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## THE LONG BATTLE FOR AN INSTANT MESSAGING STANDARD

For the first five years of the 21<sup>st</sup> century, America Online (AOL), Yahoo!, and Microsoft battled to grab market share for their instant messaging (IM) service. Each company had its own software and network to deliver the service, which allowed users to write online, real-time text messages with other users on the same network. Although IM began in 1996 as a small venture by four Israeli engineers, it had ballooned into one of the largest means of online communication. The number of IM users grew 30 percent faster in its first five years than that of e-mail when it was first launched. By 2004, almost half of all North American online households used some version of IM. The media has proclaimed IM as being everywhere, “eating away at landline [telephone] use and displacing personal conversations.”<sup>1</sup>

Despite the large number of IM users, the three major providers, AOL, Yahoo!, and Microsoft, did not earn any significant profit from their services. While each firm offered its IM service for free, many questions remained as to how any company could eventually capitalize on millions of potential users. Some looked to the possibility of developing IM as a corporate technology tool, allowing coworkers to securely send messages to one another, and efforts were already underway to make this a reality.

Firms had also made significant efforts to establish a common protocol for IM that would enable users to communicate across different networks. But competition amongst the firms had hampered progress, forcing analysts to wonder: will consumers continue to tolerate using multiple IM programs to reach friends on different networks? As instant messaging moved forward, AOL, Yahoo!, and Microsoft would all have to resolve these issues.

### HISTORY OF INSTANT MESSAGING

By 2005, all instant messaging services relied on the same basic engineering to send messages between users. An IM user would first log in via the Internet to a service provider’s network. The user was then notified of other users simultaneously logged into the network. Messages could

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<sup>1</sup> Charles S. Golvin, “This is Not Your Teenager’s Instant Messaging,” Forrester Research, February 1, 2003.

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Steven Fan prepared this case, using publicly available information, under the supervision of Professor V. Brian Viard. This case was developed solely as the basis for class discussion. It is not intended to serve as endorsements, sources of primary data, or illustrations of either effective or ineffective management.

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only be sent to these users. When the user sent a text message, the message was encrypted with the receiver's computer address and then forwarded to the service provider's network of servers. The servers then relayed the message to the appropriate address. Because different service providers used different encryption schemes, users on different networks were prevented from sending messages to each other.

In July 1996, the Tel Aviv-based company Mirabilis launched the first free, commercially available instant messaging service called ICQ, which stood for "I Seek You." ICQ gained popularity quickly and by May of 1997 had acquired over 850,000 users.<sup>2</sup> Mirabilis' timing was good for two reasons. First, Internet availability had become extensive enough for communities of people to be online at the same time for long durations. Second, the high-bandwidth servers necessary to set up an IM service were readily available.

Seeing the success of ICQ, AOL quickly entered into the public IM market by launching AOL Instant Messenger (AIM) in May of 1997.<sup>3</sup> Although AOL had offered its IM service to AOL members since 1989, its service was previously unavailable to users outside its community of ISP (Internet service provider) subscribers.<sup>4</sup> Shortly thereafter, in June 1998, AOL bought Mirabilis and its rights to ICQ for \$287 million.<sup>5</sup> This was the opening salvo in the battle for IM dominance. In June 1999, the Internet portal Yahoo! launched its IM service called Yahoo! Messenger,<sup>6</sup> followed one month later by Microsoft's initiation of its service, MSN Messenger.<sup>7</sup> AOL established an early lead because it already enjoyed a large user base of its own ISP subscribers and because its user base grew rapidly after opening its service to non-ISP subscribers. (**Exhibit 1** shows the number of users at work and at home in early 2000, in total and by firm, and demonstrates AOL's early dominance. **Exhibit 1** also shows that many users operated more than one IM service to communicate with contacts on different systems.)

The detailed mechanics of how each of the three major services works was similar. The first step for the user was to download and run the IM software from the service provider's Web site (www.aol.com, www.yahoo.com or www.msn.com). The software consumed approximately 3 to 10 megabytes of space; a very small amount of space given the storage size of most computers' hard drives.<sup>8</sup> On a low-speed line, it took approximately five to ten minutes to download the software, while on a high-speed line it took only a few seconds. Most of the software necessary to run an IM service was stored on the user's system. Only the usernames in the "Buddy List" were stored on the company's network so that users did not have to rebuild them when logging on from different locations.

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<sup>2</sup> "The ICQ Story," press release, ICQ, Inc., <http://company.icq.com/info/icqstory.html>.

<sup>3</sup> Dana Gardner, "Netscape and AOL Team up on Messenger," *InfoWorld*, October 20, 1997.

<sup>4</sup> Gordon Laing, "AOL Instant Messenger 5.2," vnunet.com, November 21, 2003, <http://www.vnunet.com/downloads/1135269>.

<sup>5</sup> "America Online: Maker of Chat Software for Internet is Acquired," *The Wall Street Journal*, June 9, 1998.

<sup>6</sup> "Yahoo! Milestones," press release, Yahoo! Inc. <http://docs.Yahoo!.com/info/pr/milestones.html>.

<sup>7</sup> "Microsoft Launches MSN Messenger Service," Microsoft Corporation Press Release, July 21, 1999, <http://www.microsoft.com/PressPass/press/1999/Jul99/MessagingPR.asp>.

<sup>8</sup> Most personal computers offer more than a gigabyte (approximately 1 billion bytes) of storage space, which is over 300 times the required 3 megabytes (approximately 3 million bytes).

The user then registered a unique username and password to be used when logging into the provider's network. Each time the user signed on, a "Buddy List" appeared displaying the usernames of other people currently logged into the same network. The initial "Buddy List" was blank but the user added the usernames of people that she might want to communicate with when they were online. Meanwhile, she might be listed in other users' lists so they would be aware of a new buddy's presence online. All users could initiate real-time text messages with those already on the network by selecting their usernames from the "Buddy List." Messages were displayed in a separate window with a text editor, in which the user could compose the messages she wished to send. Generally, a user had to be logged into the appropriate IM network to initiate or receive messages. (**Exhibit 2** shows screen captures of the interfaces and "Buddy Lists" for some major IM providers.)

To use more than one IM service, a user needed to download and install all the software necessary to run the additional IM services and register a new username for each provider's network. The user might not be able to use an existing username for the additional IM services if someone on a network was already using that name. She also had to establish another "Buddy List" for the new service, managing a separate "Buddy List" on each IM network when she wanted to employ both. In spite of these complications, the interfaces of the major IM services were considered fairly easy to use. Even children of elementary school age were able to quickly set up an IM account and begin chatting online with their friends.

The leading competitors' programs offered slight variations to the basic IM functionality. ICQ, MSN, and Yahoo!, for example, stored user-supplied profiles of each username on their networks, and allowed users to search the profiles for people to add to their "Buddy List." AIM did not offer this search feature and required users to know the usernames of their friends to be added to their "Buddy List." ICQ stored messages sent to recipients who were not currently logged onto the network so that the recipient could receive the messages the next time that they logged in. Neither AIM nor MSN offered this feature. (**Exhibit 3** shows some of the main features supported by the major IM services.)

Creating an IM service such as AIM, MSN, or Yahoo! required a large number of servers capable of handling significant traffic volume. Each message sent required the server to look up the destination address and relay the message to that address. Thus, the number of servers necessary to run an IM service was roughly proportional to the number of users and volume of messages and depended on the performance of the servers. A software team was also necessary to program the interface and develop the messaging protocols used by the servers to route messages. The number of developers needed depended largely on the complexity of the programs and protocols. AOL, for example, might have over 20 developers working on AIM at a given time because of its multiple features and complex messaging protocols to ensure security.

