The Fifth Annual Game Design Think Tank
Project Horseshoe 2010

Group Report: Making Online Multiplayer a Better Place

Participants: *A.K.A. "The Asynchronous N00bs"*

Lisa Brown, Insomniac Games

Juan Gril, Joju Games

Jason VandenBerghe, Ubisoft

Tony Goodman, Independent

Victor Jimenez, Northrop Grumman

Kalvin Morrow, Disney Online Studios

Peter Justeson, Tetris Online

Facilitator: Ron Meiners, Electron Wave

The Problem

Competitive online multiplayer games have a problem. Regardless of how fun the game itself is, playing in an online competitive environment can be an incredibly punishing experience that turns off potential players after the first few matches, or exhausts established players with negative social play experiences. Many game MP (multiplayer) communities struggle or die due to unsustainable population, and a big factor contributing to player loss is the intimidating and frustrating nature of the overall experience of online competitive play.

Why we should care

There's a misconception we've all faced that a volatile environment in competitive games comes just from the fact that they are competitive, that people who want to compete thrive in such an environment, and that people who don't enjoy the environment would enjoy cooperative experiences more.

We disagree! We've been competing in games since the beginning of time, and people like competition because it can be fun. New players, casual players, and players turned off by commonly volatile MP environments still can have fun in competition. By making games that fight over the top percentage of

ranked competitive players and ignoring the rest of the population of potential competitive players, we are missing out on a huge player bases that could sustain our MP populations!

It is not uncommon for a game's online competitive multiplayer mode to be designed for a very specific sliver of the overall potential audience. Game lobbies and ranking systems are designed to best serve the very top percentage of ranked competitive players, and there is a tendency to design such elements for players who already know what they're doing. Many of the social connection and teaching problems in such games are often left for the player base to solve amongst themselves. For example, the creation of clans as a means of connecting people who enjoy playing together, or external mentoring programs that take place on community forums.

In general, games have come a long way in terms of introducing new players to their rules and worlds in a safe way and inspiring confidence to continue and face the challenges to come. Single player and cooperative experiences have been extremely successful at this. Competitive experiences -- particularly online competitive experiences -- struggle in this area, and we should care enough to serve the player base that we are losing because of it.

Who are we trying to help

When brainstorming tools to help competitive MP experiences to be less punishing, our workgroup had particular audiences in mind. We are not talking about the top percentage of competitive players who are already consistently playing. Our discussion was more interested in people who would enjoy competing but are blocked or dissuaded by various social reasons.

This audience is still varied and complex in its needs, so some tools work for some types of players but not for others. Here is a summary of the types of players we are addressing:

1. The completely new player with no genre experience
2. A player with genre experience but who is new to a particular games MP competitive format
3. A player with casual experience but who has gaps in his knowledge that makes him unrankable. For example, Street Fighter 4 features an ability called "Focus Attack" that appears simple at first, but also has many non-obvious uses that are important to effective play. Not knowing about the subtleties of Focus Attacks that enable powerful setups and combos can be a large hole in a player's overall knowledge of how to play
4. Players of any skill level who only feel comfortable playing with strangers if at least one other person they know is present
5. Players of any skill level who only feel comfortable playing with friends, but none of their friends are online
6. Players of any skill level who have no in-game friends

Some Disclaimers

Many of the tools discussed have applications in all types and genres of games. The focus for our discussion was on competitive multiplayer gaming, which we felt presented the most "worst case" examples. So, the lens through which these tools are presented are that of competitive MP by default. These tools also have advantages for cooperative games.

We also realize that, for the vast majority of games, the online multiplayer population quickly wanes to a very small population, which means that there is not a large enough community to use fancier matchmaking than matching by skill, or sometimes simply matching by whoever else is online. While we feel that these tools will help make a more sustainable multiplayer population that will help mitigate this problem, we ultimately are not looking to directly solve the natural play lifecycle.

