What You Need to Know About Managing an Enterprise GIS Project

Glenn Berger and Gerry Clancy share best practices for managing enterprise GIS projects.

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Video Transcription

00:01 My name is Glenn Berger. I have approximately 20 years of experience managing GIS project as well...

00:10 ...projects as well as other IT types of projects in utilities, telco, government...

00:18 ...so I've done small projects, large projects, you name it.

00:23 When I say 20 years, yeah, I started when I was 5, but, anyway...

00:32 ...so I've got some experience that I definitely want to share with you guys and Gerry, do you...

00:41 I'm Gerry Clancy. I'm from our Washington, D.C., office, Glenn's former office...

00:47 ...and we together manage a wide variety of commercial, federal, state, and local projects...

00:54 ...that vary from very small, from a couple of days to a week to multimillion, multiyear-long engagements.

01:00 So what we're going to try and talk about today is not all war stories, no client naming...

01:07 ...but to try and give you some guidance of what we've learned and...over the years.

01:14 I've been with Esri...20 plus years. Let's just leave it at that.

01:19 And most of that time in the Professional Services group managing projects from way back in the early ARC/INFO days...

01:26 ...and how we've migrated to the new patterns and so there's a lot of new things that if you're a project manager...

01:32 ...and have been growing up in project management, that are really changing underneath you...

01:36 ...so we really want to try and take this session to one of the key things about GIS and...

01:42 ...enterprise project management that are important and start that conversation with you.

01:46 So that's what we're going to try and talk about.

01:50 Want to go to the next slide.

01:54 So, what...what Gerry and I have done in the past and we...we like to focus in on 10 key areas or 10 key focus areas...

02:03 ...that we think from a project management perspective, a project lead perspective...

02:09 ...areas that we want to share out based off of our years of experience.

02:17 Some...some of those experiences are good. Some of them not so good.

02:22 But...but sometimes those not-so-good experiences can teach you a lot more than the ones that go smooth and successful.

02:32 So, we want to share those out.

02:35 We do...we will share a few war stories. It's not all war stories, but we wanted to make sure that this...

02:43 ...shared with you in...in a...in as interactive a way as we can.

02:47 So, as you have questions or if you want to share stories on...on your end or whatever, you don't have to wait to the end...

02:54 ...you can interrupt us.

02:56 I will typically interrupt Gerry, and Gerry will typically interrupt me, and that's just the...

02:59 Yes he will.

03:01 That's just the way we are, so we want to make this as fun and engaging as we possibly can.

03:09 You could see here, these are in no particular priority or...or rank order.

03:16 All of them are important and there may be some on there that you're looking at right now and saying, well, what about this one?

03:21 What about, you know, why is...why are these 10 and why is this other thing I've got fresh on my mind not on there.

03:29 So please feel free to share that with us.

03:31 This list does change slightly.

03:33 We've changed it a couple times based off of feedback from the audience...

03:37 ...and maybe a particular experience that either Gerry or I are having on a project that we realize...

03:44 ...hey, this is something that we're seeing and we want to share it out.

03:50 Even though they're not in any particular order of importance, for me...

03:57 ...this is...this is probably the one area that I really want to stress, at least from my

perspective and as a new project leader...

04:05 ...or project manager that's entering down or beginning to enter into a project, is really critical to...

04:16 ...to understand what is the business workflow, what is the business opportunity that you're trying to solve.

04:22 Why...why are you doing the project?

04:26 As you're sitting there and you're thinking, you're looking at the slide right now...

04:29 ...if...if you're saying inside your mind that, well, hey, I'm doing the project to implement a GIS system.

04:36 And that's not...that's not the right answer.

04:40 That is the means. That's what you're going to do to deliver some business value to your organization.

04:46 And you can't lose sight on that.

04:48 Are you implementing a system to replace an existing legacy system that needs to be retired?

04:54 Are you trying to drive efficiencies in a business process?

04:58 Are you trying to improve productivity?

05:01 There are a whole host of reasons why you as a project leader or project manager have been tasked with the project that...

05:09 ...that...that's been assigned to you that you're responsible for, and you can't lose sight of that.

05:16 I don't know how many times I've been involved with a project and I personally, I think, we all kind of fall into this trap.

05:21 You...you focus on project task.

05:24 You're really focused on the project plan, you know...

05:27 ...maybe you're...you're...you're struggling around some particular functionality that's not, you know...

05:33 ...it was due yesterday and you find out, well, it's only 50 percent complete or whatever the case.

05:38 And we have a tendency to really focus in that area, and we need to, obviously, I'm not saying you ignore that...

05:44 ...but I think it's...it's very important that you understand and...

05:48 ...focus as a laser beam on why are you actually doing the project for your organization.

05:59 Fit the management of the project to its scale and scope.

06:02 So, bottom line, all projects vary.

06:08 They vary in complexity. They vary in duration. They vary in what they're actually trying to accomplish.

06:16 And, to...to use the same project management approach or process for a project that is a week or two weeks in length...

06:27 ...or a month in length or something that's maybe two years in length can cause you some problems.

06:35 Adapt your project management approach. Adapt how you want to manage a particular project to what that project demands.

06:44 Now, when I'm saying that, I'm not...I'm not saying you're not focusing on the same constraints throughout...

06:50 ...that manage all projects or that are fundamental to all projects.

06:54 Time, cost, and scope are all interdependent, you're balancing those against each other.

07:01 All I'm saying is, if you find yourself with five project administrator-type people and one technical resource...

07:10 ...then you've probably got some things out of whack.

07:14 You probably want to look at it from...what...what...keeping it simple but yet communicating the message and...

07:21 ...accomplishing the goals that...that you originally targeted to do.

07:25 And a lot of that can be kind of reinforced by that first slide.

07:28 You'll hear me reference this a lot and in...as I go through the slides, understanding the business value.

07:34 Once again, understanding that and keeping that first and foremost as you go through execution of your project.

07:46 Break it into small, workable pieces.

07:49 I think a lot of us have, especially some of us who have been around for a while, have definitely embraced this concept.

07:58 I think a lot of people are, you know, some of it is just...it's second nature to what we do.

08:05 But, it can be kind of intimidating to have a two- or three-year project where you're trying to deliver brand new capabilities...

08:15 ...insert new technology into an organization, and breaking it up into smaller pieces, into different phases...

08:23 ...can certainly help you in that respect.

08:27 It gives you an opportunity to under...to...to develop an understanding within...within the organization.

08:35 It's important to remember that we're, in a lot of cases, we're delivering new technology, new functionality, new capabilities...

08:41 ...to an organization that maybe your stakeholders just aren't as familiar with.

08:48 It gives you an opportunity to put the technology in front of them, put the solution in front of them...

08:53 ...let them understand what this really means when we say a GIS system.

09:00 It allows you the opportunity to get buy-in as you go and to show success.

09:06 You know, one that...that we've been or that I've been trying to drive is that initial phase could be something as simple as...

09:14 ...standing up the baseline technology, getting it in place, getting it installed.

09:20 Maybe that could be the very first phase or the first spiral, first iteration, whatever you want to refer to it as...

09:26 ...where you put that in there, you stand it up, you really haven't started delivering business functionality yet...