Some companies have provided a pseudo-IM service by reverse-engineering the protocols used by other service providers, for example Trillian, an IM program developed by Cerulean Studios. By reverse engineering the messaging protocols used by AIM, MSN, and Yahoo!, Trillian was able to disguise the origin of messages before sending them to their appropriate destinations. This allowed Trillian users to create messages using the Trillian interface, which the software would then translate using the appropriate protocol and send to the IM provider's servers to be

routed to the intended recipient. Trillian was also able to receive messages sent from different networks by decoding them based on the protocols into text presentable within the Trillian interface. Since Trillian did not use servers or have an established network, it was not considered an actual IM service provider. Because Trillian had to do so much computation to reverse engineer the messages, it employed more of the user's computer resources than other IM programs. Most Trillian users did not mind this since the increased computational load was still less than that required to run multiple IM programs simultaneously.

IM had several qualities that differentiated it from alternative means of communication such as e-mail, telephone, and short-message-system (SMS) text messaging. Unlike e-mail, in which people send and receive messages asynchronously as in the traditional postal system, IM worked in real time so that messages were sent back and forth between two users instantaneously. In this respect, IM was analogous to the telephone system. But unlike telephone, IM only allowed for text messages<sup>9</sup> and users were limited to communicating only with those currently logged into the IM network, unless the IM service allowed for storage of messages for offline users. The key advantage of IM relative to telephone was the ability to correspond with several users simultaneously. An IM user could simultaneously send text messages to any or all of the usernames displayed on their "Buddy List," which on most systems displays up to 100 names.

The relative merits of IM and cellular phone service were more complex. Users with flat rate local telephone and Internet service could remain logged into an IM service 24 hours a day. Since IM service was free, they could send and receive messages at any time without incurring any incremental charges over the monthly Internet subscription fee. This was a major benefit for cellular phone users who often exceeded their allocated minutes and incurred per-minute fees when talking on the phone, especially during peak hours. Most cellular phone plans offered SMS text messaging, which allowed cell phone users to send text messages to other cellular phone users who also had SMS-capable phones. SMS users could send text messages to friends anywhere and anytime that they carried their cellular phone. IM users were more limited in mobility because they needed a computer system to run the software and connect to the Internet. However, with the advent of newer, more powerful cell phones able to run IM programs and offer wireless access to the Internet, IM was becoming available on higher end cell phones for those that could afford them. SMS and IM messages were harder to send via cell phones because they did not have large keyboards for writing text, and cellular service providers usually charged a per-message fee for SMS messages, whereas messages sent via IM were free. However, users still needed an Internet connection to use IM, which for cell phones required an additional monthly fee.

### **Instant Messaging Providers and Competition**

In 2004, three providers, America Online, Microsoft and Yahoo! dominated the consumer IM market, with a small fraction of users' services provided by smaller IM firms or corporate systems offered by users' employers. Given their size, these three providers determined competition in instant messaging, although the move to enterprise systems had the potential to alter the dynamics of the industry and introduce new competitors.

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<sup>9</sup> Recent advancements, however, have begun to make voice communication possible.

***America Online (AOL)***

AOL was incorporated on May 24, 1985 under its original name Quantum Computer Services with the goal of bringing the Internet to the average consumer. It quickly rose to prominence as an ISP by offering dial-up online connections nationwide. As the Internet expanded, the number of AOL subscribers grew rapidly. Ten years after its inception, AOL had over 4.5 million members. In 1995 alone, membership jumped by over 2.5 million people.<sup>10</sup>

Along with providing access to the Internet, AOL offered unique, “value-added” services to its users. AOL members had access to user-friendly e-mail accounts with their usernames as their e-mail address. AOL offered chat rooms where people wishing to share their thoughts with an audience could do so anonymously via real-time text messaging and discussion boards where people could post comments and replies on various topics to the entire online community. AOL also offered large amounts of proprietary content including online “channels” with breaking news and entertainment, navigational shortcuts and keywords to more easily search the Web, address books and calendars. AIM was part of this proprietary content.<sup>11</sup>

AOL first offered its Internet service for the Macintosh and Apple II in 1989 and then Windows users in 1993. AOL went public on the NASDAQ market on March 19, 1992, but switched to the New York Stock Exchange in 1996 after announcing service in the United Kingdom, Canada, France and Japan. To expand its presence as both an ISP and an IM provider, AOL acquired CompuServe, a leading ISP at the time, and Mirabilis in 1998. In 1999, AOL acquired Netscape Communications, a popular software company known for its powerful Internet browser and proprietary Web site content. As AOL continued pushing to deliver the best online material, it announced plans to merge with the major entertainment conglomerate Time Warner in early 2000. The merger was successfully completed on January 11, 2001, under the new company name AOL Time Warner.<sup>12</sup>

Today, Time Warner is one of the world’s leading entertainment and media companies in the world with businesses in film production, publishing, cable systems, and television networks in addition to the Internet. Time Warner’s businesses include Warner Brothers studios, New Line Cinema studios, cable channel Home Box Office, magazine publisher Time Inc., Time Warner Book Group, Turner Broadcasting, and Time Warner Cable. In 2003, Time Warner’s revenues totaled \$39.6 billion. (See **Exhibits 4 and 5** for recent Time Warner financial statements.)

Despite AOL’s earlier rapid growth, its luster has waned in recent years. One major factor was competition from other ISPs, companies such as NetZero and Juno, which offered discount dial-up service at rates over 50 percent less than that of AOL. Many users were also attracted to high-speed Internet connections via DSL lines or cable modems. These high-speed connections could only be established by companies who had access to phone or cable lines such as Comcast or SBC. Since AOL did not have access to these lines, users had to go elsewhere if they wanted a high-speed connection. Furthermore, the “walled” content that once only AOL customers could access had become publicly available from other sources on the Internet. For example, though

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<sup>10</sup> “Who We Are: AOL History,” AOL, Inc. press release, December 28, 1995, <http://corp.aol.com/whoweare/history.html>.

<sup>11</sup> Ibid.

<sup>12</sup> Ibid.

AOL was known for its keywords to access information quickly on the Web, people were soon able to find the same information by running simple searches using a search engine such as Google. This gradual decline of AOL led Time Warner to drop AOL from its name in 2003.<sup>13</sup>

AOL originally developed IM to allow AOL members to communicate in real-time with other members. As part of a partnership with Netscape beginning in 1997, AOL began to offer its AIM service publicly using Netscape's Web browser so that non-AOL members could message subscribers of AOL and vice-versa. As shown in **Exhibit 1**, AIM's user base had grown tremendously since that time and AOL was estimated to have around 195 million users on its network, as of early 2003.<sup>14</sup> As shown in **Exhibit 3**, AOL at that point incorporated many features in addition to simple text messaging, including video chat, file transfer, speech chat, news and stock tickers, and the ability to sign on with multiple usernames. AIM had a strong brand identity and continued to be the most popular IM service (see **Exhibit 6** for market shares). Analysts conjectured that AOL historically viewed its IM business as part of the content and features that drove its ISP business. It was unclear what role IM would play as AOL faced increasing competition from other ISP providers, especially broadband providers.