Since the roots of the problem and the types of players they affect are pretty complex, we've divided the results of our tools brainstorm into three broad headings. The first set of tools address new and unskilled

players, where the focus is acquiring those players who are just starting. The second group address the social nature of what makes playing competitive MP fun, and retaining players regardless of skill level by leveraging their social networks. The last section is about ways to match up strangers based on enjoyable playstyle, and so addresses players that are comfortable with the game and who are not deterred by playing with strangers.

Acquisition, the New Player issue

In spite of the importance of social elements, skill and familiarity with the game are still huge obstacles to contend with for many players just starting out their competitive MP experience. Even with the best tutorials and the most preparation, the nature of competitive games still involves some number of trial-and-error initial matches to introduce players to the game concepts and in some cases to properly place them. The idea of these tools is to make this acquisition process less of a soul-crushingly negative experience than it is currently in many games, in hopes to keep them interested in coming back.

Hidden MP Tutorial

This is probably the most straightforward tool, and is focused on making those first trial-and-error matches less punishing and more helpful to new and low-skilled players. It addresses the problem that many competitive multiplayer games are structures so that it seems a player is expected to come into MP knowing everything already.

Starcraft II's practice maps are an example of this in action: the maps are simpler, the game time is slower, and extra obstacles prevent rush strategies to create a safer environment in which someone can learn the basics. Tutorial-style maps should be designed to shuffle out skilled or experienced players who would otherwise become bored with them, but to isolate and address information gaps in new players, and introduce them to the game in a situation where they will not be overwhelmed by advanced tactic use.

The "Hidden" nature comes from not making the tutorial explicit, which could be a turn-off to new players to the game who have other experience. Instead, the introduction to MP should be easy for advanced players to move through without hindering their progression, and provide aid to low-skilled players without beating them over the head that they are in newbie-mode. Unlocking new maps or game modes via basic achievements can be one way to do this.

Mentoring

Player to player mentoring is a potentially great way to both aid a new player with skill set gaps and to give them a social connection and sense of belonging. Many games have features that lend themselves to community-organized mentoring, such as a highly skilled player being able to review a low skilled player's replay video in games that have that feature.

This particular tool also has the advantage of being able to occur asynchronously, to avoid the difficulty of matching up schedules. Tools in multiplayer games to encourage mentoring would be helpful, but taking it a step further, is there a way to support the connecting of mentor relationships in-game instead of relying on community formation to do it for you?

Further, when community-formed mentoring happens, it is often at a higher level of skill. For example, the mentoring is to improve the strategies of a player who already knows the ropes. Mentoring could be used even more effectively at the lower levels to help new players and those with skill set gaps, and could allow someone who is still a relative beginner in skill still take on the role of mentor for a complete beginner.

Asynchronous Group Goals

This tool is a way of tying the new player acquisition issue into the social issue of the next section. The idea is to address the issue of an early adopter of a game feeling alone: coming into a competitive MP

game alone can be very intimidating, and providing some sense of belonging to a group could help smooth over the trial-and-error phase of MP adoption.

The players targeted here are those that are completely new to a game, and so have no in-game friends, and perhaps have no online friends at all, and for the worst case, no one in their real life social network who is playing the game. On his first entry into the competitive MP mode of the game, match up the player with some other new players who have recently been on. Display the newbie group prominently, and have some group achievements that players contribute to asynchronously as they go through their placement matches. For a certain type of player, this scant connection can make the initial MP experience more inviting, and encourage them to keep trying those initial matches because someone else is counting on them. For other players where this is not a value, it can be safely ignored and not a hindrance.

Of course, this example is for the worst case: a practical hermit's first experience with a game's online competitive multiplayer mode. Other tools could make this newbie grouping more relevant, such as if the game is connected to an existing social network via a RealID-esque system, or where a social network is the platform for the game. The more socially relevant the people are, the more confidence the grouping inspires, as we explore later when discussing trust systems.