09:32 ...or...or business workflows, but it gives an opportunity for those other users in the organizations...

09:37 ...to see exactly what you're talking about when you talk about GIS or geospatial functionality.

09:45 I think this is really critical in today's technology environment.

09:49 People are and end users are not going to wait for a year and a half to get a system up and running.

09:56 They're just not.

09:57 It's the...the technology will support small incremental bills and your end users are frantic to get things.

10:05 So you really need to think, even in an enterprise, which is usually a very ugly, complex, integrated project.

10:13 You really need to think about not the end goal of being 18 months or 2 years down the road.

10:19 You need to break it up into three- and six-month project bills, and delivering things constantly to meet end goals.

10:26 And, you know, the old project management method of waterfall or spend a year in requirements...

10:34 ...and then you're going to go to do some design, and then you're...

10:37 ...and three years later you still haven't got anything to show except a lovely set of documents.

10:42 It's not going to fly.

10:44 Really in this moving, fast world, your requirements are constantly changing...

10:50 ...and you really need to think about breaking your enterprise project up into small, manageable, deliverable-focused efforts.

10:58 It's really critical at this stage.

11:01 It's...and I guess the one thing that we encounter a lot is, we'll go in...

11:06 ...a project manager or a project lead will be familiar with our technology or they're...they understand GIS.

11:15 Maybe it is in a GIS department within an organization.

11:19 But obviously that's not all the time who the key stakeholder is on a particular project.

11:25 It could be a dispatch group or a work order group or some other...

11:30 ...they're looking to a GIS group or a particular project lead to implement a system that provides a business function...

11:37 ...but they don't necessarily always understand what this is.

11:40 A lot of people that maybe aren't involved in our industry are familiar with billing systems and customer information systems...

11:50 ...but they're not as familiar with geospatial technology.

11:53 So using a phase-based approach allows you to come in, show some of the capability...

11:58 ...get them to understand exactly what the solution's about...

12:02 ...and you'll be surprised at how quick that can help you get that buy-in, start getting new ideas flowing, and it can go a long way.

12:12 Are you going to Correct talk about Microsoft Project?

12:14 Yeah. Yeah, the other thing is Microsoft Project, it's a wonderful tool...

12:20 ...obviously, or any...any project...project plan type of tool.

12:29 Use this, you know, you as a project lead, I mean, you're a change agent, right?

12:33 You're...you're the one that's bringing this system to the organization.

12:37 Make sure to share it out and share what those major milestones are, what those tasks are...

12:42 ...even to people that may not be directly responsible or assigned within your project plan as resources.

12:48 Remember, you know, you don't want to become the black box.

12:52 You don't want to be that project that, hey, something's going on over there in the corner...

12:56 ...and, you know, hey, who knows when it's going to be done.

13:00 Provide frequent updates.

13:02 Now on the flipside of that is, be careful with the project plan.

13:07 You know, by...by going at it from a multi...multiphase approach, you can put some detail on those first couple phases...

13:15 ...but you can go lighter in the...in the subsequent phases.

13:19 If you're planning out task four, six, eight hours for...

13:24 Don't do it. Yeah. Please, please don't do it.

13:26 For project deliverables 24 months down the line, well guess what, I...I can tell you right away those are wrong.

13:33 Those are going to change.

13:34 Your dependencies are going to change.

13:36 So, just kind of keep that in mind.

13:38 You don't want to get to the point as a project leader, as a project manager...

13:42 ...where you're so heads-down in your project plan or your project schedule that you're missing the big picture.

13:50 So there's a great little 20-minute workshop on the demo floor about building a project plan and good tools to use.

13:57 It's on the little sheet that we handed out.

13:58 We can certainly talk to you when that's going to be, but it's...don't get project planned to death.

14:04 When we go into enterprise projects and we see a project plan that's this thick, I'll tell you right now...

14:09 ...the system's not going to work.

14:10 I don't even have to look at the requirements.

14:12 You...you can't manage at such a minutial level and be effective.

14:18 So it's really, you know, the tools are there to be an efficient project, not to be a project in and of itself.

14:27 So you really need to kind of make that balance work.

14:30 Yeah, and, you know, I mean it's one thing when you're talking about delivering, you know,

military-grade systems...

14:37 ...and those types of things or launching the space shuttle.

14:41 And once again, we're...I just want to make sure this is clear.

14:44 We're not saying you don't have a project schedule and you don't do project planning, you certainly do.

14:49 But just do it to the right level.

14:51 Don't get overwhelmed by that.

14:53 That...that's not what you're really here for, not what you're being tasked to do.

14:58 You're being tasked to get a project deployed to deliver capability.

15:02 This is something that, as you notice, Gerry jumped up.

15:05 I'm kind of rambling on about it, but this is important to us...

15:09 ...because both Gerry and I have a tendency to get pulled into some difficult situations or projects that are challenging...

15:17 ...or facing difficulty, and we both kind of swap war stories over time where it's...we both kind of go in and do...

15:25 ...right away we say, hey, let's see that project schedule, let's see your project plan.

15:30 And if it makes a noise when it's put on the table, then we're very concerned, and we most of time understand what the problem is.

15:43 You need to be in sell mode.

15:46 Once again, this goes back to you being the change agent.

15:50 Somebody has...has...has entrusted with you a...a project, an initiative that is going to potentially change, in some cases...

15:59 ...could drastically change an organization.

16:02 It's going to deliver new capability that maybe somebody's never seen before.

16:08 So, be in...be in that sell mode.

16:10 Continue to emphasize what the project's about.

16:15 Demonstrations of capability and functionality that the project has accomplished to your stakeholders, to the users...

16:24 ...is critical.

16:26 Don't be afraid to sell what you've done.

16:29 We have a tendency from a project standpoint to...to say, well, I've got a 24-month project

duration...

16:39 ...and I've got, you know, 10 different phases that I'm scheduling.

16:43 I'm...I get through maybe phase 1 and phase 2, and I don't see that as a significant accomplishment...

16:49 ...because I'm deep in the project and I'm like, hey, well I still have, you know, well over a year and a half to go before I'm done.

16:56 But that...that can be a significant accomplishment, letting your stakeholders know that...that you're making progress...

17:04 ...getting them to buy in to what you're trying to do and what you're trying to accomplish...

17:10 ...and really most significantly getting that feedback.

17:14 Are you on the right...are you heading in the right direction?

17:17 Once again, when you communicate, when we talk about being in sell mode, what we mean is you're communicating...

17:23 ...you're saying, hey, you entrusted me to implement a project that was going to deliver X business value, improve productivity...

17:31 ...performance, whatever the case may be.

17:34 When you status your stakeholders, when you status your customers, it should be in relation to that.

17:40 It should be...it shouldn't be, hey, we just...we developed this workflow.

17:44 I mean, that's important, but it's...we've developed this workflow...

17:48 ...and here's how it's addressing the capability that you've tasked me with implementing.

17:52 And I think, you know, one of the things we tend to do as project managers, a really good thing is to, across all the spectrum...

18:00 ...look at single points of failure.

18:02 So, all the geeks and bitheads who work on hardware, you're always talking about redundancy and replication.

18:09 You need to be doing the same thing with your project sponsors.