### **Microsoft**

Bill Gates and Paul Allen founded Microsoft in 1975 with the goal of bringing personal computers (PCs) to every household. In 1981, Microsoft introduced the MS-DOS operating system for IBM PCs. Four years later, Microsoft shipped its first version of the Windows graphical operating system, the key driver of Microsoft's future success. Microsoft went public in 1986 in an offering that the investment community praised as one of the most successful in history. The 1990s were the "Windows Era" for the PC, a decade in which Microsoft released three versions of Windows with improved interfaces, more support for networking and user authentication, and greater stability with better memory management. With the ascendancy of the Internet, Microsoft increasingly focused on its next era of software and services called the .NET platform. With .NET, Microsoft aimed to provide consumer software that could be used anywhere, anytime, and on any device by taking advantage of wireless communication and smaller, faster computers.<sup>15</sup>

In 2004, Microsoft was the largest software company in the world. It offered operating systems for servers, personal computers and embedded devices such as kitchen appliances and entertainment systems.<sup>16</sup> Microsoft was dominant in PC operating systems with an estimated market share of 95 percent.<sup>17</sup> Microsoft was also dominant in office productivity applications (word processing, spreadsheets and presentation software). Its Microsoft Office Suite of Word, Excel, and PowerPoint had an estimated market share of 94 percent in 2002.<sup>18</sup> Office's market

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<sup>13</sup> Chris Isidore, "Time Warner Drops AOL Name," *CNNmoney*, September 18, 2003, [http://money.cnn.com/2003/09/18/technology/aol\\_name/](http://money.cnn.com/2003/09/18/technology/aol_name/).

<sup>14</sup> Paul Davidson, "H-P AOL Team On Instant Messenger," *USA Today*, January 22, 2003, [http://www.usatoday.com/money/industries/technology/2003-01-22-aol\\_x.htm](http://www.usatoday.com/money/industries/technology/2003-01-22-aol_x.htm).

<sup>15</sup> "The Microsoft Timeline," Microsoft Corporation, <http://www.microsoft.com/museum/musTimeline.msp> (January 8, 2005).

<sup>16</sup> An embedded device is any non-computer appliance utilizing a computer chip.

<sup>17</sup> "Operating System," Wikipedia, December 6, 2004, [http://en.wikipedia.org/wiki/Operating\\_system](http://en.wikipedia.org/wiki/Operating_system).

<sup>18</sup> James Maguire, "Corel Wins Market Share from Microsoft Office," NewsFactor Network, October 16, 2002, <http://www.newsfactor.com/perl/story/19693.html>.



share was so large that all other competing software suites offered some compatibility with Microsoft's programs.<sup>19</sup> Microsoft also offered business solutions applications such as Microsoft Small Business, Great Plains and Microsoft Business Network that managed transactions, distribution channels, inventories, accounting and budgeting, as well as software development tools such as Visual Studio, Visual C++ and Visual C#.

By 2005, Microsoft had increased its presence in corporate servers with its Windows Server operating system, SQL Server database software, and Exchange Server e-mail and communication tools. Microsoft was competing in content with MSN News, Health, Games, Entertainment, Travel, Yellow Pages and Encarta Encyclopedia. Microsoft also had a presence online with its Internet Explorer browser, which represented 81.4 percent of the browsers used,<sup>20</sup> Hotmail e-mail service, Outlook e-mail program and MSN Internet service and software including e-mail virus protection, spam e-mail filters, parental controls and calendars. However, Microsoft's Internet products were far less successful than its PC software and applications. (**Exhibits 7 and 8** provide recent financial statements for Microsoft.)

Microsoft announced the launch of its IM service, MSN Messenger, on July 21, 1999. Microsoft envisioned Messenger allowing users to communicate with the largest number of people on the Internet and offering seamless integration with several Microsoft communication tools including Internet Explorer, Outlook, and Hotmail. Users could already access Messenger from Explorer with one click, use the same login and password for MSN and Hotmail and determine which contacts in Outlook were available online. To promote its new messaging service, Microsoft subsidized a sweepstakes to give away \$5,000 to randomly chosen subscribers of Messenger.<sup>21</sup> Messenger originally gave users the ability to text message other Messenger users and AOL IM users, but AOL later blocked MSN's access. As of 2004, Messenger allowed communication amongst users subscribed to the Microsoft network only. **Exhibit 3** shows that MSN incorporated many features such as video chat, file transfer, speech chat, user searches, and the ability to send messages to offline contacts through e-mail. Messenger carried the strong Microsoft brand name and grew to control the second largest market share in IM as shown in **Exhibit 6**. Analysts speculated that Microsoft viewed MSN Messenger as driving more operating system and application software sales, since MSN was a communications tool that was tightly integrated with Outlook, MSN Web services and other Microsoft products. In fact, Messenger was already bundled with Microsoft's XP operating system.

### ***Yahoo!***

David Filo and Jerry Yang incorporated Yahoo! in March 1995 with the goal of helping Internet users easily search for information on the Web. The business started off as a Web site with categorized lists of favorite links used by Filo and Yang to keep track of their personal interests on the Internet. Their Web site soon began to attract hundreds of visitors and in the fall of 1994 had reached over 1 million cumulative hits. Sequoia Capital funded Yahoo! with an initial investment of \$2 million and had a successful initial public offering in April 1996. By 2005,

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<sup>19</sup> Mike Langberg, "New Outlook on Microsoft Office," *The Mercury News*, October 16, 2003, <http://www.siliconvalley.com/mld/siliconvalley/7030861.htm>.

<sup>20</sup> "Browser Statistics," 2004, [http://www.w3schools.com/browsers/browsers\\_stats.asp](http://www.w3schools.com/browsers/browsers_stats.asp).

<sup>21</sup> "Microsoft Launches MSN Messenger Service," Microsoft press release, July 21, 1999, <http://www.microsoft.com/PressPass/press/1999/Jul99/MessagingPR.asp>.

Yahoo! had expanded well beyond its initial portal business to become one of the leaders in Internet communications, commerce, and media as measured by traffic, advertising, and user reach (**Exhibits 9 and 10** provide recent financial statements for Yahoo!). It provided services to over 232 millions users each month around the world and its Web site, [www.yahoo.com](http://www.yahoo.com), served as a navigational guide to the Web. Yahoo! also offered online business and enterprise services including Corporate Yahoo! (a customized enterprise portal solution), audio and video streaming, online store hosting and management, and other Internet services.<sup>22</sup>

Yahoo! launched its IM service on June 21, 1999 to provide the 47 million people who then had Yahoo! accounts an integrated suite of communication and information tools that worked seamlessly with existing Yahoo services. Called Yahoo! Messenger, the suite was packaged with voice chat, voice conferencing, news, sports scores, and various alerts in addition to standard text messaging. The alerts notified Messenger users about incoming Yahoo! e-mail; when stocks specified by the user on Yahoo! Finance had reached user-defined price limits; bidding activities on Yahoo! Auction; and upcoming appointments in Yahoo! Calendar.<sup>23</sup> **Exhibit 3** shows that Yahoo! Messenger also incorporated video chat and file transfer capability. The service carried the strong Yahoo! brand name and, as indicated in **Exhibit 6**, commanded the third largest market share in IM. Analysts speculated that Yahoo! viewed its IM service as driving users to its portal, search engine and shopping sites that in turn drove advertising dollars. Since the IM program ran in the background and was visible even when a user was not on a Yahoo! Web site, it continually drew the user's attention to visit Yahoo! Web sites.

### ***Other Instant Messaging Services***

Although not an actual IM service because it did not have its own network, Trillian, developed and launched by Cerulean Studios on July 1, 2000, provided users with a single program to message users on AOL, Microsoft or Yahoo!'s networks. By reverse-engineering the encryption used by these three firms, Trillian eliminated the need to run several IM programs to message users on these different networks.

Kevin Kurtz and Scott Werndorfer founded Cerulean Studios in May 1998. Their first version of Trillian allowed messages to be sent on the Internet Relay Chat (IRC) network. IRC, developed in 1988, allowed users to log into chat rooms called "channels" where they engaged in conversations with other users worldwide.<sup>24</sup> In November of 2000, Trillian opened up its service to AOL's and Microsoft's networks and one month later, provided access to Yahoo's network, allowing users to access all three of these services while bypassing the ads that the companies sent to users. Slowly, Cerulean Studios added new features to Trillian as seen in **Exhibit 3**. Although its functionality was still limited relative to other IM clients, Trillian's price was right: it was freeware supported purely by customer donations.

