

# Senior Executive Seminar Welcome by Jack Dangermond

Jack Dangermond gives his introductory remarks for the Esri Senior Executive Seminar, held in San Diego, CA on July 11, 2010. He talks about the business value of GIS, gives his vision for GIS, and provides an insider discussion of the technology.

<http://video.esri.com/watch/58/senior-executive-seminar-welcome-by-jack-dangermond>

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## Video Transcription

**00:01** Twenty years ago when we held our first executive meeting like this, we just had a handful of people.

**00:07** And our users asked if we would hold such a meeting so that they could have their executives informed about what GIS was all about...

**00:17** ...why they were so enthusiastic about it.

**00:19** And Roger...Roger was very supportive at the time.

**00:24** And that was a good thing.

**00:25** So I am actually rather amazed that you're all here.

**00:28** It speaks to an increasing maturity of our technology and its implementation across organizations.

**00:38** So I'm going to talk about applications to give you sort of a sense of what's going on in our field today...

**00:44** ...then give you a sense of the vision of where it's going.

**00:47** And we'll do more of this throughout the day and especially tomorrow.

**00:52** I'll give you some sense, an insider discussion, about what's happening with the technology...

**00:57** ...and then talk a little bit about the business value; why I think this is actually going as fast as it is.

**01:04** First...well, first maybe I'll simply talk about the business value.

**01:09** My sense is that GIS is going mainstream.

**01:14** I first had the experience of that a couple years ago talking to the president of a large utility in Europe.

**01:22** And he said, You know, Jack, I'm using SAP as our back office system.

**01:27** It's managing all our money and our people and so on.

**01:30** And I'm using SCADA to manage our operational stuff.

**01:35** And the third pillar of my organization is now GIS.

**01:39** I'm actually using it systemically right across the organization.

**01:43** Not...as much as I like GIS, as much as I think about it being so important, to listen to a chief executive talk at it like that...

**01:54** ...that it's a fundamental core aspect of how he runs his business, it sort of set me back.

**02:00** This spring I visited for an afternoon with the prime minister of India.

**02:05** And he had exactly the same vision.

**02:08** This is a big guy.

**02:10** And he said, Jack, I would like to use GIS and geography to organize my country and manage it better.

**02:18** And last November I was in China at our users conference, and there, talking to some of our users, they said quietly...

**02:26** ...why don't you come over to our...our...our place, I'll show you something.

**02:30** So I went over to their place, and lo and behold they had developed a system, which I'm going to show tomorrow...

**02:39** ...that organizes every one of their ministries into a services-based system that communicates kind of an infrastructure system.

**02:50** And I was shocked.

**02:52** Roger and I went to China in the mid-80s and talked about this vision.

**02:56** But they have quietly, systematically done it.

**02:59** And I said, what was the driver that did it?

**03:02** And he said, well, you know, in China we don't quite have enough food.

**03:08** We don't know where to locate the next hundred million people.

**03:13** Where should the new cities be?

**03:15** How should we locate...where should we locate our power plants?

**03:19** And here we're not talking about one department.

**03:21** We're talking about senior management, senior executives.

**03:25** I think that's why this meeting is so important, is for us as a group to realize something interesting is happening.

**03:35** Tomorrow we'll also see a presentation from Abu Dhabi and also later today...

**03:41** ...where there's vision going on at the senior executive level...

**03:44** ...that says, I can run things with a system like this, a GIS system.

**03:53** Well, my little thing is not working, but...oh yes it is.

**03:59** It's first useful to say, with these hundreds of thousands of organizations around the world using it, that GIS is already successful.

**04:09** There's, by our measure, about a quarter million organizations that are using it in cities...

**04:14** ...in government, in business, in utilities, in the NGO sector.

**04:19** And they're looking at things that are very tight in at a particular city or a particular project.

**04:24** But others are looking at the whole world; looking at global climate change, looking at changes going on.

**04:31** And it sort of sets it up for this same question.

**04:34** Can we use this kind of technology to move up a step, to begin to do like the president of DONG Energy is doing...

