Esri’s Enterprise Strategy

We’ll define Esri's enterprise strategy at ArcGIS 10 with a focus on understanding the business value, the architecture, and support for emerging technologies like the cloud. This will be a deeper dive into how ArcGIS 10 enables scalable, collaborative GIS.

http://video.esri.com/watch/72/esris-enterprise-strategy

Video Transcription

00:01 My name's Bruce Harrison, and this is my colleague here, Andrew Hendrickson.

00:05 We work as part of a patterns and practices team here at Esri and spend a lot of time working with customers...

00:14 ...and working across our...with our sales team, our distributors, our partners on enterprise architecture and...

00:26 ...identifying different patterns that we can take out to the field with the goal of creating customer success.

00:37 What we want to talk to you about today is GIS in the enterprise and some principles and strategies around that notion.

00:50 So like I say, we have a lot to cover today.

00:53 We'll start out by kind of exploring this notion of GIS in enterprise through a series of questions and lessons learned...

01:02 ...and then jump into Esri's enterprise strategy.

01:11 So I guess I wanted to start out by asking probably the most important question, you know, What is an enterprise?

01:20 But before I answer that, I guess I just was interested in kind of polling you guys out there in the audience.

01:28 How many of you by show of hands are actually working sort of hand in hand and integrate as part of your IT organization?

01:43 And how many of you have actually taken your GIS and it's an integrated part of the enterprise, your IT enterprise?

01:57 All right. And how many of you guys are here today to learn about some ideas on how to effectively do that?

02:06 Good. It's what we were hoping.

02:11 So I guess the short answer for us is, you know, an enterprise is...it's a strategy, it's an infrastructure...

02:21 ...the systems, it's the governance, and it's the resources required to effectively achieve your business objectives.

02:31 So it's really not a proxy for size; it can be big, it can be small.

02:39 It can support a single organization; it can span an entire government or global operation.

02:51 And it also goes far beyond mapping and visualization.

02:57 GIS is really just, you know, one technology of many that support the overall enterprise.

03:06 And I guess, to me, an enterprise is much like a city. It's a business and it really needs to be run like one.

03:15 So I look at it as a living, breathing thing that's continuously evolving.

03:21 And I guess similar to your organizations that you serve, you know, it has its own set of challenges...

03:28 ...and therefore, it requires proper planning, governance, and obviously a sustainable budget.

03:41 The second question I wanted to throw out to you is, When is information technology useful to an organization?

03:51 When it enables the organization to achieve its business objectives established by its leadership.

04:00 So that means it really needs to solve real-world problems, you know.

04:05 This notion of, you know, I've gone down this path in my 20 years in GIS, but you know the notion of build it and they'll come...

04:15 ...and stand up services and folks will use them, it doesn't work in an enterprise.

04:20 Everything is done with a purpose in mind.

04:25 So it also must create new opportunities to fundamentally improve the way in which the organization does business.

04:36 And lastly, it must add incremental value to the work environment or the enterprise.

04:47 I think that the way we should be looking at GIS technology in enterprises, you know...

04:51 ...we should be thinking about how to help the organization work smarter, not harder, and faster.

05:01 The third question I had for you guys is, When will executives invest in information technology?

05:10 And the answer is, When executives understand how the technology will help them achieve their business objectives.

05:18 So I guess that really makes it important to, you know, speak the language of the executive.

05:25 And I don't know how many of you have had conversations with one of your business executives or...

05:32 ...a CIO and they just didn't understand what you were trying to tell them, or they got a little bit confused.

05:40 And I know I've had those conversations especially with the CIOs that I've worked for.

05:46 You start talking "geodata this" or "geodatabase this" or "geospatial that," and it all kind of means the same thing...

05:53 ...but it's just not in a context of how they understand information technology.

05:58 So, you know, I just think we just have to be a little bit careful of the way we engage with executives.

06:08 You know, I think the easy thing to do is to hold our discussions in the context of business solutions.

06:18 I think business executives typically don't understand or don't have a strong understanding of technology...

06:25 ...and they really don't need to, right?

06:27 You know, what they really need to know is that the solution that you're proposing to them...

06:32 ...is going to help solve their business objectives and needs, right?

06:38 And then when we think about solutions, we should think about them in the context of creating success for that executive sponsor.

06:50 I don't know exactly where all you guys come from, but I spent quite a few years in GIS before moving to a level...

07:00 ...in state government where I was more of an IT executive.

07:07 But we were always told by our CIO that the folks that we serve are our customers...

07:15 ...and our goal was to become the preferred provider.

07:18 So it's always kind of stuck with me that, you know, whether it was my GIS or it was the enterprise that I was managing...

07:28 ...I wanted folks to come and work with me and my team.

07:33 Otherwise, there's nothing worse than you spend years building your GIS to find out that...

07:40 ...you're not working closely with your IT department...

07:43 ...and somebody within the IT department decided to bring in Google and stand up an app, and you can do it better.

07:51 Right? And so that's not what you want to see happen.

07:59 I thought this was kind of interesting. You know, even in tough economic times, looking at the priorities...

08:08 ...technology applications and tool priorities from NASCIO this year, GIS is up one from 2009.

08:19 In 2009, it was number eight; it's number seven this year.

08:23 So I just think it's kind of interesting that the state CIOs, you know, they do value and understand...

08:30 ...importance of GIS technology in enterprise, and I really truly believe that we'll see a continued investment in it.

08:40 But again, we've got to focus on solving real business problems, right?

08:46 So I guess I would just challenge you guys to get plugged in with your IT departments if you're not...

08:55 ...and kind of open up the hood of the GIS that you built and show them what you can do for the enterprise.

09:03 A good way to get plugged into the enterprise is to get plugged into the enterprise strategy.

09:13 Otherwise - I've seen it, I've personally experienced it - you know, GIS will just continue to be segregated...

09:21 ...and treated as sort of the odd man out when it comes to prioritization and sustainability.

09:28 So I think being part of that strategy, it really promotes knowledge and awareness of the technology and what it can do.

09:41 It institutionalizes the tactics that focus on development, deployment, and support.

09:51 It opens up the door to innovation.

09:55 I mean, I think you definitely have the ability to begin to think a little bit out of the box once you're more plugged into the enterprise.

10:05 And it ensures sustainability through proper planning...

10:09 ...because that's just something that happens in any well-run, organized enterprise.

10:18 So I think any well-run GIS program should have its own plan and strategy...

10:25 ...but what I'm really talking about is an enterprise strategy.

