

Green Connected Workplace



Case Study: Cisco's Connected Workplace Impact on Environmental Sustainability

Rich Gore:

Hello, and welcome to this Cisco on Cisco seminar. My name is Rich Gore. I'm a Cisco IT Manager in the Cisco on Cisco team. And this is Wolfgang Wagener. Wolfgang has been working in the Cisco Workplace Resources team with a lot of other Cisco folks who've been planning and designing innovative workplace design for the last eight years.

Now, the theme of our show today is how Cisco reduces energy usage, how we reduce carbon emissions and technology wastes, through an unusual and innovative work process and office design. So Wolfgang, let's look at the agenda for today's show.

Agenda

Wolfgang Wagener:

Thank you very much for inviting me today. What I would like to talk about today is: what is the impact of information technology on environment sustainability; what is Cisco doing about it; and thirdly, what is the importance of the workplace design for Cisco's overall environmental performance.

Cisco's 3-Pronged Approach to Environmental Sustainability

Wolfgang Wagener:

Let's start with Cisco's approach to environmental sustainability. If we really think about what Cisco does, is we are an infrastructure company. We build the backbone for the Internet, and we can address environmental sustainability on three levels. The first level is our own products, so this is what we make. It's how much material we consume, how much energy our products consume, and this is directly related to

our own core business.

The second area which we address at Cisco are our own operations, so how do we run our business; and this is really the area where IT and work with resources have a direct impact and can have an influence on the overall carbon emissions and environmental sustainability for the company et al.

And the third area Cisco is addressing is the network effect, so how does the Internet affect society and our customers? To give one example here is Cisco is committed to work with the Clinton Global Initiative to help cities make more sustainable, and we're working with San Francisco, Amsterdam and Seoul to help them to achieve their climate change goals.

IT's CO2-Reduction Impact is 10 Times Greater than its Direct CO2 Production

- Wolfgang Wagener:* Now let's take a look at IT itself. So if you take a look at IT – so IT is very intangible, so we're usually talking about Web-based services, we're talking about energy, we're talking about all these things, which are invisible. Yet, if you take a look at the technology itself, it has a very direct physical impact, so this is the first order of impact. And this is measurable, and IT itself is actually increasing the environmental footprints of company and organizations, yet where the benefits are on the second and third order of impact, which are firstly on the level of operations, on e-business, e-government applications, and thirdly on the long-term socioeconomic changes. So this is a fine work with which we as a company are approaching environmental sustainability.
- Rich Gore:* So I'm – I'm a little confused. I understand very much how anytime you walk into a switch room or walk into a data center, you can feel the heat and you can hear the – almost hear the electricity being used. But how is it that IT can be used to reduce energy use? It seems like most of the things that IT deploys, and I speak as an IT person, use a lot of energy.
- Wolfgang Wagener:* Yeah, this is correct. So this again is the first order of impact. I think this is one very important lesson, to realize that IT is actually a big consumer of energy, and the component of IT, if you ask companies today how much energy do we use for IT, you probably won't get a very good answer these days. So research shows it's about 4%, 5% of the worldwide energy consumption is just on IT itself.
- Rich Gore:* That's enormous.
- Wolfgang Wagener:* Yeah, that's enormous. And if you're a company like Cisco, we're an IT company; it's probably even way bigger in our own operations. So but I think the – so this is – you're talking about the very direct effects, so the energy consumptions, the materials you need to manufacturer your equipment, the e-waste you have to recycle, the electronic equipment – yet the benefits on the enabling technology – the technology sets, technology enables.
- So to give one example, on the building side, technology helps you to do the energy management in buildings more efficiently. The same way –
- Rich Gore:* So smart buildings, so –
- Wolfgang Wagener:* Smart buildings.
- Rich Gore:* – using less energy because the building senses the demands that are required on it.
- Wolfgang Wagener:* This is one example, so, smart buildings.

- Rich Gore:* Okay.
- Wolfgang Wagener:* You could also take a look at smart transportation. So if you have better real-time information about where your vehicles are, you can streamline the public transportation systems, for instance.
- Rich Gore:* Hmm, okay. Okay.
- Wolfgang Wagener:* We have intelligent infrastructures, intelligent roads, which are helping you to –
- Rich Gore:* Stop the waste of sitting in traffic, yeah.
- Wolfgang Wagener:* Yeah. So, really, to help you to combat congestion. So these are all secondary benefits technology enables which are significantly higher than the energy IT consumes in the first place.

