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Abstract

“Mobility Gaming” entails research done on how the social interaction within MMOG / MMORPG can be brought into a mobile context. The central issues in the research how MMOG players communicate and interact with each other today and how it can incorporate user mobility. Based upon this the research is focused on how the connection between non physical space, game world, and the physical space can be interconnected to enable the interaction to still occur. A prototype environment is created in which the user interaction can be tested and experienced. Cellphone and PDA clients have been developed alongside a server service to facilitate user based testing within this environment. The research done during this thesis have shown me that the user desires to reach each other is a very viable but not developed area for interaction within game environments.

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Introduction

“Humans are inherently social: they live together, work together, learn together, play together, interact and talk with each other, and socialize.”(Preece, Rogers and Sharp, 2002).

We, the human race, are social beings that enjoy the company of others. Normally this socializing occurs in the physical space but in today's society this has branched into the non physical space of internet. Firstly we had the phone that made communication of longer distances almost instantaneous and is now a very common interactive appliance. The phone has some drawbacks mainly that it's confined to the connection to the phone line. This was “solved” with the adoption of cellphones in our everyday life. The cellphones provided us with mobility and instantaneous social interaction without the hindrance of physical space.

Games have been around as long as humans. To “play” or participate in games is a social activity as most games require at least two participants to be playable. This social behaviour of gaming has followed into the computer era. Many times friends gathered around the entertainment system or the computer to play games. With the availability of internet connectivity and the games with the ability to play over the internet, the social interaction once again, just as with the cellphones, broke the physical space barrier for gaming.

With the possibilities provided by internet and the advancement of computing power available to the common user the gaming industry provided the players with larger and larger multiplayer games until what we see today with Massive Multiplayer Online games (MMO) where thousands of simultaneous players act and play in the same ever present virtual world.

MMO games in their nature are a social activity, even if you play for your self and only for your self you will in most of these game interact or interfere with other players from many parts of the real world as well as very different ambitions and ethics. *“Because the forms of social interaction that occur within a game have strong connections to forms of social interaction outside the game, it will be impossible to consider social play without straying just a bit into the realm of culture.”*(Salen and Zimmerman, 2004)

This creates a community and there can't be a community without communication between members of said community. Hence ways of communicating and interacting with other members within the community is important and this is what many find most important.

Commonly large numbers of players form up in their own sub communities, often called guilds and

alliances. Within these the need to communicate and keep in touch grows bigger as the members usually share common goals and strive to accomplish these.

“Successful MMOGameplay is cognitively demanding, requiring exploration of complex, multi-dimensional problem spaces, empirical model building, the negotiation of meaning and values within the relevant gaming community, and the coordination of people, (virtual) tools and artefacts, and multiple forms of text – all within persistent virtual worlds with emergent sociological cultural characteristics of their own” (Steinkuehler, 2004a, 2004b).

This is where a mobile device can increase the ”presence” of a player as he/she can participate within the world even though not at a computer capable of playing the full game.

In enabling communication from mobile device into the game world it opens up to enable other functions, features and tasks within the world. These are all dependent on the set world where the game takes place and its own unique rules and styles of play. Therefore it can only serve as a base of information as the game and its world would have to be designed to accommodate mobile devices with their diverse and limited set of features.

For instance Eve is very different from Lineage II as is World of Warcraft both in the set world as in the rules enforced upon the player within the world. All these different virtual worlds still share the basis of a community and their needs to communicate, if only to brag about their latest feat.

Looking back at MUD's, Multi User Dungeons, and how most of the regular players gathered around IRC, Internet Relay Chat, channels to communicate and forming communities not to unlike the MMORPG communities.

In looking at the games on the market and seeing what the users of these systems considers lacking or actually would like to have available to them in a mobile context will show where the common ground is for a general approach and based upon that approach a world can be designed to accomplish this and add it's own set of features available to the users.

The most common and well known mobile the device today is the cellphone, which leads most users to the conclusion that it has to be a cellphone to be a mobile client even though a PDA or PSP could do just as well. The cellphones does have an advantage with the cellular networks coverage compared to WLAN which other devices tends to support. The availability of cellphones, even though it's somewhat limited capabilities compared to computers, makes for a well suited platform.

Purpose

The purpose of this research is to see how to combine mobile devices with Massive Multiplayer Online Game (MMOG) / (Massive Multiplayer Online Role-playing Game (MMORPG) and their communities normally based around full featured computers. Mobile devices being designed more for casual short term gaming makes for an interesting addition to the normal computer based communication ways in MMOG and can also provide the player/user with access to a downsized feature set from the MMOG that provides the player with the social interaction within the game world as well as providing means to act within said world, with limits depending on the device used, to accomplish tasks (trading, crafting, skills and more depending on the device used).

Method

The methods used during this research are covered below but they include user discussions, questionnaires and prototype testing with users and personas.

In order to do this research I have approached the MMOG arena with a game and play style independent focus. The need to limit the scope of the research and material a game had to be selected. Even though a lot of the features and ways of playing are similar between the different games some things, besides the world, make them different.

This is mostly smaller issues, for instance how the chat system works or how the player can interact with the game world. In the end most of these small differences can be considered minor and therefore not disturbing the concept of enabling the user to be mobile, physically socializing and still maintaining his or her game world based social interaction.

In establishing the wishes and needs and desires for mobile "in game" communication I started off with informal questions to some players of EvE, see "Establishing the perceived need".

These results would form a general direction for further user involvement in the process such as questionnaires, scenarios and producing personas (appendix A, B) used to further evaluate and test decisions made throughout the design process.

With MMOGs being internet based games the players, at least in Sweden, tend to participate in these games from their own homes which presents a problem for user based testing and evaluating of design decisions. This only left World of Warcraft as a viable game to do user studies on, with the time available for this, as this is the most commonly available MMOG in internet café thus enabling the desired testing and information gathering. These players were asked to fill out my questionnaire, during which I observed the gameplay.

This meant that I as the designer had to experience World of Warcraft as a new user and participate in the socializing with a new virtual crowd. Much of the work pre-prototype have been based around discussions and watching, and to some extent playing myself, the game of World of Warcraft.

All of this feedback and input was used to form a concept for which prototyping and user testing would be conducted.

Prototyping on parts of the concept were developed for an iterative design and evaluation process while still developing the broader designs. There are several platforms that can provide the users with internet connectivity while being mobile. The most common and familiar to the users of these

are cellphones. Another common device is the PDA, these often offer internet connectivity in the form of WLAN (Wireless Local Area Network). Other devices such as the Nintendo DS and Sony PSP exist and are very capable devices, but these were discarded due to the closed development environments.

