bandwidth transmission over standard twisted copper wires (regular telephone lines).

**DS0 (Digital Signal 0):** A single voice-grade 64 Kbps circuit.

**DS1 (Digital Signal 1):** 1.544 Mbps with a payload of 1.536 Mbps bi-directional.

**DS2 (Digital Signal 2):** 6.312 Mbps, which can transport four DS1s asynchronously.

**DSP:** Digital signal processing.

**DTMF (Dual Tone Multi Frequency):** Commonly known as "touch-tones," this in-bank signaling is made up of two

tones (out of a group of 8) and is used to translate dialed digits.

**DWDM (Dense Wavelength Division Multiplexing):** A high-speed version of wavelength division multiplexing. (See WDM).

**DHTML( Dynamic Hypertext Markup Language):** A technology that adds dynamic behavior to otherwise static HTML pages. It allows developers to modify all portions of the Web page, at any time, dynamically.

**EDFA (Erbium Doped Fiber Amplifier):** EDFAs are used for amplifying optical signals in long-haul optical networks. Unlike electro-optic repeaters, which convert light to electricity, amplify the signal, and then reconvert it to light, EDFAs amplify the light signal itself. EDFAs have advantages that make them critical components of optical networks: they are fast, very simple, and are not frequency-dependent, meaning that networks may be upgraded by installing new wavelength division multiplexing (WDM) equipment without changing fiber or amplifiers between nodes.

**Ethernet:** A popular, cost effective way information can travel through a network, also the easiest type of network to set up.

**FDMA (Frequency Division Multiple Access):** Systems that transmit one voice circuit per channel. Each conversation gets its own, unique radio channel.

**Fiber Mile:** The number of route miles installed (excluding pending installations) along a telecommunications path multiplied by the number of fibers along that path.

**Fiber Optics:** Means of providing a high-speed transmission, using light to send images through a flexible bundle of glass fibers.

**Firewall:** Hardware or software that separates information on a computer from outside users not authorized to access this information.

**FM (Frequency Modulation):** Modulation of the radio frequency based on the frequency of signals (vs. the amplitude).

**Frame Relay:** Form of packet switching that employs statistical multiplexing over a shared network, intended for use between intelligent end-points and implemented over high-quality transmission facilities that connect programmable switches.

**Freenet:** A service that provides internet access without charging usage fees.

**Freeware:** Copyrighted software given away for free by the author. Although it is available for free, the author retains the copyright, which means that you cannot do anything with it that is not expressly allowed by the author. Usually, the author allows people to use the software, but not sell it.

**Frequency Shift Keying (FSK):** The form of frequency modulation that used two separate audio frequencies to transmit binary ones and zeros.

**FTP (File Transfer Protocol):** A method for downloading and uploading files to and from an Internet site.

**FTTC (Fiber to the Curb):** Provision of fiber optic cables to the street cabinet, from where copper lines are already connected to buildings. A cheaper alternative to FTTH.

**FTTH (Fiber to the Home):** Deployment of direct fiber optic connections to consumers' homes, allowing for wide bandwidth connections. FTTH faces technical hurdles (amplification of signals in the upstream direction), but the most significant factor holding it back is the cost of laying fiber optic cables. As such, FTTH is not expected to be the only wideband access solution, but will be deployed selectively and will co-exist with DSL access solutions over copper pairs. FTTO (fiber to the office) is more prevalent, as large office buildings contain enough users and demand for services to justify the cost of laying fiber.

**Full Duplex:** Refers to a communications system that uses two separate transmit and receive paths to allow simultaneous conversation in two directions.

**Gateway:** A means for providing access to the Internet.

**GUI (Graphic User Interface):** A program that uses "icons" such as pictures, buttons, and symbols as commands that you "click" on. An example of a GUI interface is the Microsoft Windows operating system. GUI is also used

throughout the Internet and in Web browsers making it easy to explore the World Wide Web by using your mouse to “point and click” to travel anywhere in the world you choose to go.

**HDSL:** High data rate DSL service that symmetrically delivers 1.544 Mbps over two sets of copper twisted pair, which is the same rate as a T-1 type connection.