**04:44** ...saying, I can actually begin to manage things, see them, understand them...

**04:49** ...work with them, with this new kind of information system.

**04:54** I would like to assert that GIS is changing things, sort of slowly, bottom-up.

**05:01** Little by little, it's changing how we organize and how we reason.

**05:07** And especially with things like Google Earth and Microsoft's Maps of the World...

**05:13** ...while they're simple, they're opening the world's eyes to begin to think spatially.

**05:18** And yet they want, that is, the world wants, to take the next step.

**05:22** To go deeper, to look at authoritative source, to look at relationships and patterns and processes.

**05:29** The kind of science that Roger originally conceived of so many years ago.

**05:35** Also, GIS is changing things in the sense that it's helping people begin to collaborate.

**05:40** And I see this in our own federal government.

**05:43** Agencies are talking with agencies in new ways because...because they can with these tools.

**05:49** Different disciplines are connecting, different activities are getting connected.

**05:54** And also, we...we don't need to really talk much about the fact that a map is worth a million...

**06:00** ...a million words, not a picture worth a thousand words.

**06:03** A map is understandable quickly and immediately.

**06:08** I can see the story, I can see what's going on in the Gulf.

**06:10** I can see Haiti.

**06:11** I can see where the problems are.

**06:13** I can see crime, I can see it all, quickly...where's the issue?

**06:17** So it's becoming a new storytelling system.

**06:22** And we see it on the news, we see it on TV, we see it in schools, we see it as a new medium for communication.

**06:31** GIS is also quietly sneaking in and helping us organize how we work.

**06:38** It's tying together different aspects of organizations.

**06:41** The measurement folks with the data management folks with the analysis folks with the people who visualize...

**06:48** ...with the decision makers, and also the people who actually carry out these decisions.

**06:53** It's an interesting cycle that this systematic, holistic technology that we're attracted to...

**07:01** ...is changing, nicely, organizations in the background.

**07:06** Is it enough?

**07:07** Is it in time to deal with the challenges that we're facing?

**07:12** Even in Roger's movie, 40 years ago he envisioned them...the challenges that we're facing on the planet.

**07:19** Well, time will tell.

**07:21** More about that tomorrow.

**07:24** Local government is probably the best example of this.

**07:27** The different departments in local government like planning and engineering...

**07:31** ...and public works and surveying are using GIS extensively around the world.

**07:36** And the vision behind this is not just automation of applications...

**07:41** ...but it's the integration of these activities around core, shared infrastructure, data, maps, workflows, that sort of thing.

**07:54** And this is improving collaboration across the organizations.

**07:58** Local government is an example of it.

**08:00** State government is another example of it.

**08:03** National government is another example of it.

**08:05** National governments are a little slower in getting there because of the immensity of size, as Roger's film pointed out.

**08:13** In this environment, the concept is that updates to any one department, like on a map or in a dataset...

**08:23** ...are integrated and immediately made available to everyone else.

**08:27** This is a core vision.

**08:29** That means everybody's living in their own operations based on those kinds of transactions.

**08:36** And the same thing is happening in utilities.

**08:40** And the same thing is happening in business.

**08:43** We're getting to core value here.

**08:46** And you, particularly you, as senior executives, know what I'm talking about.

**08:52** You didn't get to where you're at by showing up with some nice maps or...

**08:57** No, you had to work hard for this.

**09:00** You had to make those tough decisions.

**09:02** You had to deliver business value to your organizations or somebody else is waiting to take your job.

**09:10** At least that's my experience.

**09:11** You've got to drive for business value.

**09:16** People like FedEx now invested a few million dollars in GIS.

**09:22** They won't even let me tell you how much.

**09:24** But let's just say its orders of magnitude in savings through automation.

**09:31** People in Sears, people in retail, but also people in government, different kinds of values.

**09:38** Seeing policies change and also communicating about policies through maps.

**09:47** At the same time, computing is evolving.

**09:52** At the same time, our ability to measure geography, wire it up, is evolving.

**09:59** And many things are contributing...imagery, LIDAR, sensor networks...

**10:05** ...now crowd sourcing of information coming in from citizens, georeferenced, all becoming part of our world of GIS.