Both the PDA and cellphone development tools are readily available and provide means to package the application for distribution. The targeted cellphones support the J2Me (Java 2 Platform, Micro Edition) and the PDA support Microsoft's .NET Compact Framework architecture vastly decreasing the complexity of prototype development.

The user desires and needs were made into stakeholder requirements. Every design decision had to be tried against these requirements to find a suitable prototype. With the focus on mobile devices such as cellphones the prototypes should not put a high demand on performance and be usable in a mobile environment where outside interruptions can and will occur that lies beyond the users control.

Another part in the process of prototype development and testing were designing and constructing a solution upon which the concept would work. With no good way to connect the prototypes to the actual servers an alternative had to be designed. Thus client server architecture was implemented to incorporate the mobility of the users.

Personas and scenarios were developed to help in the design and development of the prototypes. These were constructed with to resemble the data gathered from the research and the users desires.

The prototype cycle ended with user testing and evaluation, from which the input was analysed and brought into the process to redesign and further the development of the concept.

Establishing the perceived need

To establish a starting point I had to find out what players of MMOG thought was lacking in the in-game and out of game communication mechanics and how these could be brought together within the games themselves. Thus establishing their needs and desires (cmp Preece et al, "Interaction design, beyond human-computer interaction", p 216, 2002).

Normally most if not all out of game communications rely on the use of web forums and different voice chat services like Ventrilo and TeamSpeak, though the voice communication is mainly used in direct conjunction with in game events.

There are obvious benefits and drawbacks to these workarounds, one the bigger drawbacks is the lack of in-game real time connection with for instance a web forums run by a guild on the other hand it gives the user flexibility to choose the type of software the feel suits them the best and it's also usable within other game communities the same base of players might be part of i.e. World of Warcraft and Guild Wars.

In establishing a base for further investigation within this area I posted a question on a small EvE guild (called Corporations in this game) that is part of one of the major alliances in this game universe. The players of this guild have been playing the game anywhere from 1 month and up to 3 years and in the beta of the game and the majority of them are very active within the game both in guild, alliance events and affairs.

As is common on these forums is that any name used is their actual in-game character name and therefore any references to names are not the players real name, which mostly is unknown to me.

This behaviour is normally used to enable the users to know who posted what as they are usually only known by their character name and sometimes the avatar of the character.

In trying to maintaining a general not game specific approach (hard due to the vast majority and diversity of the games available) the following is the questions put up on this forum.

Please select the top 3 things and if you can, please write a short explanation to the feature if it's not Eve and also please say something about why you want that feature.

Survey:

In , insert your favourite MMOG (and please if you play more than Eve post that as well) what features of that game would you most like to have available to you in a mobile device (Cellphone, PDA, PSP etc.).

This questions where put together to help me to determine what the more than casual gamer thought would be a nice way to make the games mobile. At this time I had not made any decisions about where this was heading. I had thought that the desire to have the game available on a mobile device would be one of the driving arguments, but it appeared that most of them weren't particularly interested in that. The first response was actually the one that influenced the concept and designs the most.

“However, one idea that would certainly interest me would be the ability for cellphones and the like to be able to connect to voice communication servers such as the ones used for TeamSpeak. The ability to connect and just have a casual chat with others in the game about whatever, would be kind of cool.” (The character Ben Derindar. VTIL forums)

Parts of the discussion between myself and the other users revolved around what other parts, besides this baseline desire to connect to the voice chat, of the game that would be interesting to have available on a cellphone. To some extent this was very game dependant but actions like management of members, organizing events and trading and producing / crafting where those that got most attention.

Not knowing the users social or educational background they appeared to have a good general knowledge regarding cellphone gaming and usage patterns.

“I don't think any mobile game designed to be a 40 hour romp would be successful. Such a platform is not practical or fun to spend long periods of time on. Look to the success of tetris or snake on phones you can play them in 5-10 min waiting for a train.” (The character Inspir. VTIL forums)

The results and specifically those shown above lead to the decision to incorporate a mobile

application to enable the social interactions of a MMOG while the user is not in front of a computer playing the game.

“The defining trait of all MMO games is the unique aspect of human interaction. Whether it’s the Sims online or EVE the ability to converse to other HUMANS about meaningful game oriented politics/issues is vital. Further A handheld device by definition is a communication device. Thus it seems only natural that a MMOG on a handheld device must incorporate a form of chat.” (The character Inspir. VTIL forums).

Inspir comment, quoted above, brought together the two of the most significant aspects within this research, mainly human interaction and mobile devices are designed for communication.

From general to specific

In the beginning of this process I aimed to keep it game unspecific. Due to the nature of online gaming and the actual user base off the different games it would be quite difficult within the given time frame to find enough players of different games for surveys and questionnaires. At the time of doing this thesis work the MMOG with the most number of subscribers world wide is World of Warcraft. This is the game most commonly found at internet café and similar establishments thus the choice of game specific research had to be within the World of Warcraft environment. In choosing World of Warcraft as the specific game the need to accustoming me to this game, as I'm not a subscribing player of this game.

Thus after establishing the perceived needs of some EvE players I set out to establish if the players of World of Warcraft had the same perceived needs.

I was fairly certain that it would prove to be the same but there might be some differences due to game mechanics.

The fact that World of Warcraft is spread out on several different servers which each are it's own world where as EvE is a single universe where every player takes part and affects the same game world could also be a factor

Not being a player of World of Warcraft I decided to spend time watching seasoned players to observe the game. During this observation I informally asked questions regarding game play and relating them to similar features in EvE, as this is my MMOG of choice. Some comparison where done with the newly released Dungeon & Dragons Online. These comparisons where done to get a better understanding of what areas of the games that could be incorporated while keeping game

unspecific in the conceptual design of the overall solution. For different reasons, such as intellectual property and copyrights, it can't be connected to any game in production. Another factor in these comparisons is to try to think outside the box that is social interaction within MMOG.

With a basis for the game play established a questionnaire was designed, appendix A, to look at player specifics within the game environment as well as desire to use the features discussed in a mobile environment.

As stated earlier World of Warcraft is one the games with the most available player base as the game is present in virtually any gaming establishment or internet café. One part of the questionnaire was aimed at World of Warcraft features to establish the desire to use that exact feature and if it might enhance their experienced game play. I wanted to establish if the players had any experience of playing games on cellphones. The actual testing as well as observation of their game play was conducted at a gaming establishment called "Gamers Paradise" which is open 24 / 7.

While there I got to watch some of the players participating in a raid, which I unfortunately could not question them about as they were quite occupied with it, but it showed the inherent need for voice communication and where the benefits of a mobile solution enabling interaction with the group running the "raid".

