Project Massive 1.0: Organizational Commitment, Sociability and Extraversion in Massively Multiplayer Online Games

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ABSTRACT
Massively Multiplayer Online Games (MMPs) continue to be a popular and lucrative sector of the gaming market. Project Massive was created to survey MMP players about their play experience, social experience, and communication tool usage both inside and outside of their gaming environments. 1852 MMP players have completed the online Project Massive survey, reporting on their play patterns, commitment to their player organizations, and personality traits like sociability and extraversion. The primary focus of Project Massive has been on the player groups that form in MMPs. Most MMPs support and attempt to foster group formation of some kind or another among their players. These formal player groups, often called guilds, can be as persistent as the digital worlds in which they exist. We have found that players who are highly committed to their guilds spend significantly more time in-game than do moderately committed guild members and solo (non-guild) players. Enhancing a player's commitment to their guild can translate into extending their commitment to the game world. In turn, this may result in longer subscriptions and increased revenue for the game's creators. This research is important because there has not been substantial research into the traits and practices of the more successful player organizations that are able to sustain committed bodies of members. Project Massive has investigated how these groups develop, organize, communicate, and operate across a number of independent game worlds. Here we report on our findings and describe our future longitudinal work as we track players and their organizations across the evolving landscape of the MMP product space.

Keywords
CSCW, MMP, MMO, MMORPG, guilds, massively multiplayer, persistent worlds, group formation, group maintenance

INTRODUCTION
In the 1990s, user enthusiasm for Internet based multiplayer PC games like Meridian 59 and Ultima Online hinted at the potential commercial and social impact of the Massively Multiplayer (MMP) genre. Even before that, text based Multi-User Dungeons (MUDs) captivated some gamers by offering a collaborative social experience in a persistent online world. With the

widespread availability of broadband internet connectivity, and 3D acceleration hardware, graphically intensive multiplayer online games are now developing into a sizable part of the exploding digital entertainment industry. Today in the United States and Europe, products like Star Wars Galaxies and EverQuest command audiences of 200,000 to 440,000 subscribers who purchase the client software for 30-60USD and pay a monthly fee of around 15USD to play [6]. In Korea, NCSoft's Lineage has approximately 4 million subscribers, though certain eccentricities of the Korean market (e.g. public availability of games in internet cafes or 'PC baangs' and divergent subscription models) make the numbers difficult to compare to the US. What is clear is that MMPs, or perhaps interactive entertainment product offerings based on MMP design conventions show continuing potential as major sources of entertainment for consumers and income for developers.

Game developers have built several MMPs such as Star Wars Galaxies, Dark Age of Camelot, EverQuest, Ultima Online, and the Asheron's Call series, where several thousand players can simultaneously join in a persistent gaming experience in a world that exists even when they aren't playing. Participation in these "worlds" allows players to build social relationships with other players, which often develop into organized collaborative groups, called guilds.

Yee's series of surveys of Everquest players found that social interaction was the primary reason for playing [8,9,10,11]. As gamers shift from solitary gaming experiences to massively multiplayer online role playing games (MMORPGs) and join or consider joining organized in-game groups called guilds, interesting questions arise about the creation and maintenance of these virtual communities and their impact on the players. For example, do players develop and maintain their guilds using tools provided by the game developers, through external tools like the World Wide Web, or through a combination of these things? How does using these tools relate to commitment to the guild? Finally, can a description of how players use tools to support their guild help developers improve the design, administrative policies, and actual code of their games?

The growth of the online multiplayer game industry brings with it a large number of new players on a daily basis, providing both potential revenue and administrative headaches for the developers who maintain MMP worlds. The premise of this paper is that proper implementation of Computer Supported Collaborative Work (CSCW) tools to support group formation, maintenance, and coordination promises to positively affect both the player's experience and the developer's bottom line.

EXISTING CSCW TOOLS IN MMPs

Reading web forums on the topic of multiplayer online games indicates that players frequently use common CSCW tools external to the game itself to coordinate group activity. Tools such as instant messaging, chat, bulletin boards, and email are employed by members of player organizations to communicate with other members. Increasingly, developers integrate these facilities into the game world to eliminate the need for external systems. Currently, the most commonly found in-game facility is a configurable chat client. What is not currently available, however, is some form of graphical user interface (GUI) based instant messenger or "click and send" chat. Instead,

command line based chat clients seem to dominate, probably because they are easy to develop and consume few system resources.