The Social Issue

One interesting research project found that what most players really want is to play with their friends. The research found that most players aren't looking to play online with strangers, which means improving on this experience is improving on something very few people care about. Ultimately, the project felt that the best matchmaking system will always be limited by the fact that there is no bond external to the game. This is further complicated by concurrency issues that limit the ability of friends to play together -- concurrency rates being as low as they are means that most people won't have a large enough social circle to consistently have a friend online.

What the research group tried was more along the lines of improving playing with friends, rather than focusing on other types of matchmaking. Some of the things they experimented with included event-based gameplay to increase concurrency, gameplay designed to create bonds of friendship between strangers (which requires things like cooperation and time / consistent participation), and matchmaking based off of a combination of relationships between people and game compatibility.

While it may be true that most people are interested in playing with friends, as the research project shows, there are still many cases where friends are not accessible at a given time. The following tools cover the gap between someone with no in-game friends and someone who is able to play with friends at any time or who is in a clan environment where the social connection is more consistently available. This includes players who prefer to play with friends but none of their friends are online, players who will play with strangers, even unpleasant ones, as long as at least one other person they know is present, and similar situations.

Asynchronous Game Modes

These features can create a sense of playing together when our busy lives prevent us from playing real-time with friends. The goal is to create a gameplay experience with the group we belong in when we aren't online at the same time.

1. Achievements during play that go towards a group total. This could be a cooperative layer on top of a competitive experience (trying to achieve a common goal) or a meta competitive experience between friends. An example of this is the Guild Achievements system in World of Warcraft. Guild members can do actions as individuals that contribute to an achievement that the entire guild is working on, so they can still contribute even if they aren't playing at the same time as other guild members.
2. Challenge-style game modes that can be linked between players in a turn-based way. For

example, a puzzle game where you have to clear the board in the fastest time, with a way to challenge a friend to try and beat you the next time he is on to play.

3. Ghost racers found in various racing games provide an interesting way to play against friends -- simply record a friend's playthrough and play it back while the player races "alone." This type of playback gaming could be applied to other genres, so long as the gameplay is basically indirect (meaning that the players don't need to interact or react to each other to achieve their goals). What would the equivalent of a ghost racer be in a first person shooter or a competitive puzzle game?

Trust Systems

Let's say none of your friends are online and you are looking for a way to judge whether a potential player is worth playing with. Why do so many in-game player rating systems fail? It seems like a good idea at its core: if you like playing with someone, give them a high rating and then other people will see that they are cool and want to play with them too. Ta-da! But then you wind up with situations like the **Sims Online Mafia**, or abuse of the Xbox Live player rating system.

These systems fail because there is no confidence in the rating. If some random stranger has a bunch of stars that are the cumulative scores given by a bunch of other random strangers, what does that really mean? It doesn't really give any confidence that you would enjoy playing with that person at all. If Player A loves a high-energy smack-talk full game session, and gives a high rating to smack-talking Player B because of it, that does not mean that Player C, who hates smack-talk, will enjoy playing with high-rated Player B. Social rating systems CAN work if the rating of one player is relevant to another -- that is, if there is some overlap in the social networks of two players.

Here is a simple example of a trust system at work: If a friend recommends a product, you have some amount of confidence in that product based on your friendship with the person, even if you know nothing else about the product. Say a friend-of-that-friend recommends a product. You may have less confidence in the recommendation than if it came from your friend directly, but there is more confidence in it than if the recommendation came from a complete stranger that you had no relationship with.

The fact that there's some confidence in someone you don't know just because you have an overlapping social network (the mutual friend) is important. Building trust and reputation systems in social networks is something that's already being studied and used in non-game areas. If you are the sort of player who dreads playing competitively with strangers, and none of your friends are online, but some friends-of-friends are, would you be more inclined to play with them? We think yes! Perhaps then if none of a player's friends are online, you could show friends-of-friends who are online as suggestions for who to play with.