Many companies also used proprietary IM systems developed by outside vendors. Designed with more extensive security than mass-market systems, these enterprise systems acquired a collective

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<sup>22</sup> "The History of Yahoo! – How it All Started," Yahoo Media Relations, Yahoo!, Inc., 2003, <http://docs.yahoo.com/info/misc/history.html>.

<sup>23</sup> "Yahoo! Messenger Makes the World a Little Smaller, More Informed," Yahoo Media Relations. Yahoo!, Inc. 2001, <http://docs.yahoo.com/docs/pr/release331.html>.

<sup>24</sup> Joseph Lo, "Internet Relay Chat FAQ," December 13, 1996. <http://www.irchelp.org/irchelp/altircfaq.html>.



user base that rivaled the market share of AOL, Microsoft, and Yahoo. In 2003, 12 percent of households in North America were using an IM service provided by their employer.<sup>25</sup> One leading vendor of enterprise IM systems was Jabber, Inc., whose clients included AT&T, Hewlett Packard, and Lehman Brothers. Because Jabber's IM system was open source, businesses could modify and extend its features to suit their needs.<sup>26</sup> Another leading vendor was IBM, whose enterprise IM system Sametime has over 4,000 installations. Eager to enter into the corporate market, AOL, Microsoft and Yahoo! all created business versions of their IM service with enhanced security to encrypt messages sent outside company walls.<sup>27</sup> However, intense competition in the market forced Yahoo! and AOL to abandon their enterprise IM services in June 2004.<sup>28</sup>

In 2003, 9 percent of North American households were using an IM service offered by an ISP other than AOL or Microsoft.<sup>29</sup> Telecommunications companies often offered these IM services. For example, BellSouth delivered BellSouth Messenger over DSL lines to users in the southeastern U.S. However, many ISP's decided against establishing their own IM network and ceded to the market leaders. For example, Comcast did not have a proprietary IM service and instead referred its users to AIM, MSN Messenger, or Yahoo! Messenger. SBC had a partnership with Yahoo! and referred its DSL users to Yahoo! Messenger.

### ***Competition in Instant Messaging***

By July of 1999, both Microsoft and Yahoo! had developed IM services to rival that of AOL, which held the highest market share in instant messaging at the time. Originally, their services offered the ability to send messages to users on the AOL network and vice versa.<sup>30</sup> However, AOL blocked their access to its network by changing the message protocols used to communicate with AOL's servers. In response, Microsoft modified its software to circumvent the blockade, but could not establish a permanent connection as AOL kept changing its server protocols. Together with Yahoo!, Microsoft began arguing for open standards in IM to allow each of the different networks to communicate. AOL responded to the request by criticizing Microsoft for its lock on the Windows operating system.<sup>31</sup> An AOL consultant suggested instead that AOL and Microsoft negotiate an agreement for interoperability, saying, "We want interoperable systems, but that's going to happen by AOL and Microsoft sitting down together, not by Microsoft hacking into our systems."<sup>32</sup> Another smaller IM service, Prodigy, said that a test version of its product worked with AOL in mid-1999, but AOL promptly changed protocols and demanded that Prodigy license AOL software. Bill Kirkner, Prodigy's chief technology officer complained, "Not only did they yank it back but then they want a fee for it."<sup>33</sup>

<sup>25</sup> Charles S. Golvin, "IM Adoption – Far From In Lockstep – Marches On," Forrester Research, September 30, 2003.

<sup>26</sup> Jabber Homepage, Jabber, Inc., <http://www.jabber.com/index.cgi>.

<sup>27</sup> Charles S. Golvin, "This is Not Your Teenager's Instant Messaging," op. cit.

<sup>28</sup> Matt Hines, "AOL quits enterprise IM game," *CNET News.com*, June 22, 2004, [http://news.com.com/AOL+quits+enterprise+IM+game/2100-1012\\_3-5242473.html](http://news.com.com/AOL+quits+enterprise+IM+game/2100-1012_3-5242473.html).

<sup>29</sup> Charles S. Golvin, "IM Adoption – Far From In Lockstep – Marches On," op. cit.

<sup>30</sup> Microsoft's software sensed the presence of AOL's software and then prompts the user to enter her AOL screen id and password and transfer her "buddy lists."

<sup>31</sup> Don Clark, "Internet Rivals Attempt to Open Up AOL's Instant-Message System," *The Wall Street Journal*, July 26, 1999.

<sup>32</sup> Ibid.

<sup>33</sup> Ibid.

Microsoft continued to alter its software to work with each change made by AOL to block its servers. This cat-and-mouse game continued until November 1999, when Microsoft announced it would back down, claiming, “The techniques AOL used to lock its system could pose a security threat to both companies’ customers.”<sup>34</sup> It then introduced a version of its software for MSN users only. One of Microsoft’s program managers, Deanna Sanford, stated that AIM contained a bug that, if exploited, could allow outsiders to run software code unknowingly on people’s computers. She further added that Microsoft had no choice but to back down if it did not want to put MSN users at the same risk. AOL denied Microsoft’s accusation and stated that nothing in its software would put its users at risk.<sup>35</sup>

Microsoft, along with Yahoo!, soon joined the IMUnified coalition, a group that included AT&T, Excite@home (an ISP and online portal company), Odigo (a small IM service), and Prodigy, dedicated to establishing greater interoperability in IM. IMUnified’s goal was to deliver a new IM protocol for the delivery of text and exchange of “Buddy Lists” by the first quarter of 2002.<sup>36</sup> IMUnified took an active role in influencing the AOL merger with Time Warner, voicing complaints to the Federal Communications Commission (FCC) over AOL’s lock on its network. The FCC heeded the complaints and ordered AOL to accept several IM restrictions, requiring AOL-Time Warner to hold off on advanced, high-speed IM services until its instant messaging network became interoperable with rival systems or until AOL no longer dominated the IM market. To satisfy the interoperability requirement, AOL had to either adopt a messaging standard or enter into a contract to interoperate with at least one IM competitor at the time it entered any advanced IM business, and with at least two other competitors within 180 days of entering any advanced IM business.

In February 2001, IMUnified announced plans to release a new IM protocol that all of its members would adopt. However, some of the IMUnified members believed there could be significant delay, citing “contractual coordination” between members as the biggest obstacle.<sup>37</sup> If successful, the standard would put even greater pressure on AOL to open its network using the protocol. With so many actions being taken to break down AOL’s barriers, analysts began doubting whether AOL could maintain its market share lead.<sup>38</sup>

Cerulean Studios became AOL’s next target. Trillian had provided its users access to AOL’s network for more than a year. But in January 2002, AOL blocked their connection and sent messages to Trillian’s customers warning them about use of unauthorized software. AOL’s spokesperson said, “This is about a company that hacks into our system. There is no interoperability agreement between our companies, and to the extent that Trillian users are being told that there is, they are being misled.”<sup>39</sup> This began another cat-and-mouse game between AOL, which kept modifying its systems to block Trillian, and Cerulean Studios, which kept circumventing the changes. Unlike Microsoft, however, Cerulean Studios did not back down

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<sup>34</sup> Don Clark, “Microsoft Ends Row With AOL Over Messaging,” *The Wall Street Journal*, November 18, 1999.

<sup>35</sup> Ibid.

<sup>36</sup> Ashlee Vance, “Microsoft, Others set Instant-Messaging Standard,” *ITworld.com*, February 8, 2001.

<sup>37</sup> Ibid.

<sup>38</sup> Ibid.

