

ArcGIS System and Productivity

ArcGIS 10 is a system that can be used anytime anywhere - on desktop in the office, or anywhere in the field or through the cloud. The demo shows productivity enhancements in ArcGIS for Desktop such as direct access to ArcCatalog from within ArcMap, easier searching for content, and a new parcel tool. Field staff can access a new Mobile Project Center that lets them download maps created in ArcGIS for Desktop, and web editing tools are now more intuitive and easy to use.

<http://video.esri.com/watch/38/arcgis-system-and-productivity>

Video Transcription

00:01 Welcome back! Welcome back, everyone. I hope you enjoyed the break.

00:06 I'm John Calkins, and I will be your emcee for the next exciting session about exploring and discovering ArcGIS 10.

00:17 What is a GIS? If you think about that question for a minute, a GIS is a geographic information system.

00:25 And I want to put the focus on the last word, a system.

00:29 A system, by its very definition, is many parts that all make up a whole; they're interconnected.

00:36 A system has structure, behaviors, and it all has to work together. For the next 90 minutes, we're going to focus on the system.

00:47 But before we start, I want to do a quick, informal survey.

00:50 Raise your hand if you consider yourself an ArcGIS Desktop user.

00:56 Okay. Now raise your hand if you're a server user.

01:01 Okay. Now raise your hand if you're a mobile user. And that's three hands, I know; probably one too many. I got the idea.

01:10 But I want to suggest to you that that question was totally inappropriate.

01:15 Because in 2010, there will be no more desktop or server or mobile users, but everyone is going to be consuming the whole system.

01:24 We're all going to use every part of the system.

01:28 Two years ago, our director of research and development, Scott Morehouse, told us that GIS was going to become like music.

01:37 Where do we listen to music? We listen on our iPod, we listen on our desk using iTunes, we listen at home...

01:45 ...we listen outside, we listen in the car, we listen everywhere.

01:49 And the music is delivered to us through a system that's made up of hardware, software, and online content.

01:56 Well, GIS is going to become just like music. In fact, GIS has already become just like music.

02:03 And we're going to use a system that consists of all those pieces, and especially that online content part.

02:10 Well, Scott told us that message two years ago, but for me, it actually really sunk in about two months ago.

02:17 I was in the office, I was working on a map of Yosemite National Park, a beautiful map on my desk.

02:22 My coworker was taking that map and publishing a Web application.

02:27 But then I had to go home early that day, and she kept working, and she published it to the Amazon cloud.

02:33 And then she sent me an e-mail that says, well, that's now available on ArcGIS Online.

02:38 So I was at home, and I was using my iPhone, and I was doing the thumb thing on my iPhone, sitting on my sofa.

02:43 And that was the moment that I realized, I am no longer a desktop user, which is what I thought of myself.

02:50 I'm now using the whole system. And I liked it. Because it meant I could work anywhere.

02:55 That one beautiful map that I was working on in the morning in the office I could work on at home on my phone.

03:01 And that's when I think I truly caught up with Scott's vision that GIS is going to become just like music.

03:08 We're going to have it everywhere, and it's going to be available to everyone.

03:13 So what we want to do, is we're going to spend this morning, we're going to talk about where do you want to work?

03:17 Some of you may want to come over here to your office, or my office, and work on our desktop computers.

03:22 Or you may keep going, and you may go out into the field.

03:26 You may want to work in the forests of New Zealand, collecting and analyzing information.

03:30 And when you get tired, where do you go?

03:33 Well, if you're like me, you head over here to Starbucks, and you want to get on the Wi-Fi, you want to stay connected.

03:41 And with a little luck, we can have our Starbucks delivered.

03:47 So we're going to try to have a little bit of fun over the next 90 minutes.

03:51 We're going to show you a number of these big ideas as we walk through a series of live demonstrations.

03:57 The first one is about productivity. How do we get started with productivity? With a map, the way we all get started.

04:04 We're all making maps every day.

04:07 We bring data together, we apply great cartography, now we want to make sure that map is current and up-to-date.

04:14 You'll find with ArcGIS 10 hundreds of productivity enhancements to make those processes simpler.

04:20 There's another big area, and that is how we create and update features.

04:25 Close your eyes and imagine the editing process for a minute as it exists today.

04:29 You say, Start editing. You create a point, a line, a polygon.

04:33 You fill in the attributes. You change the symbology. And then you repeat the process.

04:37 We're going to turn that all upside down.

04:40 We're going to make the process as simple as choose the symbol on the legend and drop it onto a map.

