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Order Code RS20688
Updated March 28, 2002

CRS Report for Congress

Instant Messaging on the Internet: Interoperability Issues of Competition and Fair Access

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Summary

Instant Messaging (IM) is one of the fastest growing Internet applications. The recent debate about IM is related to the broad issues of open access rules and competition in the high speed Internet service and cable television markets. Although IM technology has evolved largely independent of formal regulation, a review of the AOL-Time Warner (AOL-TW) merger brought issues of interoperability (the ability to exchange messages between multiple IM services) among IM services under scrutiny both in the US and Europe. Concerns about open access and accessibility for the disabled, have been raised by Members of Congress, the Federal Trade Commission (FTC), the Federal Communications Commission (FCC), and the European Commission (EC). These issues highlight the growing complexity of regulating converging technologies. This report discusses the technology behind instant messaging and provides an overview of the issues. It will be updated as necessary.

Background

Instant messaging (IM) is one of the fastest growing free services on the Internet. IM combines the immediacy of a telephone call with the network presence of electronic mail (e-mail) to create an instantaneous system for exchanging messages between two people. In its simplest form, IM applications are used for the synchronous exchange of text messages. However, recent developments in IM technology also now allow users to exchange files, pictures, and even voice messages. Many industry observers are optimistic about the future of IM, suggesting that IM software could become part of Web browsers and will soon become available for wireless devices such as cellular phones and personal digital assistants.[1]

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[1] Barry Nance, "Instant Messaging: Good for E-Commerce?" *Computerworld*, 15 May 2000, p. 74; John Borland, "Instant Messaging Moves to Cell Phones," *CNet News.com*, 23 February 2000, [http://www.canada.cnet.com/news/0-1004-200-1556076.html]

The interest in IM stems from the larger debate regarding the America Online (AOL) -Time Warner, Inc. merger. Concerns have been raised not only about the possibility of AOL-Time Warner being a dominant force in cable-based Internet services, but also that it could leverage its customer base against providers of alternative high speed Internet services such as digital subscriber lines (DSL), which runs over telephone lines. The IM debate serves as a case study of the broad issues of open access rules and competition in the high speed Internet service and cable television markets.[2] As the Internet continues to develop as a medium for communications and entertainment, it is possible these issues will be raised again in the context of a related technology.

Both U.S. and European regulators expressed concern that the merger would create a company capable of controlling a significant portion of both the distribution channels for new media content (cable TV, Internet access, satellite broadcasts), as well as the content itself (digital music, books, videos). The EC, FTC, and FCC all examined the IM issue, either directly or indirectly, as part of their larger overall reviews of the AOL-Time Warner (AOL-TW) merger.

In Europe, the EC was primarily concerned about the combined company's ability to shut out competitors' access to distribution channels for the emerging market for the digital delivery of music, sports, and entertainment [http://europa.eu.int/comm/role_en.htm]. Although some observers believed there was less potential for such monopolistic control by a combined AOL-TW in Europe than the United States, other observers cited AOL Europe's rapid growth as one of the leading pan-European Internet service providers (ISPs) as an indicator of its potential to create a "walled garden" of digital media.[3] The proposed AOL-TW merger was further complicated by a proposed 50-50 joint venture between British-based EMI Music and Time Warner, which represent two of the five largest recording companies in the world. In October 2000 the EC approved the merger on the condition Time Warner call off its merger with EMI and sever its relationship with European media giants Bertelsmann AG and Vivendi SA. The EC did not include restrictions regarding IM, deciding that AOL's dominance in Europe was far weaker than in the United States.[4]

In the United States, where AOL is the largest ISP and Time Warner is the second-largest cable television company, there was a greater focus on infrastructure questions. The FTC review concentrated on the implications of combining different technical capabilities in one company, particularly on "open access" as a means to ensure competition between rival ISPs and choice of technologies.[5] In December 2000 the FTC approved the AOL-TW merger with conditions. These conditions included requiring the merged company to open its cable system to competing ISPs before AOL is allowed to

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[2] See CRS Issue Brief IB10045, *Broadband Internet Access: Background and Issues*, by Lennard G. Kruger and Angele A. Gilroy for a more comprehensive review of open access issues.