10:30 And every well-run enterprise has a strategy, and that strategy will continue to sort of...

10:38 It's a living document; will continue to change and evolve over time.

10:46 And it's kind of interesting, I whited out the name of the last enterprise that I worked on...

10:53 ...but every enterprise typically has a name too and people take it kind of seriously.

11:01 Like I said, it's like a business, right?

11:03 But this right here is an example of the last enterprise I worked on...

11:09 ...this 43-page document that outlined the enterprise and our strategy.

11:20 You know, everything from...up to the governing structure.

11:26 But this small little paragraph right here was all we had in there about the use of geospatial information...

11:33 ...or technology in the enterprise. You know, two long, run-on sentences, right?

11:38 But those two, long, run-on sentences ensured us...

11:43 ...millions of dollars a year to continue to support the growth of GIS within the enterprise...

11:52 ...to continue to support the development of geoenabled applications as well as geocentric applications.

12:02 So it doesn't take much.

12:04 I used to have a lot of folks look at that, and they'd read our strategy, and they go...

12:11 ...Bruce, we know you love GIS, but that's all you put in there about GIS?

12:16 Yeah. I mean, you don't want to make a big deal about it, because there's...

12:22 You could make a big deal about a lot of other, you know, enterprise-enabling technologies that are supporting the enterprise.

12:29 They don't do that either.

12:31 So you kind of have to treat it like every other mainstream technology that's part of your enterprise.

12:44 So the last question I have for you guys is, you know, Could GIS bring additional value to your organization?

12:52 And I'd say, my answer is that yeah. Absolutely yes.

12:56 Otherwise, I don't think you'd be here today if that wasn't the case.

13:01 So I really believe that GIS can help turn data across the enterprise into actionable information.

13:13 I think it can help you empower your workforce through improved workflows and access to information.

13:23 It can also help internal as well as external stakeholders of your organization manage or...

13:29 ...gain a better understanding of its operations.

13:34 So I don't think it's as much about building an enterprise GIS as it is about...

13:40 ...integrating the GIS that you've built into the fabric of the enterprise.

13:46 It's about geoenabling the enterprise. It's about GIS in the enterprise.

13:51 And it's about leveraging the investments that your organization has already made in GIS, right?

14:02 They're probably quite substantial.

14:04 But a lot of times, if you're not plugged in with the enterprise or your IT department...

14:10 ...sometimes they really have no clue, you know, how much the investment is.

14:18 And it's about helping your organization make the most informed decisions as they relate to everyday business problems.

14:27 Right? I mean that's the key is solving business problems.

14:37 So I guess now I just wanted to just hare with you some of the lessons learned or valuable lessons that I've learned over the years.

14:48 'Cause, you know, I've spent almost 20 years helping people use GIS technology to bring value to their organizations...

14:58 ...and, you know, try to achieve their business objectives.

15:01 And I think again, I'd be the first to admit that evolved over time.

15:06 You know, it didn't happen right out of the gate.

15:08 Probably took me first 10 years of my career to understand that I needed to kind of refocus on solving business problems...

15:17 ...otherwise, folks weren't going to invest in my GIS.

15:23 But these have been valuable lessons, and I just wanted to share a couple with you today.

15:29 So the first thing I learned, and I probably already mentioned this, but I don't think you can mention it enough times...

15:34 ...is that it's vitally important that I focus my energy on solving real business problems.

15:43 And you know, I think why that lesson doesn't seem...it's probably not revolutionary, but I think you'd be surprised...

15:51 At least I'm surprised.

15:53 You know, sometimes I still find myself today, unless I, like, follow my strict approach on how I work with customers...

16:02 ...that it's sometimes easy to forget, especially when you're dealing with a lot of new technologies and evolving technologies.

16:12 Think the second thing I've learned is that - again, we've learned this by working with a lot of

you...

16:21 ...is that organizations all face similar challenges.

16:27 I think, you know, what makes each organization truly unique is how they prioritize addressing these challenges.

16:37 And I'd also say that it's important to point out that not all challenges can be solved or resolved through the use of technology.

16:52 So in a sense, a lot of times there's some level of fundamental change that needs to occur within the organization...

17:00 ...in order to actually meet these business objectives.

17:04 So I'd just go as far to say that, you know, if you're working with customers today, especially within that enterprise space...

17:16 ...I mean, you're a change agent, and your role and your responsibilities sort of go beyond just thinking about technology...

17:25 ...but really how people think and how they can actually think about problems a little bit differently.

17:33 And I think we heard some of that yesterday during the keynote speech, right?

17:41 And the third thing that I've learned is that...

17:44 You know, I just felt like I used to spend too much time thinking about how I was going to engage...

17:51 ...or think about solutions, and I learned that I don't have to re-create the wheel every time I engage with a customer, right?

18:00 Because they face similar challenges.

18:01 But I can also think about solutions in sort of a consistent way.

18:07 So I think about solutions as a recipe, and there's a common set of ingredients that I can use every time...

18:15 ...after I understand what the customer's challenges are and how we need to solve them.

18:23 It's almost like a pick list of...

18:25 And that's sort of where Andy will kind of dive in deeper in the next section on how we actually use that recipe to define...

18:36 ...and design and develop effective business solutions.

18:43 So let's explore these a little bit further.

18:48 You know, what really excites me anymore, just walking around or when I visit customer sites is...

18:57 ...I just see opportunities everywhere, right? I mean, you just look around.

19:02 We sit around our campus sometimes, sit out in front of one of the buildings...

19:07 ...and you just start looking at the different things that are there and the different problems that could occur...

19:12 ...and that you wonder, you start thinking about the types of solutions and systems that you could put in place to...

19:18 ...you know, help your organization better manage its business, right?

19:25 So there's sort of internal and external sides of the business, right?

19:32 So if you're wondering where this picture is, it's the city of Wellington, New Zealand.

19:40 But again, it could be just about anywhere, right, in the world.

19:44 And I think even though we're kind of facing tough global economic times right now, maybe that's changed people's priorities.

19:56 I don't think it's diminished the value that GIS can bring to organizations.

20:02 I think to the contrary, this crisis is just shining new light on GIS's ability to make a difference.

20:11 And again, this is another important reason why GIS needs to be managed in the enterprise.

20:18 You know, in the early years of my career, I spent quite a bit of time helping folks configure and deploy GIS software.

20:29 And then probably halfway through, after I really started to focus on business solutions...

20:40 ...I spent more time focusing on really how to solve their problems, right...

20:46 ...and implement solutions that would really make a difference.

20:50 So we'd work, you know, myself and my team would work with one department and another and another...