**Host:** A computer on the Internet, or any other network that provides server where Web pages can be located.

**HTTP (HyperText Transfer Protocol):** A protocol that allows HTML documents to be moved across the Internet.

**HTML (HyperText Mark-up Language):** A formatting language used to create pages on the WWW. A major feature allows documents to link to any other documents on the Web. Documents can be viewed through a browser that runs on your computer.

**Hyperlink/Hypertext:** A link within a hypertext document. The link can be text, image, sound or video. The reader can click on a link to get more information about a topic or to transfer to another site with related information.

**IF (Intermediate Frequency):** Refers to the resulting signal in a supernet receiver after the incoming carrier is mixed with the oscillator.

**Integrated Services Digital Network (ISDN):** Switched network providing end-to-end digital connectivity for the simultaneous transmission of voice, data, video, imaging, and fax over several multiplexed communications channels.

**InterNIC (InterNetwork Information Center):** A US company where you register your domain name and who maintains a database with all registered names.

**IP Address:** The Internet protocol address, which is a 32-bit address assigned to an Internet host.

**IP (Internet Protocol):** A standard that keeps track of network addresses for different nodes, routes outgoing messages, and recognizes incoming messages.

**ISP (Internet Service Provider):** A company that provides Internet access to customers.

**ISOC (Internet Society):** An international organization that is dedicated to the development and use of the Internet. The purpose of the Internet Society is to promote and encourage global cooperation, use and coordination of the Internet infrastructure and its networking technologies and applications around the world. Members consist of individuals, commercial, government, and non-profit organizations.

**IP Number:** A unique number that identifies every computer on the Internet. Each unique number has four parts separated by dots.

**Java:** A programming language that permits interactivity with information on the Internet by downloading small programs (applets) to the user’s computer.

**Kilobit (Kbs):** One thousand bits of information.

**LAN (Local Area Network):** A narrow range data network using packet switching and multiple access technology.

**Leased-line:** A phone line that is rented for exclusive use, generally by a company. Internet sites with permanent connections, rather than modem dial-up, use leased lines to connect to an Internet backbone.

**Listserv:** A specific type of mail list application that is presently the most common mailing list type on the Internet.

**Local Loop:** Communications lines/services between the telephone subscriber and the phone company switching center.

**MAE (Metropolitan Area Exchange or Ethernet):** A Network Access Point where Internet Service Providers connect with each other.

**Mbps:** 1 million bytes per second.

**Megahertz (Mhz):** 1 million cycles per second.

**Mirror site:** An alternative site to the main computer Web site that “mirrors” or duplicates the content of the main site. The mirror site helps to handle the high traffic to a popular site.

**Multiplexing:** The transmission of two or more signals over a single channel.

**NAP (Network Access Point):** An actual connection to the Internet backbone network.

**Online Service Provider:** A paid service that provides a wide variety of interactive services and context to their subscribers. All major online services offer full Internet access to their customers.

**Optical Amplifier:** An amplifier of optical signals. The most popular optical amplifiers are EDFAs.

**Packet Switching:** The method used to transmit data on data networks. Unlike the public switched telephone network, packet-switched networks do not reserve a circuit between end points. Instead, they break up messages or files into many small packets. Each message packet may take a different route from origin to destination, traveling along network circuits that are shared with packets from other messages.

**PDM (Packet Division Multiplexing):** Different applications are assigned to different packets within the message frame, instead of different time slots, as with TDM.

**Point of Presence (POP):** Physical location within a local access and transport area (LATA) at which a long distance carrier's trunk lines are linked to the local carrier's network.

**POP:** Short for population. Commonly used as a measure of the potential market for a cellular or PCS provider.

**Port:** A specific gateway into and/or out of a computer system. This term can apply to physical plugs, such as a printer or modem port. On the Internet, it specifically applies to programmed gateways that lead to specific features within computer systems.

**Private Line:** Point-to-point telephone line for the exclusive use of one party.

**Protocol:** The conventions used in a network for establishing communications comparability between terminals, and for maintaining the line discipline while they are connected to the network.

**RADSL (Rate Adaptive DSL):** This high-speed form of data transmission is derived from ADSL technologies and is geared toward the residential market, with a few added features. RADSL automatically adjusts line speed based on the

condition of the line. In areas where there is a large variance in the distance between the central office and the subscriber, RADSL helps to provide a more consistent service for subscribers.