Currently, most MMPs attempt to foster some type of group formation among their players. One basic technique employed to encourage cooperative play is the amplification of in-game difficulty such that quests cannot be completed alone. In addition, developers employ other design methods to encourage player collaboration and organization. These include item-crafting systems that encourage reliance on other players for materials and character class designs that require collaborative play in order to assemble all of the necessary skills for successful adventuring (e.g. healing, spell casting, melee fighting, and "crowd control"). Many player groups, like the environments they operate in, are persistent from one playing session to another. Developers have given different names to these officially organized, often large, player groups: player organization, org, allegiance, etc. These terms are essentially synonymous with "guild," the term we will use here.

Since there is some evidence that participation in guilds enhances players' enjoyment of the game, it seems logical that guild membership would increase player commitment to the game as well [8, 9]. This enhanced commitment could translate into more time online, lengthier subscriptions, and more revenue for the game's developers and publishers. Therefore, developers should be interested in supporting the formation, operation, and maintenance of guilds as a central pillar of the player community.

Members tend to feel more group loyalty when they think they are making a distinct contribution, recognizable by the other members of the group [1]. To support this enhancement of group loyalty, some games display the exploits of guilds and individuals within them to the game community, though near real-time websites maintained by the game's developers. An example of this, the Camelot Herald, was created for the game Dark Age of Camelot, and can be seen at www.camelotherald.com. The data generated by the game servers that is used to populate the Camelot Herald is also made publicly available via XML for the use of the Dark Age of Camelot community in their own personal and guild web sites. A number of developers are also considering ways to send game information to wireless handheld devices, opening up a whole new level of contact with the game world while away from the computer. As of this writing, this capability has yet to be utilized in any of the major commercial MMORPGs.

Finding a group to play with (i.e., a non-persistent group of players that usually lasts no more than a single play session) is a time consuming and inefficient task with which all players are faced at the beginning of each session. Various techniques and systems exist throughout MMPs for finding a group. "Wander and team" is a technique in which players move about the game world and approach other players or groups of players, asking if they would like to team up. "Player-lobbying" is a technique characterized by players going to a busy common area in the game world and looking for other players who are interested in forming a group [5]. Both methods are quite time consuming and inconsistently fruitful, taking away from the overall gameplay experience. To improve this aspect of the game, many online games include systems that directly support finding other players who want to group. LFG (looking for group) and recruiting systems like those employed in Dark Age of Camelot are designed to increase the efficiency of the process. LFG functions allow players to announce their desire to group in rather conspicuous ways

(e.g., placing the letters "LFG" above their avatar's head). Integrated group recruiting systems allow players to announce their desire to group and specify the types of players with whom they wish to group. Of course, group-finding tools provide little value if players do not use them, a common problem in many of the MMPs offering these enhanced group finding functions.

There has been little research addressing how guilds communicate, and which methods of communication are most effective in supporting group activity. At the guild level, the most commonly available techniques are tools such as guild membership tags that increase awareness and visibility of guild members in the environment and guild-only messaging systems that reach all guild members currently online. Given these limited facilities, many guilds use external tools like guild web pages, message boards and listservs to communicate. We are interested in how these tools enable groups to transcend physical, social, and geographical boundaries. In addition, we are interested in how these tools influence player behavior, in terms of group socialization, retention and commitment to a guild and to the game itself [2, 3, 4].

METHOD

We used several methods to investigate the use of CSCW tools in MMPs. The first three authors of this paper have spent over one thousand hours of participant observation, playing eight MMPs and interacting within their social structures. We conducted a "ride along" observation session with an existing elite guild. During the ride along, we were able to observe the activities of experienced players as they logged on, grouped and adventured together. We also conducted fifteen in-depth interviews with experienced MMP players. These activities not only served to illuminate the topic area, but also allowed us to create a focused survey instrument that we deployed on the web during the Fall of 2002.

Long-form Interviews

We conducted fifteen one hour interviews with members of guilds in the game Everquest. The findings from these interviews were used to create the fixed responses for the web-based survey. During the interviews, we found that fun and social interaction were the two most common motivations for MMORPG play, and that most players interviewed played upwards of 20 hours per week. We also found that most players we interviewed had 10 or more alternative characters in addition to their primary character or "main." These characters were used for a wide variety of functions, from excess equipment storage to experimentation with other character classes within the game.

