Board Game Metaphors for GIS

On day one of the 2010 GeoDesign Summit, Ola Ahlqvist discusses massive multiplayer online gaming (MMOG) technology and how it is finding its way into education and training environments.

http://video.esri.com/watch/114/board-game-metaphors-for-gis

Video Transcription

00:01 Can everyone hear me? Yes. Well, then I'm fine.

00:02 All right, thank you. So how many of you played some kind of game over the holidays?

00:07 [Inaudible audience participation]

00:08 Yeah, see? Games are a lot of fun and engage people. Anyone played Monopoly?

00:14 A few. Do you remember the rent of Broadway?

00:19 [Audience participation] I want to say it's 400 and...400 [inaudible]...

00:22 There you go. Right. Useful trivia.

00:25 Do...does anyone know the ballpark figure of the actual square foot rent of a flat on Broadway?

00:32 [Inaudible audience participation]

00:34 Right. Never mind. Anyway, I'm working with a...a whole range of really great students at Ohio State...

00:43 ...and we wanted to attack this thing of global or collaborative mapping in a slightly different fashion.

00:51 So looking at parti...participatory mapping, I couldn't see that much public participation.

01:00 And also with the growth of social networking, although they try to pinpoint their location of friends and stuff...

01:05 ...they're still not using space as a really...a foundation for social networking.

01:12 So thinking about this, can we blend spatial environment, social networking functionality into a single platform? Yes.

01:19 I could only look into my son's bedroom and find him playing this Tibia game...

01:24 ...online, massive multiplayer gaming environment where he joins in with ti...

01:30 ...other fr...people that he know...learned to know through the Internet...

01:35 ...and they solve pretty complex things. Often you see maps.

01:42 Started looking at games. It's usually a voluntary activity.

01:47 It has a lot of make-believe; you have imagined things, or you've envisioned things, and you have some kind of goal in mind.

01:56 Sometimes it...it involves a lot of intellectual, sometimes physical activities.

02:01 And...and it...it has been shown that game play can promote a lot of higher-level thinking...

02:07 ...problem solving, social interaction, and collaboration.

02:09 So I want to show you a brief clip here real quick, hopefully, with some sound.

02:18 And have you heard of Leeroy Jenkins? Some. Okay, you're in for a treat.

02:26 So here we go; it's poor quality, poor audio.

02:30 [Video clip playing in the background]

02:31 Yeah. So these players now join in, donning a headset from their home computers...

02:37 ...and they take on roles like a master sorcerer, something like that.

02:42 And they're planning this attack on an opposing team, and you can see them kind of roaming around there...

02:52 ...dividing the tasks, figuring out how much energy, how much resources they could pitch in...

03:01 ...how much they will earn...learn from it, how much they will earn, strategize.

03:07 But what we eventually going to see, there's this one guy in the lower left that doesn't pay attention. That's Leeroy.

03:14 And all of a sudden, he just...just breaks with the plan, just doesn't stick to it and creates basically mayhem.

03:23 [Video clip playing in the background]

03:31 Yeah, there's the analytics.

03:38 There he goes.

03:39 [Video clip playing in the background]

04:13 All right. That's enough.

04:18 So yeah. You can see the dynamics of it, the real time, the collaboration, the immersiveness.

04:23 It's multimedia; it's really engaging.

04:26 Actually, there's been studies and...and analysis of this very game, World of Warcraft.

04:32 And you can see that looking at over 40,000 discussion threads on this official World of Warcraft forum...

04:39 ...about druids and the way they evolve, about 89 percent of all the postings is about some kind of social knowledge construction.

04:48 Right? And there is building on other ideas, counterarguments, system analysis, mathematical models as insights...

04:54 ...all of those things that we as educators, as the university profession try to instill in our students, right?

05:00 So why not look at games as education?

05:04 More things about video games. It's really a social activity now. It's not this confined space that...

05:10 You're really engaging with other people. It's continued to grow despite the deteriorating economy.

05:16 It's now up to the level of the film and music industries in terms of economic activity.

05:21 And look at that last fact. By the age of 21, average American kids have spent more than 10,000 hours playing such games.

05:29 That is five years of work in full-time job, 40 hours per week. Right?

05:35 How's that sit on a...on a résumé? I've got five years of experience; I'm now a...sor...master sorcerer.

05:43 Well, I wouldn't laugh.