Going back to the ratings idea, tying a rating system to a trust system can introduce many complexities. After all, your reputation might matter differently to different people, so it isn't as easy as displaying one score for anyone who looks. However, if a trust system could make meaningful ratings within the context of multiplayer games -- and as a result provide a means of smoothing the transition from "no friends online" to "there's just about always someone on who I'd like to play with" -- then the complexities of such a system are worth it.

Play Experience

For this section, let's consider the best-case scenario. Your game has a competitive multiplayer population that is large enough and consistent enough that it can effectively use matchmaking techniques that aren't just "what other players are currently online." Most of the time, games in this situation do thorough matchmaking based on a player's skill level. However, even if players are matched perfectly on skill level, that does not necessarily guarantee a fun play experience.

Since our workgroup was focusing on people who fall below the top percentage of ranked competitive players, especially those playing for a more casual experience (regardless of skill level), we explored ways of matchmaking players based on preferred social interactions and qualities of play experience. Basically, matchmaking completely divorced from skill.

At its basis, this seems pretty logical. Someone who likes to be a team player would enjoy playing with other team players. But there are more complex relationships at hand that aren't as intuitive on the surface. After all, if you always match team players with other team players, how do you select the right number of players that prefer a leadership role? For a more complex example, let us take the rage quit. We found in our workgroup discussion that having someone else rage quit on us could yield two very different results. For Player A, having someone rage quit on them makes them feel awesome and powerful and confident. For Player B, it feels almost devastating, cheapens their feeling of success, and ruins the experience *even though they won the match*. How is that measurable in such a way that someone prone to rage quitting would be more likely to be matched with Player A and less likely to be matched with Player B, on top of all the other social interaction qualities of playing with someone else?

There have been many studies and analysis done on player archetypes, from the **Bartle Test** to more **detailed player taxonomies** based on genre. But in a competitive MP environment, there is very little time to get player input on things like their playstyle. People want to play the game, not fill out pages of e-Harmony style questionnaires before getting into a match. Plus, explicit questions could be abused anyway. For example, a highly-skilled player who wants to grief might select "casual" as his preference so he can get in to harass less skilled players. Is there a potential way that matchmaking could be done on attributes of playstyle preference by analyzing how a person is playing the game?

Genome Project

Pandora is awesome. It makes surprisingly accurate personalized music suggestions based on very little user input ("yes I like this" or "no I don't like this," or no response). Wouldn't it be awesome if we could make the Pandora equivalent for online competitive multiplayer games? If, after playing a match, you just had to answer "was that fun?" and the system would magically analyze the qualities of that game session and be able to match you up with other people in such a way that it consistently provided an enjoyable play experience? And, as a result, this matchmaking system would lead you to meet more people that you like playing with, potentially forging in-game friendships or leading you to a clan where you felt comfortable?

With the aforementioned studies into player archetypes, it's not a far fetched idea to create genes from measurable attributes and link them to a player. However, the Pandora analogy breaks down after a point. In the Music Genome Project, songs are analyzed individually by musicians to decide what genes apply to what songs. Even with a list of measurable attributes, analyzing the relationships between those attributes is incredibly complex. The factors in analyzing a gameplay match, with game type, genre type, the individual attributes of all players involved and how those attributes interact with the attributes of every other player, soon explode into a research project of exponential complexity.

However, it is possible that genetic algorithms could help us on this front. For the non-programming-inclined of our audience, a genetic algorithm is basically a programmatic means of figuring out optimal cases from many variables with complex relationships. It is used for solving many important problems, like encryption and code breaking, telecommunications routing, or figuring out **effective Starcraft II build orders.**

To create a genetic algorithm, four things are needed:

1) A way of expressing a potential solution to the problem as a gene sequence. This would be the matchmaking parameters and the players in the game. For an FPS example, this would include static features that can be measured before matches (game modes, map features, etc.), features of the match

itself (length, proximity of players, distribution of kills), and features individual to the player (where the player sat in the distribution of kills, how many assists they got, etc.)