The players we interviewed all belonged to guilds with greater than 20 active members, and they often played in groups with members of their guild. However, they also played in groups with players who were not of their guild. Players used a wide array of tools both in-game and out-of-game to communicate with other guild members. These tools included email, instant messenger, web forums, and standard telephony. The respondents were largely satisfied with the in-game tools provided by the game developers, despite shortcomings they identified.

In-game voice communication was not used by any of the players interviewed, but was identified as something they would be interested in having included in the in-game tool set. Currently, voice communication is made possible by third party applications that are wholly independent of the actual game code.

An example of one such application is Roger Wilco, a voice-over-IP program available at www.rogerwilco.com.

The players reported that their guilds did pre-plan various cooperative game activities (e.g., a campaign to defeat a fearsome monster). When guild members missed these organized activities, most respondents reported that they knew about the activities but were unable to attend because of conflicts with "real life" commitments. This finding seems to indicate that the individuals we interviewed and the guilds to which they belonged made efficient use of existing coordination tools.

All respondents expressed a high level of commitment both to their guild and to their game world. They also seemed to agree that the social commitment to the guild enhanced their commitment to the game, making them more likely to continue their subscription.

The Online Survey

We created a web-based survey in order to expand the reach of our investigation. Building on the information collected during the interview phase, we developed a 69-item survey, and posted it on the World Wide Web at www.projectmassive.com. The web survey was multiple-choice in format in order to enhance user approachability and ease data processing and analysis. However, the survey also provided respondents the ability to enter free responses when the choices provided were not satisfactory.

Recruitment of users for this phase of the study took place online via posts to web forums and direct recruiting within Ultima Online, Everquest, Dark Age of Camelot, Anarchy Online, and The Sims Online. Respondents were contacted via posts on forums and web pages, both game specific and devoted to the MMP community at large. In addition, some in-game recruiting was done via word-of-mouth techniques like broadcast chat. As an inducement, players were told that one in every hundred people that completed the survey would receive three months in their game of choice for free (~39USD). Project Massive's online survey has collected a wealth of information on the games, guilds, and players that populate the MMP space. This paper summarizes some of the more interesting discoveries. We invite you to visit www.projectmassive.com for additional results from the survey.

RESULTS

1836 respondents between the ages of 12 and 68 (M=27) completed the online survey. Males comprised 90% of the sample, with 187 female respondents participating. The distribution of respondents by the game that they reported playing most is displayed in Figure 1. Since only 10 players each from Ultima Online and Asheron's Call participated in the study, results for these two games will not be discussed any further. The large proportion of Everquest players in the sample is reflective of both the game's popularity and the fact that many of the web forums to which we posted catered to a collection of MMPs which almost always included Everquest.

Figure 1: The number of respondents shown by their most frequently played game.

Figure 2 is a plot showing respondents reports of the amount of time per week they say they spend playing their preferred game. Everquest, Dark Age of Camelot, and Anarchy Online players all reported playing for an average of 15-21 hours per week, the equivalent of a half-time job. The distribution is skewed to the right, with a sizable minority of players (12%) indicating they play more than 40 hours per week.

Figure 2: The average hours played per week in a player's most frequently played game.

A series of questions asked respondents about their various motivations for playing MMPs and the primary reason for maintaining their ongoing subscription to their most played game. Thirty-nine percent of the players reported that the social experience was their primary reason for playing; this motivation did not differ by gender. Figure 3 shows the responses to the item about the player's main reason for maintaining an ongoing subscription to the game. This pattern is to be expected, as maintenance of social contacts is touted as the main reason for play less often than fun and character growth, arguably the two central tenets of role-playing gameplay in general, be it single player or multiplayer.

Figure 3: Main reasons for on-going subscription to an MMP

The pattern in Figure 3 was similar across the three games for which we have data, suggesting not only the importance of the social experience, but also a good consistency in the motivations of players in this genre. It is troubling that 10% of the players report addiction as their main reason for continuing to play. However, a discussion of addiction and MMPs is beyond the scope of this article. For a discussion of MMPs and addiction, please see Yee's *Ariadne* [8].