**10:16** This isn't just about money.

**10:19** It isn't just about keeping track of the records about people.

**10:23** No, it's about everything.

**10:25** It's about measuring, managing, leveraging, all of it...just magnificent, magnificent technology.

**10:35** GIS is not simply data; it's knowledge.

**10:39** It's the data of course, but data has to be organized into data models.

**10:45** And GIS professionals, the people who work with you and for you, spend a lot of time figuring out those data models.

**10:53** GIS is also about spatial analysis; the logic of combining overlays to be able to figure out...

**11:01** ...like Roger's movie, where to locate things or how to manage things.

**11:07** GIS is also about workflows.

**11:09** You do this, before you do this, before you do this.

**11:12** And workflows particularly are interesting because combining geography with workflows...

**11:20** ...we can span across different departments of the enterprise or different segments of society itself.

**11:27** Encapsulating these together with maps is what GIS is about.

**11:34** You might wander around tomorrow night and see some just incredible maps.

**11:38** Users love to see their...their own maps out there, but other users love to see them and they take photos of them...

**11:45** ...and say, I could...I could...I could copy that map, because it's so fantastic.

**11:50** I could use it in my city.

**11:52** And you'll see a lot of that going on.

**11:56** GIS encapsulates cartographic knowledge, just like it captures workflow knowledge...

**12:04** ...and analytic knowledge, and allows it to be shared.

**12:09** So GIS is more than just data.

**12:11** It's more than just dynamically making a map.

**12:14** These sharable knowledge bits...well, as you'll see again tomorrow, are starting to go on the Web.

**12:24** I can share not only my map, I can share my data.

**12:27** I can share how I approach a problem.

**12:29** I can share how I analytically model streams, how I approach how land use changes in my city, and on and on.

**12:40** GIS, again as you'll see tomorrow; I hate to reference tomorrow except that's an ad for tomorrow.

**12:45** Be sure to be there!

**12:48** GIS technology is really rapidly growing.

**12:51** Every year we make progress.

**12:54** Some of the basics, again as Roger's movie shows so clearly, are still the same.

**13:00** Measurement, organization in a digital form, analytics and so on.

**13:05** But the tools to be able to make beautiful maps or analyze processes...

**13:09** ...or put them on the Web so that everyone can see them, is advancing quickly.

**13:15** For you in the IT business, you often talk about patterns of implementation.

**13:21** Today, the biggest pattern is desktop.

**13:25** It's used by individuals.

**13:27** Most of your organizations have dozens, thousands, of these desktops where people collect and manage the data.

**13:35** They often do projects, they make a great map.

**13:39** The second pattern is serving those maps and those datasets so that other people can access them.

**13:45** Serving them into cell phones, serving them into Web browsers, serving them into other desktops.

**13:52** The third pattern is the federated pattern.

**13:55** This is what they're doing in China; many different servers that are integratable.

**14:03** I can bring these services together and mash them up and see the whole organization as a whole.

**14:11** The fourth pattern is something new.

**14:13** It's emerging on the Web, or the Web cloud environment.

**14:19** And this calls for bringing together many services from distributed places...

**14:24** ...and allowing these services to be integrated dynamically and used openly by everyone.

**14:32** The desktop pattern, as I mentioned, is the common pattern of the GIS professional...

**14:38** ...and probably most common for you to understand.

**14:42** I simply sit there, it's a productivity tool, and I do my work.

**14:45** The server pattern takes the desktop's work and serves it out to other people, other desktop users.

**14:53** I can see your map, I can overlay my map with it.

**14:57** Or Web...Web clients, so I don't have to have any software at all.

**15:01** I can just look at your maps or I can combine your maps with other maps.

**15:05** The mobile client, like an iPhone or Android phone or Windows phone.

**15:12** And also serving open standards-based services so I can wrap a service by one organization into an application of mine.

