

## Let the Games Begin

By Greg Osgood

Games are for kids. Or, maybe that was once the case. The lottery commission in the state where I live reminds us that, "You've got to be in it to win it." Almost every day, my TV, computer or cell phone tells me that if I buy some product, I'll be eligible for a big prize. You probably have a friend who plays fantasy football.

The Entertainment Software Association says that 68% of American households play computer games, including 35% of senior executives.<sup>1</sup> Forty-three percent of people who play video games are female. Soldiers can maneuver virtual vehicles through the virtual streets of Iraq before they have to do it in real life. Everyone, it turns out, is playing games.

Massively multiplayer online games (MMOGs) like World of Warcraft and Lord of the Rings Online are played on every college campus on the planet, including MIT, Stanford, Oxford and Cambridge.<sup>2</sup> In case you are not already playing them, MMOGs are video games involving teams of players. Players can be anywhere on the globe where there is Internet access, and the games can accommodate thousands of players at the same time. World of Warcraft has more than 12 million monthly subscribers, paying over \$2 billion in annual subscriptions.<sup>2</sup>

Another thing that is massive about these games is the amount of time and effort spent on them. People devote about three billion hours per week playing MMOGs.<sup>3</sup> Why? Because they're fun and engaging. But what exactly makes MMOGs so enjoyable and engaging?

### MMOG Engagement and Motivation

Here are some of the ways that these games engage and motivate players:

- The game challenge is epic. In the context of the fantasy, players are saving the world. "A good game," said one game expert, "gives us meaningful accomplishment, clear achievement that we don't necessarily get from real life."<sup>3</sup>
- There is both competition and collaboration. Competition operates on several levels:
  - Individuals can compete with their own previous performances
  - Players can compete with other players
  - Teams can compete with other teams
- Similarly, team members collaborate to:
  - Help each other improve their own personal performance
  - Improve the level of team performance over past efforts
  - Beat other teams

The combination of important goals, competition and collaboration create natural connection and strong bonds between players. Players take pride in their team and gain self-esteem through their team membership and accomplishments. Strong working relationships are forged, more adept players help weaker players, and individual expertise is utilized. Players do not just develop a sense of community; they become part of the real community that plays "their" game. They derive part of their identity from the game. They connect with other players, regardless of team affiliation, and actively collaborate to make their MMOG the best.

- Opportunities for achievement and rewards abound. In addition to moving toward the ultimate goal — winning — there are other accomplishments (e.g., facility with a weapon) that generate personal satisfaction and bragging rights. Players who develop expertise receive titles like “Master Swordsman.” Adding this dimension to the game helps players create a richer story, which includes their accomplishments and makes the game more vivid and personal.
- Feedback is timely and frequent. Shoot accurately and a monster’s head explodes. Discover the secret access to an energy source and you gain the power to continue your quest. Take on a stronger opponent by yourself and you die. Players understand how their actions affect the game. Missteps are clear immediately so corrections can be made immediately.
- MMOGs are visual. Players can see both the action and how their participation and input affects outcome. Cause and effect are obvious. The visual aspect makes the game more vivid and real.
- MMOGs obviate user interface problems. MMOGs are designed to erase any sense that there is a distinction between the user and a program. Instead, players feel that they are part of the game. Once players gain a minimal level of experience with the MMOG, game action seems natural and flows intuitively.

### **Application to Clinical Trials**

Like MMOGs, many clinical studies involve hundreds or thousands of people around the globe. But, aside from that, what do MMOGs have to do with running clinical trials? By creatively employing video game features into the way we do the important work of conducting trials, we can escalate productivity and increase accuracy. Here are some ways we can do that:

- Communicate the importance of the study. Everyone wants to be a part of something worthwhile. People don’t put their best efforts into activities they see as routine. Certainly, not every new drug or device will be a blockbuster, but each one is aimed at a real problem affecting real people. Communicate the vision of the study clearly and often. It takes multiple impressions for advertisements to get their message across, so start building the study vision early, say, during the feasibility process, and keep reinforcing it. Try telling the story by using examples of real people.
- Create multilevel competition and collaboration. Challenge staff (site, sponsor and CRO) to outdo themselves, for example by entering data faster and more accurately. Frequently post performance metrics (beyond the usual enrollment numbers) and commentary to feed the competition between sites and between countries. Encourage the bonds that naturally develop in a shared mission. Less experienced sites need support. They can get it from their monitors, but they can also get it from more experienced sites. Build mentoring relationships across sites. Pair strong centers with weaker sites, or allow participants to choose whom they help, and then recognize their collaborative performance.
- Create goals. Every study has obvious milestones that the entire study team can celebrate. To maximize motivation, create ancillary goals that study personnel can achieve and tell their colleagues and supervisors about. For instance, bestow titles (like green-yellow-black belt) as mastery of the EDC system is proven. Publicly congratulate sites that enroll the first subjects. Define new accomplishments as the study proceeds. Or, better yet, ask coordinators and monitors to help invent them. It makes good sense to recognize sites when they reach their recruitment objectives, but what about when they demonstrate proficiency with a complex assessment? Give them something to boast about.