Communication

Approximately 83% of players reported that in-game communication was enjoyable. The respondents indicated that they frequently used all of the major varieties of chat (Broadcast, Guild, Group, and Private). In contrast, digital voice communication (e.g., voice-over-IP), conference calling and person-to-person calling were almost never used. It should be noted that at the time of this writing, no major MMP release has contained native voice communication in its client. However, several existing third-party applications including Roger Wilco and Microsoft Voice Commander enable voice over IP sessions to run in the background during gameplay. Again, these products were rarely used.

When asked about the content of their in-game communication, the primary reasons for it were the exchange of support and advice (77%), social exchanges / small talk (77%), and coordination and scheduling of activities (76%). In contrast, fewer respondents reported talking about sharing personal experiences (53%) and dealing with group management issues (58%).

With respect to communication outside of the game environment, respondents were asked which modalities they have used and the frequency of use for each. Message boards were both the most widely and frequently used method

of out-of-game communication. This result reflects the prevalent use of guild web pages and game forums as the medium for player communication outside of the game world. While used less frequently than message boards, players also reported frequent use of instant messenger programs and email in their efforts to communicate with fellow players outside of the game.

Sixty-nine percent of respondents indicated that they communicate outside of the game with fellow gamers. Like in-game communication, out-of-game communication was primarily used for coordinating and scheduling activities (57%), exchange of support and advice (55%), and social exchanges (53%). These percentages are lower than those obtained for in-game communication, because 28% of the respondents reported that they had no communication outside of the game with members of their guild. Out-of-game discussion of group management issues was practiced by only 28% of the sample, suggesting that these duties are often handled by a subset of individuals within each player organization. The slight reordering of these responses in the out-of-game context reflects the asynchronous nature of message boards and email, two of the most used out-of-game tools. The synchronous, or real-time, nature of the in-game communication modalities makes them slightly better suited for social exchange and provision of advice than the more latent out-of-game tools.

When asked specifically about the out-of-game communication modality used to coordinate times for play, message boards (60%) and the guild's "message of the day" (58%) were the most common responses. A "message of the day" (MoTD) is a 2-3 line message that members of a guild see each time they enter the game. It is often set by guild leadership and contains the dates and times of planned activities. Guilds seldom used email (34%), and IM (23%) for this particular purpose.

When offered a list of various enhancements they would like to see added to MMPs in the future, 40% expressed desire for a speech-to-text function that would reduce the amount of typing necessary to carry on a conversation. The ability to send some kind of sound event to a fellow player's computer in order to wake or alert them interested 48.5% of the respondents. Everquest already has a limited facility for doing this. Finally, 63.9% of the players would be interested in a more robust automated logon alert system similar to that found in conventional instant messenger "buddy lists."

The Guilds

Seventy-eight percent of respondent reported that they were members of guilds. Respondents who were members of a guild played more hours per week (M=15 hours) than those who did not claim membership (M=11 hours), $t(1804) = 7.56$, $p = .000$. Because this is a cross-sectional survey, the direction of causation in this relationship is not clear. One can argue that guild membership encourages more play. However, people who play more hours have more opportunities to discover and join guilds.

The average reported guild size across Dark Age of Camelot, EverQuest, and Anarchy Online was 41-45 people. However, players from all three games expressed the belief that a larger guild of 61-75 members would be "ideal." The players reported that their guilds staged pre-planned activities, often called raids, 1-2 times per week.

When asked whether they have ever changed guilds with their main character, 50% say that they have. Interestingly, this indicates that half of the respondents have remained members of the first guild they joined. Of those reporting having left a guild, 40% indicated that their departure was due to personal differences with the members or leadership of the guild. Further, 76% of respondents indicate that they would not seek to join a different guild in the future. Taken together these numbers suggest either strong commitment to the current guild or inertia in finding another.

With respect to recruiting practices, 26% of respondents reported playing with members of their guild on three or more occasions before being invited to join. Playing with members of the guild once or twice before being invited was reported by 23% of players. Only 8% of guilds report having universal initiation privileges where anyone in the guild can invite and initiate new members. Sixty-three percent of respondents indicated that initiation privileges are restricted to high-level officers. The remainder reported that their guilds practice a more relaxed hierarchical system where lieutenants or non-executive recruiting officers have the ability to recruit new membership.