18:12 So the sell mode means that you need to be communicating and recruiting and getting people to buy into your enterprise vision...

18:21 ...because, you know, we've been in numerous situations where that project champion moves on four months into the project...

18:28 ...and all of a sudden you've got a vacuum and you've got no project champion...

18:33 ...and you just see this heading off a cliff.

18:35 So, the whole idea behind this is visibility.

18:39 It's often a difficult hat for project managers to where they want to be in a very logical, controlled environment...

18:45 ...and this is...this is spin and it is PR.

18:48 But you are selling the...the value of the project, the benefits of the project, and you are...

18:56 ...you are spreading the load in case someone in that chain leaves...

19:01 ...and we've all been in projects where a key decision maker has left...

19:05 ...and if you haven't really been actively engaging other people on the city council, on a board...

19:13 ...the people who are your bosses and boss's bosses and keeping them involved...

19:19 ...and keeping on, particularly in this in financially stressed time, your project budget's going to go away.

19:25 So, it's sometimes a really hard thing for project managers to embrace...

19:30 ...but it's a critical piece of kind of what you have to embrace as a project manager.

19:35 And I think, don't...don't underestimate when...when, you know, one other key component of the sell mode is...

19:41 ...a lot of times a project leader or project manager in that role is...is also being the peacemaker.

19:49 You can be going in and impacting an organization, changing the way they've been doing business for 30 years.

19:56 And through this sell mode, it's...when Gerry says spin or PR, it's not false spin or false PR.

20:04 It is an opportunity for you to get in front of all your customers and stakeholders.

20:08 It's an opportunity for you to work with organizations that may be kind of going against each other on things...

20:16 ...and try to bridge the...bring them together, become that peacemaker, not to step away from it and say, well, that's their problem.

20:24 I'm...I'm...I'm focusing on my project, because at the end of the day, you're delivering capabilities for a mission or a business need.

20:33 You're not just completing out the system.

20:36 If you deliver a system that nobody wants to use and work with, then...then what have you accomplished.

20:44 Manage change. I guess it's probably hard for some of y'all to see this. It will happen; get over it.

20:52 I mean, that's...that's just the reality.

20:56 We have a tendency, guilty as charged, that at times I'd become very risk averse.

21:04 You know, I want to set everything up and, by God, I've got the plan.

21:07 I know...I know how this is going to happen.

21:09 I...I know what we've got to do to make this work, you know, whatever the case may be.

21:13 I've got my playbook.

21:15 Somebody comes along and says well, hey, I want to change that up a little bit.

21:18 Sometimes I reaction is, whoa, whoa, whoa, whoa, whoa, whoa, hold on.

21:22 If I change this, how am I ever going to hit my target?

21:26 But the reality is, going back to what Gerry was saying...

21:29 ...things have changed a lot from a financial standpoint, technology in general, what's going on in all of our business environments.

21:37 And the reality is, you're going to get new requirements, and you want to...

21:41 ...you want to deal with those as they come up during your project plan.

21:45 Now, I'm not talking about, you know, changing the color of something or some minor change within the application.

21:52 You need to deal with those certainly.

21:54 But what I'm talking about is, as your stakeholders become more aware of what the system capabilities...what they're going to offer...

22:03 ...they're going to begin to see other opportunities to enhance that business value that was originally targeted for that project.

22:11 Better ways to improve productivity that maybe you never...never identified at the beginning of the project...

22:18 ...or that nobody really envisioned in the business case phase, but as the project progresses...

22:24 ...they're going to see that, oh, wait a minute.

22:26 If we leverage this function, or if we can put a capability in that does X, we can even, you know...

22:31 ...as opposed to a 30 percent improvement, we can get a 35 percent improvement.

22:36 You as the change agent, you as the one who's trying to deliver success into the

organization...

22:41 You need to be prepared to accept that and be prepared to deal with that.

22:46 Now, that doesn't mean it's not going to cause impact.

22:49 It doesn't mean, hey, thank you very much, we'll just do this and move on.

22:53 You need to understand how it's going to impact your schedule.

22:56 You need to understand how it's going to impact your project.

22:59 But there's a couple tools or a couple ways to kind of deal with that.

23:03 Obviously, if you have your business value identified early, back to slide 1, and you know why you're doing the project...

23:10 ...then as a change comes up or as an issue comes up, that's your ultimate arbitrator.

23:16 That's when you look at that change and you say, okay...

23:18 ...how is this going to impact what we're really trying to accomplish within the organization?

23:23 If it doesn't have an impact on business value, then that's a different conversation.

23:27 If it's going to deliver more value into your organization, then it's probably something you want to consider.

23:33 Using a phase-based approach also will...will...is a nice tool to have in your toolbox for dealing with that change.

23:41 You may not be able to squeeze it into that immediate phase in front of you, but the fact that you've got another phase coming...

23:47 ...and another phase coming, allows you that flexibility to plan that change, to prepare for that change.

23:55 And I guess that's the fundamental thing is understanding that changes can happen, be prepared to deal with it ahead of time...

24:02 ...build it into your planning for the project so it doesn't catch you by surprise and doesn't make you the no guy.

24:08 You know, you don't want to be the guy that's constantly saying no.

24:11 You want to be the guy that's...that...that can consider it and say yes or no based off a rational approach.

24:19 And...and in an enterprise project, which is usually long, drawn out over multi years and have a lot of features and functions...

24:27 ...one of the first things you'll probably need to do early on in the project is really set up how do you manage change?

24:33 What is...don't wait for it to happen.

24:35 So in an enterprise project, you're usually going to have some sort of change control board.

24:39 You're going to have some sort of workflow process to manage change.

24:43 There's some really great...we've got some resource slides at the end here.

24:47 On our esri.com site, there's a whole project management section...

24:50 ...in case you never knew that Esri did project management, we do.

24:54 And there's some templates there for change control board stuff and a whole bunch of things.

24:58 So there's a lot of things you can use out there and, again, the whole thing about change is it will happen...

25:04 ...plan for it and get over it.

25:06 And...and capitalize on the things that are really great changes.

25:10 Not every change is a negative change, but they all have that impact on those three constraints.

25:15 It's going to change my schedule or my scope or my budget.

25:18 And you need to be able to take advantage of how you balance those and to create off those.

25:25 Yep. Question.

25:27 [Audience question] I have a question about workforce and change and going back to your previous sell slide...

25:33 ...when you're implementing a change to a legacy system, modernizing a legacy system...

25:39 ...is it...have you found that it's better to, during the implementation phase...

25:44 ...include the smaller group focused explicitly on that...that project, or include everybody...

25:52 ...a semblance of everybody in your organization?

25:55 Repeat the question?

25:56 Oh, yeah. In dealing with...in dealing with a new system, replace...replacing an existing system...

26:03 ...where you're going to impact potential business process or workflow within our organization.

26:09 Do we find it's...there's any lessons learned or best practices around that? Do we focus on a target area or a pilot area or workgroup?

26:19 Or do...is it more of a big bang approach where maybe bring in multiple people across the entire organization?

26:27 Both ways can work. I think my preference and what I'm most comfortable with is...