<sup>39</sup> Stacy Cowley, “Trillian Restores AOL IM Connection,” *CNN.com*, February 26, 2002.

from its fight and continued to provide messaging services to AIM users.<sup>40</sup> There was some precedent for AOL eventually accommodating interoperability. After several months of sparring, AOL quietly acquiesced and allowed Odigo to interoperate with AOL IM in early 2002.<sup>41</sup> In August 2001, AOL also launched a technical test of interoperability between AIM and IBM's Lotus Sametime enterprise IM system. However one industry analyst commented, "The industry is not looking for interoperability between Lotus and AOL, but between AOL and other consumer IM products."<sup>42</sup>

AOL's reaction to Trillian contrasted greatly with that of Microsoft, which welcomed the service and did not block access to its servers. Microsoft even notified Cerulean Studios of changes in MSN Messenger so that Trillian could remain compatible with its networks.<sup>43</sup> Yahoo! also did not make any attempts to block Trillian from its network until after making an upgrade to their IM service in September 2003. Trillian developers were able to circumvent the block and Trillian continued to provide service to and from Yahoo! users.<sup>44</sup> Microsoft in 2002 had continued to work through industry associations to advance common standards. In particular, Microsoft worked with the Internet Engineering Task Force, a network of designers, operators and vendors, devoted to influencing Internet architecture.

In November 2002, AOL announced that it would begin developing an enterprise version of AIM for corporate use. The market size for corporate IM was potentially enormous with 200 million workers in the U.S. using e-mail<sup>45</sup>; however the lack of security, user authentication and message archive capabilities left many corporate IT managers wary of IM. AOL's announcement signaled a major strategic shift by the company, which had long been developing AIM for the consumer market only. By incorporating extra security features, the enterprise version of AIM would prevent internal messages between employees from being forwarded to the public, but still allow users to communicate with people outside of the company.

Enterprise IM systems also required user authentication tools, enhanced stability and ability to scale with changes in a company's size. Many employees of potential corporate customers were already using consumer IM services before AOL announced its enterprise service (**Exhibit 11** shows that 14 percent of IM users used instant messaging at work), although many companies blocked the use of IM products at work to prevent sensitive internal communications from traveling across the Internet and to impede hackers from attacking their systems through IM software. According to **Exhibit 1**, AIM had more users at work (6.5 million as of May 2002) than any other IM service. Unlike the original free consumer version of AIM, AOL's enterprise IM service would cost about \$30 per user for security services and back-end software.<sup>46</sup>

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<sup>40</sup> Ibid.

<sup>41</sup> Ibid.

<sup>42</sup> Ibid.

<sup>43</sup> Brad Reagan, "E-Commerce (A Special Report): Openers --- Let Them All Talk," *The Wall Street Journal*, July 21, 2002.

<sup>44</sup> Juan Carlos Perez, "Yahoo Cuts Off Trillian Users," *PCWorld*, September 26, 2003,

<sup>45</sup> Julia Angwin, "America Online Invites Businesses onto its 'Buddy List' - AOL Aims for a Bigger Piece of the Office-Software Market with a More-Secure IM System," *The Wall Street Journal*, November 4, 2002.

<sup>46</sup> Ibid.

At around the same time, both Yahoo! and Microsoft announced plans to release corporate versions of their IM services. Microsoft's new enterprise IM service would work with existing Microsoft products including the SQL Server database to store messages for logging and auditing purposes. Yahoo! and Microsoft set initial prices for their enterprise IM services at \$30 and \$24 per user respectively. Although other vendors such as IBM's Sametime group had already developed IM services for corporate use, AOL, Yahoo!, and Microsoft believed that their products' ease of use and consumer familiarity would give them an advantage.<sup>47</sup> This has proven not to be the case for AOL and Yahoo!, which both announced their withdrawal from the enterprise IM business in June 2004, less than two years after their first enterprise products were introduced.

In August 2003, the FCC lifted the restriction it had set on AOL's IM service as a condition for allowing the AOL-Time Warner merger because it determined that Yahoo! and MSN provided enough competition to prevent AOL's dominance in the market. Lifting the restriction allowed AOL to offer streaming video capability, a feature that both Yahoo! and Microsoft had already started to implement. The FCC believed that the restriction no longer served the public interest since Yahoo! and Microsoft had become reasonably sized competitors to AOL.<sup>48</sup> Given the late start, AOL was not able to release a new version of its IM software with video support until February 2004, as seen in **Exhibit 3**. Named AIM 5.5, the new software supported webcams to allow video conferencing. AIM 5.5 initially supported only Apple computers running Mac OS X, but now offers streaming video for users running Windows XP.<sup>49</sup>

### Instant Messaging Beyond 2004

As the market for IM continued to grow, companies such as AOL, Microsoft, and Yahoo! would continue to push for dominance as smaller players such as Cerulean Studios kept finding new ways to compete. But with each company offering its service for free, it was uncertain whether any of the firms would ever earn money from IM. A clear model for earning revenue had not yet emerged. Furthermore, full interoperability between each of the IM networks still did not exist at this point, forcing consumers to toggle between several different IM programs if they wanted to communicate with users on different networks.

New questions were arising as old questions persisted. Would instant messaging standards continue to be fragmented, or could groups such as IMUnified succeed at unifying the standards? Trillian might offer the key to the problem of interoperability, giving its users contemporaneous access to multiple IM services. But AOL and Yahoo! might continue to thwart their efforts, leaving Trillian's customers to deal with network outages. Would Trillian's customers be willing to put up with these problems and how could Trillian affect the major players in IM? If firms found a way to earn revenues from IM, would Trillian help by offering interoperability or hurt by commoditizing the product? There are no easy answers to these questions.

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<sup>47</sup> Todd R. Weiss, "Microsoft Targets Corporate Instant Messaging Customers," *Computerworld*, November 18, 2002.

<sup>48</sup> Scarlet Pruitt, "AOL Takes AIM at Video," *PCWorld*, August 21, 2003.

<sup>49</sup> Jim Hu and Ina Fried, "AOL Links with Apple on Video IM," *CNET News.com*, February 5, 2004, [www.news.com/2102-1032\\_3-5153969.html](http://www.news.com/2102-1032_3-5153969.html).

**Exhibit 1**  
**Number of Users of Instant Messaging**  
**From Home and Work – U.S. Only (millions)**

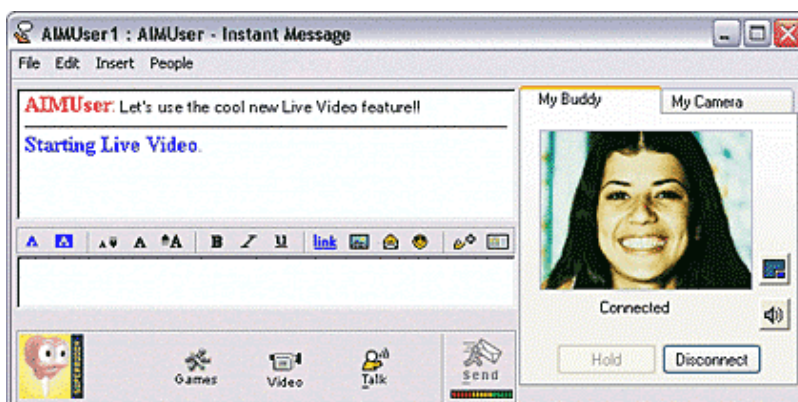
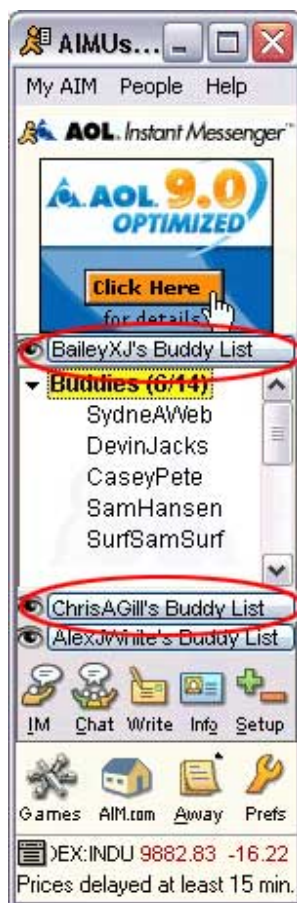
	Unique Users				Total Users Aug 2000
	Home March 2000	Work March 2000	Home May 2002	Work May 2002*	
Total chat and instant messaging	27.4	6.5	41	12.6	
AOL Instant Messenger	16.9	4.4	22	6.5	21.5
ICQ	8.2	1.3	4.4	1.1	9.1
Yahoo! Messenger	5.3	0.9	12.4	3.7	10.6
MSN Messenger	4.5	1.0	15.7	5.3	10.3

\* Does not include products designed specifically for the enterprise

Source: Media Metrix (March 2000), Media Metrix (August 2000), Nielsen/Net Ratings (May 2002).

