Bulletin

Worldwide Web-to-Host Forecast and Analysis

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IDC Opinion

What are the growth opportunities for Web-to-host technology as corporations deploy intranets and ebusiness applications over the next five years?

The migration to ebusiness is fueling customer demand for Web-to-host products. Customers are deploying Web-to-host technology to leverage their existing applications into Web initiatives. The focus of these deployments is on both existing internal business solutions and outward-facing ecommerce initiatives. The majority (61%) of solutions in 1999 were for internal corporate intranets, but a growing percentage (32%) of Web-to-host deployments were for corporate extranets.

The Web-to-host market is continuing on its significant growth path, with revenues rising 113.6% to $240.0 million in 1999. Explosive growth will continue, with revenue reaching $1.5 billion in 2004.

Market Highlights

The Web-to-host market experienced significant growth, with sales increasing 113.6% to $240.0 million. Factors contributing to this performance include the following:

- Web-to-host is a key component of ebusiness migration for the significant installed base of IBM mainframe and midrange customers.
- Ease of deployment and management provided IT managers with a compelling reason to upgrade to Web-to-host access.
- Product functionality improved to provide additional features important for the remote user.

Market Segmentation

This bulletin is part of IDC's ongoing discussion of the host access market. It looks at the market opportunity for Web-to-host browser licenses. Revenue market share is presented to normalize the differences in vendor packaging and pricing.

To provide a one-to-one comparison between traditional emulation software and browser-based access, the total opportunity is also presented by the number of user licenses shipped. The opportunity does not take into account all possible users of concurrent licensing.

For more detailed information on the entire host access desktop market, refer to *Worldwide Host Access Software Market Forecast and Analysis* (forthcoming).

Methodology

This document presents shipment, revenue, and installed-base figures from 1997 through 2004. Figures for 1997, 1998, and 1999 are actual. Figures for 2000-2004 are forecasts. The years presented in this IDC bulletin are calendar years.

Shipments and revenue represent end-user spending, including implicit payments to the channel (where applicable), rather than manufacturer revenue. Forecast revenue is expressed in current U.S. dollars. The average selling price reflects the average street price of a typically configured product. The price excludes service contracts.

Primary data is based on vendor surveys, interviews, and user surveys. IDC questioned vendors about shipment rates, perceived market shares, technology and component issues, and future product plans. Secondary sources, such as publicly accessible financial information (e.g., 10Ks, annual reports, and searches of press information for private companies), ensure the accuracy of vendor statements.

Definitions

The following are terms used in this document:

- **Web-to-host browser.** A Web-to-host browser is software that provides host access to a browser client. It is licensed by either the client or server. It can be built to support Java, ActiveX, or HTML.
- **Web-to-host server.** A Web-to-host server is software that allows users with browsers to access host-based applications. It provides the centralized administration, management, and creation of browser-based host access clients and can support a variety of technologies including Java, ActiveX, and HTML. The definition also includes zero client footprint products.
- **Intranet.** An intranet is a private TCP/IP network that may or may not be connected to the Internet. Management of TCP/IP addresses and all dependent services is the responsibility of internal network administrators. If the intranet is connected to the Internet, at least one firewall is typically in place either to prevent intrusion from the outside or to control internal users' access to the outside or both.
- **Extranet.** An extranet is a private Web site accessible by external organizations such as business partners and suppliers but not by the general public.