26:36 ...I like focusing on an initial target workgroup for validation of the workflow throughout the course of the project.

26:44 So one of the things that I...I talked about was phases, and I probably should have mentioned this. I glossed over it.

26:52 When we talk about doing phases, you know, one of the things I like to focus on in doing a phase or a spiral...

26:58 ...is I want to make sure that I plan out a particular workflow from start to end.

27:04 So when I...So I bring in the actual workgroup.

27:07 You have your software testers, but beyond that, we want to bring in the users to have them start using the system and...

27:14 ...getting familiar with the system.

27:16 So, I think there's certain strategies that you can employ, such as validation environments and validation labs...

27:23 ...where it's not just about testing, but it's also about a gradual training opportunity.

27:28 You can bring in key people from different organizations, but as you head into the implementation phase...

27:36 ...if it's a legacy system that's been around for awhile and if...and if you can afford to transition from a legacy system...

27:43 ...and begin to move your resources off a different legacy system with old workflows into a new system with change...

27:52 ...if you do that gradually, it allows you to learn and also allows you to develop your own internal users to become your champions...

28:00 ...for that next workgroup that's coming down the line.

28:03 I guess I would have...a...a...a comment that it depends on the...how integrated and utilized the legacy system is.

28:10 So if it's a legacy system that's in a...an agency or a city government that is in every tentacle of the organization...

28:20 ...there are...I think there are two things you need to do.

28:22 One is, you need to have representative people who are going to be effective engaged early and often.

28:29 And you make those some sort of steering committee and you get them involved.

28:33 But we found that implementations that are so elaborate don't work from an implementation strategy.

28:42 You really need to say, okay, in this big legacy system, I'm, you know, the first phase is the planning department...

28:50 ...or some part of the agency.

28:52 And that's the focus group we're going to get on board and pilot.

28:57 But you're at the same time on a parallel track engaging everyone else in that organization saying...

29:03 ...here's the big plan and how we are going to schedule it all out.

29:06 So I think if it's something that is really impacting many, many places in your organization, you kind of have to do both...

29:13 ...and you do them at two different levels.

29:19 Well, that was your opening act. _____ [Inaudible/Unintelligible].

29:22 So I'm miking up _____ [Inaudible/Unintelligible]. You are up.

29:24 So I take the next five.

29:27 So, any questions while we're just changing mikes here? Because we only...they only gave us one.

29:30 You...you can tell we both have the same accent. So...so it should be an easy transition. Yeah.

29:35 Yeah. I'm from Atlanta, too. Little further across the pond.

29:43 Okay. By the way, I see a lot of people taking photographs. That's great.

29:47 You are going to get all these slide decks. They're on the presentations materials that you get.

29:52 So you do get all of these slide decks.

29:54 So, the next five. Involve IT early and often.

30:00 This is really critical in...in this technology time.

30:06 GIS is not just a little special niche that's sitting in some department.

30:10 It is a full-on stack Correct that slides into your IT space.

30:14 And, you can't...most departments have a GIS specialty, but in an enterprise system...

30:21 ...you're engaging multiple agencies, multiple departments, and you need to engage IT.

30:30 I can tell you from experience that if you do not engage IT early, you're project's not going to work...

30:35 ...because you'll find out as you go into testing and staging that some key critical things that you didn't know about...

30:43 ...the organization doesn't...and when the IT front says, no, we're not doing that.

30:47 As much as I don't want to say this, I've actually gone down project requirements on...and built systems around a...

30:58 ...a Linux system to turn around to go into the IT to deploy and say, we don't do Linux.

31:05 So you don't want to find that out when you're ready in staging.

31:08 That's kind of an extreme, but...but there's lots of other examples of that as well.

31:15 What we try and do early in bringing people together and...within an enterprise system is...

31:20 ...you must have some IT stakeholders at the table.

31:23 Not just end users, not just the business sponsors, but someone from IT who is sitting there and nodding and understanding what GIS...

31:31 ...they've never heard of GIS.

31:33 They've heard of Oracle and SQL Server, and they're comfortable with DBMSs...

31:37 ...but they don't know anything about GIS, and they just think, we just put it on this little box and it'll be fine.

31:42 It's not going to work.

31:43 It is such an integrated place in the platform of web servers and ports and all sorts of other things that I know nothing about...

31:50 ...that you've got to have them at the table.

31:53 And you've got to recognize that they're going to say things that you probably don't want to hear.

31:58 So, we actually worked on a project recently in the last couple of years where at the user requirements meeting...

32:06 ...when we were trying to do features and functions and what is it the business that they're trying to support...

32:11 ...one of the key things within this federal agency is they wanted to be able to engage in the Internet...

32:18 ...and bring data sources down in real time and download from all sorts of websites...

32:24 ...to get the best data that they could as quickly as possible.

32:28 We then turn around to the IT people and say, what's your requirements in terms of the stack of things that we're allowed to do?

32:36 And one of the first things they said, no outside Internet...Internet access. Period.

32:41 And so all of a sudden you've got mutually exclusive requirements that the IT says, no outside access...

32:49 ...and the business is saying, we must have that.

32:52 And so we were able to really negotiate early on that the IT people who were very stuck in their ways...

33:02 ...and following very focused agency specifics, had to be engaged and brought in early and said, you've got to change.

33:11 And that...that process of doing that took a long time.

33:14 If we had waited, we would never have got the project off the ground.

33:18 So it's really critically important to identify an IT sponsor and have them at the table early, and get them engaged and trained.

33:28 It's really critical.

33:30 You cannot have someone who is the best DBA in the world manage your geospatial database...

33:36 ...because they will go in directly at the row level and start manipulating things and corrupt your database in a heartbeat.

33:42 I've had it happen numerous times.

33:45 You know, so the whole idea of training people in the IT space is getting them to SDE training, getting them into stuff.

33:54 You know, they'll just want to assign a DBA and say they're done. And that's not going to work.

33:59 Okay.

34:01 Question. Oh, question, sorry.

34:02 [Audience question] What if you have a client on the business side who doesn't want to involve the IT...

34:08 ...because of their rigid requirements?

34:11 Then you've got a problem. How...I mean...the early...you know, one of my mantras in project management is...

34:19 ...the earlier you surface the problem, the quicker it's going to get solved.

34:22 And one of my mantras to my boss is, he doesn't want to hear about problems...

34:28 ...when the only thing he can do about it is throw money and people at it.

34:31 You know, if he finds it earlier, you got to bring him to the table.

34:36 If the business client says, I don't want to deal with the IT, they're hard...

34:40 ...you've got to take it on.

34:41 You've got to have separate meetings with them, bring them to some meetings.

34:45 Why are they are hard? What are the issues?

34:48 Because ultimately, it's, you know, ultimately you've got to put this system someplace.

34:55 And from...and in changing times, it's not sitting in the planning department or the engineering department.

35:01 It's sitting in IT infrastructure.

35:04 And, they'll look at you and say, you can do whatever you want, and, but then as soon as you give them a set of requirements...

35:13 ...they say, well, you can't do that.

35:14 And so you've got to get them engaged early.

35:17 And I...I...I would seriously think about how is that project going to be successful if IT's not involved.

35:24 Yeah, and I guess just to...to further emphasize that and, I mean, this is somewhat obvious...

