Collaborative Design with gDesigner

Chris Goz from Critigen presents "Collaborative Design with gDesigner" at the 2011 GeoDesign Summit.

http://video.esri.com/watch/177/collaborative-design-with-gdesigner

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Video Transcription

00:06 Hi, I'm Chris Goz from Critigen, I'm going to be talking about Geodesigner, which is an application we wrote.

00:13 It's a baby, it's only six weeks old, so be gentle with me.

00:18 It's a flash application that runs on mobile devices, extending Esri's Flex API and has...

00:26 ...ArcGIS Server running on the back end.

00:30 About me, I'm not a geodesigner, I'm not a designer, I'm not even an urban planner...

00:35 ...I'm just a spatial developer, in a spatial innovation group at Critigen.

00:40 If I get too geeky, let me know.

00:45 This morning, trying to find a definition for geodesign was very tough, and I was encouraged this morning...

00:50 ...we saw the exact same slide by Mike, so I picked the two good examples of what geodesign could be.

00:58 But to us, in the context of geodesigners...

01:02 ...we wanted to focus more on the collaboration aspects of it, the drawing prototype aspects of it...

01:11 Performing geographic analysis and picking winners.

01:13 It's a way of weeding out poor design.

01:18 And to that end we came up with the Geodesigner application.

01:24 I like to think of it as like a grease pencil on a map, but I can take it mobile because it's on a mobile device.

01:28 I can walk out into the field, realize that there's a tree that's not on my map, I can rearrange my design based on that.

01:37 Because it's mobile, it's lightweight, it's not a real robust, like the tablet we saw earlier this morning...

01:43 ...it's not a robust set of tools like that.

01:46 But it has the capabilities, and it also has the server information in the back end, so you may not be...

01:51 ...carrying around all the data that you need to create a design but it's there, nonetheless.

02:00 So here it is.

02:03 On the left is an Android Galaxy tablet and on the right is an iPad.

02:10 To start, obviously if you're familiar with these devices, you just tap the icon and you're welcomed with a flash screen.

02:16 This just reminds you that you can rotate the device, landscape or portrait, change the functionality.

02:23 The first thing we want to do is pick a chat channel, and the way this is going to communicate is people that are...

02:29 ...on my design team, I'm communicating with them...well a different design team...

02:34 ...or a different design scenario would be on a cross channel.

02:36 So I just make sure I'm just getting my features and not their features.

02:39 You simply pick a channel, in this case, I select the black mamba, and you're into the application.

02:46 There are some buttons across the top of this; this is sort of like the main canvas.

02:50 You can see we're streaming AGS services.

02:53 Rotating it, I get the map again, but I also get the feature palette on the left, and that's...

02:58 ...where all the design elements are, sidewalks, parking lots, pools.

03:03 And where that stuff comes from, as we saw earlier today as well, it's the feature service...

03:07 ...that comes new with ArcGIS 10.

03:10 So streaming from the cloud, I'm getting my map services, which are somewhat limited, and the feature service.

03:17 And to create something, I just flip through the palette on the right, pick the element I want to draw...

03:22 ...tap, tap, tap on the screen, now I've got a parking lot.

03:28 Soon as I'm done drawing that parking lot, it's geometry, it's not a feature, it's a big distinction...

03:33 ...to make; it's still just a geometry, a graphic on the map.

03:38 As soon as I'm finished drawing that geometry, it is shared with everybody that's on my black mamba channel.

03:43 Nobody else sees that, just the people on my channel.

03:46 It's geochatting; it's just like doing text chat but it's sending geometry and symbology.

03:54 So now I've got a parking lot.

03:56 Well, not being a good drawer, I drew it too big, so I can just tap on it, change the size...

04:03 ...and when I'm done drawing, it's shared with everybody.

04:06 And like I said, I'm a spatial developer, so of course I put it in the wrong spot.

04:10 Thankfully somebody moved it where there's actually roads.

04:15 In a similar fashion, through collaboration with my other teammates on this design channel...

04:21 ...we're drawing and adding, editing each other's features, I can add them, delete them, move them...

04:26 ...and there's a whole palette there on the right.

04:30 When we're happy with our design, we hit the Submit button, and three things happen when I do that.

04:36 First thing, again through geochatting, I tell everybody, hey Chris is doing some calculations...

04:42 ...don't you hit the Calculate button yourself.

04:45 So it actually disables the button on everybody's device that's on my chat channel.

04:49 The second thing that happens is those geometries get sent up to the server.

04:53 It's that point that they become actual features in a geodatabase, and they'll be there for a long time.

05:02 The third thing that happens is those features get processed into a GP task, and the benefit of having that all done...

05:11 ...on the server, obviously, is it's not done on my mobile device.

05:16 As well, it also can reference all the geodata that I don't have on my device.

05:20 I may not have historic sites; I may not have endangered species.

05:25 But they could be on the server, and that'll go into the geoprocessing task to calculate the score from my design.

05:32 What's that model look like? It can be whatever you want.

05:35 It's just a model; it can be simple, it can be complex.

05:39 In our case it's pretty simple, but it can be whatever you want it to be.

05:42 And this is where that geographic analysis comes in, and that's really part of what geodesign's all about.

05:50 So once I've done that, the devices are told, hey, there's a new scenario, you may want to add this to your collection...

05:58 ...as opposed to having each device saying, hey, is there something new, is there something new...

06:02 ...is there something new, continually pulling the server, it's told hey, there's something new.

06:07 Great, now I can see it on my device.

06:11 Once I've built up a couple scenarios, I can start paging through them, looking at the spatial elements...

06:16 ...of each design, and across the top you'll see some scores, the 9, 8, and 8.

06:21 In our case, it was a greenness score, an aesthetic score, and a cost score.

06:27 Again, those are driven by the model, it can be whatever you want it to be.

06:31 You can page through and pick the clear winner, the one that has the most scores.

06:36 If you're an engineer and you like numbers, we've got graphs.

06:40 Same thing, I can next, next, next through them, and the vertical line tells you which one you're on.

06:46 The bonus here is that along the bottom, you've got some summary information...

06:50 ...which is a little blurry, but it's telling you the number of barbecues you have.

06:54 The square miles of sand and playgrounds that you might have.

06:57 Again, this is just sort of like the quick prototype.

07:02 And that's it; that's what it does. That's Geodesigner.

07:05 It's a collaborative, mobile environment, where I can draw different scenarios, measure their effects...

07:11 ...change my design as I need to to improve my scores, and then pick the winner that I...

07:15 ...bring back to the office to develop further.

07:19 I kept talking about we, and I just wanted to make sure that I mention the other people in the group.

07:25 Tyler and Rand, both were instrumental in this, as well as Mansour from Esri.

07:31 And if any of you have ever worked with Mansour, it's like drinking from a fire hose.

07:35 It was a two-day cram session followed by a week of intensive development to come up with this application.

07:41 So, that's all I've got. Thank you.

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