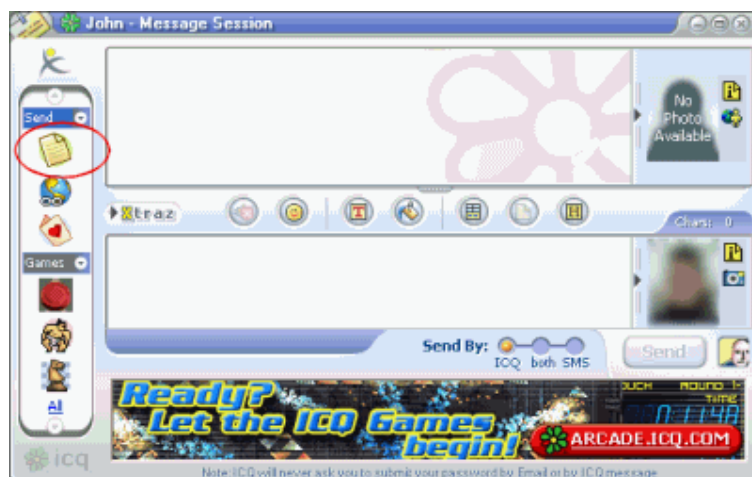
## Exhibit 2 IM Screenshots

### AOL

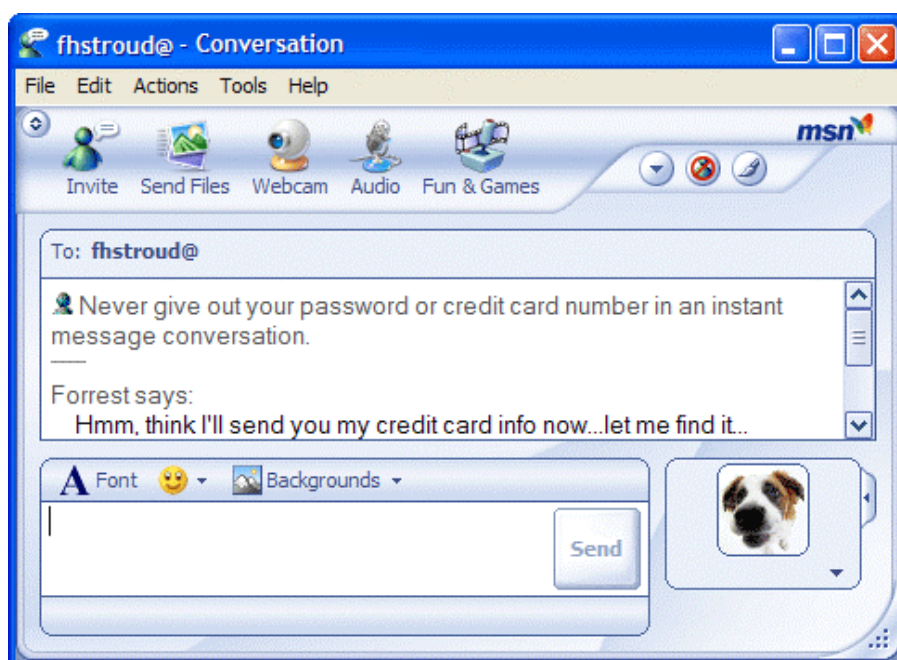
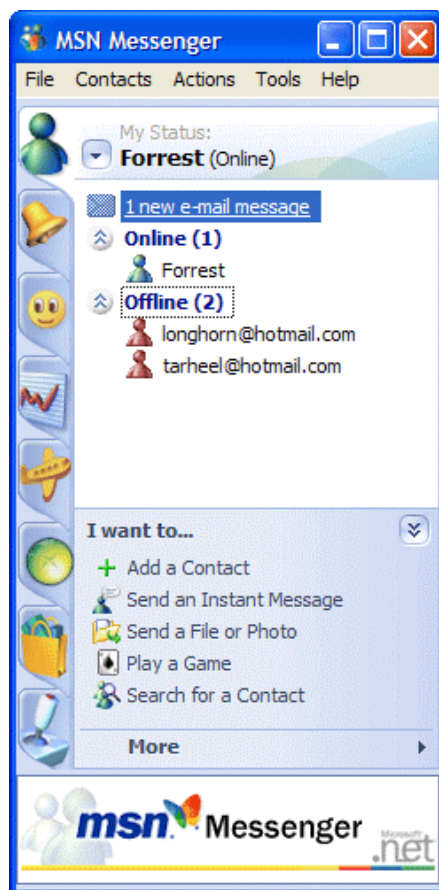




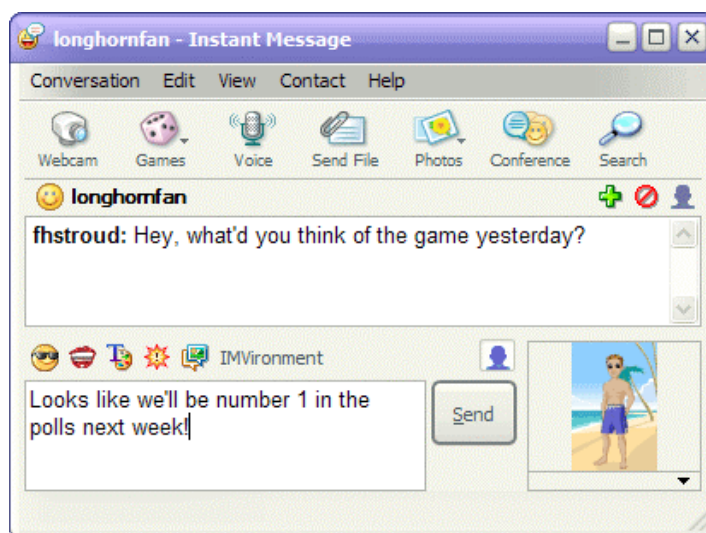
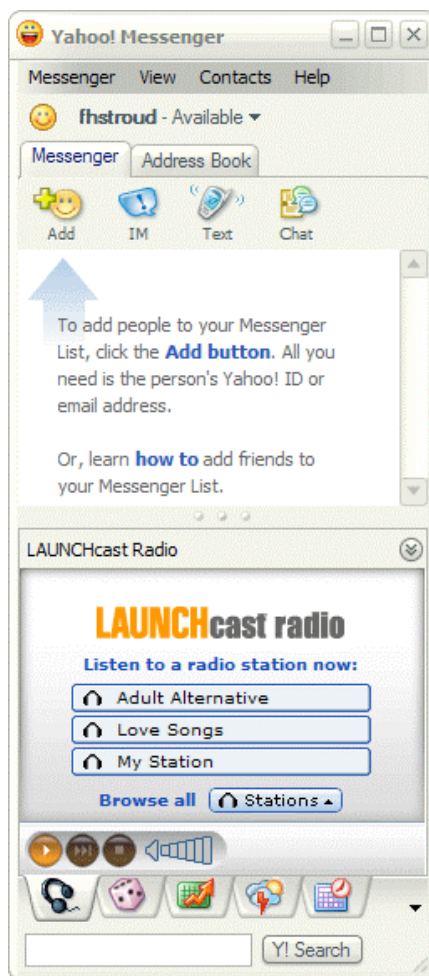
## ICQ



## MSN Messenger



## Yahoo! Messenger



## Trillian



Source: Screen shots taken by the authors from established accounts.

