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November 9, 2000

**By Hand**

Magalie Roman Salas
Secretary
Federal Communications Commission
Room CY-A257
445 Twelfth Street, SW
Washington, D.C. 20554

Re: *Written Ex Parte*
In the Matter of Applications of America Online, Inc. and Time Warner, Inc. for Transfers of Control, CS Docket No. 00-30

Dear Ms. Salas:

Pursuant to section 1.1206(b)(1) of the Commission's rules, 47 C.F.R. §1.1206(b)(1), an original and one copy of this letter and enclosure are being provided to you for inclusion in the public record of the above-referenced proceeding.

Sincerely,

Ruth Milkman

Enclosure

cc: James Bird
Darryl Cooper
John Berresford
Royce Dickens
Joel Rabinovitz
Linda Senecal

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**Excite@Home**

November 9, 2000

James Bird
Office of General Counsel
Federal Communications Commission
445 12th Street, S.W.
Washington D.C. 20554

Re: *Written Ex Parte*
In the Matter of Applications of America Online, Inc. and Time Warner, Inc. for Transfers of Control, CS Docket No. 00-30

Dear Mr. Bird:

This letter is a follow-up to the telephone call between Excite@Home and FCC staff on November 6, 2000, and responds in greater detail to questions raised by you and the other FCC staff in the course of that call. In that call, which was requested by FCC staff, you asked Excite@Home to clarify certain information provided in the written submission of October 3, 2000, entitled "The Basics of Instant Messaging Interoperability."

Instant Messaging

*Description of instant messaging.* Instant messaging is a presence detection and communication platform that works as follows. The user has instant messaging software running on his or her personal computer. This instant messaging software is called the "IM client." The IM client opens a connection to the instant messaging server.[1] The IM client sends the name and password of the end user to the IM server for authentication. If the name and password are authenticated, the IM server will keep open the connection to the client, and this open connection will establish that the user is "present." The presence of the user can then be detected by other users that have been placed by the first user on a "buddy" list. The server also communicates to the client information regarding which of the user's buddies are present, and provides updates as buddies go on and off line.

[1] The user may subscribe to an instant messaging service and also to an Internet access service. The two services may or may not be provided by the same company. The instant messaging server is likely to be separate from the server used to provide Internet access. Therefore, the end user has a physical link (whether cable modem, dial-up access or xDSL service) to its Internet access provider, and over that single link can maintain multiple open connections to websites, IM servers and the e-mail server, for example.

When the user sends a message to a buddy, the user sends the message to the IM server, which relays the message to the buddy. The broad use of "firewalls" — security systems used by organizations to protect their network from external threats — often makes direct connections between users difficult or impossible. Thus, for most IM products both the user and the buddy send messages to the IM server.[2] Even if the user has a large number of buddies, the user only maintains one connection to the IM server.

*Resources consumed.* For text messages, the amount of bandwidth consumed by the open connection between the client and the server is very small. By way of comparison, the draw on server bandwidth of downloading a web page might be as much as 1000 times greater than the draw on bandwidth of sending a text message. The major resource constraint is not bandwidth, but the limited number of ports available per server. A server may have roughly 20,000 – 50,000 ports, and this is the limiting factor on the number of possible open connections.

*Peer-to-peer communications.* In contrast to the services described above, in which users connect to other users through one or more IM servers, peer-to-peer connections, such as AOL's ICQ, permit communications directly between clients. The client establishes a connection to an IM server, and the IM server conducts the authentication and identification functions. The IM server then provides the IP address of the buddy directly to the client, and the clients establish a direct connection that does not go through the IM server. The IP address is temporary in the sense that as soon as the user turns the computer off and back on, the user may have a new IP address.

*Types of interoperability.* There are two types of interoperability for instant messaging: client-based interoperability and server-based interoperability. Either form of interoperability enables the user to communicate with buddies that subscribe to an IM service offered by a provider other than the user's IM service provider. Interoperability may be client-based or server-based, independent of whether the instant messaging services are peer-to-peer communications, or the clients communicate via one or more IM servers.

