Deploying Geospatial Information to Mobile Platforms

Jo Fraley demonstrates best practices for sharing maps and analysis on mobile devices.

http://video.esri.com/watch/1076/deploying-geospatial-information-to-mobile-platforms

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Video Transcription

00:01 Journal entry. November 7. Next stop USAID.

00:07 When a disaster or crisis occurs, USAID is prepared to answer the hard questions, when and where should the US provide assistance?

00:15 What and how much is needed?

00:16 And how do we coordinate with multiple organizations on the ground?

00:20 At USAID, we saw GIS making a difference in many different humanitarian assistance efforts, analyzing the recent floods in Thailand...

00:29 ...tracking internally displaced persons in Uganda, and a really interesting story from Haiti.

00:36 Analysts mapped the density of destroyed buildings.

00:40 Calculated, there was more than 10 million cubic meters of rubble which clearly demonstrated...

00:45 ...the lack of enough available open space in the right places for temporary shelters.

00:51 So in a key innervation, they created a new two-story shelter.

00:56 Now they can shelter twice as many people in the same space as before.

01:01 But GIS is a relatively new tool in the development community, and we saw the evidence during our visit...

01:06 ...represented by an incredible team of young, inspirational GIS champions, that are spread across multiple divisions...

01:13 ...yet all banding together informally to help each other and to empower the best decisions.

01:19 USAID is in the early stages of their enterprise GIS potential as an organization.

01:25 They have the staff and the champions.

01:27 They're building great maps and analysis, and just last November, they formalized a new geocenter to increase their capabilities.

01:35 Even in times of budget cuts in many organizations, the GIS team is seen as mission critical.

01:42 At some point during our visit, the subject of the news media came up.

01:46 I often personally disagree with how some news reports sensationalize events.

01:52 And I realized a valuable lesson here.

01:55 Media can often drive decision making in the absence of authoritative information.

02:01 This was an a-ha moment for me.

02:03 I understood that as GIS professionals, we must share our results quickly so decision makers can act with the best authoritative information...

02:13 ...not let the absence inadvertently drive decisions.

02:21 Now let's take the USAID lesson a step further.

02:24 Where do most people in the world get information they use to drive their own decisions?

02:29 The answer today I would suggest is their mobile device. No big surprise, right?

02:34 Our new challenge as the GIS community is to realize that for many situations we must be able to deploy our work to the mobile platforms...

02:43 ...because that's where many decision makers are getting their information first.

02:48 This new trend is Mobile First.

02:51 To help deepen our understanding of what Mobile First means, please welcome Jo Fraley.

02:59 Thanks, John.

03:02 When John gave me the assignment, Mobile First, my initial reaction was, there's so many devices, where do I begin?

03:10 If mobile is where people are getting their information, then Mobile First means their content must fit on a small screen.

03:18 It should be intuitive.

03:19 And it should work when you send an e-mail with a link.

03:24 When you need to share maps and analysis to your organization, to your manager, or to the public, the first question is, do you need to write code?

03:37 No or yes?

03:39 If yes, do you write JavaScript in HTML or do you go native, meaning using the SDKs for a specific device?

03:49 Now let's take a look at these three options.

03:53 The first option is you need to share to many devices without writing any code.

03:59 You've seen how ArcGIS Online allows you to share content easily.

04:04 If we go to the full site for ArcGIS Online on my iPhone, what is wrong with this picture?

04:11 It breaks all the Mobile First rules.

04:14 It doesn't fit on the screen. It's hard to use and navigate.

04:18 But what else is wrong with this picture?

04:21 It's not 11 p.m. at night.

04:24 This is actually a picture.

04:27 Let's open up a browser and navigate to ArcGIS Online.

04:33 Mobile First means you get a streamlined application that is built to fit and work on your mobile device.

04:41 If I'm signed in to ArcGIS Online, I'll get my content, but I can also get to additional content.

04:48 And those intelligent web maps that have been authored and saved on ArcGIS Online are easily accessible…

04:55 …and I can open them in my map view.

04:58 I can get to a description about that map, and I can quickly zoom in to my current location using the GPS of the device.

05:06 Also, pop-ups that are authored within the map are also accessible.

05:16 And if you really like a map, you can share it via e-mail, Facebook, or Twitter.

05:24 Another out-of-the-box option for users of Android, iOS, and Windows Phone is to download ArcGIS for those specific devices.

05:35 Opening ArcGIS on my Windows Phone, I have access to that same content from ArcGIS Online.

05:42 So using ArcGIS Online, you can share to many devices, whether they're using a browser…

05:49 …or using the native ArcGIS applications for their specific device.

05:53 There's no programming required.

05:58 Moving on to our next option when you do need to write code, do you go JavaScript HTML, or do you go native?

06:08 Well I wanted to see what it would take to write a simple application focused on a hot topic of 2012, the presidential election.

06:17 So using HTML 5 and the ArcGIS API for JavaScript, I spent a couple days, wrote about 400 lines of code to create an application.

06:27 I shared an e-mail with my colleagues asking for their help in testing the application...

06:31 ...explaining to them that the application collects public opinion on election issues.

06:36 It's designed to work on multiple devices, and if they click on the link, they could try the application out and give me some feedback.

06:46 Now the application does take advantage of the GPS of the device.

06:58 Using my location, I can grab the ZIP Code and summarize the results for this particular region.

07:05 I can click on a map to see where the results have been collected from, and as we zoom in...

07:10 ...we can see the blue dots represent that the biggest issue in this area is budget and economy.

07:16 Going back to the chart, the chart will update based on that region or map extent.

07:23 Now since the application is designed to work on multiple devices, let's go back to my iPhone, open that same e-mail, and click on the link.

07:36 So using JavaScript in HTML, you can write your code once to create focused applications that collect, summarize...

07:48 ...and visualize information on multiple devices.

07:58 The last example that I'm going to show you today is creating native applications.

08:04 Some organizations are standardizing on a specific device.

08:08 The ArcGIS Runtime SDKs for Android, iOS, and Windows Phone allow you to build these native applications.

08:16 And these SDKs allow you to take full advantage of your device's capabilities like the camera, the contact list, and online storage.

08:26 Coming at 10.1 with the Runtime SDKs is the ability to go offline.

08:33 So let's open up an application, and this application is built specifically for the iPad...

08:39 ...that allows me to do inspections on tanks in a gas and oil field.

08:45 But we want to take advantage of that offline capability.

08:48 So let's switch and actually turn, go into airplane mode on my device, and I see that I'm offline.

08:58 I can continue to pan and zoom around the map as well as get to information about my tanks.

09:06 We can collect information while disconnected...

09:10 ...and this capability is available because this application takes advantage of the local storage of the device.

09:19 We can also add a photo, either from the camera or the library, and save that information all while disconnected from the network.

09:30 And I see that I have one inspection ready to sync.

09:34 Now let's go back online, and once connected to the network, I can sync my changes and the data will update on the server.

09:48 So using the ArcGIS Runtime SDKs, you can build these native applications that take full advantage of your device's capabilities.

09:59 To wrap up, the three options when thinking Mobile First are no programming required using ArcGIS Online...

10:10 ...creating applications using JavaScript in HTML to reach multiple devices...

10:15 ...or creating native applications for a specific device.

10:19 So my challenge to you is, the next time you need to share your maps and analysis, think Mobile First. Back to you, John.

10:32 Thanks, Jo. This gives us a better understanding of what Mobile First means for pushing information back to the world...

10:40 ...as well as collecting information back, because in many situations, the best information comes from those that are walking in the geography.