This questionnaire would serve to show the actual usage of voice communication as well as to establish the usage of cellphones as a gaming platform. We already know that cellphones are an ever present communications tool. While the players were filling out the questionnaire I spent time watching their game play as well, all to gather a better understanding of how they tend to play. In this case most of them played in small scale questing or raiding with only two to five characters.

I spent time talking to the players about different aspects of this concept of mobile communication within the game and how that could be used and in talking about this I got a better notion on the reception of such a solution and the underlying, although not always recognized, need and desire to communicate with in game persons as well as to manage tasks that normally takes time from the players active game time. Even though the actual questions do not cover the aspects of game features beyond chat and market related communication, as these are the base of it, it was very indicative towards the general attitude as well as to the adoption of such a solution and the expansion upon it that could be done.

The results of the questionnaire showed that that in average they were between 20 and 30 years and had played at least 6 months and World of Warcraft was their first MMOG. They were all

members of guilds but none of them had any administrative roles within their guild. Though some of them had the role of “noob”, a new player, and helper. A noob helper could be thought of as a teacher or trainer that helps the new player to understand and use the game mechanics to the best advantages for the chosen characters profession and direction. What they also do is organise raids and questing parties for these lower level characters.

Every one of them had played games on a cellphone but none had played any internet based cellphone game. This wasn't really surprising as games on cellphones have been around a while and almost all users try them eventually.

Regarding the more interestingly questions in relation to this thesis. There where some diversity regarding what features would be appealing to have in a cellphone application. The majority would like to have chat available to them as it is sometimes hard to get in touch with other players unless all involved are logged into the game and at their computer.

This subject was also the one that, when discussed, got the most positive feedback. I think this is because the chat is used by everyone playing the game and is the main form of in-game interaction between players.

The aspect of being able to do trading, in the auction, with the cellphone got more of a cooler response, but this can be explained by the fact that it's not “gold” that drives these players. Mostly the response was that they would check it from time to time and if something interestingly was for sale they would monitor it. It was actually only one of them that said that he would be day trading. I'm a beginning World of Warcraft player and have not covered all aspects of the game and hence can't say if it would be a doable “profession” within the game world. Though I suspect that it is indeed very doable but that it comes in a later state of the game when other means of progression is sought after.

The results of the questionnaire showed that player of World of Warcraft also would desire to be able to socialize with in-game relations even though not at their computer.

Learning to play the game

To further understand the interaction between the players the decision was made to spend some time playing the game myself.

The goal was to see where and how the communication and interaction between the entities, players and guilds, could be enhanced by a mobile solution. Though starting from nothing like all other new players there would be hurdles and time spent to get into a position where larger guild activities would become available. It still gave significant input regarding how communication within the game mechanics occurs and how this could be transferred and complimented with a mobile solution.

The choice of server became a PvP (Player versus Player) oriented realm (server) based on access to test subjects to conduct user testing in and out of game.

Other aspects to be investigated are the notions and thought of further adoptions to the mobile environment like a raid tactical command centre mode where the ones logged in via mobile devices could gather at certain time a tactical 2D view of the the area to further aid the ones in game performing the raid or quest. This can probably also be extended to include PvP situations but that would need further studies due to the game play and game balance issues this could cause.

Though a lot of the more difficult and high level content was out of reach, for my character within the game, for my study of the game I had to use the input of regular players.

World of Warcraft chat

By using the in game supported functions for interaction and communication between players and guilds the current available options was explored. World of Warcraft features a chat system quite similar to other games. Most functions of the chat and actually the general script and macro system within World of Warcraft is oriented around “/command” followed by a list of arguments.

This chat system serves several purposes, mainly to help players communicate with each other directly via shout, say and whisper and indirectly via party, local, guild and general. Further the chat system also handles combat messages though these are in a separate “window” in the default configuration.

With the focus being on this game the study of this system will serve as the basis for the clients to eliminate the need for the users to learn new syntax and way of interaction with the chat system. In World of Warcraft the use of abbreviations and specific cultural words are used in the same way as the text message system on cellphones rely heavily on abbreviations and rewriting the text in the way it is pronounced.

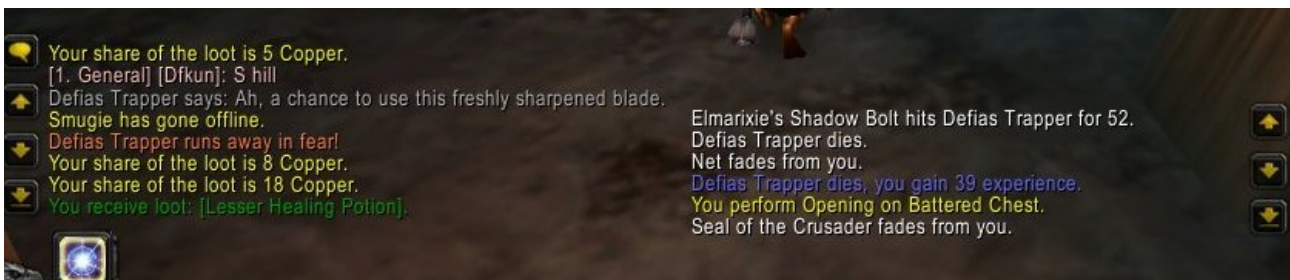


Image 1: Screenshot of 2 window chat setup in World of Warcraft

The actual chat engine could, in retrospect, certainly have used further usability testing as it is not straight forward to use even if you have played other similar games. A lot of the short commands that it relies heavily upon are not intuitive to use. Still in designing an alternate application to enable the user communication in mobile environments this chat engine had to be replicated so that the users have a system they are used to use at hand. Certain changes could be done due to the nature of text input on cellphones.

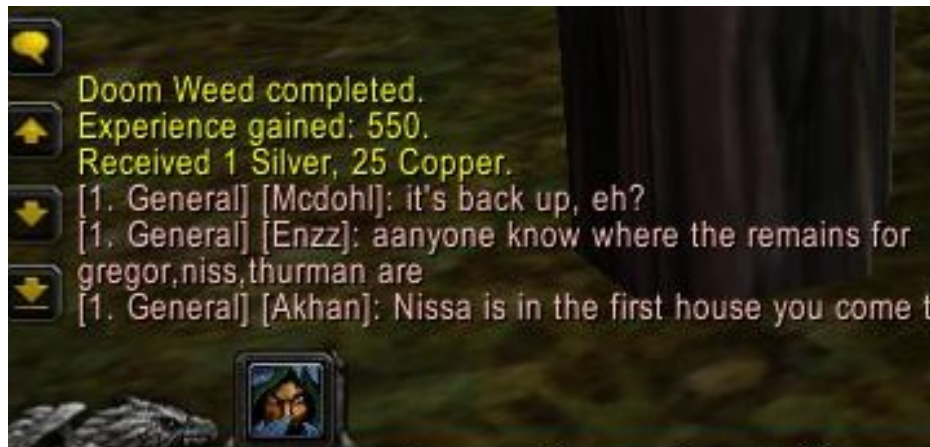


Image 2: Screenshot of default chat window layout in World of Warcraft

Using voice communications

“The work in dragon slaying is equally complex and is in fact more stressful due to time constraints, frequent crises, and management issues related to coordinating 20 to 30 players over typed chat in real time.” (Yee, 2005).