[3] Edmund Andrews, "No Concessions in AOL Merger," *New York Times*, 7 September 2000, C9; Alex Klein, "Europe Watches Warily as AOL Flexes Muscles," *Washington Post*, 18 September 2000, A1.

[4] Edmund L. Andrews, "Europe Approves AOL-Time Warner Deal," *New York Times*, 12 October 2000, [http://www.nytimes.com/2000/10/12/technology/12ONLI.html].

[5] Elizabeth Wasserman, "The Other Trustbuster," *The Standard*, 8 September 2000,

offer its own high-speed cable access, prohibiting the interference with either the content or consumer access to interactive television services provided by non-affiliated providers, and requiring the merged company to continue to support and promote its DSL services at a comparable level as it does its cable services.[6]

The FCC, which held hearings about the impact of the merger on IM, addressed the issue directly as part of its overarching concerns regarding the development and use of new communications technologies and preserving competition between service providers [http://www.fcc.gov/csb/aoltw/07-27-00_enbanc/agenda.html]. In January 2001 the FCC also approved the merger with conditions. In addition to reinforcing the FTC's requirement that AOL-TW open its cable systems to competitor ISPs and restricting its ability to enter into exclusive access agreements with ATT, the FCC also restricted the merged company from offering advanced IM services such as videoconferencing until it either implements an industry-wide standard or enables interoperability standards between its IM system and that of three other competitors [http://www.fcc.gov/Bureaus/Cable/Public_Notices/2001/fcc01011_fact.pdf].

Who Provides Instant Messaging Services and Who Uses Them?

Most IM services require users to download and install a small program on their computers. To use an IM application, users first create a personal directory of "buddies". The IM software alerts the users when one or more of the user's "buddies" is online and available to chat via instant messaging. Users then send an invitation or a short message to a person to initiate the discussion. IM is more expeditious than e-mail because the message immediately appears on the person's screen. In contrast, e-mail messages are stored on a central server until the recipient decides to check and download the messages.

Although earlier forms of synchronous chat technology, such as the Unix "talk" feature and Internet Relay Chat (IRC) have existed for over a decade, the current incarnation of IM did not become widely available until 1997.[7] Originally noted for its entertainment value, IM was seen as a way for younger users, often using unusual "screen names,"[8] to communicate. However, as IM has grown in popularity and functionality, some industry observers predict that IM will grow into a $6 billion market as it becomes an important business tool.[9] According to some estimates, 29% of US corporations currently use IM while 42% may begin to utilize IM for business in the future.[10] There are a number of potential business uses for IM, including providing live online customer service for shoppers, and to support communication and collaboration in a "virtual office" where

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[6] David Lansky and Jeremy Pelofsky, "AOL/Time Warner Wins FTC Blessing," *Reuters*, 15 December 2000.

[7] Patricia Fusco, "AOL: Instant Messaging Interoperability is a Non-Issue," *InternetNews*, 28 June 2000, [http://www.internetnews.com/isp-news/article/0,2171,8_404471,00.html]

[8] Screen names are pseudonyms used to identify a person sending or receiving instant messages.