20:56 ...week after week, and we did this for years.

20:59 And this is interesting. My big experience was working at a state government.

21:06 And we initially were not...we were part of the IT organization, but we weren't plugged into the enterprise...

21:14 ...and we were treated separately.

21:18 You know, we worked hard to get out there and build capacity with the other departments...

21:25 ...and our GIS grew to, you know, it was really successful.

21:31 It grew to a point where, instead of focusing on business challenges and having time to get out there and work with customers...

21:39 ...and have our staff focus on sort of the core functions of GIS, we quickly became overwhelmed with managing infrastructure...

21:52 ...and developing, you know, I had application developers who were developing solutions.

21:57 You just grow to a point where your infrastructure just begins to collapse, right?

22:04 So I had no choice but to...

22:08 You know, I said, well, I'm going to have to go and work with these folks that are already doing this stuff...

22:14 ...managing data, developing apps, managing the network, managing the infrastructure.

22:19 You know, we develop apps; they had a governance structure, you had to go and you had peer review of your solutions.

22:29 So that was a learning experience for me and my staff...

22:35 ...but it also required me to spend time educating those different divisions I just mentioned on the value of GIS technology...

22:49 ...and the platform we were leveraging and just GIS in general. A lot of them didn't know about it.

22:56 So we had, you know, training. But it was pretty powerful and really beneficial, and it made all the difference in the world.

23:06 And you know, if you think about the end game is creating customer success...

23:12 ...I don't know how you do it without being plugged into the enterprise.

23:19 So the other thing I mentioned is that we found working through, you know, numerous customers...

23:27 And this is really something that I think Andy and our team, over the past few years, working with customers...

23:37 ...we've realized that, I mean, it's not rocket science.

23:43 You know, folks all face similar sets of problems, and while their missions are probably uniquely different...

23:50 ...they all need to be able to support a common set of business behaviors, right?

23:55 So we kind of bucket them up into kind of four areas - asset management...

24:03 Folks, don't let this confuse you over managing signs or manholes.

24:11 When we think about assets, we think about assets in the context that every organization has to...

24:19 ...you know, they have investments; they need to manage their investments.

24:26 So we look at assets in the form of people; equipment; it could be poles, vehicles, buildings, land.

24:36 Every organization has some sort of assets they need to manage...

24:39 ...and what's interesting about assets is they're inherently location based.

24:45 So GIS is a perfect tool to help you manage your assets, right?

24:48 I mean, that's sort of the bread and butter of where we began, right, with our desktop products.

24:56 You know, now we're managing assets through the web and mobile.

25:00 So the second pattern that really emerged was this area of planning and analysis.

25:08 So while it's important to be able to effectively collect, organize, and exchange data...

25:17 ...data doesn't necessarily equate to information that can help you make informed decisions.

25:22 So every organization has the need to take their data that they're managing about their assets...

25:31 ...and transform it into actionable information.

25:38 The third pattern is field mobility.

25:42 In many cases, organizations need to get information into and out of the field.

25:49 You think about it, I mean, we, even Esri, we have a sales force; they're buzzing around the field.

25:57 They use mobile devices to, you know, route them from customer to customer, so they're sort of our assets and we need to...

26:07 You know, we look at them as well, we need to provide them with tools to more effectively do their job...

26:13 ...and visit with customers and create success.

26:18 And I think another way to look at the field mobility piece, we look at it as kind of empowering the workforce...

26:26 ...with access to information that they probably didn't have before, which helps them make decisions...

26:32 ...more effective decisions, quicker decisions.

26:37 And then the fourth pattern we refer to as operational awareness.

26:42 And I think every organization has the need to provide both internal and external stakeholders...

26:53 ...with an accurate and up-to-date understanding of their operations or issues that they want

to share.

27:00 So it could be an internal dashboard, it could be an external dashboard.

27:05 You guys saw a lot of the VGI stuff yesterday, and that's sort of where those types of solutions fit in here.

27:15 And all these areas are continuously evolving.

27:19 So I'd say, you know, if that makes sense to you, then these are the areas where organizations' business challenges reside.

27:28 Right? So it starts to make it a little bit easier for you to begin to engage with customers...

27:34 ...and drill in and understand their challenges through the use of these patterns.

27:43 And I think they'll help us...they can help you quickly uncover them, understand them, and solve them.

27:51 And again, this is something that Andy will dive deeper into in the next section.

27:58 But I'd argue that, you know, when you work with customers, if you go back and you should try this...

28:07 ...but guaranteed, if you're developing a solution or a system, it's going to be defined by one or more of these patterns.

28:19 And the last thing that I had mentioned was that there's a recipe to every effective customer solution.

28:30 So let's talk a little bit more about that.

28:34 I truly believe that a solution is a recipe for customer success...

28:40 ...and after we fully understand the customer's business challenges and their business requirements...

28:48 ...there's some combination of these ingredients here that will create customer success.

28:57 To us, it's that simple, right? I mean, there's some level of core technology that you guys manage.

29:05 Maybe it can be coupled with a partner solution.

29:09 There's always a need for data, right, to support workflows, so that data can come from internally or it can come externally.

29:18 I think you saw yesterday with Bernie up on the stage.

29:21 I mean, the amount of data that's available to you today to create solutions is just unbelievable.

29:29 And there's always some need for training, right?

29:31 It really depends on the solution, but it could be formal training or it could be...

29:39 You know, when we used to roll out solutions, custom solutions that we develop or geoenabled solutions...

29:45 ...a lot of times, the folks that were going to be actually the users of the solutions...

29:51 ...we would train them on how to actually use the solution or application.

29:58 So there needs to be a little training plan for that.

30:03 There's services, you know, we have all different levels of services that we can bring to bear...

30:09 ...from supporting the configuration, customization, implementation, integration.

30:20 And we'll even talk about some of the services a little bit later that we can bring to bear to help you guys probably...

30:30 ...potentially move your GIS into the enterprise.

30:33 And the thing that, if you want to become part of the enterprise, then I think we always have to be thinking about...

30:41 ...promoting enterprise best practices and thinking about those.

30:44 So it's one thing, you know, we all have our production environments or development environments.

30:51 You know, every time we develop a solution, we have to kind of think about those different environments.

30:57 Do I have a staging environment? Oh, maybe I don't have one, or maybe I need to expand it...

31:04 ...because I've just added another solution to my enterprise, right? What does that mean?

31:09 So we need to understand how the solutions that we're proposing affect the underlying infrastructure and fabric of the enterprise.