And the third level is the long-term changes, so this is leading us to what we want to talk about today, the workplace itself. So if you really think about how the nature of work has been changing, how work and life start to blur together, you're really talking about long-term structural changes where you could replace transportation, for instance, through telecommunications, so where could use TelePresence, other forms of virtual collaboration, to not travel to begin with or not to go to the office.

And this, if you start analyzing this, has also a very direct environmental benefit. And just to give you here one example in terms of numbers, the research which we received from Europe is indicating that the benefits of IT are about ten times as large as the direct energy consumption of the IT infrastructure itself, so you can take a look at IT as an environmental investment you make which helps you to streamline operations and change fundamentally how we as organizations and societies work.

- Rich Gore:* I'm looking forward to hearing more about that. I'm looking forward especially to hearing how our customers can do similar things to reduced their own – not only their own energy usage, their own impact on the environment, but also perhaps their own energy costs.

Buildings Account for Half Of The World's Energy And 40% Of CO2 Emissions

- Wolfgang Wagener:* Okay, let's take a look at this. So you addressed already the direct energy consumption of IT. If you start to take a look at the global footprint – this is already the global numbers – and you could boil this down and ask, what is my carbon or environmental footprint as an organization? Let's say we as Cisco, for instance.

Take a look at this – to begin with, globally – the four buckets the energy consumption falls into: our buildings, our transportation, manufacturing. This is a classical way of taking a look at the environmental footprint. And as we discussed just a few minutes ago, IT is becoming an important, distinct contributor to the overall environmental footprint, and so this is one theme you can see here.

The second area which probably comes to a surprise or almost to a shock if you are a real estate person is that buildings are the largest consumer of energy, so about 50% of the worldwide energy is consumed by buildings – by the way buildings are designed, by the way they are operated, and by the way they are used – and this equates into about 40% of the worldwide carbon emissions.

So I mean, the message here is if you want to do something about the environment, then you definitely have to take buildings into account. So this is why the changing workplace has such an important impact on the

environmental performance of Cisco.

Rich Gore: That makes sense, not only taken into account, but that's the sweet spot. That's the place to hit.

Wolfgang Wagener: That's the place to hit. And what you see with IT is, again, IT is a direct contributor, but IT is also the – it's part of the problem but also part of the solution, and it helps to make buildings, transportation and supply chain more efficient.

Rich Gore: Now I'm really curious, thank you.

Two Major Changes Are Driving Workplace Design

Wolfgang Wagener: So let's start with the long-term social and economic transformation in the workplace. So if you take a look at how has technology transformed the workplace and how does it affect the way we design the workplaces, it's two trends happening. One is the way the work is getting done is becoming more and more collaborative, and collaboration can take place virtually – so with e-mail, with TelePresence – many forms of virtual collaboration that we have available. But collaboration also has to take place face to face.

So for instance, what we're doing here today, it is very important that we take a look at each other, we collaborate together. Yes, we can make this available virtually, but the importance of physical collaboration and virtual collaboration is getting more and more critical for the success of organizations.

And if you take a look at the traditional workplaces, traditional workplaces are not designed for this. The traditional workplaces, the cubicle farms here in North America or individual offices in Asia and Europe, they're really designed for individual productivity, and for a workplace environment, which operated in stable conditions. So you're basically, you knew where your place is, you know where to go and where you're going to be from 9:00 to 5:00.

Technology is changing this fundamentally, so work becomes more collaborative; and secondly, technology itself is becoming more mobile. So information is now following the worker, rather than the worker coming to a place to get to information, and this allows a more fluid use of spaces within a building; a more fluid use of campus environments where you can roam from building to buildings; and ultimately you can work at many places, whether it's your home, whether it's on a customer site, where you are as productive as if you would be at your home-base office. And these two trends – so work becoming more collaborative and increasing mobile – really have forced us here at Cisco to rethink our workplace.

Cisco's Connected Workplace Environmental Benefits

Wolfgang Wagener: Now, with this transformation, what are the environmental benefits, which are a result out of this? And the bottom line is that these collaborative and mobile workplace environments are improving the resource efficiencies of our real estate.