35:30 ...but, if they're hard there's probably a reason they're being difficult.

35:36 It's not just, yeah, well, most of the time it's not because they want to be.

35:40 They are very risk averse. Yep.

35:42 They are responsible for the security and a lot of assets within a given organization.

35:50 So, while some of us in, you know, at times of, you know, made my comments under my breath about certain security procedures...

35:58 ...or whatever in an IT department...

36:00 And CNAs in federal agencies.

36:03 But there is a reason for it, and, you know, just getting at that underlying reason for it...

36:05 ...and, you know, just getting at that underlying reason for it...

36:09 ...and sometimes it...it...it just takes somebody in the business willing to cover them for making a change in procedure.

36:21 So they have their playbook that says it's X, Y, and Z, and, hey, that's what they're going to do.

36:27 They've been instructed. That's the way it is.

36:30 If you got the right business champion associated with your project, sometimes you can get them to step up and say...

36:37 ...hey, I'll own this risk and have them champion that risk, if you will, and makes IT feel a little bit more comfortable...

36:45 ...because there may be...agreeing to it, but they're not the ones driving it...

36:50 ...so they can sometimes feel more comfortable about that change.

36:53 I think there was a question. Yep.

36:55 [Audience comment] I just had a comment about, at some point if you're attempting to avoid IT, at some point that confrontation...

37:05 ...it's going to happen, if either at the support level, at a time of upgrade level...

37:12 ...at an interface level if you decide you want to interface to another system...

37:16 ...at some point you're going to have to have...

37:18 You have to bite that bullet and...

37:21 [Audience comment] So the earlier the better is your point.

37:22 The earlier the better, and...and that's a good mantra in any of the problems you're going to face.

37:27 But it's really critical on the IT front, because things are changing so much...

37:31 ...and policies are changing that, quite frankly, a lot of the IT policy side is not keeping pace.

37:38 So one of the things we try and do early in a project cycle within an enterprise project in one of the early phases...

37:44 ...I think Glenn mentioned it earlier was, in one of the early phases I call it connecting the dots.

37:50 So, you know, if you're standing up a web viewer that's going to put points on a map for something...

37:58 ...and, early on, get IT involved, get a server set up, take the Flex or the Silverlight or whatever your...

38:10 ...your poison is of how you're...you're building this, get the free one that we have loaded on there...

38:15 ...and make sure you can connect to ArcGIS Online.

38:17 That simple one, two, three step, we've done it numerous times in projects, and I can't tell you how many IT things we've uncovered.

38:25 They won't open port 80.

38:26 They...they won't let us do a reverse proxy.

38:30 All the technical mumbo jumbo that's out there, you find that on the first three weeks of your project.

38:36 It gives you...gives you 10, 12 weeks to fix it.

38:39 You're not finding out when you're deploying at week 10, and next week your business manager's got the big demo.

38:47 So the earlier the better. There was a question.

38:50 [Audience question] Yeah, would you deal with it the same way like you have squadron-level IT, wing-level IT, base-level IT...

38:59 ...and DoD-level IT?

39:00 Okay.

39:01 [Audience question] It's hard to get them all in sync.

39:03 Yeah. So the question or comment is, if you've kind of a very hierarchical IT structure, where do you engage?

39:09 And, I guess my experience is that it depends what you're implementing.

39:13 On an enterprise level, you're probably going to be impacting all of them...

39:17 ...so you're going to need this committee's of how they organize which is sometimes baffling to me, to be quite honest.

39:24 But you're going to need to think, where does it fit in that hierarchy, and usually what I try and do is go one above it.

39:31 You know, so, you know, particularly in a hierarchical military.

39:36 If it comes from the top, it...it...it...it really helps to get it flowed down, so we...we usually try and engage at that level...

39:43 ...but, again, it depends on...on what you're implementing.

39:47 There's a question at the back.

39:48 [Inaudible audience question]

40:12 Yeah, that's...that's...hmm...not a good PM strategy, but, you know, the comment was, you know, that...

40:21 ...IT is there to support the business, not the other way around.

40:24 [Audience comment] Just so you know, IT supervisor...

40:28 [Inaudible audience comment]

40:33 I love this IT supervisor.

40:36 Can you get duplicated into some of my agencies? I'll give the list to clients.

40:39 [Audience comment] At the end of the day, we're _____ [Inaudible] value. That's a problem, and there can't be legitimate concerns, right, so _____ [Inaudible].

40:47 Correct.

40:48 [Audience comment] I can't offer it. If you get my manager tell me I can do it, we'll do it.

40:53 Great. [Audience comment] Here's the risk. _____ [Inaudible] the risk, we'll get it done.

40:57 And that's exactly the IT attitude you want.

40:59 Unfortunately, when I work, I don't often get that.

41:02 And so what we try and do is…is…is you've got to engage them early. You got to…

41:08 Most IT people are…are bound by rules and regulations.

41:12 You kind of have to figure out, you know, how to circumvent some of those and them changed.

41:18 And then the case where we had mutually exclusive IT says, we can't do that and the business is saying we will…

41:25 …we went, you know, to the…the boss of everyone and said, the business…

41:30 …this is what it's getting to take to fill this business need.

41:33 This is what we need to do, and IT won't do it, and they changed the…we got them to change the policy.

41:39 But it was something that didn't happen overnight.

41:41 It took a lot of meetings; it took a lot of negotiations; it took a lot of conversations to make sure that they weren't…

41:48 …they didn't think we were doing something crazy, that there was a lot of things considered.

41:51 So, earlier the better you get things, particularly on the IT front.

41:56 Next one.

41:58 Ah, okay.

41:59 This is perhaps a sacrilegious slide to put up in a GIS Esri conference.

42:04 But, you know, on Monday you saw some amazing demos.

42:08 I mean, I sat in the audience, too, and I'm like, really, we do that, and just some breathtaking ideas.

42:14 But don't get enamored by Monday.

42:17 The reality is, you know, you can get a vision from Monday and some ideas, but a lot of the…

42:23 …some of the things you saw Monday may not be practical for your business.

42:27 So, one of the things that always happens after user conferences, I have lots of clients who come up and say…

42:33 ...that mobile app that Bernie Szukalski showed on stage on Monday. We want it.

42:39 And I say, why?

42:42 What business function, you know, if...if...if you don't do any mobile activities, why?

42:47 Now there may be some very valid reasons and, you know, we've implemented some things that are very strategic...

42:55 ...and targeted that have nothing to do with the business because perhaps we're buying credibility with upper management.

43:04 And that's a really good strategy to have.

43:06 So an example of that is, if your...if your upper management are all iPhone and smartphone enabled...

43:14 ...then maybe even though the business doesn't need it, maybe doing some dashboard on an iPhone...

43:20 ...or publishing some web services that they consume would be a really good idea to get them to buy in and engage on the technology.

43:27 But the...the bottom line is, if you need a truck, get a truck. Don't use a car.

43:32 So, you know, the whole idea of writing your technology to your business is just as critical...

43:40 ...as writing your project management strategy and your communication strategy...

43:45 ...which is sacrilegious with...you're going to see loads of shiny objects.