Related Research

The following IDC reports cover related areas and serve as additional background for many conclusions in this bulletin:

- *Worldwide Host Access Software Market Forecast and Analysis* (forthcoming)
- *IDC's 2000 U.S. Web Spending Model: Forecast and Analysis by Vertical Industry* (IDC #22234, May 2000)
- *1999 IDC 500 Series: Western Europe Web-to-Host Adoption Trends* (IDC #20139, September 1999)

- *1999 IDC 500 Series: eBusinesses Drive Adoption of Web-to-Host Solutions* (IDC #20033, September 1999)
- *Server Market Review and Forecast: 1995-2003* (IDC #19715, August 1999)
- *Where's the Office? U.S. Remote and Mobile Worker Market Review and Forecast* (IDC #19692, July 1999)

Market Dynamics

Intranet Deployments

Intranet sales accounted for the majority (61%) of total Web-to-host revenue in 1999 (see Figure 1). The following factors contribute to strong intranet sales:

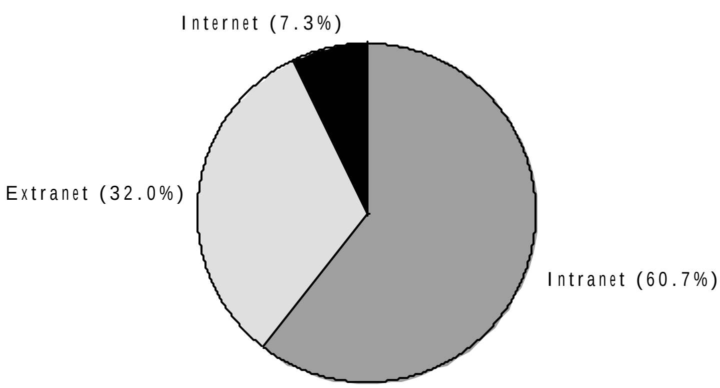
Web-to-host product functionality meets the next-generation needs of existing host access users.

Buyers for intranet seats tend to be the same as traditional host access seats, and the sales channels are similar.

The ability to expand the host access base within a customer intranet faces minimal infrastructure barriers.

Figure 1

Worldwide Web-to-Host Revenue by Usage, 1999



Total = $240M

Messages in the Data:

- The majority of sales continues to be in intranet opportunities, but vendors are making inroads into extranet and Internet opportunities.
- New server-based products entering the market offer scalability and security to extranet/Internet end users.

Source: IDC, 2000

Extranet

The extranet portion of the Web-to-host market grew from 27% in 1998 to 32% in 1999. The extranet market gained share as customers were eager to roll out Web-to-host offerings to business partners and remote employees. Extranet adoption was strong across all regions but Europe showed particular strength because this customer set tends to have more distributed remote offices.

Internet

Internet sales accounted for 7% of total revenue in 1999, up from 4% in 1998. Growth in Internet sales are the result of the following:

- User interface improvements broadened the appeal of Web-to-host for Internet users.
- Federal, state, and county governments viewed Web-to-host as a significant tool to reduce costs and provide access to public data.
- Universities and libraries continued to expand user access to host-based systems.

The Internet segment will grow to account for over one-third of the opportunity. IDC believes that new products available in 2000 will offer enhanced user interfaces, integration with application servers, and the mission-critical scalability needed to capture the broader base of Internet users.

eBusiness

The migration to ebusiness is the most significant driver of Web-to-host adoption. Access to the corporate mainframe is expanding as companies leverage existing systems to create new ebusiness applications. Smaller vendors, such as Seagull Software and Jacada, that maintained a focus on ebusiness demonstrated significant success in the market. These companies exploited the needs of ebusiness customers by partnering with ecommerce software players and internet service firms. For more information on ebusiness as a driver for Web-to-host, refer to *1999 IDC 500 Series: eBusinesses Drive Adoption of Web-to-Host Solutions* (IDC #20033, September 1999).

Remote and Mobile Workers

As corporations demand more time from their employees, the ability to work remotely in a home office or in mobile situations is growing rapidly. The U.S. remote and mobile population in 1999 was expected to reach 35.7 million, and it will continue to grow at a 6.7% compound annual growth rate (CAGR) over the next five years. Devices that range from advanced cellular phones to robust handhelds and high-end notebook PCs allow employees to gain access to critical host data at any location. The emergence of smart handheld devices, pagers, and cellular phones as key mobile devices in various industries and for regular business use will provide new market opportunities for Web-to-host vendors. The growing adoption of VPNs, the emergence of broadband wireless, and improvements in security options will serve to accelerate adoption in this new customer base.