Even the most intuitive and easily used chat can't be compared to the ease which we use voice communication to convey what we mean to each other. A lot of human communications depends on the use of subtle things like tone or the stress of the voice. These things are very hard to put into a text chat within a game as the environment where many different cultural heritages. Hence the development and use of voice communications software within the gaming communities have grown to accommodate this need. The software mostly used today are Ventrilo and TeamSpeak which are primarily designed for gaming, also used is the likes of MSN Messenger voice chat and other messaging software with voice capabilities.

“In a recent survey, I asked players whether they had ever used a VoIP tool. Across the board, the results were fairly stable. About 70% of

respondents had used a VoIP tool at some point. There were minor age and gender differences. Male players were slightly more likely to have tried a VoIP tool than female players. And we see a slight decline over age. After a mild peak in the 18-22 age range, we see a gradual decrease.”
(Yee, “The Daedalus Project”)

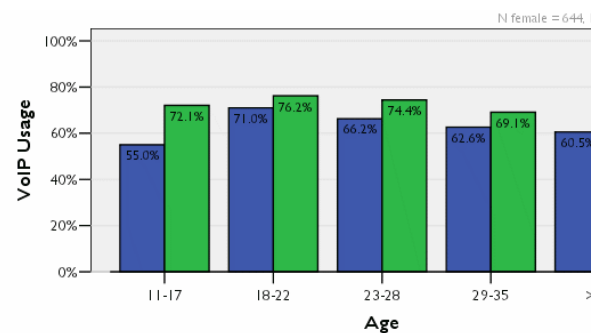


Image 3: Yee, graph of VOIP usage, The

TeamSpeak

“TeamSpeak is a quality, scalable application which enables people to speak with one another over the Internet. TeamSpeak consists of both client and server software. The server acts as a host to multiple client connections, capable of handling literally thousands of simultaneous users. This results in an Internet based teleconferencing solution that works in a variety of applications such as team mates speaking with one another while playing their favourite online game, small businesses cutting costs on long distance charges, or for personal communication with friends and family.”(TeamSpeak website)

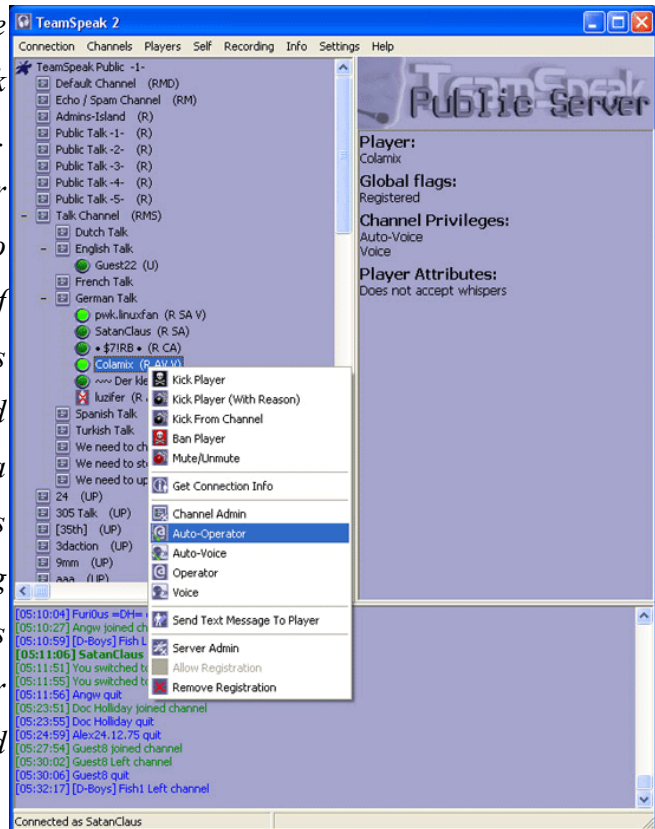


Image 4: Screenshot of the TeamSpeak client

TeamSpeak is one of the two most commonly used voice communication software used in conjunction with online gaming. The client is free to download and use but the server software needed has to be licensed. They offer two different ways to do this. The first is for non-profit entities where there is an annual license fee based upon the number of simultaneous users that should be allowed to connect. The other licensing form is for commercial entities like hosting companies, that either for a rental fee or as an added bonus offer TeamSpeak server to their customers. This latter form is very common as it removes the need for the users to handle server hardware and the bandwidth demands that comes with this form of communications.

TeamSpeak offers per channel compression settings to lower the bandwidth demands when many users are connected to the same channel. One feature that is most notably to the average user is the “Channel Command” mode. This mode enables users with this activated to speak to each other and even between channels. A good example of this is when several smaller groups of players engage other players in combat, where coordination of forces is needed.

Ventrilo

“Ventrilo is best known for it's superior sound quality and minimal use of CPU resources so as not to interfere with day to day operations of the computer or during online game competitions. It is also preferred for the simple user interface that any first time computer user can very quickly learn because the most commonly used features are immediately visible and can be activated with a single click of the mouse.”(Ventrilo website)

Ventrilo is just as TeamSpeak a voice communication application. The client is also free to download and the server comes in to flavours, one “Public” which is free to use as long as it's used within the license regulations. The other is the “Pro” version which is directly aimed at hosting companies.