43:49 If you go down to the main floor and go on the vendors, this...and on the Esri side, there are some really amazing things...

43:56 ...but, back to that first slide...what is the business reason you are implementing it?

44:00 And it's not the technology.

44:02 The technology is the solution, not the business problem. Okay?

44:11 [Audience comment] Do you like the car?

44:13 Yeah, that is Glenn's car by the way.

44:17 Okay. This...we've been petitioning to have a sessions on requirement gathering for a long time.

44:25 To me, we could do a whole tech workshop for a whole day on how to do requirements gathering...

44:30 ...and there is a 20-minute one that's going to happen on the demo floor.

44:33 We're doing it twice, one right after this session at 10:00, and then there's one later this afternoon that I'll give.

44:39 But requirements, requirements, requirements.

44:42 As Glenn said earlier, we get pulled into some really ugly projects that are heading south badly.

44:48 And the two things we ask for usually when we go in is, let me look at the project planning schedule...

44:53 ...let me look at your requirements documents.

44:55 And we go off in the corner and we usually bang our heads on the table.

44:59 Because I can tell you right from the very beginning by looking at the requirements documentation and...

45:05 ...by the way, a long Excel spreadsheet line by line is not a requirements documentation, in case you thought that was the case.

45:13 It...it is such a critical part of every piece, particularly in an enterprise project that is complex and long.

45:19 So, we're not going to spend the rest of the session on requirements gathering...

45:23 ...but there's some fundamentals that you should take away from it is, and there are some amazing books...

45:28 ...we've got some references for some books that are good, but any good requirements project management class that you can take...

45:36 ...whatever the methodology they take, it is an art; it's not a science.

45:41 But there are some good practices, and they should really be about what are you building.

45:47 They should be...they should be in the language of the users.

45:51 As I said, a long Excel spreadsheet that we respond to all the time on RFPs...

45:55 ...when they put in an appendix of 500 things it should do is not a requirements document.

46:01 That's the...perhaps might be the first phase.

46:06 But they provide traceability.

46:07 If you don't know what you're building, how do you know you're successful?

46:11 How do you know when you're going to stop?

46:12 How are you going to put things into phases?

46:15 So the requirements process and the documentation you do with that is absolutely in...the most...

46:23 ...I'd say even over project schedule, the most important thing that you need to do.

46:26 And it can be as easy on a smaller project as Excel spreadsheets and a Word document that translates those into workflow.

46:37 The key is workflow.

46:40 So, if you're building a system for a map viewer that the public's going to be using...

46:45 ...what is the two things you want them to do, and write them out.

46:50 And...and then from that, there is a really easy way to start saying, okay, from that, what's the data I need to support that?

46:57 What should you be focusing on?

47:00 And there's lots of different strategies.

47:02 We can go on and on about requirements and don't get me started.

47:06 But there's lots we can talk about on that and we can certainly do that afterwards.

47:09 Can you show the next slide?

47:10 And, just before moving to the next slide, I guess, describe the whatnot, the how, in the requirements...

47:20 ...one of the things that...that I'll look at when I'm looking at a requirements volume is...

47:26 ...if I start seeing a requirements document that's describing how to zoom or how to pan or how to do some of those things...

47:35 I...I immediately become concerned, because those are things that I think we've, over time, we've all become familiar with.

47:42 We understand how they work in the underlying COTS technology...

47:46 ...and what we really want to see in those requirements is what are you trying to accomplish.

47:52 What...what is that workflow? Business workflow.

47:53 What is that scenario?

47:57 Now, there're are going to be certain things that isn't satisfied by the COTS technology.

48:02 It is very mission specific or business specific, but describing it from the standpoint of a user...

48:09 ...you can have a list of 500 capabilities, system capabilities, and you could actually complete all 500 capabilities...

48:17 ...but if there's no thought put into how those capabilities are orchestrated together, of how it comes together...

48:24 ...how does somebody execute a function or proceed through a scenario...

48:30 ...you can check the box for all 500 but deliver no business value.

48:35 So, seeing that relationship between the two and understanding what the business value is, what the workflow is...

48:41 ...and what are the system capabilities to support that is extremely critical.

48:49 So this is an attempt to try and bring again some fundamentals on requirements gathering.

48:55 So in the top part, it's a line item on a spreadsheet, but you've translated that into...there's many ways to do it.

49:03 It's in more user specific...

49:04 ...and then there's some...some potential things that you as an enterprise system would need to build.

49:11 So, you need workflow. You need use cases. You need a domain model. You need a design model.

49:17 And on an enterprise, you need all of those things.

49:19 On...on a smaller project, you can do this in two hours.

49:24 You know, clearly an enterprise system, it's much more involved.

49:27 There's a lot of people involved.

49:29 But there's really good software and tools out there...Enterprise Architect Team Foundation Server.

49:35 There's a whole bunch that we use on really, really big projects where you really need to assign IDs and track traceability.

49:42 But fundamentally, a lot of these documents are what you should be using.

49:47 There's a lot of really great literature that you can buy on Amazon and all sorts of places.

49:52 Any good solid requirements gathering process is...is important, and it's...it's also important to understand...

50:00 ...and we've been in cases when you gather requirements that are going to be mutually exclusive.

50:04 And that's the whole part of an enterprise system is...is...is involving early, creating a vision, collecting requirements...

50:11 ...shuffling them into phases, and then packaging them for delivery.

50:17 And it might mean that where you end up, at the end of the year is very different where you thought you were going to be...

50:22 ...because of change and shifts in requirements.

50:26 But the only way you're really going to know what you're supposed to be building is if these sets of documents are in place.

50:33 And without them, so, when we get called into ugly situations and we ask and they don't have them...

50:39 ...or all they've got is the first thing, which is an Excel spreadsheet of a list of 500 requirements, it's painful.

50:46 Because the end users don't know what they're supposed to be getting.

50:50 The workflow that one end user in region 9 supports versus another end user in region 2 supports, might be very different...

50:59 ...and you need to kind of figure out, are we doing both, are we modeling both, is one more important than the other?

51:05 And these cases are...are the critical way to translate those.

51:09 And there's...there's templates up on our website about a use case and what a use case is.

51:14 So we can certainly go ad nauseam and talk about that.

51:18 But that...that...that 20-minute workshop might give you some good ideas as well.

51:24 Okay. Even in an enterprise system, in...in today's frantic world when you're trying to get things stood up...

51:35 ...you really must sit back and start to say, what can COTS give me first?

51:40 It's...and by COTS, I don't mean just Esri software.

51:44 I mean the RDBMS you're using or some extension that a business partner puts together...

51:50 ...or, you know, if you're in the utility business or you're in the planning business...

51:54 ...there's loads of business partners who have very focused applications that they've written and, you know...

52:00 ...there's not the money these days to write custom systems, there's just not.

52:04 So in the...even in an enterprise system when you're perhaps going out and...and creating new editing tools...

52:11 ...there are great templates, there's great packages out there that do a lot of that.

52:16 You really must look at what does COTS give me first?

52:20 And that should be your approach.

52:22 And we often in our phasing, one of the things we do, even if we are building somewhat of a custom system...

52:28 ...we'll stand up the COTS editing environment first if we're doing an editing.