Web-to-Host Market Forecast

Worldwide Web-to-host market revenue will increase from $240.0 million in 1999 to $1.5 billion by 2004. Licensed browser shipments will increase at a 53.6% CAGR from 3.5 million desktops in 1999 to 30.0 million in 2004 (see Table 1).

Table 1

Worldwide Web-to-Host Browser License Shipments, Revenue, and Installed Base by Region, 1997-2004

	1997	1998	1999	2000	2001	2002	2003	2004	1999-2004 CAGR (%)
Shipments (000)									
United States	150	1,020	2,257	4,340	6,800	9,500	14,000	16,200	48.3
Growth (%)	NA	580.0	121.3	92.3	56.7	39.7	47.4	15.7	
Europe	68	252	879	1,960	3,300	5,000	7,500	9,000	59.2
Growth (%)	NA	270.6	248.8	123.0	68.4	51.5	50.0	20.0	
Asia/Pacific	6	73	161	300	700	1,250	1,800	2,400	71.7
Growth (%)	NA	1,116.7	120.5	86.3	133.3	78.6	44.0	33.3	
ROW	6	53	213	400	700	1,250	1,700	2,400	62.3
Growth (%)	NA	783.3	301.9	87.8	75.0	78.6	36.0	41.2	
Worldwide	230	1,398	3,510	7,000	11,500	17,000	25,000	30,000	53.6
Growth (%)	NA	507.8	151.1	99.4	64.3	47.8	47.1	20.0	
Revenue ($M)									
United States	15.6	81.8	154.3	280.6	442.5	616.0	729.0	810.0	39.3
Growth (%)	NA	423.4	88.6	81.8	57.7	39.2	18.3	11.1	
Europe	7.1	20.4	60.1	128.8	217.5	330.0	405.0	450.0	49.6
Growth (%)	NA	187.4	195.1	114.3	68.9	51.7	22.7	11.1	
Asia/Pacific	0.6	5.9	11.0	23.0	45.0	77.0	108.0	120.0	61.3
Growth (%)	NA	846.5	85.7	109.0	95.7	71.1	40.3	11.1	
ROW	0.6	4.2	14.6	27.6	45.0	77.0	108.0	120.0	52.5
Growth (%)	NA	576.6	244.2	89.6	63.0	71.1	40.3	11.1	
Worldwide	24.0	112.4	240.0	460.0	750.0	1,100.0	1,350.0	1,500.0	44.3
Growth (%)	NA	368.7	113.6	91.7	63.0	46.7	22.7	11.1	
Installed Base (000)									
United States	176	1,123	2,914	6,002	10,092	14,904	21,783	27,518	56.7
Growth (%)	NA	538.1	159.5	106.0	68.1	47.7	46.2	26.3	
Europe	82	300	1,052	2,564	4,742	7,577	11,510	15,033	70.2
Growth (%)	NA	265.9	250.7	143.7	84.9	59.8	51.9	30.6	

Asia/Pacific	7	77	207	419	929	1,762	2,763	3,862	79.5
Growth (%)	NA	1,000.0	168.8	102.4	121.7	89.7	56.8	39.8	
ROW	6	56	246	543	1,004	1,792	2,664	3,802	72.9
Growth (%)	NA	833.3	339.3	120.7	84.9	78.5	48.7	42.7	
Worldwide	271	1,556	4,419	9,528	16,767	26,035	38,720	50,215	62.6
Growth (%)	NA	474.2	184.0	115.6	76.0	55.3	48.7	29.7	

Key Assumption:

- The opportunity to replace existing host access seats is a significant market accelerator.