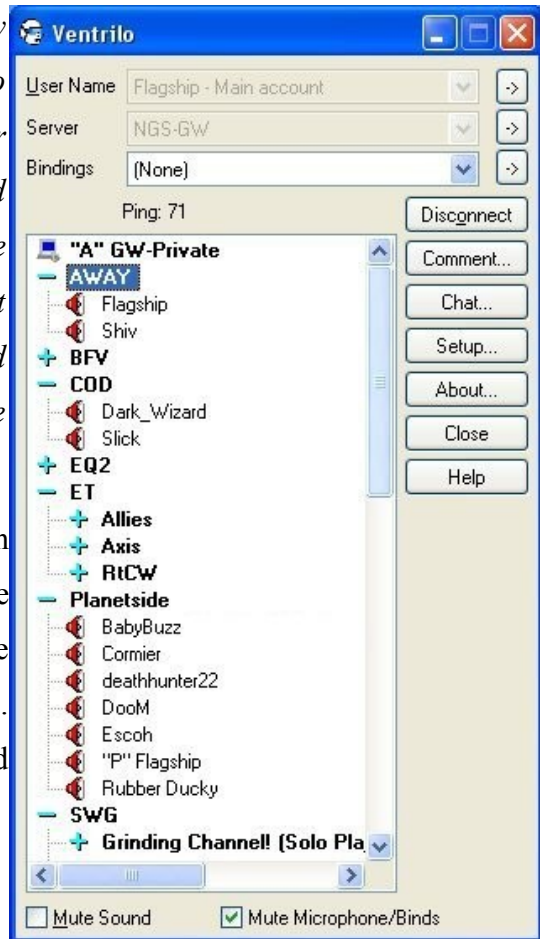


Image 5: Screenshot of Ventrilo client

Ventrilo is perceived by many users as the application which, just as they state on their web page, the voice application with the best sound quality. While the general conception is that Ventrilo lacks some of the features that TeamSpeak has.

Within my experience it appears that Ventrilo is favoured for smaller groups of users and its feature set is geared towards this.

Both these applications are essential tools for most of the MMOG players that are at least part of a community within the game worlds. A lot of communication and discussion are handled with the help of these applications as it would just be too cumbersome to do it via the game clients built in chat.

Using other resources of communication

Due to the very nature of MMOGs, and the in most cases global user base, the need and also the use of out of game communication facilities are heavily relied upon. Most commonly used by both the game publishers and the community alike is web forums as these overcome the problem of time zones and are not dependant on real time communication between the users. They also serve as an excellent place to publish help guides and other kinds of persistent information. *"Fan sites receive millions of hits a month from players because they contain strategies, guides, and their own forums in which players and guilds participate."*(Stalzer. "Massively Multiplayer Game development 2").

Further the use of mailing lists and email can serve to deliver news and to some extent keep the out of game communication flowing to all of the community members. When real time communication is needed out of game most of it can take place over voice chat or through a chat network like IRC where many games have channels under official or at least fan based control also guilds set up their on channels on these networks.



	Topic	Author	Replies	Reads	Last Post
📁	Sticky: Blasters balance post with pictures and stuff Pages: 1 2 3 4 5 6 7 8 9	Tuxford	243	11300	2006.05.09 18:14:00 by: Jin Entres
📁	Sticky: Blasters, artillery and more Pages: 1 2 3 4 5 6 7 8 9	Tuxford	265	15485	2006.05.09 17:41:00 by: LUKEC
📁	Sticky: A Guide to Missiles Pages: 1 2 3	TomB	69	19878	2006.05.08 18:49:00 by: Wesley Harding
📁	Sticky: A Guide to Turret Tracking Pages: 1 2	TomB	52	26946	2006.05.04 11:53:00 by: Roerny Schneider
📁	Sticky: Ship/Module Guide Index	Lomithrandra	5	75103	2006.05.08 16:31:00 by: Commander Ashik
📁	Sticky: QuickFit - Offline Ship Fitter Pages: 1 2 3 4 5 6 7 8 9 ... : last (10)	Rahzelk	291	82263	2006.05.08 20:45:00 by: Tictacticus
📁	Sticky: EW Pages: 1 2 3 4 5 6 7 8 9 ... : last (21)	TomB	624	35372	2006.05.09 06:16:00 by: Spacehulk
📁	Sticky: Ship Setups Index	Jorauk	22	15924	2006.05.09 17:03:00 by: Xori Ruscuy
📁	how to get hold of t2 BPO	TheTaintedOne	5	48	2006.05.09 19:36:00 by: Del ReyII
📁	Ultra-violent lewt - What happened?	Ithildin	23	1010	2006.05.09 19:35:00 by: Xelios
📁	my issue with cake pricing, k	keepiru	29	533	2006.05.09 19:33:00 by: Gronsak
📁	logistic cruiser skill requirement! NERRRRRF Pages: 1 2	Gronsak	41	1409	2006.05.09 19:27:00 by: Cadman Weyland
📁	Quick Qu about killing Freighters	BlackPulsar	4	54	2006.05.09 19:24:00 by: Ithildin

Image 6: Screenshot of EvE official forum

The forums are not real-time in the communication thus a good place to leave messages or posting

information where no immediate response is required or even wanted. In short a good place to gather information about events and the game world.

The voice communication is needed to full fill the gap in ways to express that the text based chat leaves the user with, also it's less demanding to speak out than to type it.

The major drawbacks with these are that they are restricted to the PC and mostly to the one used for gaming. Forums are accessible from most internet connected devices but seldom adapted for mobile devices. These factors leave a void that can be filled.

Concept

Always with you. One of the most interesting aspects of the phone as a game platform is that you are never far from your phone. MMOGs are very social games that revolve around player communication and interaction, and the social aspects of MMOGs can be enhanced for phones by supporting more regular, but shorter, visits to the game world. (Tommy Palm. Gamasutra)

The concept developed is to enable social interaction between players of a MMOG, while parts of them are not in the game themselves, rather they are being within a mobile context. Connecting to the service with a mobile device. Common communication channels available to the players are text and voice chat.

“After many weeks of watching I found myself interested in the interactions between people in the game, it was totally absorbing!!!! The fact that I was able to immerse myself in the game and relate to other people or just listen in to the 'chatter' was appealing. [DAoC, F, 34]” (Yee, “The Daedalus Project”)

Software design

Working with devices with limited processing power and sometimes unreliable connection and connection speed sets requirements upon the design. The requirements made for the design focusing on real-time communication in the form of text and voice chat.

Another factor in the design of both the interaction and the application is the constraints imposed by the form factor, the screen real estate and input methods. In this aspect there is a wide spectrum of devices between the basic cellphone and the advanced PDA. Most of the cellphones share roughly the same size of screen as are the screens of most modern PDA.

In order to create the prototypes some assumptions with regards to the form factors had to be done.

With the limits of the screen and input methods efforts were put in to enable the users to participate effectively in chat session, here the PDA could prove to be the superior platform due to it having stylus and some models have keyboards.

With the concept focusing on direct communication and mobility there was a need for a protocol cope with this. The protocol also had to easily be adapted for the target platforms. The software solution had to be client server as this is how a final product would work, as it either would be connected to the producers system or as a third party solution connected to the game servers. *“UDP is faster and more efficient for many lightweight or time-sensitive purposes. Also its stateless nature is useful for servers that answer small queries from huge numbers of clients.”*(Wikipedia). The choice of UDP (User Datagram Protocol) was made to ease the connection handling in the code. Designing the protocol focused on keeping up the flow of traffic and enabling for more than text communication. An important aspect for the solution that had to be designed into the solution was the handling of disconnects and sessions. Further the often time limited bandwidth available to the user while the user is mobile had to be considered in the design of the protocol.