**15:22** A simple way to understand it is, I can take a map coming from one agency...

**15:26** ...and put it into a Web site and serve it out as part of my Web site.

**15:31** And the last one is integrating these services into an enterprise services bus...

**15:36** ...so I can connect it with other services like back office systems...

**15:42** ...big database services, customer service services, and the like.

**15:47** Organizations like IBM have pioneered the implementation of geo...

**15:53** ...into their other services environments using exactly that environment.

**15:58** So authoring on a desktop, serving on a server, using in a whole plethora of different tools.

**16:07** And those tools, those clients, are getting very easy to use.

**16:11** One of them is the desktop.

**16:14** Just a couple days ago, we released the iPhone application that accesses services.

**16:20** And it's doubling every day.

**16:22** Okay, it's only been four days, five days.

**16:26** First day was 5...500 downloads, the second day was 1,000, third day was...

**16:31** Anyway, 12...now we're up to 12,000 downloads a day.

**16:34** And you guys might say well, that's not very much.

**16:37** It's doubling every day.

**16:39** And that's going to be very cool.

**16:40** Because with a little iPhone, you can download this app and you can look at services from all over the world.

**16:47** How are we doing over there?

**16:49** This is going to serve executives.

**16:51** And you can say, how are we doing in the southern part of the town?

**16:54** How are we doing in south Texas?

**16:56** How are we doing in northern Munich?

**17:00** You get the idea?

**17:01** And...and most of you now have these smartphones around.

**17:07** Not only can you look, not only can you bring a little geography into the field or into...into the executive suite or to a citizen...

**17:15** ...you can go the other direction.

**17:16** Why don't you fix this?

**17:18** Why don't you do that?

**17:20** Come on, let's move!

**17:22** So it's both directions.

**17:24** So GIS is going to be not simply broadcast media, no.

**17:27** It's social media; it's social networking.

**17:32** And the GIS organizational part of organizations is going to be enriched by all of this very quickly.

**17:40** The third pattern, these federated systems...

**17:42** ...this is actually the architectural diagram of China, which is implemented, has a whole family of big computer centers...

**17:49** ...that are replicated in a massive center in central government and then served out in this way.

**17:57** This Web cloud pattern, this fourth pattern that's emerging, is interesting.

**18:01** It's enabled by faster machines, and networks, and Web services, and open standards...

**18:07** ...and open data sharing policies which are emerging.

**18:10** This is a big thing in North America, Australia, Europe.

**18:15** It's really taking off.

**18:16** But also, we see it in places like Abu Dhabi in the Middle East.

**18:20** It's not just a...a unique thing.

**18:23** This will, I'm certain, move all over the world.

**18:28** GIS professionals are beginning to serve their knowledge; their maps.

**18:33** Now you know what knowledge is now, right?

**18:35** It's not just maps.

**18:37** They're models, they're workflows, how they organize themselves.

**18:43** They're serving these out as rich applications for citizens and knowledge workers and others to use.

**18:49** Not only are they building apps and serving those out, but they're also serving...listen carefully.

**18:56** Not only are they building great apps, but they're also serving the core information and services behind the apps.

**19:06** You understand that, Roger?

**19:11** Let...let me make a point.

**19:14** There are thousands and thousands of these servers.

**19:18** And people are serving cool little apps for their own community, for the...and so on.

**19:23** But the maps and datasets that are behind those apps are also like you can lift the hood up and the basic, raw data is right there.

**19:33** That's a very interesting, Web-based, geospatial infrastructure that other apps can be built on top of dynamically.

**19:45** You can just come along and grab that, and grab that, and grab that and build a little interesting app.

**19:50** Citizens can do that, NGOs can do that.

**19:53** People can have access to the core knowledge that your GIS organization is in.

**19:58** You may not want to do that, and that's optional.

**20:01** But many people have dreamt about the vision of a spatial data infrastructure for their city or for their state.

**20:11** This is just happening without much effort right behind the scenes.

**20:15** And what's occurring on top of that infrastructure...

**20:18** ...and we'll hear it from Washington, D.C., one of the leaders in those fields today...

**20:22** ...is people are building cool little apps on top of it like open government apps or citizen science apps.

**20:31** This one in the center is Cornell University.

**20:34** What's going on there is people are doing bird observations, about a million a day...a month, 1.3 million a month.

