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Video Transcript: Sources of Value for Green IT

An ROI Innovation Report



From the Green IT Innovation Series

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This document contains an edited transcription of a video interview with Steve Sams, Vice President, Global Site and Facilities Services for IBM. We spoke with Steve in Toronto on March 1, 2010. The interview was conducted by Michael O'Neil, Chief Content Officer for IT in Canada.

Michael O'Neil: Welcome back to our discussion on innovation ROI and green in the data center. I'm Michael O'Neil, and I'm joined today by Steve Sams, vice-president, Global Site and Facilities Services.

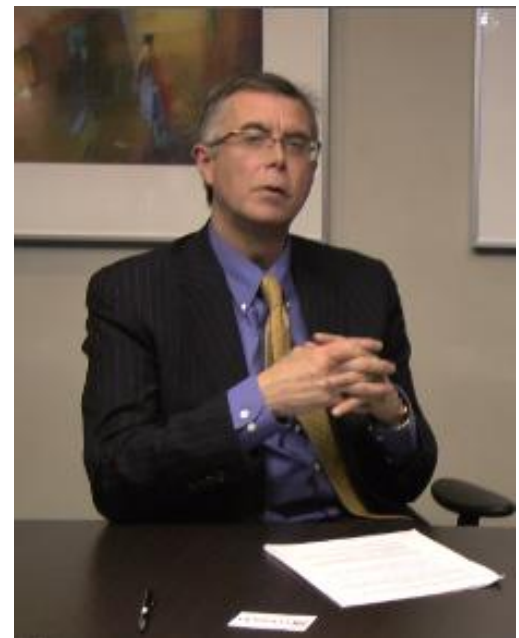
Steve Sams: Hey, Michael. How are you today?

Michael: Hey, Steve. It's been forever. [laughs]

Steve: Yes, it has.

Michael: Well, now that we've talked about business triggers that indicate the need for a new data center, and the likelihood that virtually everybody will experience these triggers over the next five years, let's hop in with where a customer would see sources of savings or new efficiencies or new capabilities that might come about from a significant retrofit or a new build around a data-center operation. So, clearly, justifying a new data center, a substantial retrofit, is a costly undertaking. Where do your clients look for the return part of ROI, the benefits from these investments?

Steve: Well, what we've found, Michael, is that clients are really focused on four elements of ROI, or we're encouraging them to focus on four elements of ROI. The first is really capital costs. These are major capital-cost investments. I mean, in big cases, talking about \$50 million, \$100 million, \$200 million for a new data center is not unheard of. The second point that clients may not recognize, though, is that the operational costs of data centers are significant. Typically, for every dollar we see clients spending in capital cost, over the next 20 years, which is the average life that customers expect out of a data center, they're going to spend \$5 in operational costs.



Steve Sams, Vice President, Global Site and Facilities Services, IBM

And those \$5 dollars represent things like energy, maintenance of the data-center infrastructure, like the power and cooling systems within the data center, staffing costs, real-estate tax, all of those sorts of things.

So even though in these cases, the customers have gone to the board for approval for a \$100 million spend for the data center, in many cases they haven't told the board that they're going to spend another \$500 million to run the thing over the next 20 years. So we think operational-cost optimization is critical, in terms of getting the right ROI.

The third element is a significant part of that operating cost is energy. About 70% to 75% of the cost over the next 20 years of a new data center we build is going to be energy costs. So making the right trade-offs at the design point to say, "Look, if I spent a little more up front to drive higher-efficiency things in the data-center infrastructure, what kind of payback, from an operating-cost perspective, do I get?" That kind of transparency is really critical.

And then the last element we find is really around switching from an approach that says, OK, if I want to build this data center to live for 20 years, then let me build what I think I'll need 20 years from now, and switch to a modular approach where I build what I need today, today, and then I add to it in a modular fashion for what I need tomorrow, has huge financial impact. Typically, it will reduce the capital costs by up to 40% and will reduce ongoing operations costs by up to 50%.

Michael: And those savings are not just the IT equipment itself, but it's the cooling and the power and...

Steve: No, it's basically the operating costs of the data center itself – the energy costs, the capital costs you use to build the data center, the costs you have to maintain the chillers and UPS. It doesn't include any of the technology at all. That's on top of all of the things we've described.

Michael: So your 50% OPEX cost [reduction], then, is primarily because you're not overbuilding your power infrastructure, you're not overbuilding your cooling infrastructure and then cooling parts of the data center that you're not actually using.

Steve: Right. So if the data center I need today is half of what I need 20 years from now, then I've got half the UPS technology installed. I've got half the generator and chilling and cooling technology installed. And so that's significantly reduced my up-front capital costs, because I haven't installed it yet because I don't need it. And then I'm not paying for maintenance for things that aren't installed yet. I'm not paying for energy for things not installed yet. So they're impacting my operations costs as well.

Think of modular design in a very simple way. And that is, look at your laptop. When you need more memory, there's a little slot in your laptop. When you open it up to plug more memory in...and you don't buy the memory until you get that funny little response on your screen that says, "Give me more," right?

And if you design data centers the same way, as kind of plug-and-play vehicles, where you could plug-and-play UPS systems, you could plug-and-play cooling systems, you could plug-and-play generators and power-distribution systems, et cetera, into the environment, you can significantly defer costs and, in essence, only experience those costs, either from a capital or operating perspective, when you need it, just the same way as your laptop's upgradeable today.

Michael: And the interesting thing about your analogy is that I'm not powering that memory for the years that I don't need it.

Steve: Absolutely.

Michael: I get to take advantage of the lower cost of memory over time, and maybe even an improved density or...

Steve: Right, more efficiency. The memory might be more efficient, might be faster, might [offer] all sorts of benefits in the future that it doesn't today.

Michael: So as you're guiding people to where they look for the savings or the efficiencies or the benefits of a retrofit or a new build-out, are those the kinds of things you point to?

Steve: Absolutely. So what we're really doing is we're really trying to change the paradigm of data center design, from this "build it and they shall come" model to the "build it just in time when you need it" model. And as a result, we're significantly impacting both the flexibility of those sites for the unknowns that customers have in the future, and we're doing that at a cost model where they're only paying for what they need today.

Michael: That's really interesting. I mean, all of business has gone to a just-in-time model. So IT is now catching up to the model of the surrounding business?

Steve: Yeah. And quite frankly, the technology side has been there, but the data center infrastructure side hasn't been. So if you think of the technology side, if you look at blade servers, the ability to slide three new blades into the chassis and provide that capacity to your storage units or networking units, that's been there on the technology side, but the data center infrastructure side really hasn't kept up to that environment.

Michael: And is that because they've been built to last 20 years?

Steve: Yeah. I don't think anybody really thought of... We were fortunate enough to come from a technology model, where we were kind of used to this – build a design that could stretch its life over a period of time by adding more capacity to it, by adding more features and function to it. And so we applied that product model to a data-center environment. I mean, a very simple thing we did in the beginning is we stepped back and we looked at the capital costs of a traditional data-center build, and we found that 60% of the capital cost is in those components: the powering and the cooling components, the UPS, generators, et cetera, et cetera.

And those units are just units. If you design the data center in a way where I could plug them in when I needed them, into an existing power and cooling distribution network, then I could significantly lower my up-front costs, but I give myself the ultimate capability to grow bigger and bigger and bigger when I needed it. People just hadn't looked at it that way.

Michael: Thanks! This has been an IT in Canada interview with Steve Sams, IBM Vice President , Global Site and Facilities Services, on sources of value for Green IT.