[9] Patrick Ross, "AOL Time Warner Can't be Trusted On Access, Hill Panel Told," *New York Times*, 6 October 2000, [http://www.nytimes.com/cnet/CNET_0_4_2948607_00.html]

[10] Steven Bonisteel, "Instant Messaging Increases in Workplace," *Newsbytes*, 19 March 2002, [http://www.newsbytes.com/news/02/175316.html].

members of a team may be located in different areas of the country or the world. IM also provides a means to communicate discreetly with colleagues during meetings and negotiations. During the September 11, 2001 terrorist attacks, many people turned to cellphone-based text messaging and Internet-based instant messaging to get around the congested phone networks. AOL reported a 20% jump in instant messaging volume, handling 1.2 billion messages on September 11.[11]

A growing number of IM services are now available, most at no cost to the user. Although an exact accounting of the number of people using IM applications is not available, based on the reported number of users, some of the most commonly used IM programs include AOL Instant Messenger (AOL IM), ICQ ("I Seek You"), Yahoo Messenger, and MSN Messenger.[12]

Interoperability Issues

Until recently, IM has evolved largely unnoticed and independent of any formal regulation. Since IM is often a free service offered to attract users to purchase other services, such as Internet access, there has been no commercial market to regulate. However, two qualitative changes in the IM market may change this situation. First, the rapid increase in IM users has helped draw more competitors into the field, heightening the vested interest in the future of IM as a service. Second, the advanced technical capabilities associated with IM software programs such as file transfers and voice messaging suggest that IM has the potential to evolve from the simple exchange of text messages to something more akin to telecommunications services regulated by the FCC. Consequently interoperability issues have arisen that could affect the future growth of IM.

Within the larger controversy over interoperability, two inter-related issues can be identified, *open access* and *accessibility*. Open access concerns have been raised mostly by companies who want to assure their ability to enter into certain markets for services. Accessibility concerns have been raised mostly by advocates who wish to maintain the Internet as a resource that is accessible to all people, regardless of their disability.

The major question being debated at this time is whether there should be interoperability between different IM applications. At the present, there is no technical standard to guide the development of IM applications. Unlike e-mail programs, which conform to certain industry-led standards, each company develops its IM products as it chooses. The result is that in order to communicate with another user, both people must be using the same application. For example, an individual cannot use AOL IM to communicate with another person who uses Yahoo! Messenger.

In response to a growing concern over the lack of standards, the Internet Engineering Task Force (IETF) convened the Instant Messaging and Presence Protocol Working Group (IMPPWG) in 1999 to define the protocols and data formats necessary to develop a widely interoperable instant messaging system [http://www.ietf.org/overview.html]. In February 2000, the IETF issued a minimum set of requirements in a Request For Comments (RFC)

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[11] Alex Daniels and Brendan Barrett, "Saved by Text Messages," *Washington Techway*, 1 October 2001, p.14.

[12] Jill Carroll, "FCC May Open AOL Messaging Center," *Wall Street Journal*, 13 September 2000, A3.

and continued to review the various industry-proposed protocols and suggestions. The IETF has since narrowed down a list of ten proposals to three protocols that it is actively considering. The IETF's review is focusing on the protocols' ability to provide "presence information,"(the ability to locate other users who are online) as well as the ability to communicate using different systems. It is unclear if the interoperability protocol, tentatively called the Common Profile for Presence and Instant Messaging (CPIM), will be approved by the IETF.[13]

Open Access. The debate over IM interoperability focuses primarily on the issue of open access and is related to the original concerns over whether a merged AOL-Time Warner will provide access to Time Warner's high speed cable lines to rival ISPs. Although estimates vary depending on the measurements used, two of the most popular IM programs, AOL IM and ICQ, are both owned by AOL. Based on the global number of *registered accounts*, which may or may not actually be used in any given month, the Wall Street Journal reports that ICQ has 73 million accounts and AOL IM has 65.5 million accounts. The next most-popular program is Microsoft Messenger, with 18 million accounts.[14] These numbers also includes multiple accounts created by the same people. In contrast, Media Metrix estimates that AOL IM has 21.5 million unique users (*individuals* using the service during a given time period, only being counted once), ICQ has 9.1million users, Yahoo Messenger has 10.6 million users, and Microsoft Messenger has 10.3 million users.[15]