31:20 So I guess in summary, I'd just say GIS has evolved.

31:29 You know, I think everyone in this room somewhere, if you build a GIS...

31:34 ...it kind of resides somewhere on this business enterprise curve.

31:39 And it might be completely set apart from the enterprise; maybe you're beginning to move into the enterprise.

31:50 I think we've built some really good GIS systems...

31:56 ...and I guess we'd just challenge you guys to begin to think about how do you...

32:01 ...how do you move your GIS up that business enterprise curve and into the enterprise.

32:07 It's sort of a different way of thinking.

32:11 I don't think it diminishes the need for and relevance of the systems that you've built, because there's always going to...

32:18 ...there's always going to be a need for folks to support core GIS capabilities.

32:22 But we look at there's GIS users and there's business users.

32:27 So there's patterns that support the GIS users; there's patterns that support the business users. They're the same.

32:38 It kind of goes back to the notion of we need to speak the proper language, right?

32:45 You know, and as you move up that business enterprise curve, you're going to be dealing with...

32:51 ...different types of enterprise users, and it takes work, but I think in the end, the long run, there's a lot of value in it.

33:01 So I just hope that you guys consider the experience that I've shared with you useful as you approach doing this or...

33:11 ...if you're in the middle of it.

33:15 But I'd say most importantly, remember that there's sort of patterns; we shared with you some of these patterns...

33:22 ...whether it's around the four patterns of GIS or those business behaviors or patterns associated with solutions.

33:30 Just remember them, and I think it will make your lives a lot easier when you're moving your GIS into the enterprise.

33:39 So I'm going to turn it over to my colleague Andy here right now and let him dig a little bit deeper into some of this stuff.

34:02 Okay. Well, thanks, Bruce. Alright. Can everybody hear me? Sounds good? Yes? No? Okay, good.

34:18 Thanks, Bruce. I'm going to move into a different domain, so to say, and talk to you more about how we're utilizing...

34:25 ...patterns and practices for working with some of our large clients in terms of an enterprise architectural approach.

34:32 So I'm going to talk about strategy. I'm going to talk about the product as well.

34:35 I'm also going to talk about some of the support that Esri offers...

34:39 ...and then I will also review some of the things at ArcGIS 10 that I think will benefit you as you grow your GIS in the enterprise.

34:46 So just to sort of kind of reinforce what Bruce was saying, a GIS in the enterprise is data management.

34:51 It's planning and analysis, it's mobility, and it's operational awareness, or visualization.

34:57 So one thing we want to reinforce time and time again is that with the GIS, we've seen tremendous enhances in quality of data...

35:06 ...timeliness of being able to deliver your data, okay?

35:10 Efficiency, and actually the ability to build a community within your enterprise.

35:18 So this slide here is demonstrating a different kind of view.

35:25 It's an updated slide for ArcGIS 10 where we're showing that our technology...

35:29 ...whether or not you're using it on the web or in a mobile client or on the desktop, is pervasive.

35:35 It can be on premises, you know, a local deployment within the enterprise, exposed to the enterprise...

35:41 ...or now with the cloud as well, or a combination of all of these.

35:46 So we're seeing in the enterprise, we're seeing the ability to better visualize and create your data...

35:53 ...to collaborate with multiple departments, discover data, manage it, and analyze it.

35:59 Again, these patterns are starting to jump out at us.

36:03 This is an older slide that we've updated as well.

36:07 This is kind of flipping the previous one around, and what we're demonstrating here is that ArcGIS is an application.

36:14 It's an application server that plugs into your greater business enterprise.

36:18 So you'll see across the bottom, I've got this application server thing listed, little geocode's going to jump...

36:24 ...because geocoding is a capability that your GIS can provide back to your business...

36:29 ...a single capability that multiple departments may not actually know where it's coming from, being provided by the GIS.

36:36 But it's a business process that's required by the enterprise.

36:40 And you can see in this application server tier...

36:42 ...I'm including the GIS right alongside of all other types of enterprise-class technology.

36:48 The integration platform is a step above.

36:51 We don't have to get into specifics on that, okay...

36:53 ...because different organizations use different pieces of technology or nontechnology to do

that.

36:58 And at the top, there's those clients again. There's the ArcGIS platform, whether it be desktop, mobile, or web clients.

37:05 Off to the side, which is cut off - it's not cut off on this side; let's look at this one.

37:11 And we see here that sort of contemporary capability for taking information from other locations and mashing it together.

37:18 That's what we're trying to demonstrate there.

37:21 So I think it's necessary to talk a little bit about enabling technologies as well.

37:26 So accepting the evolution of technology is very important as you're building a strategy...

37:32 ...or effecting upon a strategy to grow your GIS in your enterprise.

37:38 ArcGIS Server. We have a lot of folks using ArcGIS Server?

37:43 I have to ask because I'm also going to ask if folks are still using ArcIMS.

37:49 I'm kind of referring to that when I say evolution of technology and accepting it, okay?

37:53 Because ArcGIS Server is so different. Look at what's provided out of the box via standard APIs, web services...

38:00 ...that IT people can understand, whether it's the mobile data service or a map service or the geodata service...

38:07 ...a custom service that you build with geoprocessing.

38:10 This is important because, really, for the first time, you don't have to wrap a lot of the GIS capabilities...

38:17 ...with some other form of technology to feed it back to the business.

38:21 Standard REST and SOAP APIs out of the box; this is IT, this is IT language. They will understand.

38:28 So just by giving them an API sometimes is a great way to publish all of your capabilities back to the business.

38:35 So with that said, let me talk a little bit more about how I do this with some clients.

38:41 Going to use this notions of reusability constantly throughout the presentation.

38:45 One thing I want to drive home is that it's necessary to define what the capabilities you're providing to the business are.

38:52 This example that I've got up here on the screen is the example, again, of a function - geocoding.

38:57 Time and time again, I see geocoding as a repeatable thing that's utilized by multiple business

units within an enterprise.

39:04 So here is just my way of describing what this capability would be.

39:09 It may be different for you, but this is a good, simple example.

39:13 So what is the requirement to the business? What is the service requirement?

39:17 And you'll notice that I'm not mentioning that this has to be SOA or WOA; it's just a service.

39:22 How you implement it, that's part of your strategy as well. We'll talk more about that later.

39:27 So what is the function? It's a geocode.

39:29 What information are we providing back to the business?

39:33 Who will the consumer and provider be?

39:35 This is very important. Bruce mentioned earlier, "build it and people will come."