- It is often difficult for study personnel to appreciate how their contributions make a significant impact on the overall project. In addition, the work required in a clinical study is voluminous, demanding and often inadequately appreciated by those who are not directly involved. Study personnel, and regional monitors as well, can feel isolated. Frequently communicate the story of the study and how each person fits in, so they can personally connect with the success of the project. Like a good sports coach, provide ample positive feedback. Give coordinators and investigators frequent, meaningful and specific information about how their site, region, country or other group is performing. Drive timely communication. Use technology to send customized messages. Include everyone so they can share the study vision.
- Make the study visual. Use graphs to show individual sites how they are doing, as well as how their efforts contribute to the study. But go beyond graphs. Post videos of coordinators performing their tasks in innovative ways or explaining how they meet recruitment challenges. The more visual you can be, the better the program will resonate with everyone (including investigators).

### **Investigator Meetings**

Investigator meetings are primarily used for training and working out the details of a study. Smart sponsors also use them to develop relationships, create teams, build esprit de corps, and engage and motivate study personnel. They are a great opportunity to establish the notion that participants are part of a grand mission, important work that can also be fun and engaging.

People like people better if they have played a game with them. Why not organize the CRCs, CRAs and study managers into teams and play a game? The game can directly relate to the study and should generate lots of awards. For example, there could be an award for the best answer to an awkward question from a potential subject. In addition to reinforcing learning, playing a game can develop relationships and a sense of community that will carry forward through the study. Games, by the way, can also be used in virtual meetings, where MMOG concepts are even more applicable.

### **Electronic Data Collection (EDC) Systems**

The growing use of web-based EDC systems, clinical trial management systems (CTMS), and study portals make MMOG concepts even more applicable. Video games are designed to encourage participation. They give individual information and feedback. Likewise, an EDC system can be programmed to:

- Recognize the coordinator as a specific person. Sign-in screens could say, for instance: "Welcome, Jill Smith, ABC Study Expert." Ask Jill for profile information so you can display headlines tailored to her interests about study progress, reminders about the importance of the study for patients, and news about the indication. Give Jill feedback about her past performance. Show her in real-time how her site, region and/or country are performing in comparison to other groups. Jill's supervisor probably knows very little about her responsibilities, so these forms of recognition can be very useful in demonstrating high performance to supervisors.
- Include instant messaging (IMs) as a feature, particularly in large studies, so site personnel can interact in real-time to ask each other questions and develop ideas for improving the study. As in MMOGs, real-time communications engage participants and create communities.
- Identify achievements, deliver awards, and announce new challenges. Again, recognition is very important, but be creative with rewards. For example, make a

contribution to a patient advocacy group after a coordinator enrolls three subjects. Recognition and rewards can be based on performance points that participants accumulate for entering data within the specified time period, reducing the number of queries, enrolling the first subject quickly, responding to monitor questions, etc.

- Act like a teammate, not a drill instructor. When a coordinator makes a data entry error, don't program the system to say: "ERROR CODE 1762 INVALID DATE FORMAT." Instead, have it provide a constructive message like: "Enter month in format MMM: OCT for October." When an error is corrected, the system could respond: "Excellent, now you've got it!" When a coordinator enters data promptly and accurately during an entire session, the system might say: "Thanks for your flawless work!"
- Recognize achievements immediately. Delay defuses. EDC systems can instantly display achievements and send congratulatory email messages to study personnel and their supervisors. These systems are an ideal means to deliver immediate feedback.
- Show performance graphically and participants pictorially. Retail web designers know that human faces on websites lead to more sales, and of course, a picture is worth a thousand words. Display recruitment and completed patient numbers in real-time and send notices to all interested parties

In fact, EDC could be the major connection portal for clinical studies, one that is exceptionally personalized and informational.

### **The Reward System**

The motivational possibilities of EDC have not been explored, but the fundamental idea is to make people want to work on your study instead of something else, without crossing any ethical or regulatory lines. Most study personnel have too much to do every day under the best of circumstances, so give them reasons to complete your work first.

Rewards in MMOGs are not cash or merchandise but instead have only intrinsic value. MMOGs provide performance points, earned titles, and other recognition. Using this approach minimizes regulatory and ethics problems while retaining strong motivational benefits. (Accurate and timely data entry does not subvert human subjects protection; it enhances it.) In addition to personal satisfaction and bragging rights, performance points can be used for a larger advertising budget, supplies for a party to reward helpful co-workers, or access to senior study managers. Design the reward system to encourage healthy competition collaboration between sites and between coordinators and monitors. Transform competition and even antagonism into constructive collaboration.

Everyone wants to be a winner. Everyone wants to be successful. Catch people being successful and they will become more successful.<sup>4</sup> Create lots of "wins." Non-stop wins may seem excessive, but it clearly works for MMOGs.

### **Conclusion**

The features that make MMOGs (or any game) fun and engaging can be used in clinical trials to engage study personnel, fuel productivity, and elevate accuracy. Creating and maintaining enthusiasm, especially in hard-pressed study coordinators, is challenging but can generate huge returns. MMOGs create the sense that what the player is doing is important. If fantasy games can become so important to people that they voluntarily devote significant parts of their lives to them, why can't we do the same for clinical trials with actual real-world importance? Games are not just for kids. Let the games begin!

## **References**

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3. Jesse Schell, quoted by Adam L. Penenberg, "How Video Games Are Infiltrating Every Part of Our Lives," Fast Company, December 13, 2010
4. See, for example, writings by Peter Drucker, Ken Blanchard, Jim Collins, and Stephen Covey.

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