Rich Gore: So let me just stop here. I think people are aware of the fact that they're certainly meeting more often, they're less often in their offices, less often in their cubes, and much, much more often in overcrowded, overbooked meeting rooms; and that the trend certainly is to more mobility, especially with wireless – people are carrying their wireless PDA's, their wireless laptops around with them everywhere and working from a variety of places – but how does that change the office? And more, how does that change the office such that it reduces energy consumption?

- Wolfgang Wagener:* So first of all, you – the first point you already mentioned yourself. It's a relationship of collaborative places like meeting rooms to individual offices. So a traditional office, you have about 70% individual workspaces and 30% collaborative workspaces. This ratio is turned around. So today you have – at Cisco, for instance – about 70% of the workspaces are collaborative and 30% are individual.
- Rich Gore:* What would that look like? Would it be just a building with a lot of meeting rooms and a few cubes, and people are just in meeting rooms all the time?
- Wolfgang Wagener:* Well, the – I think it depends on the type of work you're doing. So what we're offering here at Cisco is a variety of choices. So depending on whether you meet – you have a meeting, whether you're with a customer, whether you're just in here for a couple of hours, whether you have to do some head-balance work and you have to, let's say, write a report and need to be on your own – so depending on the need you have, you have a variety of choices to use the office environment. So this is I think the first difference.
- And the second one is, in the historical office design, you were assigned to a very specific place, and there is – and we are un-tethering the worker from the need to come to one specific location. If you think about it, if you can be productive anywhere. So if technology allows you to be productive at a desk, as let's say in our cafeteria, so how – what is then the need for you to have still an individual space? And so we don't have dedicated spaces for most of the employees in our new workplace environments, just to enable the mobility as well as the collaboration.
- Rich Gore:* So instead of maintaining a cube that I'm hardly ever in, I just come to a building and there's a variety of environments – that I can meet with people or work heads-down or meet with customers.
- Wolfgang Wagener:* Yes.
- Rich Gore:* Okay.
- Wolfgang Wagener:* And this variety of places and this more fluid use of an office environment is resulting in about 40% of space reduction – or let's put it the other way around, is if you provide a more appropriate and mobile work environment, you're increasing the asset utilization of your real estate.
- Rich Gore:* Interesting. Okay, I'd like to hear more about that, thank you.
- Wolfgang Wagener:* So – and this is the – the very first point is here the reduced space need, so the improved asset utilization of real estate. And if you think about for large organizations like Cisco, real estate is the second-largest expense on our balance sheet.
- Rich Gore:* What's the first?
- Wolfgang Wagener:* HR.
- Rich Gore:* Ah.
- Wolfgang Wagener:* So after you and I.
- Rich Gore:* Ah, very good.
- Wolfgang Wagener:* But then usually IT and real estate are about the same size, but for most company, real estate is even larger than the IT infrastructure costs. So reduce space need, and think about environmental sustainability – reduce, reuse, recycle. So if you really want to be effective and do

something good for the environment, the very first step is to think about what can you reduce. And if you reduce space, this is probably the most significant reduction in environmental impact. And if you think about reduce, reuse, recycle, if you think this to an end, if you don't have any buildings at all, you're a very green company.

Rich Gore: Everybody's in tents.

Converged IT & Building Solution: Reduced Space and Furnishings

Wolfgang Wagener: Everybody could be in tents, but again, reduce space needs by 40% is very significant, and we have reduced consumption of materials and equipment, and I will give some examples about this.

And then the operations of the real estate and IT in itself is going to be more energy-efficient, so the energy consumption is going down. And then lastly, the electronic and office waste is reduced significantly as well, with utilizing technology in our workplace.

Rich Gore: So when you say reduced space, the first image that comes to mind is this cube that was ten by ten or eight by eight, and it's now six by six and four by four and then two by two; so that's not what you're talking about. You're not talking about reducing cube size. In fact, you sounded like you were talking about cubes are no longer there.

Wolfgang Wagener: No, there are no cubes any longer. We are not talking about making the space for the individual worker smaller; we are talking about to providing you the wider, broader, more exciting workplace environment with many choices. And as part of these choices and the mobility and collaboration you have as a result of this, you improve the asset utilization. So I would say to – yes, we want to save costs. But the main driver are first of all collaboration and mobility, and as a result out of this comes the tremendous efficiencies in terms of waste.