Messages in the Data:

- The market for Web-to-host will take off this year because customers are past Y2K and ready to deploy next-generation technology.
- The rapid growth in wireless access to the mainframe will make the end-user shipment forecast increasingly difficult to pinpoint.

Source: IDC, 2000

IDC made the following assumptions for this forecast:

- Customer deployments are accelerating because product functionality is stable and customers are past Y2K headaches.
- Web-to-host browser desktop licenses will outship traditional host access licenses in the second half of 2000.
- The average end-user license charge will decline from $68 in 1999 to $50 in 2004.
- The installed base of Web-to-host browser licenses will increase from 4.4 million in 1999 to 50.2 million in 2004.

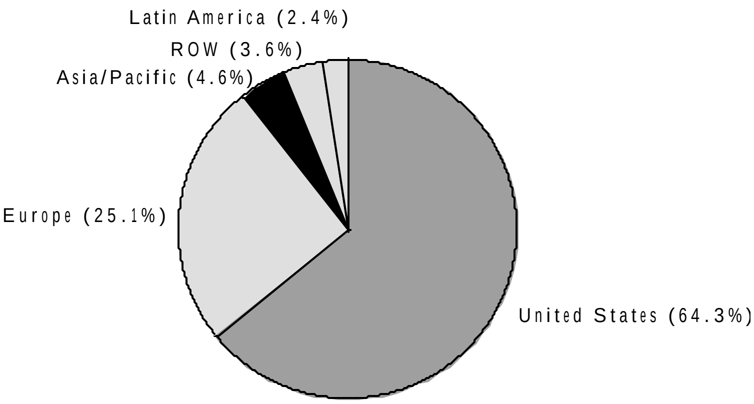
An increasing number of casual users both inside and outside the corporation will have access to legacy applications.

The availability of wireless Web-to-host offerings will further fuel license shipments as access to the mainframe reaches a whole new user population.

As a percentage of total new revenue, international revenue will increase from 36% in 1999 to 46% in 2004. Sites outside the United States will begin to increase investments in Web initiatives (see Figure 2).

Figure 2

Worldwide Web-to-Host Revenue by Geography, 1999



Total = $240M

Messages in the Data:

- Latin America is an emerging market for Web-to-host.
- International markets represent a significant opportunity. Vendors need to expand distribution channels to reach outside the U.S. customer base.

Source: IDC, 2000

Web-to-host products will play a critical roll in linking existing mainframe applications to the Web. The vendors in this space will be successful in moving beyond their traditional customer base by forming partnerships with new distribution channels such as application server providers (ASPs).

The Web-to-host market is expanding the mainframe beyond the traditional user base. IDC's forecast assumes that the Web-to-host market is both the next-generation replacement for existing host access desktops and a key component in customers' internal and external Web initiatives.

Vendor Market Share

IBM emerged as the clear leader in the Web-to-host market in 1999. IBM captured one-third (33%) of the market with $80.0 million in revenue. IBM's significant installed base in the traditional host access market, demonstrated commitment to competitive product functionality in Web-to-host, ability to leverage IBM's directory and security framework, mainframe installed base, global services organization, and breadth of platforms all contribute to IBM's leadership position. IBM grew revenues 258.7% from $22.3 million in 1998, well above the market growth rate of 113.6%. IBM's WebSphere Host Integration market share rose from 20% in 1998 to 33% in 1999.

Attachmate captured second place with 18% of the revenue opportunity in 1999. Attachmate was able leverage its traditional host access installed base into Web-to-host sales.

NetManage captured 10% of the market with $23.9 million in calendar year 1999 revenue. Netmanage's Web-to-host sales included products from its acquisition of Simware and Wall Data. Looking ahead to 2000, the OnWeb Web-to-host product portfolio will provide customers with a range of solutions that will meet intranet, extranet, and Internet requirements.