**20:42** Those are transactions over into the GIS.

**20:46** I saw this bird here, I saw that bird there.

**20:48** But then I can also serve out patterns of bird movement and observations from the same system.

**20:54** It's a crowd-sourced application, and on and on.

**21:00** Volunteered geographic information is big.

**21:04** It's going to...it's just starting.

**21:07** We'll see a lot of apps for it tomorrow.

**21:09** People are putting in information like this little map of New York City.

**21:13** There's red dots, orange dots, green dots.

**21:18** Red dots are where a citizen said there's a pothole or a problem.

**21:23** The orange dots are dots where the city said, Hmm, okay...

**21:28** ...I'll integrate that dot into my workflow and start working on it.

**21:32** A green dot is obvious, it's where they fixed it.

**21:36** This is a different kind of government orientation; citizen-driven government.

**21:43** And your mind can go very quickly on this.

**21:45** These become databases that then can be analyzed, they provide situation awareness, like is going on as we speak in the Gulf.

**21:56** The last thing I'll just very quickly highlight is ArcGIS 10.

**22:01** This is, again, something we'll show a lot tomorrow.

**22:05** 10 is a new vision.

**22:08** The vision is a complete geographic information system that's much easier, more powerful.

**22:15** And it makes geographic information available for everyone.

**22:19** That's the vision.

**22:21** It does this by connecting up to a cloud environment.

**22:26** Desktops and viewers and mobile devices who can access these key words...

[22:33](#) ...discover information, analyze them, visualize them, like that.

[22:40](#) All the things people have dreamt about with a GIS.

[22:44](#) In other words, it's part of an ecosystem.

[22:47](#) And the geographic knowledge can be stored locally...

[22:51](#) ...it can be stored in an enterprise server, or it can be stored in the cloud.

[22:57](#) So like something such as Flickr, I can create some knowledge and store it up there...

[23:06](#) ...and other people that I choose to share with, like my family, can look at my photos.

[23:11](#) Or, I can share my photos with everybody.

[23:15](#) GIS users can create geographic knowledge.

[23:18](#) They can upload it and they could say, I only want to share my geographic knowledge with the archaeologists of the world.

[23:24](#) Or, I only want to share my geographic knowledge with the people that work in Shell Oil.

[23:29](#) Or say well, I want to share my knowledge with everybody.

[23:33](#) That's a choice, and that's organized into social networking groups.

[23:39](#) That's a little bit of a shift.

[23:43](#) One of the ways that this is accomplished is by organizing all the complexity of GIS...

[23:48](#) ...which has kept us from everybody using it, into a map.

[23:54](#) So all those geographic knowledge bits that I was talking about, models and so on, they're sort of organized behind the map.

[24:01](#) Here, take my map...oh, great, cool, nice map.

[24:05](#) I can interact with it, I can query it, I can edit it with easy tools, I can combine it with other maps.

[24:12](#) So the map as a metaphor for geographic knowledge is one of the key essential points here.

[24:18](#) I'll come back to that.

[24:21](#) So this system is an online platform.

[24:26](#) It takes distributed services, allows you to organize them into social groups, these little orange dots and blue dots...

[24:34](#) ...and then discover them and combine them.

[24:37](#) They're exposed as maps and apps.

[24:41](#) So I can search and find a cool map and overlay it with other maps...

**24:46** ...or I can search and find a great app in any kind of application.

**24:51** I'm taking the time on this because I think this is a shift in the way that we've ever done GIS before.

**24:58** It's an environment where I can actually share my stuff.

**25:02** And GIS users, just like other Web users, are anxious to contribute to a bigger context.

**25:13** This is how it works. This is a map gallery.

**25:15** I can either query and find some maps or just poke around and find this great map of Washington, D.C. ...

**25:22** ...and poke it again and bring up the map service from Washington, D.C., from their server.

**25:29** And I say well, I'm kind of interested in trees.

**25:31** I'm a landscape architect so I...oh, let's type in Trees, let's see if there's any trees around.

**25:36** Oh, there's a...there's a tree layer in D.C., I'll poke it and I put the trees on top of my basemap, simple mashup.