If you take a look at the traditional workplace, if you take a look, how often are people actually using the space? Sixty percent of the time, spaces are empty. So we're basically doing – we're improving – space is getting used more effectively, so people are actually there; they have more choices, they can do what they want. They have what they need at their fingertips in terms of resources, technology and space, and first of all, it's really getting rid of waste. So that's really the – what technology helps us to improve.

Rich Gore: Okay, I can see that. I was just thinking, given that the cubes are very rarely occupied, and there's not that many people on the floor at any given time, if suddenly all the cubes disappeared it would not be very crowded. In fact it would look pretty sparse. And if you increased the number of people, it would actually not get crowded; it would just get more normal.

Wolfgang Wagener: Yeah, more normal, and it's more exciting. There is a buzz in the office, it's fun to come to the office, and then the office has to be a place where you would like to come, in particular, if you can work anywhere, anytime; you need a reason to come to the office. So the office actually has to become more interesting and more exciting than the traditional cube farms.

Rich Gore: I like the sound of that.

Wolfgang Wagener: Okay, let's take a look at this. So, yeah, we talked about the space reduction that we achieved, and – well, you see the picture here. This is one of our pilot projects here in San Jose and you don't see any cubes. But we wanted to address here the environmental impact this has, and it is significant.

So if you take, for example, a 100,000-square-foot reduction in office space, then this is the equivalent of taking 560 cars off the road for a year. Just to give you an order of magnitude in terms of, if you want to be carbon-neutral, if you want to address climate change, if you want to reduce your energy consumption just by not providing space itself, this has a significant impact on the overall carbon footprint of organizations.

- Rich Gore:* And I'm at a loss now. Now, we've taken a building, we've removed all the cubes. We've put more people into it. But the building itself – I mean, you still have heating and air conditioning and lighting. What's changed?
- Wolfgang Wagener:* Well, first – first, if we say the space efficiency is about 40% higher, it doesn't necessarily mean that we're getting rid of buildings. It means that you increase the capacity of real estate. So what it helps us, for instance, we at Cisco, we are growing. We are now about 50,000 employees. We're growing still strong, we're hiring more people, and we can deal with these fluctuations of additional headcount more easily. So instead of building necessarily a new building right away, we have a high degree of flexibility to use our existing real estate.
- Rich Gore:* So the power consumption per building remains about the same, but the power consumption per person has decreased significantly.
- Wolfgang Wagener:* The power consumption per capita is going down, yeah. Let me just take you through this; I have some examples about this.
- Rich Gore:* Okay.
- Wolfgang Wagener:* So this 560 cars I just talked about are purely the construction of the real estate. So we are not talking about the operation yet; so this is just, you have to build. You need materials, you need concrete, you need steel, just to erect a building. So this are real savings if you can streamline your real estate assets.

Converged IT & Building Solution: GreenIT for Green Buildings

Now we're talking about what you asked, the operational needs of—the energy consumption of the building itself. And if I come to you and ask you today – I mean, we pay the energy bill monthly, and the energy bill doesn't tell you where the energy is spent. So if I would ask you today here, do you know how much – I mean, where does our energy go? Does it go in IT? Does it go in air conditioning? Does it go –

- Rich Gore:* I would have no idea. I know what I pay at home, but I have no idea what a building costs and where the energy goes in that building.
- Wolfgang Wagener:* So I think this is the very first step that we need a better understanding of where does the energy actually go. So if you want to reduce the energy consumption, what are actually the top priorities we need to address – and the overall energy consumption of a building? So normally what you have is about 50% goes into heating, cooling and ventilation.
- Rich Gore:* Wow.
- Wolfgang Wagener:* So – and a big portion of this, probably about a third, is needed just to cool IT equipment. So it is basically –
- Rich Gore:* Sorry!
- Wolfgang Wagener:* -- we have to heat human beings, and – well, heat and cool human beings, in the same way we have to cool IT equipment. So this is a big chunk, IT-related.

The second largest normally is lighting. So if you're talking a traditional building, we say lighting is the second-largest consumer of energy, and then we have some small other components. But with IT becoming a real important strategic asset for buildings, and we're getting more and more IT equipment into buildings, so a key component of the overall energy balance is becoming increasingly bigger. So the 25% you see here is an average number for a very normal standard office, so just some computers, desktop computers, some supporting communications equipment. But it doesn't include data center, for instance.