At its current state the protocol does not handle it, not needed for the prototypes yet, but the design is implemented and it would be session based. The session would be built up from several keys, one of them being the users account. This would enable interruptions like incoming calls, sudden drop of connectivity to occur while still maintaining a quick way for the client to reconnect and continue its session. The prototype implementation handles a limited session but primarily it can handle the separation of audio and text based chat, even though not user tested yet. This would be the next iteration of test with users.

Client design

Designing an application for a cellphone is demanding at the best of times. In order to avoid many potential pitfalls, the design aimed more for direct functionality within the given environment and its own limitations. With the processing limits of the now commonly used and available cellphones a clean and simplistic user interface was designed.

”The Dalai Lama once said that simplicity is the key to happiness in the modern world. This philosophy can be adapted into the realm of web design and digital interface design.”(Almqvist Par, ”Keep it simple, stupid”)

The focus was to enable text based communication between the cellphone users and in game users and this is reflected in the user interface. Using a limited feature set presented the testers with an opportunity to provide feedback and feature

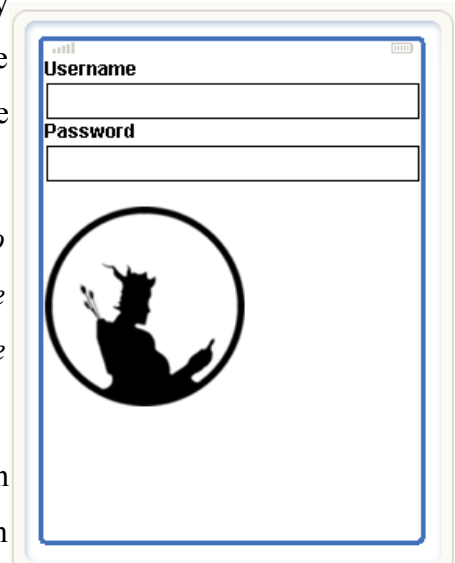


Image 7: Cellphone Login screen

request as the prototype doesn't appear finished or almost finished. This approach enabled the testing of the applications usability in the given context. Another aspect is that cellphones and their different support for the J2ME (Java Micro Edition) environment makes it time consuming to have a more advanced user interface that would provide the same look and feel across several different models.

This bare user interface was and its functions where tested in several iterations with both personas but primarily. In Interaction Design, beyond human-computer interaction they state that best way to ensure that the development stays on track with the users needs is to involve the user. (Preece et al. 2002).

The PDA (Pocket Digital Assistant) provides more freedom when designing the user interface with its larger screen and more powerful processing power.

Still much of the actual design is the same as the cellphones.

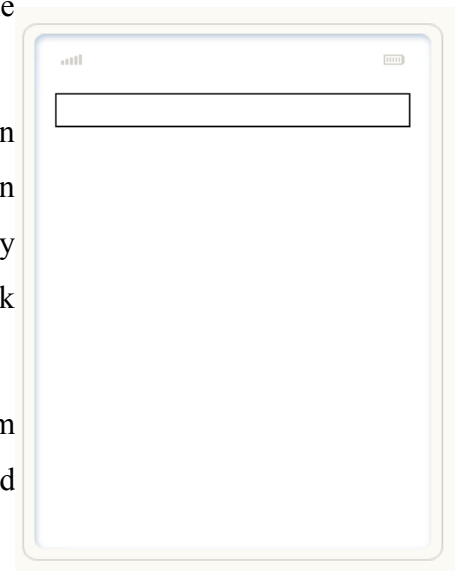


Image 8: Cellphone chat window

A major factor in this is a uniform design and the desire to keep the users interaction with other users in focus. *“Consistency helps to create simplicity. In an environment where nothing is constant, interface consistency is of the essence.”*(Almqvist Par, ”Keep it simple, stupid”). Mainly

the design of the PDA version enable me to provide a user interface for testing that would be provided in cellphones user interface and also in PC client.

Testing of the prototype was conducted at different occasion with the number of participant varying from 1 to about 10. The difference in size gave me an opportunity to observe if a relative large difference in the number of participants would change the user's behaviour and experience. Of course it would have been ideal if they would have been able to use the voice communication feature, but it was at the time of this test only available as a mock-up. As expected the level of immersion correlated to the number of participants at the test time.

The feedback provided by the first test groups where the testing was done individually with me, the users focus where on the application and how it worked and not on the interaction with other users.

Thus a large part of the feedback related to how the application looked and a more technical discussion arose. These single user tests were done with a Sony Ericsson P910 and K750. Most user interface issues where related to the P910 and how it, with its touchscreen, handled user input and the amounts of clicking needed to perform the tasks. On the K750 the user thought that mostly the user interface handling where straight forward and only the menu handling should be changed as this model tends to groups all "actions" in one menu which leads to unnecessary clicking. Both testers thought that the communication was smooth and responsive to the user input.

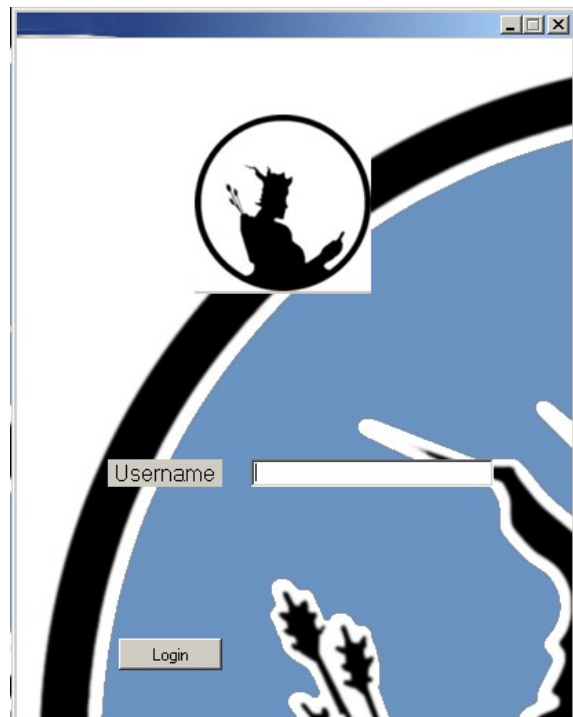


Image 9: PC Login screen

Before testing with the second groups, which would consist of more than one test subject, I developed a way to replay a chat session from a game to increase the level of immersion that the testers experienced.

The second test groups consisted of 4 persons and the application was installed on their individual cellphones, ranging from Sony Ericsson Z600 to W900i, also the P910 was used for reference.