52:32 If we're building a web viewer, we'll...we'll take the COTS one, we'll connect the dots, load some data in...

52:39 ...and get people buying into the concept of viewing their data on the web.

52:43 Sometimes they've never seen their data on the web, and they don't need to wait a year to see it.

52:47 You can start publishing that right away.

52:49 So it's, again, figuring out in the COTS what...what value does it bring, and how do we implement that...

52:57 ...and...and our strategy usually is get it in the early phases.

53:01 Don't wait to, in nine months down the road trying to show them what COTS does.

53:07 And you need to make some hard business decisions.

53:09 Again, that...that three constraints of scope, schedule, and budget, you know, if...are they in parallel?

53:18 If...if...if there's an editing environment or one of our free viewers, if that does 80 percent of what you want...

53:28 ...you need to kind of consider, is it worth spending a million for the other 20 percent?

53:32 And in this environment, you've really got to start thinking about those things and...and...

53:35 ...what is the priorities that give me the best value right now in my phasing?

53:40 So, we really look to try and leverage that.

53:45 That doesn't mean that you can't configure and completely change things.

53:50 I mean, we've got examples of...of people's sites who've used the base web viewer or the editing environment...

53:55 ...and you wouldn't recognize them because you've configured them with different workflows, you know...

54:00 ...a lot of the data flow manager and some of the other tools that really help you in workflow.

54:05 I sometimes don't recognize that they're the same base tools that were configured differently.

54:10 So sometimes that's a really great place to start, and we always look at it from an enterprise system as the first place to start.

54:24 Implementation in an enterprise is a continuous process.

54:27 Even though your schedule might say 18 months, you've got to remember that things change and things evolve...

54:34 ...and move forward and you've always got to be going back to those early visionary

documents that you write...

54:40 ...and touching base and making sure that you're on point.

54:44 And what we really like to look at is, even in the implementation process, you've usually got multiple spirals...

54:51 ...you've got different teams spun up, some doing testing, some going back and saying, did we get the requirements right...

54:56 ...some code development.

54:59 But you've really got to start looking at how we deploying and moving that forward through that cycle.

55:05 We call these spirals because there isn't an end.

55:09 Once you've deployed the first phase and you've implemented it and got it out there, you're...

55:14 ...you're already got a team geared up to think about the next phase.

55:18 And the critical things to think about in that are training and who's maintaining it and who's using it and how are you monitoring that...

55:26 ...so there's really great tools out there and available now to look at, are people using the system?

55:33 Have you built a system that no one is using?

55:35 Have you built a website that no one's going to? Why?

55:39 And...and really going back and...and trying to retrofit and, in the next phase, what you've learned.

55:47 So it's really important to think about things as a cycle and be realistic about what you can get done.

55:54 And I think the second bullet on here I think is key, job or mission-specific training.

56:01 A lot of times, we have a tendency to focus on, once again, feature, functionality, capability...

56:06 and...and that's where the training focuses as well, showing the tool, showing the capability.

56:14 But we sometimes fall short in showing how is it going to be used within the context of executing a day-to-day workflow...

56:20 ...or a job or what...how are you actually going to use this to accomplish what you've been doing for 20 or 30 years...

56:26 ...as a particular user or a person within...within an organization.

56:30 So it's...it's not just the capability but job or mission-specific training.

56:37 Two minutes and then we'll do questions.

56:39 Okay. Is that the last one? It is.

56:46 So, we like to give, beginning and end, give you right up front what you got the 10.

56:50 We try to talk through them.

56:51 Again, they're not in any priority, and I think some of them are emphasized more...

56:55 ...just because if we've come out from a project that is requirements challenged, shall we say, we emphasize requirements.

57:03 But our...our idea is that all of these are important as a project manager...

57:08 ...and I think more and more project managers are having to embrace technology.

57:14 They're having to wear an awful lot of hats.

57:16 You can't just go off in a corner and...and put your head down and get into Microsoft Project and not talk to people.

57:23 You know, so communication, even though it's not up here, we used to have a communicate, communicate, communicate one.

57:30 But it's in...it's...it's in all of these and how you communicate about your enterprise strategy and planning is really critical.

57:40 You know, how you roam the corridors and walk with your...talk with your programmers and find out what's going on...

57:46 ...that's when you really find out what's going on.

57:48 Not at the status meeting that you hold every morning at 9:00 in the morning.

57:52 No, it's when you find that they're working late at night and they've got a problem going on.

57:57 So, even though communication's not up there as a specific one, it's really implied through a lot of these.

58:05 We've got about 10 minutes or so for open questions and free consulting.

58:12 Hey, it doesn't happen very often with Esri, so come on. Yes.

58:17 [Audience question] Can you say some words about data migration?

58:19 Okay. Question is about data migration. Do you want to take that?

58:25 Yeah.

58:26 Oh, before everyone starts to leave, the evaluations are online.

58:29 Please go do them, because we really would like to hear from you about what's missing.

58:33 What are sessions that you would really like to hear?

58:35 If you're in the project management field, we really would like you to tell us about that

because they do influence.

58:43 We'll get your question in a minute.

58:44 [Audience question] Would you put that last slide back up?

58:45 Put the last slide back up.

58:49 So the question was about data migration. We don't in this session focus specifically on that.

58:56 Obviously, that's critical to any project that involves geospatial data, preparing that data.

59:05 Once again, I like to...I like to approach data migration similar to feature functionality...

59:11 ...that in the context of proceeding through the project, I don't wait till the end to do data migration...

59:19 ...or migrating data throughout the project.

59:21 It is part and parcel to what I like to call the validation lab or...or when you're getting your users to start working with the system.

59:32 Part of that should also be refining and truing up your data migration process.

59:38 And then, one...one thing that can be particularly challenged, especially in a large enterprise...

59:43 ...with a lot of disparate geospatial data is, you know, not choosing the...the best data that you know exists within your organization.

59:54 I mean, it may be good to start on that just so you can get some functionality out there...

1:00:00 ...but I think all of us are aware that, you know, there may be one region or one group within a given organization that you realize...

1:00:08 ...hey, their data's maybe not the best, maybe they haven't been extracting it...

1:00:13 ...or maintaining it to the standards that we want from an organizational standpoint.

1:00:19 Don't forget about those. Don't put those off to the end.

1:00:21 So try to get a good sampling of data across a particular organization or a region.

1:00:27 But...but to do it early. Just like everything else. Don't wait till the end, hit a couple of areas through your process...

1:00:33 ...make sure you're going through that, because that's going to help you evolve your migration process...

1:00:38 ...along with what is it going to mean to do system deployment, because they need to be close, obviously, closely coordinated.

1:00:45 And particularly if the data that you're using has never been seen in the GIS before, red flag it.

1:00:51 Because don't...don't delay in understanding what that quality is because more than likely, it's not great.

1:01:01 And we've had loads of examples, and I will not name the company...

1:01:04 ...but they gave us their data file that we were going to put up on the web, and let's just say...

1:01:12 ...it was a large retail company that sold a product of some sort that you consume every day in your car...

1:01:18 ...and we call it petrol in Europe, but it's not here, called that here.

1:01:22 And they gave us their data file, and we were going to be loading up.