### Exhibit 3

#### Major Features of Instant Messenger Products as of March 2004

	AOL Instant Messenger	Release Date	ICQ	Release Date	MSN Messenger	Release Date	Yahoo! Messenger	Release Date	Trillian	Release Date
Initiated Service	May, 1997		July, 1996		July, 1999		June, 1999		July, 2000	
Buddy List	X	May-97	X	Jul-96	X	Jul-99	X	Jun-99	X	Jul-00
Video Chat	X	Feb-04	X	Oct-03	X	Oct-03	X	Aug-02		
File Transfer	X	Jul-99	X	N/A	X	N/A	X**	N/A	X	Dec-01
Speech Chat	X	Jan-00	X	N/A	X	N/A	X	N/A		
News/Stock Ticker	X	N/A								
Multiple Identities	X	Feb-04							X*	Jan-04
Search for User			X	Jul-96	X	Jul-99	X	Jun-99		
Send Message to Offline User			X	Jul-96					X***	Jul-00
Integration with Other Clients	None		AOL	Oct-03	None		None		AOL, ICQ	Dec-00

\* Only available for Trillian Pro which costs \$25

\*\* Yahoo Messenger puts a 1.5 MB limit on file transfers

\*\*\* To ICQ users only

\*\*\*\* Acquired by AOL in its acquisition of Mirabilis in June 1998

Source: Compiled by the authors from publicly available sources.

**Exhibit 4**  
**Income Statements for Time-Warner Inc.**  
**Year End December 31 (\$ millions)**

	2003	2002	2001
Revenues			
Subscriptions	\$ 20,448	\$ 18,959	\$ 15,657
Advertising	6,182	6,299	6,869
Content	11,446	10,216	8,654
Other	1,489	1,840	2,327
Total Revenues <sup>a</sup>	39,565	37,314	33,507
Costs of Revenues <sup>a</sup>	(23,285)	(22,116)	(18,789)
Selling, general and administrative <sup>a</sup>	(9,862)	(8,835)	(7,486)
Merger and restructuring costs	(109)	(327)	(214)
Amortization of intangible assets	(640)	(557)	(6,366)
Impairment of goodwill and other intangible assets	(318)	(44,039)	—
Net gain on disposal of assets	14	6	—
Operating Income (loss)	5,365	(38,554)	652
Interest Expense, net <sup>a</sup>	(1,844)	(1,758)	(1,316)
Other income (expense), net	1,210	(2,447)	(3,458)
Minority Interest income (expense)	(214)	(278)	46
Income (loss) before income taxes discontinued operations and cumulative effect of accounting change	4,517	(43,037)	(4,076)
Income tax provision	(1,371)	(412)	(145)
Income (loss) before discontinued operations and cumulative effect of accounting change	3,146	(43,449)	(4,221)
Discontinued operations, net of tax	(495)	(1,012)	(713)
Income (loss) before cumulative effect of accounting change	2,651	(44,461)	(4,934)
Cumulative effect of accounting change	(12)	(54,235)	—
Net income (loss)	\$ 2,639	\$ (98,696)	\$ (4,934)

<sup>a</sup>Includes the following income (expenses) resulting from the transactions with related companies:

Revenue	\$ 346	\$ 652	\$ 673
Costs of revenues	(\$169)	(\$126)	(\$291)
Selling, general and administrative	26	21	10
Interest income, net	19	13	30

Source: Compiled by the authors from Time Warner Inc. annual reports (<http://ir.timewarner.com/annuals.cfm?ptype=1>).



**Exhibit 5**  
**Balance Sheets for Time-Warner Inc.**  
**Year End December 31 (\$ millions)**

	2003	2002	2001
<b>ASSETS</b>			
<b>Current Assets</b>			
Cash and equivalents	\$ 3,040	\$ 1,730	\$ 719
Receivables, less allowances of \$2.079 and \$2.085 billion	4,908	4,846	6,054
Inventories	1,390	1,376	1,791
Prepaid expenses and other current assets	1,255	1,130	1,687
Current assets of discontinued operations	1,675	1,753	—
Total current assets	12,268	10,835	10,251
Noncurrent inventories and film costs	4,465	3,739	3,490
Investments, including available-for-sale securities	3,657	5,094	6,886
Property, plant and equipment	12,559	11,534	12,669
Intangible assets subject to amortization	4,229	4,189	7,289
Intangible assets not subject to amortization	39,656	36,355	37,708
Goodwill	39,459	36,986	127,420
Other assets	2,858	2,418	2,791
Noncurrent assets of discontinued operations	2,632	4,368	—
Total assets	\$ 121,783	\$ 115,518	\$ 208,504
<b>LIABILITIES AND SHAREHOLDERS' EQUITY</b>			
<b>Current Liabilities</b>			
Accounts payable	\$ 1,629	\$ 2,244	\$ 2,266
Participations payable	1,955	1,689	1,253
Royalties and programming costs payable	778	600	1,515
Deferred revenue	1,175	1,159	1,451
Debt due within one year	2,287	155	48
Other current liabilities	6,120	5,887	6,443
Current liabilities of discontinued operations	1,574	1,730	—
Total current liabilities	15,518	13,464	12,976
Long-term debt	23,458	27,354	22,792
Deferred income taxes	13,291	9,803	11,231
Deferred revenue	1,793	1,839	1,048
Mandatorily convertible preferred stock	1,500	—	—
Other liabilities	3,883	3,867	4,839
Minority interests	5,401	5,038	3,591
Noncurrent liabilities of discontinued operations	901	1,336	—
<b>Shareholders' Equity</b>			
Series LMCN-V common stock	2	2	2
Time Warner common stock	44	43	42
Paid-in capital	155,578	155,134	155,172
Accumulated other comprehensive loss, net	(291)	(428)	49
Accumulated deficit	(99,295)	(101,934)	(3,238)
Total shareholders' equity	56,038	52,817	152,027
Total liabilities and shareholders' equity	\$ 121,783	\$ 115,518	\$ 208,504

Source: Compiled by the authors from Time Warner Inc. annual reports  
<http://ir.timewarner.com/annuals.cfm?ptype=1>).

**Exhibit 6**  
**Market Shares of Instant Messenger Firms by Number of Users:**  
**Home, Work, and Both**

	Use Non-Exclusively					Use Exclusively
	Aug 2001 Both*	July 2002 Both*	Feb 2003 Both*	Sept 2003 Home**	Sept 2003 Work***	Sept 2003 Home**
AOL Instant Messenger*****	51%	43%	53%	48%	25%	31%
MSN Messenger	29%	22%	32%	33%	22%	15%
Yahoo! Messenger	16%	11%	22%	23%	13%	9%
Employer service				12%	42%	6%
Other				11%	17%	4%
ISP service****				9%		4%

\* Base: North American households that use IM at home or at work

\*\* Base: North American households that use IM at home

\*\*\* Base: North American households that use IM at work

\*\*\*\* In September, 2003 19% get IM from their phone company; 23% get it from their cable provider

\*\*\*\*\* Includes AOL and ICQ in August 2001

Sources: Consumer Technographics Q3 2003 North American Study, Forrester Research, Inc., Consumer Technographics 2002 North America Devices & Access Online Study, Forrester Research, Inc., Insight Express.