**25:45** A couple of you have seen this before.

**25:48** When you see it live tomorrow, you'll be astounded.

**25:51** Because what it means is I can take lots of different distributed knowledge and combine them.

**25:57** Those long libraries of maps that Roger showed, all of a sudden becoming digital...

**26:03** ...becoming services, becoming mashup-able and then sharable.

**26:09** So for example, I could say, hmm, I'm going to type in and call this the Foggy Bottom Tree Map...

**26:14** ...and I'm going to put it back in the library. Pfft.

**26:16** And up it goes, in the library.

**26:19** And then I might want to find a cool app.

**26:21** I type in Crime, and here's a great crime map, and...and bring it up.

**26:26** Sorry, I got these slides out of sequence.

**26:28** You can see the nice Washington, D.C., map that I stored.

**26:33** Got it backwards.

**26:34** And then you find an app and it goes like that.

**26:37** So I click on the crime map and ah, Omega.

**26:41** They're a great company, and this is done as a business partner.

**26:44** I can jump to their Web site, spend \$99.00, buy their little app.

**26:48** Exactly like the Apple Store.

**26:50** So maps and apps.

**26:52** Or, many of these apps will be free.

**26:55** Because users like to share what they do.

**26:58** And now they have a...

**27:00** Now we've moved GIS to a different...different level.

**27:03** We've taken them so that they can share their data openly and freely...

**27:08** ...and for free in this environment, and download it and access it.

**27:12** And indirectly what happens is that everybody else can look at it, too, if you choose.

**27:17** So it moves GIS from the desktop to the server to the enterprise to the federated to the whole bloody Web.

**27:25** So geographic knowledge can...can prosper in that environment.

**27:30** So you say, will...will users really share their stuff?

**27:34** Yeah.

**27:35** Almost every week since we released this at the last of May, the volume of data and services has doubled.

**27:42** Okay, it's biased by especially North America, and...and Europe to a lesser extent...

**27:49** ...but we're starting to see dots occur all over the planet.

**27:54** Another aspect of this is something called the Community Basemap...

**27:57** ...where we have launched something called crowd-sourcing of a topographic basemap.

**28:02** People download a template, you now know what a template is, it's got all the knowledge a user does.

**28:08** They pour their own data into the template and they upload the map tiles...

**28:12** ...into this free Community Basemap multiscale that covers the planet.

**28:18** And this has taken off.

**28:20** There's actually now, following Washington, D.C.'s leadership...

**28:23** ...there's hundreds of cities, a number of states, a number of countries...

**28:27** ...including Saudi Arabia, Abu Dhabi, Portugal, Spain, and so on, who are participating in making this come alive.

**28:36** So let me conclude.

**28:39** Will...will GIS continue expanding?

**28:42** Will we make that next step to move from a research project, like when Roger started...

**28:47** ...to professionals to application users to all of society?

**28:52** I'll go back to the basic bottom line, which is there's clear business value for doing this.

**28:59** There's also a lot more value being understood in the world that says integrated approaches are becoming more important.

**29:06** People understand the benefits of sharing data, especially this kind of data, and also these new Web applications.

**29:13** Just, I think this...you'll remember this conference.

**29:17** Because this conference is the release of the technology that's going to move GIS very rapidly.

**29:25** GIS organizations will be the ones that build that data.

**29:29** They won't be something other than that.

**29:30** They'll be the ones who contribute and support the infrastructure within organizations everywhere.

**29:36** We must still continue to underline and...the importance of what made GIS successful...

**29:43** ...at the...at the local government or the state or the national level.

**29:46** It is that someone, some team, has vision and leadership and they understand how GIS really works.

**29:54** And they...and they provide the right management support.

**29:56** And there's planning, the technical architecture, the data models.

**30:01** There's a governance model, there's a financing model.

**30:03** All of these are important things that have to be worked through.

**30:06** And then there's the work.

**30:08** There has to be a team that does real work, that is motivated, has a spirit of collaboration.

**30:14** It isn't just something you buy and it works.

**30:17** This is where good people and collaboration really emerge.

**30:21** And we have, in this room, some organizations which have literally magnificent track records in being able to do this.

**30:29** So I have a great...a great...a great hope for the future.

[30:36](#) Roger asked if I would spend just a minute on Esri.

[30:40](#) Our organization continues pretty much in place as it has for 41 years.

[30:46](#) Our purpose is to...is to serve our users and also advance this technology.

[30:54](#) Evolve geographic science, I like that notion.

[30:58](#) Spread spatial thinking and spatial awareness around the world.