Testing was done in two separate steps:

1. Regular chatting with only the testers
2. Playback of a chat log and the users chatting, providing a feeling of being part of the game.

These test provided much more feedback regarding the interaction between users.

“Fun tool” and “A fun pastime” where some of the spontaneous responses during the first test. During the first part of the test the users did not relate to it in a game context. Instead they interacted in a much broader context like instant messaging and hence some of the features suggested by the test group are more suitable in that context, even though games like Lineage II incorporate MSN Messenger capabilities within the game.

Features thought of within the concept but not implemented in this prototype where asked for by the users such as private messages / chat, contact list, online list.

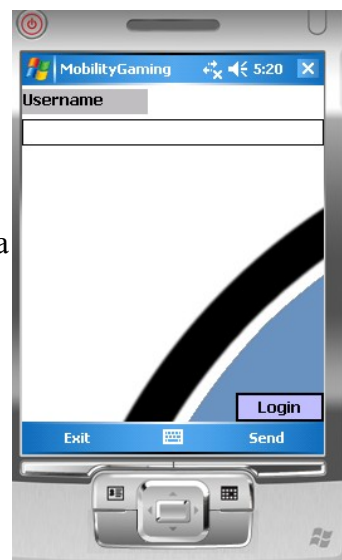


Image 10: PDA Login

During the second part of the testing I replayed a chat log from an in-game chat channel in Eve, for the online radio station Eve-Radio (www.eve-radio.com), where a lot of players interact both with each other and the dj's. While this chat was streamed through the system the user where asked to observe it and also participate with conversations between themselves. This time the focus was on the game connection of the concept. This time I also let them test the P910 and a pocket pc version. The pocket pc version was shown and tested so that they could get a feel of how the designed user interface would work, because here the two main buttons (send and exit) are always visible and accessible by the user, unlike the Sony Ericsson phones. Both the P910 and the pocket pc offers both an on-screen keyboard, with the help of the stylus, and a physical keyboard. Even though they could take advantage of any previous typing skills the presence of a “real” keyboard greatly improved the experience as it decreased the number of key presses needed to enter a message even though the phones T9(word completion) function helped greatly when entering text.

During the testing the user favoured the stylus operated on-screen keyboard over the physical one. This could probably be due to the fact that neither the P910 or the PDA had a full QWERTY keyboard but rather a shrunken version with just the basic characters needed with the English alphabet. Further I believe the usage of the stylus became more native due to the clicking on the screen to send the message, something that would have to be redesigned to for instance the “Enter” button and a click button in the user interface.

Analysis

The answers of the first inquiry, on the corporation forum, showed their indeed is a desire or felt need to be able to get in touch and socialize with the rest of the close community, i.e. the guild or alliance members, in a mobile environment. This is also reflected in the survey "Measuring the Bartle Quotient" where it show that Socializers as a sole groups is represented by 24% of the players only surpassed by the Explorers. IT also shows that when combining 2 or more player styles socializers are in the top position. (Mulligan, Patrovsky. 2003). The player styles being Explorer, Socializer, Achiever and Killer as described by Bartle in "Players Who Suits MUDs".

It also showed that the direct interest to perform more complex in game functions was low and not perceived as import as the communication.

Just as anticipated there where answers specifically related to EvE. EvE has some traits that, if the developers wanted it to, lend itself to offline handling. The most desired of them by the community is the managing of the characters skills and the actual training of the characters skills, as skills is how your character progresses within the EvE universe. Managing this would be perfectly suited for a mobile device as the training continues even when you are not logged in and if not carefully attended can stop in the middle of the night or during the day when the player is unable to connect to the servers and change it. Actually I think it's safe to say that this is one of the most sought after features that the developers do not want to enable due to the way it could harm the game.

Other things that where mentioned that work in a more general manner with regards to the genre of MMORPG is the trading and crafting (crafting/manufacturing is the process which players produce items for their own use or for sale in game)

With this first questionnaire it was quite apparent that most assume cellphones to be the host for the application when you mention mobile environments, this could probably be related to the fact that cellphones are the most common mobile communication device in our society today.

During the dialogue I had with the other players regarding this questionnaire the discussion showed that MMOGs are a very social and cross cultural environments that would be very well suited for mobile devices even though their relative capacity is quite small.

Summarizing the responses resulted in chat and messaging features being the most wanted shortly followed by voice communication (mostly due to the fact that cellphones are designed for voice communication even though not internet based) and lastly game features like trade, skills and crafting. Therefore the further surveys and designs are primarily focused to fill the three different

communications needs and specifically the text chat (quite similar to IRC, internet relay chat) used in MMOGs.

As the chat function alone can not be considered to be a game. Further research and user questioning had to be done to establish further functions that can be present and enrich the games in the mobile environment. At this point the design is targeted towards cellphones and PDA (pocket digital assistant) due to them being the most common and most accessible devices to design and develop clients for.

With the second round of user testing with questionnaires gave the possibility to create personas to be used with the design of the software and scenario testing. A result for this user test showed that most have experienced playing games on the cellphone but not tried online games for the cellphones. This could very well be because there aren't that many online games for cellphones and those that are available are not very well known, as this is an emerging area of the gaming industry mostly focusing on casual gaming for casual gamers.

Now this aspect is quite different from the concept of this thesis, which is focused on providing an extension/add-on for dedicated MMOG gamers in a mobile environment. Although the two concepts do share certain aspects and directions they are also very different. Given that most dedicated gamers appears to be more interested in the benefits to their overall game play and the social community around the game of their choice.

Further the study showed, within World of Warcraft, that the majority of the players strive to form or join guilds to further progress within the game. Features such as Battlegrounds are also what drive players to join up in guilds. As this behaviour is not unique for World of Warcraft and as stated earlier that the player base of MMOG tends to be very socializing in their nature. It creates communicative channels between the different entities within the games that, as the player progresses within the world, they use more and more for socializing with other players. This behaviour seems to be related to how long the player has been playing the game. In the case of World of Warcraft it appears, from what I have observed, that this behaviour starts when the player reaches a high enough level to participate in instances and raids as these require cooperation with others and once you find reliable good players to these with. This leads to the need to communicate and set up and organize new raids.

In discussions with users it has become apparent that the desire to have a way of communicating through the borders between the physical world and the game world. This desire comes from the

amount of time spent together and the bonds between them that have occurred as a result of their frequent interaction with each others.