**Exhibit 7**  
**Income Statements for Microsoft Corporation**  
**Year End June 30 (\$millions)**

	2003	2002	2001
Revenue	\$32,187	\$28,365	\$25,296
Operating expenses:			
Cost of revenue	5,686	5,191	3,455
Research and development	4,659	4,307	4,379
Sales and marketing	6,521	5,407	4,885
General and administrative	2,104	1,550	857
Total operating expenses	18,970	16,455	13,576
Operating income	13,217	11,910	11,720
Losses on equity investees and other	(68)	(92)	(159)
Investment income (loss)	1,577	(305)	(36)
Income before income taxes	14,726	11,513	11,525
Provision for income taxes	4,733	3,684	3,804
Income before accounting change	9,993	7,829	
Cumulative effect of accounting change	0	0	
Net income	\$9,993	\$7,829	\$7,346

**Channel and Segment Revenue for Microsoft Corporation**  
**Year End June 30 (\$ millions)**

	2003	2002	2001
<i>Channels</i>			
Americas Region	\$11,898	\$11,070	
Europe, Middle East, and Africa Region	6,671	5,130	
Japan and Asia-Pacific Region	3,437	3,169	
OEM	10,181	8,996	
Total revenue	\$32,187	\$28,365	
<i>Segments</i>			
Client	\$10,394	\$9,360	
Server Platforms	7,140	6,157	
Information Worker	9,229	8,212	
Business Solutions	567	308	
MSN	1,953	1,571	
Mobile and Embedded Devices	156	112	
Home and Entertainment	2,748	2,453	
Other (1)	0	192	
Total revenue	\$32,187	\$28,365	

(1) Represents revenue from Microsoft's majority ownership of Expedia, Inc., which was sold in February 2002.

Source: Compiled by the authors from Microsoft Corporation annual reports (<http://www.microsoft.com/msft/ar.msp>).

**Exhibit 8**  
**Balance Sheets for Microsoft Corporation**  
**Year End June 30 (\$millions)**

	2003	2002	2001
<i>Assets</i>			
Current assets			
Cash and equivalents	\$ 6,438	\$ 3,016	\$ 3,922
Short-term investments	42,610	35,636	27,678
Total cash and short-term investments	49,048	38,652	31,600
Accounts receivable, net	5,196	5,129	3,671
Inventories	640	673	83
Deferred income taxes	2,506	2,112	1,522
Other	1,583	2,010	2,334
Total current assets	58,973	48,576	39,210
Property and equipment, net	2,223	2,268	2,309
Equity and other investments	13,692	14,191	14,361
Goodwill	2,946	1,426	1,511
Intangible assets, net	566	243	401
Other long-term assets	1,171	942	1,038
Total assets	\$79,571	\$67,646	\$58,830
<i>Liabilities and stockholders' equity</i>			
Current liabilities			
Accounts payable	\$ 1,573	\$ 1,208	\$ 1,188
Accrued compensation	1,416	1,145	742
Income taxes	2,044	2,022	1,468
Short-term unearned revenue	7,225	5,920	4,395
Other	1,716	2,449	1,461
Total current liabilities	13,974	12,744	9,254
Long-term unearned revenue	1,790	1,823	1,219
Deferred income taxes	1,731	398	409
Other long-term liabilities	1,056	501	659
Preferred			
Stockholders' equity			
Convertible preferred stock	0	0	
Common stock and paid-in capital - shares authorized 24,000			
Shares issued and outstanding 10,718 and 10,771	35,344	31,647	28,390
Retained earnings, including accumulated other			
comprehensive income of \$583 and \$1,840	25,676	20,533	18,899
Total stockholders' equity	61,020	52,180	47,289
Total liabilities and stockholders' equity	\$79,571	\$67,646	\$58,830

Source: Compiled by the authors from Microsoft Corporation annual reports (<http://www.microsoft.com/msft/ar.msp>).

**Exhibit 9**  
**Income Statements for Yahoo!**  
**Year End December 31 (\$ thousands)**

	2003	2002	2001
Net revenues	\$1,625,097	\$953,067	\$717,422
Costs and expenses:			
Cost of revenues	358,103	162,881	157,001
Sales and marketing	530,613	431,392	386,944
Product development	207,285	143,468	126,090
General and administrative	157,027	105,952	79,351
Amortization of intangibles	54,374	21,186	64,085
Restructuring costs	—	—	57,471
Acquisition-related costs	—	—	4,750
Total costs and expenses	1,307,402	864,879	875,692
Income (loss) from operations	295,666	88,188	-158,270
Other income (loss), net	95,158	91,588	77,138
Minority interests in operations of consolidated subsidiaries	-5,921	-1,551	-693
Income (loss) before income taxes and cumulative effect of accounting change	384,903	178,225	-81,825
Provision for income taxes	147,024	71,290	10,963
Net income (loss) before cumulative effect of accounting change	237,879	106,935	-92,788
Cumulative effect of accounting change	—	-64,120	—
Net income (loss)	\$237,879	\$42,815	(\$92,788)

Source: Compiled by the authors from Yahoo! annual reports (<http://yhoo.client.shareholder.com/annual.cfm>).

**Exhibit 10**  
**Balance Sheets for Yahoo!**  
**Year End December 31 (\$ thousands)**

	2003	2002	2001
<b>Assets</b>			
Current assets:			
Cash and cash equivalents	\$ 713,539	310,972	372,632
Short-term investments in marketable securities	595,978	463,204	553,795
Accounts receivable, net of allowance of \$23,852 and \$19,995, respectively	282,415	113,612	68,648
Prepaid expenses and other current assets	129,777	82,216	56,458
Total current assets	1,721,709	970,004	1,051,533
Long-term investments in marketable securities	1,261,693	763,408	580,418
Restricted long-term investments	—	—	258,662
Property and equipment, net	449,512	371,272	131,648
Goodwill	1,805,561	415,225	192,987
Intangible assets, net	445,640	96,252	19,457
Other assets	247,539	174,020	144,641
Total assets	\$ 5,931,654	\$ 2,790,181	\$ 2,379,346
<b>Liabilities and Stockholders' Equity</b>			
Current liabilities:			
Accounts payable	\$ 31,890	\$ 18,739	\$ 13,218
Accrued expenses and other current liabilities	483,628	257,575	235,897
Deferred revenue	192,278	135,501	109,402
Total current liabilities	707,796	411,814	358,517
Other liabilities	72,890	84,540	23,806
Commitments and contingencies (Note 13)			
Minority interests in consolidated subsidiaries	37,478	31,557	30,006
Stockholders' equity:	687	611	581
Additional paid-in capital	4,288,816	2,430,222	2,067,410
Treasury stock	-159,988	-159,988	-59,988
Accumulated deficit	230,386	-7,493	-50,308
Accumulated other comprehensive income (loss)	3,598	-1,082	9,322
Total stockholders' equity	4,363,490	2,262,270	1,967,017
Total liabilities and stockholders' equity	\$ 5,931,654	\$ 2,790,181	\$ 2,379,346

Source: Compiled by the authors from Yahoo! annual reports (<http://yhoo.client.shareholder.com/annual.cfm>).



**Exhibit 11**  
**Location of Usage of Instant Messaging, September 2003**

Do Not Use	52%
Use at Home, Not at Work	34%
Use at Home and at Work	10%
Use at Work, not at Home	4%

Base: North American online households

Source: Consumer Technographics Q3 2003 North American Study, Forrester Research, Inc.