Thirty-six percent of respondents reported that they joined their guild because several of their friends were already members. Another 25% reported joining simply because they were invited. Only 10% reported that their decision to join was made after performing research on the prospective guild's success and reputation.

Fifty-four percent of respondents reported that they group and play with strangers at least once per play session, rather than seeking out guild members or other online friends. Only 2% indicated that they would only play with guild members and will not group with strangers.

Commitment to the Guild

We included an adaption of Mowday et al's Organizational Commitment Questionnaire (OCQ) in the online survey to measure the degree to which individuals felt committed to their guild. The OCQ consists of fifteen Likert-type items containing statements about their guild, which the respondent is asked to rate on a seven point scale from Strongly Disagree to Strongly Agree. The OCQ total score is derived by summing the numeric response to each statement (5 items are reversed) and dividing by 15, the total number of items. The resulting number is thought to index the degree to which an individual is committed to their organization. Though the scale was developed to index commitment to work organizations, we needed to make only minor alterations to its wording to fit the MMP domain. The scale is highly reliable, with a Cronbach Alpha of .91. The mean OCQ score of 5.3 out of a possible 7 indicates that players on average felt "somewhat committed" to their player organization.

There were no significant differences in OCQ score among guilds. That is, a one-way analysis of variance (ANOVA) predicting players' OCQ scores by guild shows no significant effect for guild. The failure to find guild effects, however, may be a result of low statistical power in the analyses. Although the sample is large in terms of individuals, it presents only 34 guilds that contributed three or more respondents. This small sample of guilds limits our ability to see whether strategies adopted by different guilds influenced member commitment. It is also possible that the organizational Commitment Questionnaire, which was

designed for use with work groups, might not fully index commitment to a "play group" like an MMP guild. For future phases of project Massive we plan to develop and include alternative measures of organizational commitment that might be better suited to this population.

Because there were no differences among guilds in average organizational commitment, we used linear regression at the individual respondent level to examine whether the tools a particular player used or features of that player's motivation predicted commitment to his/her guild. The five variables in Table 1 can account for approximately a third of the variance in OCQ score (adjusted R-squared of .322). We acknowledge at the outset that relationships we uncover using individual-level data may reflect either features of the guild (e.g., players are more committed to guilds that preplan raids or use email to communicate with guild members) or perceptions and behavior of individual players (e.g., players are more committed when they perceive their guild as preplanning more raids or when they use email to communicate with guild members).

Model Attributes
The proportion of guild members in a player's play groups
The frequency of preplanned guild activities
Motivation to play MMPs as a way to interact socially with online friends
Frequent use of Email to contact group members OUTSIDE the game
Frequent use of Message Boards (web) to contact group members OUTSIDE the game

Table 1: Five attributes associated with higher OCQ scores

Table 1 shows that the social character of game play and out-of-game communication both contribute to players' commitment to their guilds. In terms of the social character of the game, players were more committed to their guilds if guild members comprised a higher proportion of the group they played with, and if they played MMPs as a way to interact with online friends. In terms of communication, preplanned guild activities and the email and message board communication often used for planning these activities, predicted commitment. As we observed in the communication section above, preplanning of play activities is the primary type of out-of-game communication and the second most common content type for in-game communication. The organizational practice of preplanning can be seen as an enabling factor for playing in groups comprised of a high percentage of one's online friends. It should be noted that these social and communication factors are likely to operate cyclically as they enhance the play experience. Simply, if scheduling an event on a message board results in an event where a high number of guild members participate and enjoy themselves, then such a paradigm is likely to repeat itself with greater frequency in the future. At the same time those participating in the event are likely to experience increased motivation to play with the members of their organization based on their enjoyment of the previous experience.

Based on a cross-sectional survey, we cannot determine the causal ordering among the variables we have examined. We do not know from these data if

players are committed to guilds because they use the out-of-game tools, or whether they use the out-of-game tools because they are committed. Similarly, we do not know whether guilds' frequent hosting of pre-planned events gives rise to high usage of email and message boards, or whether the use of these communication tools facilitate group coordination in such a way that makes pre-planning possible. We suspect, however, that communication and guild commitment are reciprocally caused. Participation in the guild community via email and message board postings will enhance one's commitment, while, at the same time, commitment will lead to more communication with the group.