Rich Gore:

Okay.

Wolfgang Wagener:

So if you take a look at, depending on how you work and what technology you have, let's say ranging from a sales office to a data center, the key component can range between 25% and going all the way up to 90%.

Rich Gore:

For data center it makes sense, yeah.

Wolfgang Wagener:

For data center. So in data centers, it's about the key equipment, it's not about the people in the building. But the more important it is that we have to realize that IT is becoming a very direct consumer of energy. I think that's what we talked in the very beginning. So we're saying you have to, if you want to have a green building, if you want to reduce your carbon footprint, you just can't talk about the building itself, but you also need green IT and green buildings.

Rich Gore:

So, then, I'm still falling – I think I'm always one step behind. I have a building and we're removed all the cubes, and people now have a variety of workplaces, and there's more people in this building now. So I can see that the lighting costs would be about the same. You wouldn't add extra lights when you add more people. But the heating and air conditioning costs would go up some, with more people – well, actually, I guess just the air conditioning costs would go up with more people. And the IT costs would go up with more people. I mean, you'd have the same, you know, the same numbers of switch ports, the same amount of, you know, computers and phones and printers and all that, in a – you know, you just have more with more people, wouldn't you?

Wolfgang Wagener:

I have some numbers we'll show you in a moment to talk about.

Rich Gore:

Okay.

Wolfgang Wagener:

But I think what's – two things are happening. One, just the fact that you have increased the capacity of a building does not naturally result in higher air condition loads.

Rich Gore:

Really?

Wolfgang Wagener:

You have – keep in mind, if we say the capacity of a building is increased, it doesn't mean that you put more people at the same time in the building. What it means is – not everybody is there from 9:00 to 5:00.

Rich Gore:

True.

Wolfgang Wagener:

What you're saying is that by – in the more flexible way using the buildings, be more efficient about it. So you could work in multiple buildings during the day, you're not just sitting at your desk. So you have a higher degree of a transient population. But overall, the assigned people per building, or if you have a constant energy bill, the – if you increase the number of people you assign to this, then the per capita energy consumption is going down. So this is step No. 1, just by increased capacity.

Step 2 is, though, and I will show you some examples in a moment, is that a converged and integrated IT infrastructure design, combined with a building infrastructure – so where you also can use the IT infrastructure to manage the building itself, this combined infrastructure solution is significantly more energy-efficient than the traditional IT infrastructure in buildings.

I think this is important: the convergence of voice, video, data that we have at Cisco, the virtualization of services on the network, and the management of energy using the Cisco infrastructure – this solution reduces significantly the direct IT requirements for energy and materials, resources, etc. Let's take a look at this.

Converged IT & Building Solution: Reduced IT & Building Infrastructure

Wolfgang Wagener: So to give you one example, you asked for the ports. So in a traditional building, we provided six ports per workstation. Now, with voice and data combined over the network, we could cut this down by – to two ports.

Rich Gore: That's right. We had two ports from the PBX and four ports from the switch, coming to every cube. Okay.

Wolfgang Wagener: Right. So this is just one very good example where there is a direct reduction of IT infrastructure. And again, reuse, reuse, recycle everything you don't need. Everything you can save has a direct impact on the environmental performance of the company. So just by providing a converged building infrastructure, you have already reduced your needs for materials and energy.

Rich Gore: So no PBX's, no extra cabling for phones.

Wolfgang Wagener: Yeah –

Rich Gore: Although there still are phones there.

Wolfgang Wagener: There are still phones. So they give an example here in the projects we have been doing in San Jose. The IT infrastructure in terms of equipment, PBX's you just mentioned already went down by about 55%.

And another example, the cabling infrastructure – we talked about the reduced number of ports, for instance; it's also going down by about 50%, so this is really half of the IT needs that you would have otherwise in a traditional building.

And think about IT equipment: I mean, it's not healthy equipment. You have chemicals, you have lead, you have PVC in the cables, so it's very toxic, chemically toxic material that we're using in electronic equipment, and I think a very large contributor to reducing the direct IT-related environmental footprint is just by designing the workplace better, providing a more appropriate IT infrastructure to support this collaborative and more mobile workplace environment; and by doing so, you have significant savings.