**RBOCS (Regional Bell Operating Companies):** Local exchange carriers. The seven regional Bell operating companies formed as a result of the breakup of AT&T. Each RBOC was granted a distinct geographic territory, or local access transport area (LATA), in which they could operate. Ameritech, Bell Atlantic, BellSouth, NYNEX, Pacific Telesis, Southwestern Bell Communications (SBC), and U.S. West retained the Bell logo and the right to sell local and toll calling within the LATA.

**Reciprocal Compensation:** An arrangement that provides for equal compensation for CAPs and LECs when terminating local calls on their respective networks.

**Routers:** Computers that handle all the flow of traffic over the Internet. Since packets travel different distinct routes, the router chooses the best possible route to send the information to its destination.

**Server:** A computer or software program that controls the dissemination and movement of information.

**Signaling System 7 (SS7):** Sophisticated network signaling system that uses out-of-band signaling, where signaling information is sent over a channel separate from the call itself.

**Smart-Build:** A strategy competitors use to enter the local market. The competitor owns the switching equipment, which allows it to switch incoming calls and receive fees from long distance carriers, and leases the incumbent's lines (which would require a great deal of time and money to build).

**SDH (Synchronous Digital Hierarchy):** A set of fiber optic communication standards, similar to SONET but established by the ITU (International Telecommunication Union).

**SONET (Synchronous Optical Network):** A fiber optic communications standard established by the American National Standards Institute (ANSI) that covers multiple data transfer rates from 51.84 Mbps to 13.22 Gbps. It defines a physical interface, optical line rates known as Optical Carrier (OC) signals, frame format, and an OAM&P (opera-

tions, administration, maintenance, and provisioning) protocol.

**Splitter:** Used to split an optical signal.

**Streaming:** A method that allows the ability to start playing a file in real time instead of having to download the completed file.

**Switch:** A sophisticated computer that accepts instructions from a caller in the form of a telephone number.

**Switched Access Transport Services:** Transportation of switched traffic along dedicated lines between the LEC central offices and long distance carrier's point of presence.

**Switched Traffic:** Telecommunications traffic along the public switched network. The traffic is switched at the local exchange carrier's central office.

**T-1 Line:** A copper connection that allows for speeds up to 1.544 Mbps through the use of multiplexing technology.

**TDMA (Time Division Multiple Access):** A form of multiplexing in which different packets of data are assigned to different time slots, allowing for much greater transmission speeds.

**TCP/IP (Transmission Control Protocol/Internet Protocol):** Data application protocol used on the Internet to automatically retransmit packets that are lost during transmission.

**Unbundled Access:** As laid out in the Telecom Act of 1996, unbundled access allows competitors to purchase only the pieces of the regional Bell operating companies' network services that they need to provide local service.

**UNIX:** An operating system with built-in support for TCP/IP. Most servers on the Internet use UNIX.

**Upstream Transmission:** The transmission from a consumer's home or office to the network.

**URL (Universal Resource Locator):** An address system that identifies the service, host, path and filename of a document found on the WWW.

**VDSL (Very high rate Digital Subscriber Line):** A member of the DSL family of copper loop enhancing technologies (see "DSL"), VDSL is envisaged as the fastest copper transmission technology for the local loop. While VDSL protocols have yet to be standardized, it is likely that VDSL will be symmetric and suitable only for shorter distances than ADSL (asymmetric digital subscriber line). VDSL, ADSL, and FTTH will likely coexist with each other and cable modems as broadband access technologies.

**Virtual Collocation:** An alternative to physical collocation in which the CAPs connect their equipment to the LECs' facilities from a remote location and request that the LEC install the necessary electronics in its central office, which is then leased by the LEC to the CAP for charges generally higher than the charges for physical collocation.

**VPN (Virtual Private Network):** A private network delivered over a service provider's shared infrastructure.

**Voice Grade Equivalent Circuit:** One DS-0. One voice grade equivalent circuit is equal to 64 kilobits of bandwidth.

**WDM (Wavelength Division Multiplexing):** The multiplexing of optical signals by transmitting them at different wavelengths over the same fiber. Signals are separated by wavelength at the receiving end.

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