39:40 I've done that. How many people have done that, just built something and put it out there because you know you can? Okay.

39:45 That's okay. But it's probably more beneficial to the business if you go to them and ask them what they need.

39:53 So define who is the consumer and who is the provider ahead...

39:57 ...because you might have different service-level agreements on either side of that equation.

40:02 So what's the constraint on use? Who's allowed to use it within the enterprise?

40:06 The policy and contract, that's what I'm referring to.

40:09 What is the effect of consuming that actionable information?

40:13 How will it affect the application that's pulling it in or an individual user that's pulling it in?

40:19 And then of course the information and behavior that is the interaction model that's being pulled back.

40:24 So with ArcGIS, okay, how do we do this?

40:29 How are we able to say at ArcGIS 10 we are even more open, more interoperable, and more extensible?

40:36 We've a set of applications, okay, that ship out of the box, that will run on a number of platforms, multiple platforms.

40:47 By the way, we can abstract away from the platform now, right, if we're using services, in a sense.

40:55 They'll run on top of a number of databases, including an open source database.

41:01 It's interoperable in the sense that there's different types of standard services...

41:04 ...OGC services, REST-based services, and SOAP-based services.

41:10 And it's customizable in a myriad of ways.

41:14 So this is the message at 10; this is how you will interoperate with your enterprise...

41:19 ...with other business units, in one of these manners.

41:24 So today, I'm also going to talk a lot about some enterprise architecture.

41:29 But I wanted to put it out there that there are a lot of enterprise architecture frameworks, a ton.

41:36 I just pulled this image off of Wikipedia. There's a ton.

41:40 I'm pragmatic. I understand that if you follow one framework, some people say you might not ever get anything done.

41:47 There's a lot of different steps and things involved.

41:49 But what I've done is sort of boil up an approach based upon TOGAF.

41:54 So if you want to write something down, if you want to do a little bit of research...

41:57 ...you'll notice as you read more into TOGAF that my approach aligns with that.

42:05 So here what I'm trying to demonstrate is that we do have a process that we utilize internally...

42:10 ...and our goal, in the center there of this value chain, is to more effectively serve our customers.

42:16 So when we're working with clients on-site to build an enterprise system or to build out their enterprise system...

42:22 ...we'd like to start with the business architecture, not with the technological capabilities.

42:28 What does the business require of the GIS?

42:33 As I move around, so business architecture being first, then I like to look at the information architecture.

42:34 So a business... You know, one of the tenets I always try to say...

42:37 ...is a business process dictates the development of technical workflows, not the other way around.

42:38 So what are the value streams of the data? Who owns the data that needs to serve that business function?

42:45 Just because it resides in a GIS doesn't mean that the GIS always owns it, right? That's kind of what I'm getting at.

42:51 Or if something resides in SAP doesn't mean SAP owns it once it leaves that business system.

42:54 We can get into some new planning and start to think about what services and training and things you need...

42:59 So there, the technical architecture. What systems are required to support the flow of information?

43:07 When I say "flow of information," I kind of mean the fuel, fuel that's required to serve the enterprise.

43:15 As I move further along, this one I think is extremely important, the next one, which is political landscape and IT governance.

43:22 IT governance. So how are we affecting, you know, the governance on top of the technology...

43:30 ...as well as the business process workflows?

44:00 ...to support that particular piece of development work that we're going to do, to support that business process we started with.

44:12 Here it is, laid out in a bit of a different way.

44:16 With any piece of technology, IT, you need to understand the vision of the platform...

44:22 ...what is the architectural vision that that platform is trying to serve...

44:26 ...before you can begin to really architect a solution to support something in the enterprise or participate in the enterprise.

44:34 So the platform vision, I'll get to in the next slide to show you as briefly as I can.

44:39 Then look at number 2. Here's a business architecture, information architecture, and technical architecture again.

44:44 I believe that once you lay out the vision, you can start to really dig in and do discovery on what you're trying to do.

44:53 Off to the side there, you'll see this little thing that says "SLA."

44:58 Can anybody blurt out for me what I mean by SLA?

45:00 [Audience participation] Service-orientated architecture.

45:02 No, I don't mean service-orientated architecture.

45:05 [Audience participation] Service-level agreement.

45:06 Service-level agreement. That's right. This is an important concept. And believe it or not, it's important for GIS too.

45:14 And I say that because a lot of times I find that GIS has grown organically, departmentally, right?

45:21 So it has a different set of service-level agreements with the business than maybe the business process that it's serving.

45:29 So we need to talk about that as we're doing this discovery.

45:32 And when I say "we," I really envision myself working with you with your clients, with your internal clients or with you.

45:39 That's what I mean by we. Sort of a team approach.

45:41 Now I explode out the technical architecture because I feel like this is my opportunity...

45:48 ...time and time again, to confirm what I heard when we had our business discussions.

45:53 So you'll see as I explode out number 3, here's where I want to confirm my business architecture.

45:58 I go back to the client or the customer, and I say, "This is what I've heard. Am I correct?"

46:04 So I can create a baseline architecture.

46:08 Probing on opposing views. How many folks work in departments with different types of personalities?

46:13 A lot of us, right?

46:15 That's what I mean. Probing on different opposing views, viewpoints on the same piece of information.

46:20 So two people looking at one thing might have a different perspective.

46:26 So from there I can create a conceptual architecture and a service abstraction.

46:30 Service abstraction? What do I mean?

46:32 I mean a published...you know, what am I going to publish out to the business?

46:35 What are the number of web services that I want to provide back to the business? An API, so to say.

46:41 I revisit the conceptual architecture and then document what is the gap, what's missing.

46:47 So what effects here are we talking about?

46:49 Properly defining that solution, the solution that Bruce mentioned, where we had the core technology...

46:55 ...or business partner technology, data, services, and training in there.

47:01 Migration. Is it a migration project or is it an implementation project?

47:06 Is there change management involved and what best practices are we going to employ?

47:10 We need to drive the IT behaviors or at least align with them.

47:14 This process assists, this strategy assists in doing so.

47:19 Building trusted partners within your IT organizations is very important.

47:24 Not frightening your DBAs with SDE stuff, okay? Trusted partnerships.

47:31 So promoting that team approach and discerning that handoff to different business units.

47:36 Now how do I really do this?

47:38 I use the same four patterns to begin, okay, that Bruce mentioned.

47:43 And Bruce was talking about these four patterns aligning with business needs, right?

47:48 You guys do asset management or data management? Yes, we argue. We see this time and time again.

47:53 Planning, analysis. Yeah. Maybe something coming into an out field, and certainly visualization.