Rich Gore: So that was – those were impressive numbers: 50% cut in cabling and something similar to that in terms of equipment. But we have again – back to that building again – we have this building, we remove the cubes, put more people in. But each one of those people still has a computer, a phone, is going to need the same number of ports to connect to that they did if they were in two different buildings. So how – where does the reduction come in?

Converged IT & Building Solution: Reduced Energy Use Per Employee

Wolfgang Wagener: Let's take a look at this. So, glad you asked this question because we

did study the number of equipments per person between the old traditional buildings and the new workplace environment. And the interesting thing is, there's kind of a counter-intuitive result. We thought, well, we have more people in the building so we have to have more IT equipment.

Rich Gore: That would be my thought too, yeah.

Wolfgang Wagener: So – and the result of the study we did, the analysis, is that actually the IT equipment per capita is going down. So –

Rich Gore: So no one's taking away my laptop because that's just happening. So what's going away?

Wolfgang Wagener: Well, nobody's taking away your laptop, this is correct. And in fact, we – for instance, for mobility, we're increasing the IT equipment because we have to install wireless access points, for instance. So there are certain IT equipment needs, which are going up.

But overall, the IT equipment per capita is going down, because – let's take wireless access points, for instance; they are now serving more people than they did in the previous building. This is one area. But we have other IT equipment which – where the absolute number is going down.

Let's take for instance printing. So in the traditional work environment you have – I mean, in some cases even printer almost at every cubicle.

Rich Gore: Certainly for every manager's office there's a printer.

Wolfgang Wagener: Every manager's office. And so you have a high density of printers.

Rich Gore: Fifteen, 20 – yeah.

Wolfgang Wagener: Now, if you have network printers, we could reduce the numbers of printers supporting a group of about 400 people to two. So this again is one example where you have a direct reduction of IT equipment, which again is resulting in less material, less energy, and less e-waste.

Rich Gore: So we've just reduced 20 or 30, actually – I've seen almost 30 printers on my old floor – to two. Those had better be really high-volume printers. But really, the reason we keep printers in our offices is for privacy. We could be printing confidential material or raises, bonuses, that kind of stuff that we don't want other people to see. So what's – these two printers are certainly shared by everyone on the floor so all of your papers are shared. You know, and I print my resume up, it's going to be shared with everyone on the floor. So what do you do about that?

Wolfgang Wagener: Well, you – first of all, I mean, you don't need the printers – I mean, we – as much as possible we try to keep digital copies of our documents. So for instance if mail comes in in some cases – or actually most of the cases – it's going to get scanned, so there is less need for physical paper.

Rich Gore: Okay.

Wolfgang Wagener: We also would encourage you to really think twice about do you really need to print this document, so actually, the paper consumption overall has been going down. And again, we haven't been doing this just to say, look, we have to save costs or we have to save the environment, so please don't print. We're really looking at the needs of the people, how do they work, how much paper do they have to produce; and then went back in after about one year's time when this workplace was actively running and really analyzed how much savings did actually take place. And the numbers I shared here with you are the numbers for the