2) A way to combine two gene sequences together to make a new potentially better one. So if a player really liked a game that had a certain map, and another game that had a certain game mode, you'd randomly take the parameters from one match and combine them with the other one.

3) A way to randomly generate new genes (randomly picking new parameters, like combine two things and pick one parameter and randomly change it to something else)

4) The selection (this is the player input. In our example, the "was it fun" input)

A great experiment would be to create a system that uses this as its non-ranked matchmaking system, and see if it really does yield more positive and enjoyable play experiences. Now someone just needs to make it happen! Fortunately, much of the data needed for said genetic algorithm is often already tracked in competitive games.

Data Collection

Many kinds of statistics can be (and are) tracked during gameplay to find out a lot of information about how players play online games. The Halo series, for example, tracks a tremendous amount of data from each game, including who played in it, where in the map players tended to be, and where and how each kill was scored. Social games are also well-known for using this approach, tracking many player statistics ranging from the simple (installed base, daily active users) to the more complex (player retention, average revenue per user, how many players started playing from friend recommendations). This can lead to very nuanced analysis -- according to Zynga, part of their design philosophy is to track what players enjoy doing. They do this by checking what actions players take in their games, analyzing the patterns they see emerging, and using that data to figure out what players like to do and what players aren't as interested in.

Another noteworthy approach is Microsoft's Player Experience Panel. The Player Experience Panel is a research initiative in which Microsoft analyzes the games played of a group of Xbox Live players – a group that Microsoft found representative of the overall Xbox Live player population. Microsoft found that they can analyze player behavior in interesting ways with just basic Xbox game data.

Achievements are one of the easiest types of data to analyze. Microsoft is able to see how many players earn each achievement, and how long it takes to do so. Since many games have achievements marking the completion of each mission in their campaign modes, achievements are useful for seeing how many players complete a game, how long players take to complete the game, and where players tend to get stuck or stop playing.

Microsoft is also able to analyze presence information, which is simply the short character string shown in the gamertag that describes a player's status in the game he or she is playing. This string is basic information determined by the developer, describing details such as game mode, map, and difficulty level. By parsing this string, data can be collected to measure game mode popularity as well as map popularity by game mode. However, the data also shows a game's popularity over time. This can be used for many purposes beyond measuring a game's lifecycle, such as measuring DLC popularity, the most effective times to release DLC, and measuring what effect newly released games have on the popularity of currently played games.

Conclusion

The problems that make online competitive multiplayer experiences punishing turn-offs are complex ones. But, by focusing on the player base that is lost from these negative experiences and finding ways to acquire and obtain those players, the side effect is a bolstered competitive multiplayer population. These

tool ideas are just a few that could be implemented to acquire and retain players by acknowledging the importance of social networks and matching of playstyle preference. Our hope is that they can act as springboards for ways to design your competitive multiplayer experience or tools and features to include.

Related Reading

- Bartle Test - **http://en.wikipedia.org/wiki/Bartle_Test**
- Motivations for Play in Online Games - **http://www.liebertonline.com/doi/abs/10.1089 /cpb.2006.9.772**
- Theory of Game Relativity - **http://www.gamasutra.com/view/feature /2175/hey_bro__its_all_relative__the_.php**
- Design flaw led to the rise of the virtual mafia - **http://www.mydigitallife.co.za /index.php?option=com_myblog&show=design-flaw-led-to-the-rise-of-the-virtual- mafia.html&Itemid=29**
- RealID and WoW Forums: Classic Identity Mistake **http://habitatchronicles.com/2010/07 /realid-and-wow-forums-classic-identity-design-mistake/**
- The Blizzard Real Identity Mistake - **http://virtualcultures.typepad.com/virtualcultures /2010/07/the-blizzard-real-identity-mistake.html**
- Music Genome Project - **http://en.wikipedia.org/wiki/Music_Genome_Project**
- Next Gen Casual Gaming - **http://www.next-gen.biz/blogs/next-gen-casual-gaming**