47:59 Let me go down one level and correlate it with the technology platform.

48:02 So you'll see across the bottom, in asset management, you'll see it aligns with the geodatabase information model.

48:10 Interesting, right? As I move over, geoprocessing. Planning and analysis aligns with geoprocessing.

48:18 Mobility. Okay, mobile. And maybe the most interesting one, operational awareness aligns with our web APIs.

48:27 So it's very important to discern your business processes and align them with these four patterns...

48:33 ...because the technology performs differently for each one of these patterns. Important point.

48:41 We want to be able to build out, and I mean wide; to build in a wider manner, our technology, based upon these patterns.

48:52 Typically over here, with this operational awareness pattern, you might have thousands of users looking at something...

48:59 ...visualizing something. A web map, so to say.

49:03 So let's move over and think about asset management.

49:06 Well, here's where you might have your GIS domain, actually going in and editing information directly into the geodatabase.

49:15 Is the SLA for this user going to be the same as the SLA for that user?

49:19 That's kind of what I'm driving at here.

49:21 So should we really have those two patterns tied together...

49:25 ...or should we pull them apart by figuring out where the SLA exists on the data value stream?

49:32 Okay? Very interesting way to look at architecture.

49:36 So we went down a little bit; I'll bring it back up.

49:39 What am I trying to show here?

49:42 Level of detail, you know, increases as we go down, and this is time coming across this axis...

49:47 ...coming towards me on this side and away from me on the other side.

49:51 So across the top is what I consider the platform architecture vision, or the four patterns.

50:00 These need to align with the business strategy in some way, shape, or form.

50:03 Semantically, it doesn't matter what they're called, but we need to align it.

50:08 As I move down, you'll see specific architectural areas.

50:11 Let me just envision some sort of large business here and say that...

50:15 ...maybe it's multiple departments feeding back into one enterprise.

50:19 Then below that, specific capabilities.

50:23 So the capabilities might be a basemap or they could be geocoding or they could be some sort of proximity search...

50:29 ...on the bottom here.

50:30 But what we find is as we do this research and we're looking at the architectural approach, these things...

50:36 ...these capabilities might be repeating themselves across a business enterprise.

50:39 So we can go back and build a conceptual architecture that will serve multiple capabilities back to the business.

50:47 So we can begin to have reusable services.

50:52 What is this trying to show? This is trying...

50:56 I'm trying to just not frighten you too much, because this is a timeline for embarking upon an enterprise strategy.

51:05 On the left-hand side, you'll see "as is," and all the way to the right, you'll see "to be."

51:14 Present time to a future state. Okay, now I'm going to traverse this timeline very quickly and say that...

51:20 ...in aligning with what I mentioned earlier, we need to figure out a gap analysis between the as is and to be.

51:28 Also on the bottom of this timeline, you'll see I have it written out as being a concrete.

51:32 This is concrete; we know what's going on, we know what we have today, we're documenting it.

51:38 So we create that detailed baseline design.

51:40 Now I'm going to move up into the abstract, okay, above this timeline.

51:44 What am I saying here?

51:45 Here's where we're capturing things. Where do we really want to go?

51:48 Here's where you've got to get into that iteration with your business units and have some discussion...

51:52 ...and figure out what needs to be done.

51:54 What's this cheesy cloud and lightning bolt thing here? Right? Sorry.

51:59 That's supposed to denote stormy weather, like this isn't easy to do.

52:04 I'm telling you now, this is hard; this might take some time. But why are we doing this?

52:08 Because we need to synthesize all of these themes that we've been talking about.

52:11 Because as we drop back down into reality, so to say, we've got to come up with a solution design concept.

52:18 Now, I show this to you today because I caution you to figure out how much do you want to drill down to put into this process?

52:27 In other words, is it one capability at a time, or do you embark on a giant project all at once and try and get it across?

52:35 It varies.

52:39 We also have to consider the effect of the development life cycle when we're doing this.

52:44 So all the information we're obtaining as we're doing this discovery, as we're digging in on your architectural concepts...

52:52 ...you've got to design, build, evaluate, and deploy these things within your business enterprise.

52:58 And for your group, it may be different than for other groups within the IT domain, right?

53:03 So this is really a good way of showing that service development and deployment should be flexible and iterative.

53:12 Okay? This is what's called a development spiral.

53:15 Here I've listed it as being three-month cycles, but it could be, you know, yearly cycle or maybe biannual...

53:21 ...whatever meets your business, business needs.

53:24 So to reinforce some of the concepts that I've stated, we have to look at your business requirements by business unit.

53:31 Because different business units might still need to maintain and manage their own deployment of GIS technology.

53:39 So we need to define a balanced mix of common unit-specific services...

53:44 ...so we're not repeating things across the whole business enterprise.

53:48 Standards is really important.

53:52 I like the fact that we have standard standards, if I can say that, now out of the box.

53:57 This makes it easy for you to communicate amongst IT decision makers.

54:02 Okay. So defining the governance and the policies to reduce these types of redundancy is also extremely important.

54:07 We've seen this done in the form of, you know, centers of excellence, just straight-up policy being implemented.

54:15 Sometimes you'll have a GIO or sometimes we'll have a GIO within an IT decision-making organization.

54:23 This is how it's done.

54:29 What is this slide trying to show, because I know you can't read it in the back, right? No. Okay.

54:34 This breaks a lot of rules. But let me describe it very quickly.

54:39 Across the top are these four patterns, and what I've done is I've worked with a large utility...

54:44 ...and I've gone back to the business and we've aligned their business process workflows with these buckets, these four patterns.

54:49 And I've done discovery in the context of the patterns, so I know that for operational awareness...

54:54 ...I have 2,000 browser clients and 10 percent of which could be concurrent at any one given time.

55:02 It also says one ArcGIS ArcInfo Desktop there.

55:05 I'm going to go all the way across to the other side, with asset management.

55:09 Here I've got 350 simple web editors and 350 complicated, you know, high-precision editors on the desktop.

55:18 Now I've got a multiple set of applications within this organization.

55:22 I need to make sure that I can serve the performance and scalability of what the business requires, so where do I start first?

55:30 By figuring out how much horsepower I need.

55:33 So based upon real tests that are done, okay, on this customer's, on this particular client's,

site...

55:41 ...testing the endpoints of our server, I can come up with this simple equation that says...

55:46 ...for 2,000 web users looking at a blended cache and dynamic web map, I need this amount of cores.

55:55 Now you'll see here, this is not a system architecture design.