- actual use of the space.
- Rich Gore:* Okay, so printers are – there are fewer printers, so people are using less paper. They don't have a cube to clutter up with paper, so I can understand why the piles of paper would disappear. They're using fewer – okay, I can see where you're using fewer switch ports because really, I do use wireless most of the time; I don't plug in anywhere because the wireless is all over and I just take my laptop with me. So, okay, I can see fewer plug-in ports, because you don't need to plug in anymore.
- Wolfgang Wagener:* Right.
- Rich Gore:* So what about telephones? I mean, what happens to my phone?
- Wolfgang Wagener:* Well, the telephone is also a service, which is provided over the Internet, so we call it the voice over the Internet – voice over IP. And by doing so, again, you could reduce the numbers of telephones we use. I mean, you don't provide a telephone out to any desk anymore; you could use the phone as a soft phone over your laptop. So you have basically –
- Rich Gore:* Okay. I do that.
- Wolfgang Wagener:* -- you can carry the phone with you. You also can walk up to any workstation here on our campus and log in as – personalize the phone. So basically you really – each phone here on the campus could become your own phone. And by doing so, we could reduce the number of phones you have to provide per person.
- Rich Gore:* Because anywhere I sit down, I could log in and make it my phone.
- Wolfgang Wagener:* Yes, so it's basically my phone, yeah.
- Rich Gore:* Okay. So I really only have the phone when I'm sitting down. And actually, during the day I don't sit down that much. Okay, so, yeah, fewer phones per person makes sense.
- Wolfgang Wagener:* So fewer phones per person, and it's really about – think about this: You are now more mobile. You roam, you have a more fluid use of the spaces, and all the services you need to be productive as a worker are delivered to you, whether it's the information you need, the data, whether it's the documents, whether it is the voice services, whether it is video collaboration. So any form of tools you need to get your job done, you can get delivered to anyplace here in our workplace environment.
- Rich Gore:* Interesting.
- Wolfgang Wagener:* So I think the paradigm shift here is that you don't have to come to the office to a specific place to get to the information, but the information is following you and gets distributed to wherever you are.
- Rich Gore:* So I'm really coming into the office for people at this point, rather than for information, because the information can be wherever I am.
- Wolfgang Wagener:* That's correct. I think the more mobile people are becoming, the more important the collaboration and face-to-face interaction is becoming.
- Rich Gore:* Okay, thank you.
- Wolfgang Wagener:* And the more exciting our workplaces have to be to the people actually coming to us.
- Rich Gore:* It's starting to make sense.

Wolfgang Wagener: So I just wanted to come back to this slide here. We talked about – everything we just talked about, if you add this one up into – again, it's analytical data – to the actually energy consumption, we can talk about a reduction of 60% of energy reduction per capita through the new workplace environment. And, yeah, this is directly resulting out of this new workplace environment which has been provided as this combined IT and workplace resources, so I think it's very important that to be able to achieve these results, you need a combined infrastructure solution. You just can't take a look at this from an IT perspective or simply from a corporate real estate perspective; you have to consider both as one integrated, combined solution to achieve these savings.

Rich Gore: So there was a lot of planning and research done by both IT and workplace resources together, to build something like this.

Wolfgang Wagener: Absolutely. I think both organizations have to be joined at the hip to be successful, to deliver these workplace environments.

Let's move –

Converged IT & Building Solution: Reduced Electronic Waste

Wolfgang Wagener: So we talked about the changing nature of work. We talked about the new workplace design. We talked about the more efficient use of space. We also addressed the reduced energy consumption itself. And the last point, significant point, is the waste we produce. And as we discussed, we have less material, we have less equipment in our new workplace environment; hence, the electronic waste is going to be reduced significantly.

Rich Gore: Mm-hmm. Makes sense.

Wolfgang Wagener: So I think this is going to become a major area of concern in the future. Also keep in mind that the lifecycle of IT equipment is significantly shorter than the lifecycle of, let's say buildings, for instance. You don't –

Rich Gore: Very true.

Wolfgang Wagener: -- don't change your buildings every two years. So with this high churn rate of IT equipment, e-waste is becoming a more and more critical issue to be addressed.

Converged IT & Building Solution: Reduced Electronic Waste

Wolfgang Wagener: And just to give you some numbers here: Where is the – has the equipment been reduced? Just to give you – share with you some, again, the analytical data from the old workplace environment compared to the new one. Per worker, it's – the average office equipment went down from three and a half pieces to 2.8. The printers and copiers went down from about 30 to 8. And I think it's also important to say that we at Cisco already are very mobile, provide a very mobile infrastructure, so we all have laptops and flat screens. But imagine you would be a more traditional company, which still has a lot of desktop computers or desktop monitors; then the savings we are talking about would be even larger.

And then, just as a little anecdotal story, when we did our analysis about the old workplace and the new workplace, we were surprised to see how many personal appliances you did find, like toaster ovens, refrigerators and microwaves, which people started to pile up in their little cubicles. And by combining all this into one combined common area where we have a common kitchen and a common social breakout area, all these gadgets also disappeared, which is a direct result of, if you think you are tethered to one specific cubicle, then you tend to bring everything you need to this one specific place, which is your space or

my space. If you're working in a more mobile environment, then these needs just by definition disappear.

Converged IT & Building Solution: Reduced Office Waste

Wolfgang Wagener: Then on the paper front, you asked about the printing. We were quite pleased to see that the overall paper consumption went down significantly as well, and I think it is important to note that – to think about the office waste, 60% of the office waste generated is generated by the consumption of paper.

