Building DSS: What can DSS designers learn from video games?

Today, decision support systems use mature user interface technologies. Dashboards are not "new"; the smiley faces and sliders for user input are familiar; adding 3-D charts is not necessarily improved data visualization.

In a number of Ask Dan! columns, I have examined user interface topics and simulation. This column generalizes on some of those topics, but it also advocates more design research. I'm blessed to have three sons who all play video games. This past summer, my youngest son Greg brought MVP Baseball 2005 by Electronic Arts to my attention. He was excited by the new "owner mode" in the game. Well I bought the game for him and he has been testing the product for DSSResources.com. What have we learned?

MVP Baseball 2005 by Electronic Arts is a game rated "E" for Everyone. The game has the traditional mode where you control players for batting, fielding and pitching. In the owner mode, however, a gamer creates a team and stadium, sets ticket prices, drafts players, makes trades and manages the team.

Greg has played more than 50 hours of MVP Baseball and demonstrated the game for me twice. Greg especially likes the game because he feels "more in control" of the results. To begin the simulation, a gamer enters the owner mode and selects a team name and then sets parameters like the budget and the difficulty. The gamer then proceeds to the draft and to creating a stadium, setting promotions, ticket prices, and buying concessions. Once the simulation is defined, the game player manages the team for up to 30 years. A simple Executive Information System (EIS) provides decision support as the gamer/manager makes trades, expands the stadium and expands ball park attractions. The first key results factor monitored is Team Chemistry. The game monitors turnover among team members and on field success to calculate a measure of team morale. The next key result is Fan Happiness. In the game, ticket prices, attractions and performance of the team impact this factor. The EIS summarizes Team skills ratings, has an information window and has financial data in an Owner's box. Overall the performance monitoring is easy to understand.

Video games continue to become more complex and more realistic. The images that gamers see and manipulate create a realistic, virtual

world. My son is really absorbed in the role of owning and managing a baseball team. I'm not going to debate whether those 50 hours were a good use of his time, but I know he has learned some lessons about managing a business. Some games are more than entertainment.

In November of 2001, Microsoft released the Xbox, which is the game console my children use. Xbox 360 is set for release on November 22, 2005 and it will create a platform for high-definition video gaming. The images will become even more graphic and realistic. My guess is that the game scenarios, player roles and simulations will also become more powerful. DSS designers and builders can buy a new gaming platform.

What can we learn from video games that is relevant to building DSS?

The designers of DSS development environments and the developers of DSS tools need to work to make user interfaces more intuitive and easier to manipulate and control. Games are controlled and manipulated using a handheld device called a controller. The controller is clumsy for text entry, but it is easy to sit back and use the buttons and joysticks to interact with the on screen images.

Simulation games "try to accurately depict real world situations, physics, and events." We have had computerized business simulations for 30 years, but they have been primarily used for training and entertainment rather than for decision support and planning. "The Sims" created a new reality simulation that may create new more powerful Visual simulation tools for managers and decision makers, but the progress seems agonizingly slow. Today, managers, Information Systems faculty and students, and software developers need to spend more time using racing simulators, flight simulators, and 'Sim' type games.

Cyber Reality. Decision and planning support can imitate the reality of organization and business operating and strategic scenarios and situations. The software can be engrossing and absorbing.

Navigation. CEOs and senior managers can use input devices similar to game controllers. Planning should occur in a large display screen virtual environment and not behind a 17" inch monitor using a keyboard.

Easy to Learn. Business simulations can and should be easy to customize and learn to use. Senior managers should be able to "control the whole team and not just single actors". Managers should be able to deploy sales forces, add shifts at production facilities, and visualize new products and "test" them.

Graphic and visuals. A staff person or two should be able to use a development tool to visually model the entire business including plants, offices and staff. The cyber reality can and should imitate reality.

Design Science. We need more DSS design experimentation. The computational resources for building DSS are constantly improving and becoming more powerful. We need to continually search for new "cool" features to add to DSS products. Academic researchers need more financial support from decision support software vendors to work on novel interfaces, capabilities and "cool" stuff. These low risk investments can move us to the next level and help some junior faculty get tenure in the process.

Madden NFL 2004 took the top honor at Video Game Awards for its innovative owner mode that has now been included in other games. During the Penn State-Wisconsin football game, Saturday, November 6, 2005, an ABC sideline commentator noted that Penn State Coach Joe Paterno didn't use computers, but that he had used a video game, Madden NFL, to demonstrate the plan for the game. On the Web one can download player characteristics for a number of College teams to use with Madden NFL. If a 78 year old football coach can adopt a new technology to assist in training, planning and envisioning the future, then so can managers and executives in other industries.

So what are the "must have" video games for current and future DSS designers?

On the Web and in game magazines you'll find many game reviews and "must have" lists. I am not familiar with even a fraction of the titles so I may need to hire my sons to write some reviews, demonstrate the software to me and try XBox 360. Some titles that sound interesting are: SimCity 4 Deluxe, The Sims II, Microsoft Flight Simulator 2004 - A Century of Flight, Madden NFL 2006, RollerCoaster Tycoon 3, Emperor: Rise of the Middle Kingdom, Monopoly Tycoon, Sid Meier's SimGolf, Capitalism 2, and Airlines 2.

References

Power, D.J., "How can simulation be used for decision support?" DSS News, Vol. 4, No. 14, July 6, 2003.

Power, D.J., "How can behavioral models be used for decision support?" DSS News, Vol. 4, No. 23, November 9, 2003.

from Power, D., "What can DSS designers learn from video games?" DSS News, Vol. 6, No. 24, November 6, 2005.

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Last update: 2006-02-05 14:18