1:01:26 We loaded up. We made these beautiful maps. We put it on the web. We sent it to them...

1:01:30 ...and within 10 minutes of them getting this, they said it's wrong, completely wrong.

1:01:34 The data that they had stored, all the time thinking it was the address of the petrol stations, was the address of the owners...

1:01:42 ...and they'd never seen it on a map before until you put it on a map.

1:01:46 So, you know, on the data legacy side of things, you know, these got these massive data warehouses and tables of things...

1:01:53 ...but they've never seen them on maps before, and, you know, the GIS and maps shows warts...

1:01:59 ...and they're really ugly warts sometimes.

1:02:01 So it's really important to kind of figure that out early.

1:02:05 [Audience question] _____[Inaudible] you had templates _____ [Inaudible] web site or product management or...

1:02:09 Yeah, there's...there's a bunch of templates up on the, I think, support.esri.com, then there's a project management link.

1:02:14 If you can't find it, just let us know.

1:02:16 And then if you head down to the Professional Services island, they can show you a whole bunch of templates.

1:02:20 Yep. Guy in red at the back. Did you have a quest...? Sorry, lady.

1:02:25 [Audience question] [Inaudible]

1:02:36 I...I...I would...the comment was that implementation that is not a continuous _____[Inaudible]...

1:02:41 ...and I would challenge that in this environment that it's...that...that you're never ending.

1:02:46 There…there certainly needs to be boundaries drawn and know when you're complete…

1:02:51 …but it is an evolving process that changes an awful lot, and we're seeing it being very, very much continuous.

1:02:58 Comment back here.

1:02:59 [Audience question] [Inaudible]

1:03:12 Yes. Actually, there's a tech workshop that's going to be listed on the…if you don't have one of them…

1:03:17 …it's how to build a good project plan, and it shows…it takes you through the steps…when is it? 2:00 this afternoon.

1:03:23 Is it on that list? Let me see.

1:03:27 Creating a manageable project plan. It's at 10:30 in the Professional Services island…

1:03:31 …and then we're doing it again. I'm doing it at 1:30, and it'll give you ideas of how to break things down…

1:03:37 …and tools to use. Okay.

1:03:39 [Audience question] Do you have another copy?

1:03:40 Yep. This _____[Inaudible]…Is that yours? We've got some more copies here.

1:03:43 _____[Inaudible] orange?

1:03:45 [Audience question] No, I was just wondering _____ [Inaudible]

1:03:49 [Audience question] Can we have a copy of the _____ [Inaudible]?

1:03:51 Yeah, you…everyone gets it. There's a…you get every presentation that's shown on the tech workshops.

1:03:59 [Inaudible audience question]

1:04:00 It's…a link is mailed to you as part of your registration after the conference. There was another question?

1:04:14 [Audience question] Number nine. Number nine.

1:04:15 [Inaudible audience question]

1:04:17 Yep.

1:04:18 [Inaudible audience question]

1:04:34 So, the…the…

1:04:35 [Inaudible audience question]

1:04:37 Yes, so the comment is…is number nine, which is use COTS as much as possible…

1:04:42 …in conflict with that you have to build a lot of custom stuff in GIS needs to be custom…

1:04:46 I…I…I think that was certainly true years ago.

1:04:50 I think more and more, there are solutions and templates and things that you should leverage first…

1:04:56 …resources within your agency and time and budget are scarce.

1:05:00 So you need to be plagiarizing whatever you can get your hands on from Esri or from a business partner…

1:05:05 …and configuring it first to meet your needs.

1:05:09 So one of the things we run into all the time is, we've done editing in our planning department this way always…

1:05:16 …and we don't want to change it.

1:05:18 And I give them a proposal that says it's a million dollars to make that…

1:05:21 …or, you can implement it for a hundred thousand dollars by taking their editing templates and changing how you do…

1:05:28 …and probably improve your business.

1:05:30 The workflow that you are following for editing for the first part was probably because Jimmy didn't talk to Mary across the floor…

1:05:38 …and they were passing paper around to each other.

1:05:41 So, you know, you don't want GIS just to implement a system that's bad anyway.

1:05:46 That's just going to be a bad GIS system. Sir.

1:05:50 [Inaudible audience question]

1:06:17 Yep. I…I…we don't mean to say that you shouldn't be building custom. It should be the first place to look.

1:06:23 There's a lot of systems you probably do need to build from scratch, but in today's resources…

1:06:27 …you need to be really critical about that. There was a comment right there?

1:06:31 [Audience question] Related to the requirements, do you have strategies for dealing with…

1:06:34 …I don't really know what I'm _____[Inaudible].

1:06:38 Oh, yes. Yes. The idealistic clients. It's a bit like finding, you know, a husband or a girlfriend or whatever you're looking for.

1:06:47 I know, but I'll know when I see it.

1:06:50 prototyping. So the comments...

1:06:52 ...I mean, protyping's a good strategy for that, obviously. And that's why, I mean...

1:06:58 ...there's a couple different reasons why we go about a COTS-first approach.

1:07:02 One of those is to put something in place as quickly as possible.

1:07:07 A...a lot of people can get verbose in writing requirements and here's what I think it is, and blah, blah, blah, blah, blah...

1:07:14 ...but being able to prototype and show them something and say, Okay, well how do you want to tweak this...

1:07:19 ...or how do you want to change that.

1:07:21 Even if you're going to customize it, just having something you can demonstrate and base from...

1:07:26 ...that's...that sometimes can help in that scenario.

1:07:28 So...so demo...there's a tremendous amount of videos and demos on the Esri site.

1:07:32 If you haven't checked out support.esri.com or some of the other places in there, there's an awful lot of things you can use...

1:07:38 ...as particularly coming off Monday's plenary. Almost all the slides will be up there and demos and videos.

1:07:46 So one of things, you know, we do is, if...if you're building, let's just be simple...

1:07:51 ...if you're building a viewer again to show data on the web, you know, go to sites that do similar things.

1:07:59 So if you're a city and you're... go to other cities that show how they're doing their parcel data.

1:08:04 What are the...show them five different sites. What did you like? What did you dislike?

1:08:11 Ask them what sites they like, you know, what's the look and feel, how user intuitive is it.

1:08:16 Who are the end users?

1:08:18 So we...there's a whole bunch of workshops and stuff we can kind of give you some guidance on.

1:08:22 So there's a bunch of different resources that we've got up here.

1:08:25 Some of them are just straight process type documents.

1:08:30 We tend to follow a lot of the iconics process on the Rosenberg stuff which is very use case.

1:08:35 It's...there is actually a GIS section in one of his books.

1:08:38 He...he worked with our development team on...on how would you implement a GIS using iconics.

1:08:44 So that's the kind of process we generally use on large systems, but there's a...there's a lot out there that you can leverage.

1:08:51 This is the evaluation link. I don't know how it's going to go. We usually we hand out evaluations.

1:08:55 But we'd appreciate feedback on content and presentation and what's missing.

1:08:59 What would you like to see in a project management session, what resonated here, what didn't resonate...

1:09:07 ...and I think we're out of time, but I really appreciate you coming this morning. Thank you very much.

1:09:12 Thank you.