Rich Gore: Wow.

Wolfgang Wagener: And in addition to this, just to understand the impact paper has on the environment, the energy needed to manufacture paper is significantly higher than the printing – the energy needed for printing the paper itself. So every piece of paper you can save directly has a significant impact.

Cisco's Connected Workplace-Summary of Environmental Impacts

Wolfgang Wagener: So I hope I could give you some idea of how the new workplace design really made a difference and reduced the carbon environmental footprint for Cisco. The focus of our talk today has been in particular on the role technology plays to meet this environmental footprint reduction, and just to summarize again the three levels at which we're looking at this.

The first one is our own products, so what we do, what we make, making our own equipment more efficient. Use less material, use less energy.

Secondly, what we do as a business. How do we operate as a business? And the workplace is one very good example of how we can impact the environmental footprint of Cisco at large.

And then the third area is, what can we do to help customers, and how do we affect larger – society at large, for instance, in the urban developments which are affected by the different nature of work, where work and life are starting to blurring together more closely. So tele-work, TelePresence have a direct effect on commuting patterns, economic development, sustainability development in cities.

The Strategic Business Value of Green And Connected Workplaces

Wolfgang Wagener: And if you take this all together, the – in addition to the operational savings, the – with the triple bottom line really, what we're talking about here, so we're talking about improved productivity, we're talking about reduced costs, and we're talking about higher environmental performance resulting in a smaller environmental footprint for organizations.

And if you combine this, this has a direct impact also for the top line of Cisco and other organizations where it really helps to improve our brand equity, improve our products, and help our customers to meet their climate change objectives.

Rich Gore: So there's one thing that isn't mentioned here, and that is something you've alluded to before. You keep talking about a flexible work environment and different types of work environments in the same area, the same building, and that it's an exciting workplace. So my bottom line, which, okay, is yes, the same as Cisco's bottom line in terms of operating costs, but my personal bottom line is excitement at work, interest at work.

You've been working in this environment – in fact, a lot of Cisco employees have been working in this environment for what, two years,

three years now?

Wolfgang Wagener: Yes.

Rich Gore: What's it like?

Wolfgang Wagener: Exciting.

Rich Gore: Really?

Wolfgang Wagener: It's fun to be here.

Rich Gore: Okay.

Wolfgang Wagener: It's fun – fun to come, I hope not just for me. But everybody I talk to, the simple question is, if you ask somebody do you want to go back to the old environment or do you want to come to the new environment, I haven't met anybody yet who said, well, I'd rather go back to the old one.

So I think it's – employee retention is an important component as well, so that we have an exciting workplace where people love to come to, because we want to have people here in our offices; we want to collaborate. And we also want to attract new talent to Cisco.

Rich Gore: And this is a tough question, and I don't know how to answer it very well at all. Is – in terms of productivity, I mean, it sounds like people enjoy coming to work, they have all of their coworkers around them. Does that make it easier to work or harder to work, with all your friends all around you? How do managers feel about having all their people working together in a sort of an open office space?

Wolfgang Wagener: Well, we surveyed the groups that we moved into this new workplace environment, and our first audience has been the general and administrative staff. So we haven't done yet workplace environments for engineers, for instance. We also did take a look at call centers, so we have various work types. But the very first group audience is general and administrative staff, and the surveys we made after about a one-year use of the space have been very, very positive, indicating improved productivity and improved employee satisfaction.

Rich Gore: Amazing, thank you. Well, Wolfgang, thank you very much for coming. That's all the time we have. But if you would like more information about Cisco IT deployments,

Additional Resources

Rich Gore: Cisco IT deployments about this – about green office design – then there is a case study on the Cisco on Cisco Website that you see in front of you, on office designs, under mobility and office design. There is the green office design case study.

You'll also see a proof of concept case study that describes in a lot more detail what this new, open, flexible workspace looks like. And at that same Website, if you're interested, you can go further and find other Cisco IT case studies about the wide range of products and solutions that we deploy, what benefits we've gained from deploying them, and what lessons we've learned from installing and managing Cisco-based solutions in our own enterprise business environment.

I'd like to thank all of you for watching and for spending this time with us, and for being interested in what the Global Technology Seminar Series is all about. We hope that you've enjoyed this show, and see you soon.



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