Super Crunching in the Virtual World

We've seen how Super Crunching can accurately predict phenomena in the real world, so let's now turn to the virtual world. There's no denying that computer and console gaming is gaining ground in older age groups. Much of that growth is through the adoption of playing Massively Multiplayer Online Role Playing Games, or MMORPGs, as a pastime. MMORPGs attempt in their very design to simulate the real world in many ways, usually providing currency to create an economy and a system of "leveling-up" so that players who perform tasks many times become more efficient at those tasks.

So where does Super Crunching fit into a virtual word? There are several places, but it starts in design of the virtual world. Just like a new car design or a new drug formula goes through extensive testing, so does the play world of an MMORPG. In this phase, called beta testing, designers meet with players and have them play the game to get feedback. However, you can only spend so much time with a set of players discussing their playing experiences one on one. Also, your predictions on how other players will fair based on their input are more likely suffer from bias because of the small sample.

Emergent Technologies saw an opportunity to eliminate this bias and increase sample sizes by implementing a game engine called Gamebryo, which can be used by its companion program called Metrics to Super Crunch game designs. The engine has been adopted by critically acclaimed games such as *Civilization IV* and *Sid Meier's Pirates*, both which try and simulate real world governments and economies. [6] The Gamebryo engine allows designers to place probes of different types throughout the virtual world to measure certain behaviors. Next, the game is released to many players simultaneously to beta test. As the game is played, the probes record certain behaviors to create the data for crunching. In one example, designers create a room with a large pit of lava and a bridge connecting the two sides of the room. They place a probe in a room that records the type of "death" a player may have, were he to die in the room (yes, in a virtual world you can even die). Now when the data is crunched, if the designer sees that 83% of deaths are due to falling into the pit, he may choose to make the path wider (usually designers don't take joy in their players dying). Had the designer relied on a smaller group of players in a focus group, especially if they were quite dexterous, the designer may not have discovered the flaw until after the game had shipped. [1]

Bioware, a leading designer of "next-gen" games took a similar approach in designing the game engine used for *Mass Effect*. The designers wanted a way to measure the player's overall experience of their game, making sure that the player didn't spend too much time in any one mode. This ensured the player wouldn't get bored. They had several players complete the game and measured their time using each mode. For instance, if a player spent the same amount of time managing his inventory as he did exploring the world (and what are virtual worlds for, if not to explore?), then perhaps there needed to be more time spent streamlining inventory management. If the time players spent listening to other characters talk was greater than the time spent completing tasks, players might walk away from the game; this converts to a loss of real money for the design company. [2]

However, Super Crunching is not just useful in the design of a virtual world, but also in its upkeep. Just as s seismograph, weather satellite, or financial index can provide an early warnings for disaster in the real world, so too can the data collected by MMORPGs during play be helpful in averting a crisis. In the beta phase of a game, it is seen as an honor to participate. Most beta tests are even free to players, since feedback is more valuable to the company. Problems with the virtual world are expected, and many testers find it rewarding to be the first to experience a virtual world and discover its flaws. After release though, when the player starts paying, the developer must keep the player happy by keeping the world working. Otherwise, the player could choose to go to another company's virtual playground.

The largest complaint players have concerns the "fairness" of the world. Just like America, any player, with hard work, should be able to become a great player, but if someone becomes a great player by exploiting flaws in the world, it's seen as cheating. One example of this is "gold farming" or "experience farming" where a few players find a way to exploit certain game mechanics to get rich or powerful far more quickly than the average player. This can be detected early and stopped with Super Crunching. If a system logs the amount of money and experience a player gains over the course of a play session, and perhaps other features such as how much time was spent in each specific region of the world, the designer can find abnormalities in the data. If a specific group of players earns experience at four times the rate of an average player, and all of them spend the majority of their time in a specific place, then the developer knows to go and adjust the world at that location. Super Crunching can even tell you if the adjustment worked or if it broke something else. The data collected from the millions online playing will be far more accurate than a handful of emails from disgruntled players. [3]

Super Crunching isn't just used to build and maintain virtual worlds, but also as a way to serve up virtual advertisements in the virtual world. Several companies believe the future of advertising is online. Just look at the billions Google has spent on its infrastructure to keep users and entice businesses to advertise.

Apollo Data Technologies (ADT) uses data mining to figure out how to distribute ads in games in much the same way that a regular online ad agency uses it to target ads to specific audiences. By gathering information about a user, such as his age, other games played, time spent playing, and purchases in a game or in matters related to gaming, ADT can determine what ads are most likely relevant to the player, and sell that ad time just like a commercial on TV. Take, for example, a billboard in a racing game. For a younger player that makes many purchases, the game might display an ad for a Ford Mustang. That same virtual billboard might display an ad for a Toyota Minivan if the player were older and had kids. Information about this can be gleaned not only from in-game monitoring, but also by services such as Microsoft's Xbox LIVE which knows the other games a player plays and how many users are on the same gaming console. [4]

Virtual worlds also become the homes to virtual communities, and advertisers want to tap into these communities as well. Social networking is a big topic in modern culture, and it has been revealed that in many communities, there are particular people with great influence on the group. These players, labeled "ambassadors," are valuable because once you sell them on a product, they will sell their

friends. Super Crunching on these social networks can reveal these ambassadors so they can be targeted. [4]

Finally, some groups are Super Crunching data in the virtual world as a proxy for the real world. In worlds such as Second Life and Habbo, players get to create avatars (cartoon-like representations of themselves) and use them to manipulate the virtual world. In these worlds, the players can take real jobs, such as working in a restaurant, and with their earnings go shopping. By following the shopping habits of people in virtual worlds, shopping trends in the real world can be projected. Sulake, the company behind Habbo, decided to try directly surveying their players, reaching over 42,000 in 22 countries, about real-world shopping. Their results were seen as valuable by businesses because of the scale and range of the survey, which would eliminate bias in the data assuming the target group fit the average Habbo player. [5]

Super Crunching aids in the design and upkeep of virtual worlds in addition to providing a powerful tool for marketers to the best audience for their wares. Developers from Emergent Technology and Bioware are paving the way in the use of evidence based tests for finding flaws in virtual world design. Others are using it maintain their already vast virtual worlds to keep their virtual citizens content. Finally, Super Crunching is opening up new avenues of advertising by examining player information from virtual worlds to better target advertising. These trends suggest that Super Crunching has a home in the virtual world too.

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