Client-based Interoperability

*Description.* There are two types of client-based interoperability. In the first scenario, the user subscribes to multiple instant messaging services, but the client software enables the user to run one program (with one ID and password, rather than multiple IDs and passwords) and have one buddy list (rather than multiple buddy lists). In this scenario, the only changes required occur in the IM client, because the client software must understand multiple protocols used by the different services. In the second scenario for client-based interoperability, there is a single protocol upon which all IM service providers supported in the client agree. The single protocol initially would provide a basis for establishing presence, and sending and receiving text messages. Under either of the client-based interoperability scenarios described here, the user's PC

[2] The exception is peer-to-peer IM products, such as ICQ, which send messages directly from client to client but may contend with firewall issues.

runs client software that maintains open connections to the IM servers of multiple IM service providers simultaneously.

*Resource constraints.* Interoperability has implications for two types of resources: ports and bandwidth. Because the client software maintains open connections to multiple IM servers, it requires an open port on each server. As discussed in the first section, servers have a finite number of ports, and eventually, to support additional open connections, the IM service provider would have to add a server. Interoperability might be expected to increase the load on existing servers incrementally for those IM service providers that currently have a large number of users, but increase the load significantly for IM service providers with proportionately fewer users.[3] Thus, the burden of adding servers is likely to fall on IM service providers that have fewer customers before the introduction of interoperability. The load on the user's personal computer is minimal, since the average PC has 1000 ports available. As long as the instant messaging consists of text messages, bandwidth is unlikely to be constraining. Streaming media (voice or video) would require significant amounts of bandwidth, but this need for bandwidth is limited somewhat by most providers under their current architectures, by requiring a separate sessions for those media, and ending the connection if the user is silent for some period of time.

*Exchange of information between IM service providers.* Client-based interoperability does not require that IM service providers exchange any information. In both types of client-based interoperability, users must register and create an account with each service provider they wish to use. The interoperable IM client serves only as an aggregation point, obtaining information from the multiple providers, and presenting it in a single software/user interface, so that the user need not run a separate program for each service provider.

Server-based Interoperability

*Description.* Server-based interoperability, as the name suggests, places the burden of interoperability on the server, rather than the client. The user's client software opens a connection to the IM server belonging to the IM service provider to which the user subscribes. That IM server communicates with the IM servers of other IM service providers as needed. Thus, in contrast to client-based interoperability, the user opens a connection to one IM server, rather than multiple IM servers. With server-based interoperability, the connection is user to IM server to IM server to user.

*Resource constraints.* Each IM server has connections with multiple IM servers. It is possible for each IM server to send all traffic destined for clients of a given IM server through a single connection, provided that the connection has enough bandwidth to support the amount of traffic. In this case, both the client and server software must be

[3] This characterization of relative load assumes that companies both allow their clients to interoperate with other companies' clients and allow other companies' clients to interoperate with their clients. It also assumes that IM users add new users to their buddy lists approximately in proportion to companies' existing shares of IM customers.

modified, as well as the protocol they use to communicate, in order to support multiple services.

*Exchange of information between IM service providers.* As a practical matter, unlike client-based interoperability, server-based interoperability requires that IM service providers have some relationship, and exchange some information, such as that associated with security and authentication.

*Technical issues.* Server-based interoperability involves a set of technical issues, because it requires the definition of the protocol used by servers to communicate with other servers. The Internet Engineering Task Force (IETF) has not been able to agree on such a protocol, although the IETF believes it is technically feasible. Each time a new protocol is developed, the standards body must address security issues in some detail, such as the need to validate the identity of the server.

Sincerely,

Jon Englund /RM

Jon Englund
Vice President
Policy and Government Affairs

cc: Darryl Cooper
John Berresford
Royce Dickens
Joel Rabinovitz
Linda Senecal
Magalie Salas