Contrary to our expectations, the way in which players come to join their guilds had no relationship with commitment to their organizations as measured by OCQ score.

A player type variable was created that divided the sample into three categories: highly committed players, average players, and uncommitted players. Committed players were those members of guilds whose OCQ scores were one standard deviation above the mean or higher (OCQ over 6.33). Average players were those players with OCQ scores within one standard deviation from the mean (OCQ between 4.33 and 6.33). Finally, uncommitted players were those players with OCQ scores more than one standard deviation below the mean (OCQ below 4.33). We predicted a linear trend in the play hours data in which committed players would play more than average players who would play more than uncommitted players. Both the ANOVA ($F(2,1317) = 29.17$, $p = .000$) and the contrast test of the predicted trend ($t(1315) = 7.28$, $p = .000$) were significant. Committed players reported playing 18-24 hours per week while average players reported playing 12-18 hours per week. Uncommitted players reported playing 10-12 hours per week. Players who are committed to their player organizations play more than those who are not. Again, the causal ordering of these factors is not determined, but their relationship is strong and predictable.

Sociability and Extraversion

Sociability was measured in two ways: a "schmooze" scale and a group activity scale. The schmooze scale consisted of six items, five asking about frequency of certain "real-life" social activities and one asking for degree of agreement with a statement about spending time with friends. The scale for group activities consisted of two of the activity-frequency items and three statement-agreement items, again indexing "off-line" activities. The extraversion scale consisted of five statement-agreement items. The total score for each scale were calculated in the same way as the OCQ by summing the ratings for each item and dividing by the number of items. No statistically significant differences existed between guild members and non-guild members on the sociability or extraversion scales. However group activity scores of those individuals who reported playing by themselves and not joining groups were significantly lower than those obtained from players who reported grouping ($t(1245) = 4.134$, $p = .007$). This result suggests that the online gaming behavior of these primarily solo players parallels their real-life behavior with respect to the frequency with which they engage in group activities.

Migration

The MMP game space is constantly evolving with the release of new products and sequels with advanced graphics and enhanced in-game functionality and gameplay. Maintenance of guilds as social entities is challenged by the pull of new releases and alternative experiences. The question of whether a guild's existence is tied to the game world in which it exists or is centered around the social relationships created between the players themselves might be answered by the plans and interests of the group to move as a unit to new games.

When asked about whether or not their guild was planning to form a chapter in one of the upcoming new games, 18% of the respondents reported that they were. A large proportion of the respondents (47%) said that they would move to a new game on their own without the involvement of the guild. Eighty-one percent of respondents reported that their guild seldom, if ever, discussed plans to migrate to new games.

Only 6% felt it likely that their group would eventually move as a unit to a newer game, while 45% of the respondents predicted that their guild would probably stay in the current game rather than move.

This indication that players think of their guilds as entities that will persist in their current game world indefinitely is supported by the fact that 65% of the players reported that they plan to maintain their current accounts indefinitely and 70% plan to play their current game at least one to two times weekly even after beginning to play other games. These estimations of future behavior will be evaluated in later phases of this research as longitudinal techniques are employed to evaluate the effect of new releases on the play patterns and group maintenance of MMP players and their guilds. We expect that the attractiveness of newer game worlds and play experiences as well as the time and financial commitments associated with participating and progressing in multiple MMPs will challenge players' commitment to their current games and established guilds.

FUTURE WORK

In the next phase of Project Massive, we will follow up with the respondents who participated in the first survey to see how their play experience has evolved. We plan to use longitudinal techniques to observe these players and their organizations as they choose between maintaining their existing game accounts and moving on to new products in the MMP space. We also plan to track whether the player organizations move on to new products as large units or as smaller groups, and whether they remain in contact with one another once they become split across games. Finally, alternative measures of commitment will be included to augment the OCQ.

The effect of new, more robust tools on the creation, operation, and maintenance of guilds will be of principle interest moving forward. We encourage developers to provide turn-key facilities to their player organizations that support web presence, forums, and out-of game email facilities. A noteworthy step in the right direction is Star Wars Galaxies' fairly robust in-game email client. Placing the proper tools such as this within easy reach of the player community will enhance their ability to create consistently reinforcing experiences in which they are able to plan to play together frequently and then execute those plans with a high percentage of familiar players in attendance.

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