While developing and testing my concept I found that it not only could satisfy the desire of the players to communicate with each others regardless of whom of them are logged in with the PC game client. It actually also fills a role that a lot of instant messengers have today, giving the users a way to instantly communicate with others regardless if they are in their home or not, as long as they are at a computer. My concept could be adapted to incorporate these sorts of things within the mobile context and enable a more generalized communications environment, where things like a text message could be sent to an offline user letting him know that someone would like them to log in and chat with them. While staying in this context some of my test users expressed a desire to enable video chat, not a feature desired by the players, as this would probably break the immersion experienced while playing the game.

Looking back at the road taken to during the thesis there are areas where it, with hindsight, could have been done different. One such area is the free form user interaction. Here it should have been more organized talks with me taking more thorough notes, though it might actually have ruined the spontaneity of it, and thus had more substantial material to work with. Also these session could have used more planning with some questions designed to be asked different groups to compare their responses. While using the the hindsight the questions asked can in some instances serve to lead the users in the direction I was going, it was unintentional, and thus not giving a objective or at least designer neutral feedback.

Conclusions

Starting with this thesis work I had the notion that mobile devices where, at least from a technological perspective, a very bleak platform despite their, in most cases, excellent communication abilities.

With the results of the first user questions showing the desire to communicate in game while not at a computer and even when on the move. This combined with the constantly growing capabilities and performance of hand held devices, such as cellphones and PDAs, the possibilities of enabling this way of communicating for the gaming community is a very reasonable solution.

Based on the observed desires the basic need is to chat but other features such as trade and guild management obviously lend themselves very well to limited devices. With the addition of voice chat makes it all a very attractive package.

It's when this network of players grows and evolves into guilds that the out of game communications becomes a greater part in the planning, often this communication occurs on web based forums. This where a mobile solution more integrated with the game software would fill a very distinctive gap in the communication. When speaking to the test persons, the possibility of a mobile solution is met with a very positive response and the often vividly explains how good it would be to be able to reach persons in game even though themselves aren't or the other way around.

The research done during this thesis have shown me that the user desires to reach each other, even though not connected to the game in the ordinary sense, is a very viable but not developed area for interaction within the game environment. Other features that would naturally fit within this concept will increase the interaction. Just as I'm putting down the finishing touches on this thesis I read that CCP the producers of Eve is putting a voice chat into their next content update. This shows that the users desire to communicate is important to the game worlds.

There is still a lot of research and testing needed to be done, ideally this would be done with the support of the game producers to enable adequate testing in a larger scale.

Seeing how mobile connectivity and device penetration is going there is no doubt that this is an increasing market. During this thesis I have only touched upon some areas and within these there is still a lot of features and ideas to test and design.

The next natural step would be to enable voice based communication and connecting the concept to one or several games. Thus enabling the majority of the concepts features to be implemented and

tested.

If this concept is taken further the focus would have to be game related. Enabling those features that do not require the 3-D engine of the game to be accessible in a mobile device. There would have to be more thorough design of the user interface so the users feel accustomed even though it's not the regular PC based screen size and format. This would also require the participation of either or preferably both device manufactures and MMOG game companies.

Glossary

MMORPG:	Massively Multiplayer Online Role Playing Game
MMOG:	Massively Multiplayer Online Game
MUD:	Multi User Dungeon
Community:	A group of people having common interests
Guild:	Traditionally a Guild is a group of like minded people who represent an industry, like The Guild of Musicians, guilds in real life have evolved into Trade Unions. In gaming terms a Guild can mean the above and/or they are simply a group of people who like to play together and to work as a team.
Instance:	This is a dungeon where you will load into your OWN copy of the dungeon with your group. Only you and your group will be in your copy of the dungeon. Another group that enters the same area will enter their own copy of the dungeon.
Raid:	A raid is a large-scale attack on an area or Instance by a group of players.
IRC:	Internet Relay Chat
UDP:	User Datagram Protocol
PvP:	Player versus Player
Realm:	World of Warcraft server

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Appendix A

World of Warcraft questionnaire

1. *Man / Woman*

2. *Age*

3. *Played MMOG*
 1. *< 1 month*
 2. *1 – 3 months*
 3. *3 – 6 months*
 4. *6 – 12 months*
 5. *more than 1 year*

4. *Played World of Warcraft*
 1. *< 1 month*
 2. *1 – 3 months*
 3. *3 – 6 months*
 4. *6 – 12 months*
 5. *more than 1 year*

5. *Member of a Guild*
 1. *Yes*
 2. *No*

6. *What is your role/function within the Guild*

7. *Member of an Alliance*
 1. *Yes*
 2. *No*

8. *What is your role/function within the Alliance*

9. *Do you use voice communication software?*

1. *Yes*

1. *Teamspeak*

2. *Ventrilo*

3. *Roger Wilco*

4. *Other*

2. *No*

10. *Have you played cellphone games*

1. *Yes*

2. *No*

11. *Have you played online cellphone games*

1. *Yes*

2. *No*

The following is based on World of Warcraft.

If you with you cellphone could log in and

get access to "the auction house":

1. *I would actively track the auctions*

2. *I would not use it*

3. *Useful if an item I'm interested in appears*

4. *Daytrading*

5. *Other*

get access to Guild chat and messaging:

1. *I would actively engage in chat*

2. *I would not use it*
3. *I would use it to reach members of the guild while I'm not at a computer*
4. *Other*

Appendix B

Persona:

Mark, The seasoned player, 25 years.

Mark is a long computer game player and experienced MMOG player. Mark commutes everyday for about 20 minutes between his home and place of work. This time is usually spent reading the paper and listening to music. Within the game world Mark is a recruitment officer, handling applications and trying to find other players that could fill the ranks. Mark is also a frequent user of the cellphone, mostly to send text messages to friends.

Christian, The newbie, 28 years.

Christian haven't been playing computer games for very long. It actually started when the company he works for offered personnel discount for purchase of a "home" PC. He started to play games with some of his friends. They would meet at the home of one of them to play but as they all got Internet connections it occurred less often that they meet to play, instead the connected to each other over the internet. This led them all to get into MMOG and started playing together. Christian now plays both with his friends and other.

Scenarios

1: The waiting

Arriving ahead of the designated time, you find yourself with 10 – 15 minutes to spare before the train arrives.

2: The away from home guild meeting

While being on a trip the guild that you are part of is going to have a senior members meeting, where important points about the future of the guild will be discussed. Even though you might get to an internet café it's not certain that they would have the facilities that would enable you to participate.

Appendix C

Timeline:

January 19	Project start
January 20 – March 21	Research and Technology studies
February 14 – 21	Posting initial questions on Forums
March 22 – 29	Questioning of World of Warcraft players
March 22 – May 5	Discussions with players in free form about this concept
March 30 – April 28	Development of Cellphone client and network protocol
April 18 – May 10	Development of PDA, PC client and linux server.
May 10 – 13	User testing and evaluation of prototypes
May 15	Project End