[31:02](#) In this we have many common values with you.

[31:05](#) Develop the professional workforce with training and various sorts of things.

[31:10](#) This is an interesting organization for you who are executives, because I've...I've only found a couple like it in the world.

[31:17](#) I don't advise it for everyone, but it is interesting because we have a...we have a social focus.

[31:23](#) We have a mission, and we've stayed private.

[31:27](#) And our users 30 years ago asked us to take on this job.

[31:31](#) For 10 years, we...we just did our own little project works.

[31:33](#) But about 30 years ago this summer, we had our first meeting of users.

[31:38](#) There was only 13...11 people that came.

[31:41](#) They said Jack, why don't you change your company...

[31:43](#) ...and see if you could actually build a decent piece of software instead of the junk that we'd built before?

[31:49](#) And that was a difficult decision.

[31:52](#) Not...not only will we...not only do we want you to do it, but we'll pay you to do that.

[31:57](#) We'll pay maintenance and support and you can become a kind of GIS software organization.

[32:03](#) So we said okay, we'll just do it.

[32:05](#) And we'll commit to you that we'll spend all of our money on R&D.

[32:09](#) And we do that.

[32:10](#) We spend about 20 percent of our revenue on software development.

[32:13](#) And that's part of the reason why we've been able to make these advancements we have.

[32:19](#) Well, our strategies are first to focus on our users.

[32:23](#) And I'm not saying this talking about Esri, I'm talking about your organization.

[32:29](#) That's...that's one of the key elements, I think personally, that make successes.

**32:35** Figure out who you're going to serve.

**32:37** Are you going to serve your stockholders, are you going to serve citizens, are you going to serve users?

**32:43** Who are you...who are you up to serving?

**32:46** And for us, we just figured it out and did it.

**32:49** And...and I...again, like I say, there's lots of different formulas for you here.

**32:53** But for us, this actually worked.

**32:56** And then...our actually, strategies...are...invest a lot in technical innovation to support really great software engineers.

**33:03** And Scott Morehouse, Sud Menon, Keith Ryden...

**33:07** ...some of the people that are here at this conference are almost like, for me, like gods.

**33:11** I am so...I feel like I'm privileged to work around them because they invent and create...

**33:17** ...and they drive these visions that Roger started so many years ago.

**33:21** And second, be an organization that's user-driven.

**33:24** I have a thousand people...

**33:25** In addition to the 13,000 people that are coming here from the user community...

**33:29** ...we have 1,000 people here that will be hammered on all week.

**33:33** And they're trying to figure out, what the hell did we do wrong here, or there?

**33:36** Or what does the user really want?

**33:38** And again, this is not about Esri, it's about your organization.

**33:42** That's an element of our success.

**33:45** And then we have a vision.

**33:46** This 'can we bring geography to everyone using the Web?'

**33:51** It's only 20 years ago that the Web was released.

**33:56** And we think, ah, it's been around forever.

**33:57** Uh-uh.

**33:58** It's now connected almost everyone on the planet to the repository of knowledge that's out there.

**34:05** Isn't it amazing?

**34:07** Little farmers in Africa, growing coffee, they go to this little, you know, place.

**34:12** They make a dollar a day.

**34:13** They're using the Internet to get access to knowledge.

**34:17** Imagine when we get geography.

**34:19** And here I'm not talking about just a picture, I'm talking about the full stack available to everyone in the world.

**34:26** That will change things.

**34:28** And the last strategy we use is partnerships, which is we're partnered with lots of companies, thousands of them around the world.

**34:35** So we focus on our little niche and we let other people do their work.

**34:41** So our little niche, which is maybe a billion dollars in revenue globally, drives something like 20 billion in other businesses.

**34:51** And then we're partnered with NGOs, Nature Conservancy, National Geographic Society...

**34:57** ...who pioneer the use of these tools in conservation and education and lots of interesting things.

**35:03** That's basically it for me.

**35:07** I wanted to share besides that Holland's going to win today.

**35:11** Sort of an inside...well, what could I do?

**35:15** An inside sense of Esri and what we're up to, and also a little sense of where I think this technology will...will lead the world.

**35:24** Thank you very much.