04:47 So I want you to watch in this next presentation for this new approach to editing...

04:52 ...amongst all the other hundreds of productivity enhancements we've made.

04:57 To kick it off, I want to introduce Pat Dolan, who will be shortly followed by Katie Clift. Pat.

05:03 Thanks, John. Good morning, everyone.

05:08 As GIS professionals, we make maps every day.

05:10 The challenge in making those maps is finding the right content that's up-to-date and looks professional.

05:16 I'm excited to show you just some of the new enhancements in ArcGIS 10...

05:19 ...that'll make this process easier and you more productive.

05:23 So to begin with, I have a map document that contains information.

05:26 Now to understand what the information is on the map, I can hover over to the left-hand side...

05:30 ...and the table of contents automatically appears.

05:34 This allows me to access the tools quickly when I need them and then disappear when I need to focus on the map.

05:41 Now when I do an identify on a feature, I know exactly where the Identify window is going to appear...

05:47 ...and when it disappears, the map doesn't refresh.

05:51 This is a longer demo if I don't get crowd applause. Thank you.

05:56 So that little enhancement's already saved me a few seconds. Next, what I want to do is I need to find a basemap for the city.

06:04 Traditionally, what I would do is I open up ArcCatalog to find content.

06:07 But in ArcGIS 10, I can now access [Arc]Catalog directly from ArcMap.

06:12 What I can do is now locate the facilities and add that to the map.

06:20 Now that I've added the facilities to the map, the next challenge is I need to locate additional information.

06:26 From the table of contents, I can see that I have the capital improvement projects for 2009...

06:32 ...but what I'm interested in is seeing the projects for 2010.

06:36 I'm not sure where that information is located at, so what I can do is...

06:39 ...I can now use the new capability to search on features or content.

06:43 So I'm going to type in capital, and what I can do now is filter based off of maps, data, or tools.

06:52 Now, when I review the data, you'll notice, or the results, information about each layer appears.

06:57 So I can now understand what is the right layer to add to the map.

07:01 To narrow down my search, I'll type in 2010, and now I locate the information.

07:07 And now I can see where it is on the system and add it to the map.

07:11 Now that I've added it to the map, I need to update the symbology. Now it's not using the standard symbology for the map.

07:20 To fix that, I can come in, open up the symbol locator, and use the new search capabilities to type in projects.

07:28 Trust me, I like this one too.

07:32 And now I can locate all of my symbols very quickly without having to spend thousands of hours looking for the right symbol.

07:44 All right. Got my map. I'm ready to do some work. But before I do that, I want to make sure the map's going to perform.

07:51 So as you'll notice as I pan, there's a slight delay in the redraw. It's not bad, but we can do better.

07:59 One of the major enhancements in ArcGIS 10 is optimized map layers.

08:03 So all I need to do is right-click, open up a new basemap layer, take my existing layers and drag them into this group.

08:11 What's going on is it's going to take those layers and optimize how they're drawn on the map.

08:16 So that now when I go, I can now go out and continuously pan and zoom through my entire database without having it to refresh.

08:31 All right. Got the content, map's performing. Now I need to update the map.

08:35 Now this is my favorite enhancement to ArcGIS 10 is the new editing environment.

08:41 What I have here is a work packet outlining a new sewer line extension.

08:46 Now those of you who've worked in utilities, you know how long it takes to add this level of detail to the map.

08:51 Well, in ArcGIS 10, we've reengineered how we do editing to streamline the common ways we add features.

08:57 So simply coming in and starting an edit session...

09:01 ...I'm going to be presented with an edit template with all the features I can add to the map.

09:05 So all I need to do is select a feature and add it to the map.

09:11 Now as I add the sewer line, you'll notice that it starts giving me feedback. It's snapping to features.

09:18 So it's honoring the connectivity rules that I've established in the database.

09:22 Now as I add my lateral lines, you'll notice that there's a small Construction toolbar that follows me when I add the features.

09:29 This Construction toolbar allows me to have access to common editing methods when creating features.

09:34 So when I add this last lateral, I can pick Parallel to the lot line to make sure that the line that I add is straight.

09:42 Now I'm going to add just a few more details to the design.

09:51 So what enabled me to add 15 features in 30 seconds?

09:54 If we take a look at the properties of a feature, you'll notice that the construction has already been defined...

09:59 ...or the way we construct the tool has already been defined.

10:03 More importantly, I have all the attributes predefined, so now I can literally click and go.