At this time, AOL IM and ICQ are not compatible with each other (ICQ users cannot communicate with AOL IM users). However, it was widely reported that in September 2000 it was discovered that AOL had conducted research and development tests that enabled individuals to use their ICQ username and password to log on and chat using AOL IM. Although it was reported these tests were successful, AOL has not extended compatibility for all users beyond this test phase.[16] Since July 1999, several companies have tried to engineer their products so they can interface with the AOL IM user database without the permission of AOL. In its June 26, 2000 response to the FCC, AOL stated that it has blocked these unauthorized attempts to access its user database on the grounds of protecting the computer security and privacy of its users. AOL also said it has licensed its IM technology at no cost to over a dozen companies [http://www.fcc.gov/csb/aoltw/resp626.txt].

Although AOL submitted a plan for interoperability to the IETF in June 2000, critics claimed that the plan was not detailed enough and did not commit AOL to a specific

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[13] Jennifer DiSabatino, "Task Force Focusing on IM Interoperability Protocol," *Computerworld*, 1 January 2000, p. 17.

[14] Jill Carroll, "FCC May Open AOL Messaging Center," *Wall Street Journal*, 13 September 2000, A3

[15] Ariana Eunjung Cha, "Yahoo, MSN Challenge AOL in Instant Messaging," *Washington Post*, 16 November 2000, p. E9.

[16] Ben Hammer, "AOL Links Instant Messenger Services," *The Standard*, 26 September 2000, [http://www.thestandard.com/article/display/0,1151,18853,00.html]; Jim Hu, "AOL 'Test' Gives ICQ Members a New Home: AIM," *CNET News.com*, 26 September 2000, [http://news.cnet.com/news/0-1005-200-2871202.html].

timetable for cooperating with other companies.[17] AOL has stated that it supports developing an interoperable IM system but it must address issues of security, privacy, and user authentication. In testimony to the FCC in July 2000, President of AOL Interactive Services Barry Schuler stated that it would take over a year to fully develop the technology and perform quality testing.[18] In response, some instant messaging competitors refute Schuler's claim, noting their previous successes in temporarily making their products compatible with AOL IM before being blocked by AOL as evidence of their position.[19]

Several companies critical of AOL's approach to IM joined together to form an organization called FreeIM. FreeIM is a strong advocate for the development of open standards for IM and directs most of its criticism at AOL.

Accessibility. The accessibility issue has been raised primarily by advocates for the deaf, such as the National Association of the Deaf (NAD) and TDI (formerly known as Telecommunications for the Deaf, Inc.). According to these organizations, IM is a critical method for deaf-to-deaf and deaf-to-hearing communication [http://www.nad.policy.net/proactive/newsroom/release.vtml?id=18761]. They suggest it represents a necessary alternative for communication in the face of the growth of voice telephony over the Internet. They believe IM is important so that the deaf are not marginalized in terms of Internet accessibility. Advocates for the deaf also argue that IM is a much easier and quicker means to communicate compared to using text telephones (TTYs). They advocate that IM technology should be developed under the principles of open standards and interoperability.

Options for Congress

To date there have been no hearings or bills introduced in the 107th Congress regarding instant messaging. However, the outcome of efforts to achieve IM interoperability could impact other Internet-related issues such as the merger of media companies, broadband competition, and the digital divide. IM technology is rapidly evolving and could be a new platform for providing videoconferencing, interactive gaming, and/or e-business services. Consequently, Congress may decide to revisit concerns about IM interoperability and accessability in the larger context of these other issues.

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[17] "America Online Backs World Message Standards," *New York Times*, 16 June 2000, C22.

[18] Barry Schuler, "En banc Hearing on America Online, Inc. and Time Warner, Inc., Applications for Transfer of Control, CS Docket No. 00-30," 27, July 2000, p. 168-169.

[19] Laurie J. Flynn, "AOL's Rivals Want to See Open Instant Messaging," *New York Times*, 31 July 2000, C9.