Seagull Software demonstrated significant success in capturing ebusiness extranet and internet opportunities in 1999. Over 70% of Seagull's sales were for external users. Seagull's historical strengths are in the AS/400 space, but the company expanded its presence into mainframe accounts in 1999. Seagull captured 9% of the revenue opportunity in 1999.

Open Connect's share dropped to 9% in 1999. Without the ability to upgrade an existing installed base of host access clients, the company faces longer sales cycles than many of its competitors. Looking ahead to 2000, Open Connect is exploiting the ASP market as a new channel of distribution. In May, the company announced a partnership with Savis.

Jacada continues to target ebusiness opportunities. Jacada focuses its sales efforts on ISVs building ebusiness applications and specific industries such as automotive, retail, and insurance. In 1999, Jacada accounted for 5% of the revenue opportunity.

Hummingbird represented 4% of the revenue opportunity in 1999. Hummingbird's strong presence in IP-oriented sites enabled the company to leverage its IP installed base to next-generation Web-to-host platforms.

CNT's EnterpriseAccess line accounted for a 2% share of the Web-to-host market with $6 million in revenue for 1999.

WRQ accounted for 1% of the revenue opportunity in 1999. In May 2000, WRQ announced version 4.0 of Reflection for the Web and Reflection for the Web Professional Edition. Features such as an enhanced user interface and increased network performance will enable WRQ to increase Web-to-host adoption.

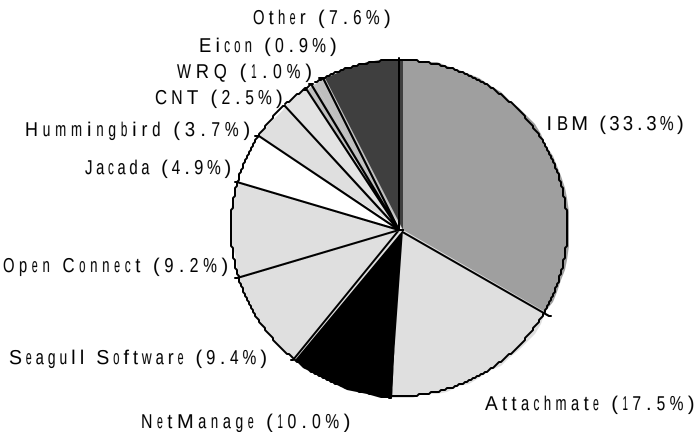
Eicon accounted for nearly 1% of the revenue opportunity in 1999. In May, Eicon demonstrated wireless host access via Avia Web-to-Host Server and Aviva for Java.

Other vendors in the market include Esker, Farabi, ResQNet, CA, Merant, FutureSoft, Century, Saga, and ICOM Informatics.

Figure 3 illustrates vendor market share by revenue.

Figure 3

Worldwide Web-to-Host Revenue by Vendor, 1999



Total = $240M

Key Assumption:

- Revenue represents end-user revenue.

Messages in the Data:

- Successful vendors in 1999 articulated an ebusiness strategy to customers.
- Additional success strategies included traditional upgrade client packages.

Source: IDC, 2000

Recommendations

In 1999, customers placed the Web-to-host market on solid ground. For the coming year, vendors must be ready for a 4Q00 blastoff. Successful vendors will focus on the following:

- Product feature/functionality that provides an incentive for existing installed-base customers to migrate to the next generation.
- Legacy extension ebusiness opportunities targeted at new users of corporate data; these are extranet, internet, and mobile users.
- Providing a range of features that will allow customers flexibility in deployments from traditional green screen to zero client-based options.
- Exploiting new distribution models such as solution integrators and ASPs.
- Providing services that ease deployments for the resource-constrained IT manager.

Topics: Intranets, Extranets, Mainframe Connectivity, S/390, Web-to-Host Emulation Software, Connectivity
Companies: IBM, Attachmate, NetManage, WRQ, Seagull, ResQNet, Open Connect, Jacada, CNT, Hummingbird Communications, Eicon Technology
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