10:07 I can select the feature on the map and add it.

10:13 So, as a part of this design, I need to go ahead and add an 8-inch sewer line just north of the new extension.

10:22 You'll notice from the edit template that I don't have that feature. Well, the templates can be easily configured as well.

10:28 All I can do, well one example is I can simply copy an existing feature, open up the Properties page...

10:34 ...now we'll go ahead and name that. We'll go with 8 inch PVC, then I can just simply come in...

10:42 ...change the properties to make sure it's an 8 inch for the diameter...

10:49 ...and now add it to the map.

10:52 So it's really that easy. I can quickly access the template, update it, and move on.

10:58 So I've finished at least the sewer line extension. Now I need to go ahead and now update this lot.

11:04 Another major enhancement to the editing environment is the Parcel Editing toolbar.

11:10 The new Parcel Editing toolbar streamlines the way in which we manage and create parcels.

11:15 So what I need to do is simply select this lot, determine what task I want to do...

11:23 ...in this case, we want to do a parcel division...

11:26 ...and what I want to do is subdivide it into five parcels, proportional to one another, starting from the east boundary.

11:33 Now it's going ahead and constructing that new lot into five parcels and prompts me to update the lot names.

11:41 Now we're going to start with a lot name of 31 since the last one was 30.

11:47 So in just a few clicks, I was able to construct a whole new subdivision.

11:57 Now more importantly, you notice when I zoomed in, you can see the measurements have been automatically labeled.

12:02 So we've already calculated the measurements for you and labeled it automatically.

12:06 So you no longer have to do that manually.

12:10 All right. We've got the map up-to-date. Now I need to validate the content before I make the map.

12:17 To do that, I'm going to use a new extension in ArcGIS 10 called Data Reviewer.

12:22 Data Reviewer has built-in QA/QC procedures to make sure the information on my map is valid.

12:28 So what I'm going to do is I'm going to open up an existing configuration of rules that I can set up.

12:33 And what we're going to check for is diameter, length of pipe, fields that are null, and the parcel area.

12:41 I'm going to run this on the entire database, and if it finds any errors, it reports them to a table.

12:47 I can now review these 11 records by opening up the table.

12:52 I can now see a description of each of the errors, and as I go through each of the issues that I find...

12:59 ...I can select any one of them and zoom to the location.

13:03 Here's an example where we have a 12-inch diameter that doesn't match the main's diameter that it's attached to.

13:09 So I've been able to update the map and validate the map. Now I'm ready to create the map.

13:15 So what we're going to do is we're going to go ahead and zoom out to the full extent of the map, to the city extent.

13:24 Now, when I think about making a map or a map book, I think about making individual maps based off of a map grid.

13:32 However, what I want to do is I want to make a map book that's based off the location of these individual projects.

13:39 In ArcGIS 10, you can now design your own map book with just a few steps.

13:44 To do that, I'm going to use the new Data Driven Pages toolbar, where I can come in...

13:51 ...select the project area that will define the extent.

13:54 Also I can figure out, define what fields I want it to automatically label on the map.

14:00 I can even set the rotation for each of the map sheets and apply. So now, in just a few steps, I have now a map book.

14:09 And as I cycle through each of the map sheets, you'll notice the extent goes to each individual project...

14:14 ...and is updated with the name and the estimated completion date.

14:20 So in just a few steps, I've been able to create my entire map book based off of the extent that I wanted to do.

14:33 So these are just some of the new enhancements that will make the process of updating and creating and generating maps easier for you. John?

14:42 Thanks, Pat. I think you did a fantastic job. They all think you did a fantastic job.

14:49 Okay. I think you did a fantastic job too.

14:54 But there's a little problem. I told everybody this was about the whole system.

14:59 You showed all the productivity enhancements, or at least some of the productivity enhancements, on the desktop.

15:04 But you didn't really engage the entire system. So I want to give you a new challenge.

15:09 Your coworker Katie Clift is going to come out in a couple of minutes, and she's going to work in the field.

15:13 Let's assume she works for the parks and recreation department, she's never used a GIS...

15:17 ...and you need to help her learn how to collect information about the park in the field and anywhere she wants to work.

15:24 So show us how you can help her with that.

15:27 Now?

15:28 Now.

15:29 Okay. Well, the reason I asked John "now?" is because my basemap doesn't contain city facilities.

15:36 I'm not sure what they look like, how to map them, or actually how to organize them.

15:40 But this is where I want to leverage the system and go online and see if a best practice has been determined by the community.