55:59 This is an architectural concept serving what the business needs.

56:03 We then would go in and figure out what is the real deployment options for this?

56:09 Does that make sense? Does 308 cores sound like a lot? It does? Really? For 2,000 web users?

56:18 [Bruce comment] Yes. You're cutting across the other patterns too.

56:22 So Bruce's point here is, remember, I'm cutting across multiple patterns here. I'm not just simply using it for this one pattern.

56:30 Because the abstraction on the bottom is showing a deployment, a staging, and a production environment.

56:40 So I want to reel us back in a little bit and say that ArcGIS 10 is a complete system, and at 10, we do better serve the enterprise.

56:49 We have more deployment options.

56:51 You have the ability to expand out using cloud options or on-premises options.

56:58 And with the utilization of a service-based approach, sometimes it doesn't matter.

57:05 You're not breaking applications by blowing things out quickly and then bringing them back in; that elasticity component.

57:14 So the technology platform is enhanced at 10 as well.

57:18 You've still got the browser, there's the desktop, our mobile solution; server's there, but online has expanded tremendously.

57:24 As Bruce mentioned, there's so much data available now.

57:29 The Amazon capabilities are also...there's a big implication there for you.

57:35 Web services being the enabling technology.

57:39 So let's talk a little bit about some resources that you have.

57:43 Sometimes I'll title this slide You Are Not Alone. There is a lot of information out there.

57:49 Our Resource Center is a good place to begin to look at application architectures, to look at security and strategy...

57:56 ...for patterns and guidance for security.

57:59 There's benchmarks posted up there for performance and scalability.

58:03 There's some tools online that you can download as well.

58:07 And also a lot of information about standards and interoperability.

58:12 We've got an enterprise licensing program.

58:15 This is very, very, very, very beneficial in large organizations because it reduces your boundaries...

58:20 ...it reduces your ceiling to creativity by not being able to get to licenses.

58:27 So there's flexible models. It allows for unlimited deployment, okay...

58:33 ...so there's negotiated models for large enterprises, there's different models for small governments and small utilities.

58:42 Big benefits here. You know, smallest, lowest cost per unit of software to the business.

58:49 If you have questions about our enterprise licensing program, you can contact your account representative.

58:57 So we've got extended support program offerings as well.

58:59 We've got an Advantage Program, includes implementation services, access to premium support, and education services.

59:11 I'll dig in a little bit on these.

59:13 Talk about the EAP, or the Enterprise Advantage Program...

59:18 ...providing flexible access to our Implementation Services organization and support.

59:24 It's subscription based, so it's an annual subscription, and it's targeted at customers...

59:29 ...looking to leverage GIS across multiple business units.

59:33 It could be scaled too, so year 2, year 3 can be different than year 1.

59:40 Implementation Services support. What do I really mean here?

59:43 We have specific testing and stuff that we do, strategies that we do specifically for enterprise problems.

59:52 And one that repeats itself is a poor performing system.

59:57 Why? Because it's organically grown throughout time, and you have heavy, heavy, heavy requirements coming from your business.

1:00:03 So we can do something called a health check, load testing. Load testing is an important part of a strategy.

1:00:12 Application and database design, prototyping and support, and performance and scalability

assessments.

1:00:20 So premium support for enterprise technology provides prioritized incident management.

1:00:26 If you want to have a special person you can get to and get your questions answered quickly, this is a good medium to do that.

1:00:33 It's also subscription based, and it's targeted for organizations with applications at a very high level of operational need.

1:00:43 We also have a partner network. I wanted to take a second to mention that while we're here.

1:00:47 We have a growing network of over 2,000 partners worldwide, and our partners do provide specific...

1:00:55 ...in-depth industry and technology expertise.

1:00:59 They've extended our platform beyond where the core technology was meant to go.

1:01:04 There's solutions and services there.

1:01:07 So the partner network also involves supporting these four patterns with their products.

1:01:17 So some challenges I wanted to mention from experience.

1:01:22 So service-based GIS offers enormous strategic, tactical, and operational advantages to an organization.

1:01:28 I write this because when it's deeply embedded, it really, really does.

1:01:34 When I say "deeply embedded," I mean you're supporting the business, and the business doesn't know they're even using GIS.

1:01:43 So overcoming a reluctance to share services, you know, and information across departments...

1:01:48 ...while gaining agreement on a common set of standards and a governance process.

1:01:52 Anybody have problems getting agreement across multiple organizations? I'm seeing some folks actually laughing.

1:01:59 This is not easy, and I'm not trivializing that.

1:02:02 We can talk later, but that strategy that I laid out, that is an effective way to do that.

1:02:10 Esri provides a complete service-based GIS platform at ArcGIS 10.

1:02:17 As I mentioned, we have a wide variety of service and support, and remember, you are not alone. Resources.esri.com.

1:02:27 So at 10, it really is transforming things.

1:02:31 It's easier, faster, more powerful, and it's everywhere in the sense that you can deploy anywhere...

1:02:37 ...cloud, on premises, a hybrid. We're seeing hybrid things arise today.

1:02:45 So I want to talk a little bit about, at 10, what we're giving you to better support what you're doing in the enterprise.

1:02:52 So in terms of data management, we've got easier-to-use tools for editing. Template-based editing is a huge leap.

1:03:02 Query layers. The ability to actually use SQL operators in the definition of a feature class is a pretty big deal.

1:03:11 There's enhancements to replication.

1:03:14 You can attach things to feature classes like photos; you can attach photos to feature classes.

1:03:20 REST-based web editing. I think this is going to implicate and do big things across enterprises...

1:03:26 ...as long as we understand simple editing workflows are different than detailed editing workflows.

1:03:32 Desktop, web. Two different things. Need to figure out what the level of detail needs to be.

1:03:39 There's a file geodatabase API.

1:03:43 Network management is better. We've increased the amount of things you can include in your network dataset.

1:03:51 There's new tools to actually load data in your network dataset.

1:03:56 Those of you that are running networks...

1:03:58 ...you can also edit a portion of the network and not have to rebuild the whole thing again.

1:04:04 This is huge.

1:04:06 There's the new mosaic dataset for storing rasters, okay, extremely large rasters.

1:04:11 This is going to be very beneficial for those of you with big, big, big raster datasets.

1:04:16 Editing templates, as I mentioned, and time-enabled feature classes.

1:04:19 So in terms of the geoprocessing and analysis, planning and analysis pattern...

1:04:24 ...this heavy, heavy integration of Python is an extremely important notion.