05:46 It might just become... As...as the bosses, the hiring managers grow up...

05:51 ...and realize what that means to become a master sorcerer in this game, that guy's...has to have something. Okay.

05:58 So what if we could exploit a fraction of this energy and use the multiplayer online gaming around a geographic setting?

06:08 So our goal with the GeoGame prototype is to create a fun game that embeds some type of geographic learning.

06:15 We want it to have mus...massive multiplayer online gaming capabilities; that's hundreds of...of people joining.

06:22 Simulations that are played on top of a GIS as if it was a board game we were playing on.

06:28 Having...ability to have the real world feed into the game.

06:33 So we could bring in real-time weather, ground conditions, demographics, anything...

06:38 ...and really also put emphasis on the social interaction, the collaboration aspects.

06:45 So the first prototype we created was really, really bare bones.

06:48 It was two years ago, and our first mission was just to create an...an...a real-time editing

component to a map.

06:57 It was built in open layers.

06:58 The next iteration was built with...the Google Earth API was brand-new by then.

07:03 It was also multiuser; you could log in concurrently having real-time interaction with the map.

07:08 You could do real-time editing, you could have chats and...and also add additional geodata.

07:13 So you could search for a KML and just pull it up and...and that could be part of the game.

07:19 The third prototype was a little digression on one of those touch tables...

07:25 ...where we also looked into how we could embed service-oriented computing into this.

07:31 So similar to a Risk game, but instead of using lookup tables for the troop replenishments...

07:37 ...we were using GP statistics, population statistics to inform that.

07:43 So you would actually learn a little bit about what the economy and population of different states in the U.S. was.

07:50 And also, we also pulled in weather data to s...

07:56 ...provide some kind of information about how easy you could move across a state.

08:00 So up in Ohio right now, terrible winter conditions, hard to move troops through, so that would affect the game.

08:09 And it was also really cool.

08:11 Most recent development, then, is called the GeoGame Green Revolution.

08:14 That's something that we're currently testing in geography classes.

08:19 And what we want to achieve is to have our students play this game...

08:22 ...and understand a little bit more about what we mean with the green revolution.

08:26 And we built it using a Sun-developed platform for mous...massive multiplayer online gaming called Project Darkstar.

08:35 And we used the NASA Worldwind interface as our...our geographic platform.

08:41 That made sense simply because both were written using Java so they could easily be stitched together.

08:47 We wanted to, as I said, emphasize the...the social aspects, so...let's see.

08:58 We were thinking about how does people behave, or...or what are our...our...

09:04 ...our situation when we do things in the real world.

09:07 We take on roles. So I could be a father or I could be a professor in...in one role, or I could be

a soccer coach in another role.

09:13 And I would take on these identities similar to the sorcerers in...in this other game.

09:18 So we can have a master profile, but then we assume a character and then we form a cohort...

09:23 ...and the cohort then takes on some kind of objective, some kind of task, and build a scenario from that.

09:29 So we formulate a setting in terms of the geographic setting, the rules, the regulations...

09:35 ...and also some data that we need to...to perform the whole game play.

09:41 So this is what it looks like right now. There's a little interface; we have the map in the middle.

09:46 I can't show it online, sorry.

09:49 You can bring up different layers. There is showing how you can act out the...the role of farmer in rural India.

09:58 So you try to maximize your production, either by choosing traditional methods or with enhanced wheat or...or fertilizers.

10:07 You can also do transactions, like there's a market, sort of eBay style; you can make bids...

10:12 ...and you can put up labor for...for sale and...and all kinds of things.

10:18 We've built everything with open standards so much of what you see relies on a configuration file...

10:24 ...that's written in an ontology definition. It's a separate ontology file that you then...

10:30 ...when you start the game, can pick another one that would be another setting, another game maybe.

10:35 And also the rule engine could be modified using that ontology. KML is used for the data import.

10:41 And the future work is then to just kind of tune this in and then allow anyone to use it and kind of build further.

10:49 One of the important things I think we can see with this is that...

10:52 ...the emergent properties that come out of having multiple people play this...

10:57 So let's say we did this farm game in a number of classes we're testing this quarter, and then aggregate the results.

11:05 So if every...every village is doing really good, that automatically...the demand would drop for crops, right?

11:13 Some simple economic model could be plugged into that.

11:16 You could see crop prices drop and you wouldn't get as much out of your yield, and that

would also be kind of a learning experience.

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