15:47 So to do that, I'm going to go in to ArcGIS Online, and now I can search on parks.

15:55 What it does, it goes out and brings back all maps that relate to parks...

16:00 ...and I can review the details of these maps and determine which one is appropriate for the exercise.

16:06 In this case, I found the map that looks like it fits what I need. I can download that map to my desktop.

16:13 Once it downloads it to my desktop, it automatically opens up the template.

16:17 So it gives me the opportunity to quickly come in, configure it for my city requirements.

16:23 So I can set the fields and begin to add features.

16:26 So I can see from the imagery where the baseball park is, where the parking lot is, and so on.

16:32 But that's only part of the challenge. John asked me to make sure I enable it for everyone.

16:37 So I need to take this same map so that people can access it outside of the office or in the

field.

16:43 To make it accessible in the field, what I'm going to do is use the new Mobile Project Center that allows me to package the map and the app...

16:50 ...so that my colleagues in the field can download it and begin to collect information in the field.

16:54 So, I'm going to go ahead and collect, or excuse me, I'm going to go ahead and continue to add information to my map here.

16:59 And I'm going to ask my colleague Katie to go ahead and download the same map...

17:02 ...and start collecting information in the field. Katie?

17:05 Thanks, Pat. As Pat mentioned, the ready-to-deploy ArcGIS Mobile application allows me to collect parks data in the field.

17:13 To get started, I download the project by clicking the project name.

17:18 Big buttons make it easy to use this application on a touch-enabled Tablet PC.

17:24 And the application walks me through key things that I need to do to run the project.

17:29 First, would you like to download data now?

17:35 Next, which layers would you like to download data for?

17:38 These are the same layers that are coming from the map that Pat configured on the desktop.

17:44 And finally, I'll get data for the default extent.

17:47 Keep in mind, I only have to walk through that sequence of steps when I download a new project.

17:56 Notice the map looks identical to what Pat configured on the desktop.

18:01 I'll zoom in to the area where I'm working...

18:05 Let's try that again.

18:12 And the application walks me through the process of collecting parks data.

18:16 Notice these are the same symbols. It's the same map template coming from what Pat configured on the desktop.

18:24 And the workflow is straightforward.

18:26 I choose the symbol that I want, I want to collect the location using the map, and I place the point.

18:34 I have the option to review attribute information, most of which was automatically populated by the map layer.

18:40 And I can add additional notes if necessary or override any of the default values.

18:49 Here I have a choice. Do I want to collect another picnic table or choose a different symbol from the map template?

18:54 I'll collect another picnic table.

19:02 And as I collect data in the field, I can view progress on the map.

19:06 Since this is a task-based workflow, field-workers can be immediately productive with very little training.

19:13 Thanks, Patrick. So now I get to head over to Starbucks. I don't think I actually get a latte, but I sure would like one.

19:20 And I can keep working here. So far, Pat and I have been collaborating on the same map.

19:25 He authored the map in [ArcGIS] Desktop and added some data.

19:28 I took the map to the field to ensure accuracy and add additional content.

19:33 But I can also edit the same map, now using a Web browser, which means that I can work anywhere, even here.

19:41 Using this configurable Web application; in this case, it's the Flex viewer...

19:45 ...it's easy to validate the data that I collected in the field.

19:48 Here we see the picnic tables, and I can click to access details.

19:53 But more importantly, intuitive Web editing tools allow me to simply keep editing this same map.

19:59 Again, here we see the same map template, the same symbols coming from the map that Pat configured on the desktop.

20:05 And the workflow is straightforward. I choose the symbol that I want, and I place it on the map.

20:11 Here I've added a playground, and I also want to indicate a parks project under construction in this area...

20:18 ...so I'll sketch that in and add project details, such as a description and estimated costs.

20:29 Now while I was busy collecting data in the field and on the Web, Pat was back in the office editing the same map.

20:36 So I not only see all the work that I've done, but I can access all of the data that he's collected too.

20:43 John introduced ArcGIS 10 as a system.

20:46 This system allows us to edit the same map anywhere, anytime...

20:51 ...to increase collaboration and productivity throughout the organization. John?

20:56 Thanks, Pat. Thanks, Katie.

21:03 I think we can best summarize what you did by saying one map document, one set of layers and cartography...

21:10 ...one set of editing rules, that template that you could use anywhere you wanted to work...

21:16 ...and also, you saw them working at the same time.

21:18 They were collaborating together; both were capturing information from the office and the field concurrently.

21:24 So thanks again, you guys.