1:04:30 I've heard folks saying, Wow, it's like we're going back to AML. Yeah. Not exactly, but it's very close.

1:04:39 You can actually, command line completion tool within ArcMap, that's pretty cool.

1:04:43 Okay. There's new overlay analysis that's included; fuzzy, location-allocation is back.

1:04:50 And certain operations for raster is up to 10 times faster.

1:04:53 On the mobile side, there's a new task for crew management out of the box; you don't have to build this.

1:05:00 Support for Tablet PCs and thick-fingered use. Thick-fingered use, I always feel funny saying that. Gloves is what we mean.

1:05:09 And support for the Apple iOS as you've seen a lot of yesterday.

1:05:13 Operational awareness or visualization or web APIs.

1:05:18 We've optimized our web graphics and the way that we send them back and forth with web applications.

1:05:23 Generating caches faster, and compact cache is a big deal.

1:05:29 It's a big deal because you can copy cache around now in a manner that actually works faster.

1:05:35 So something that might have taken nine hours can be done in 20 minutes now.

1:05:41 So those of you that have very large caches and you're having to transfer them between a development or staging or test...

1:05:46 ...QC/QA environment to your production environment, you're going to see a tremendous improvement in performance there.

1:05:53 Better cartographic and authoring tools, more powerful SDKs.

1:05:56 The map automation I see as a big implication for the enterprise as well, okay, an ability to use Python to do that.

1:06:03 Intelligent map elements. So when you change a data source, all of your map products aren't broken.

1:06:10 And from an operational standpoint, let's talk about administration for a second.

1:06:14 There's no more admin rights on the desktop required for customizing. I've heard sighs of relief on this one.

1:06:23 You can borrow licenses. Again, I'll mention the cache management.

1:06:27 And you can download your software now as well as having a cloud deployment.

1:06:33 That was a ton of information. I recognize that. I recognize that.

1:06:40 So we have a couple minutes left; I want to kind of summarize what we talked about.

1:06:43 You know, enterprise means business.

1:06:45 Bruce's message that if you expect the GIS to perform in a certain way within the enterprise...

1:06:51 ...you should treat it like enterprise-class technology when you're working with the business.

1:06:57 The patterns and practice that we use to effectively architect an enterprise solution.

1:07:03 What is the enabling technology?

1:07:07 Talked a lot about architecture and the enterprise with an enterprise architectural approach.

1:07:14 The message that I wanted to deliver time and time again today is that ArcGIS is enterprise-class technology.

1:07:21 And how do you support ArcGIS in the enterprise? And some new things that are happening at ArcGIS 10.

1:07:27 So before we get to some questions, I wanted to plug a couple other sessions.

1:07:33 Because we take this session and we go another hour and a half deeper into it on Wednesday at one-thirty.

1:07:44 The title is Creating an Effective GIS Technology Strategy.

1:07:47 We'll actually use some tools, but we will go much deeper than I did for you today.

1:07:56 Another related session, A Business Perspective on Deploying ArcGIS Server in EC2, or the Amazon cloud.

1:08:03 First one's today at one-thirty, second one's Thursday at one-thirty.

1:08:10 A third related session, Best Practices for Deploying ArcGIS Server - The Manager's View...

1:08:14 ...Wednesday morning bright and early.

1:08:19 And then on Wednesday, we have a Special Interest Group for enterprise architecture.

1:08:24 It's at seven-thirty in the morning.

1:08:27 Isn't that awesome? We have breakfast though, and we've got a neat agenda this year.

1:08:35 If you're interested, you can see myself or Bruce or a gentleman in back named Dave Wrazien about what we're doing this year...

1:08:41 ...or you can look it up online, but we would very much like to have you attend.

1:08:46 [Inaudible audience question]

1:08:48 This year we are having it, I promise. My alarm's already set.

1:08:57 Have a closing note. What's that?

1:08:59 I guess one of the things we wanted to just throw out to you guys is that, a last and final thought, is that there's only...

1:09:08 I think the organizations that I've worked in, and I know over the years, I found myself

confused myself...

1:09:19 ...but there's really only one enterprise, and you're either in it or out of it.

1:09:25 But if you think that there's two, and you've got one for your GIS, you're probably a little bit confused.

1:09:35 So we have actually four minutes, and I'll stick around, but I would welcome questions.

1:09:44 Anybody have a question? Thoughts? Darts? Yes.

1:09:49 [Audience question] The four patterns, did you all identify those...

1:09:52 ...or are those kind of something you pulled out of the general enterprise [inaudible]?

1:10:00 Those patterns, we've created those.

1:10:03 Those are not necessarily pulled out of an enterprise architectural framework...

1:10:07 ...but I would argue most pieces of enterprise-class technology are going to align with those four patterns. Yes?

1:10:17 [Audience question] Do you have a pattern for cloud computing yet, 'cause that's going to be an indication to us...

1:10:22 ...built upon Gartner bricks in the pattern [inaudible]?

1:10:27 We have our own pattern for cloud deployment. It also aligns with these...

1:10:31 [Audience question] Could you repeat the question? I'm sorry? Could you repeat the question?

1:10:35 Oh, I'm sorry, very sorry. He's asking if we have patterns for cloud deployment that align with Gartner...

1:10:42 [Audience participation] Or TOGAF.

1:10:43 ...or TOGAF. And the quick answer is no.

1:10:47 But the real answer is yes, we are developing patterns now for how our stuff deploys into Amazon.

1:10:54 I've not taken it back and worked through a TOGAF process with it...

1:10:58 ...but I would argue that it's the same thing that we talked about today.

1:11:02 We're going to ultimately have the same bit of process for going through on architecture development methodology...

1:11:08 ...to get to the same answer.

1:11:09 Because a lot of times, your deployment options - well, all the time, your deployment options come almost last...

1:11:15 ...once you've figured out what your conceptual architecture would be.

1:11:18 So if you come, I'm going to show some of those patterns at the one-thirty demo today. Yes?

1:11:27 [Audience question] Quick question about desktop GIS. Are you going to support 64-bit and when?

1:11:34 The question is for desktop GIS, when are we going to 64-bit and when. Not at 10.1. I don't have that information handy.

1:11:47 I will tell you that the server product is being worked on now, and [ArcGIS] Server will go to 64-bit before [ArcGIS] Desktop...

1:11:53 ...but it could be coincidentally because they're built on the same type of code. Yes?

1:11:58 [Inaudible audience question]

1:12:04 Oh, the location. Room 16 A. Thank you. Sure.

1:12:11 Other questions? Thank you very much. Enjoy your conference.

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