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The Role of Facilities in Green IT - Interview with Steve Sams

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. Initially, this conversation was to be only a preliminary discussion before we got into the substance of the ROI Innovation cycle of topics, but the main points were so compelling that we decided to issue this as a stand-alone document.

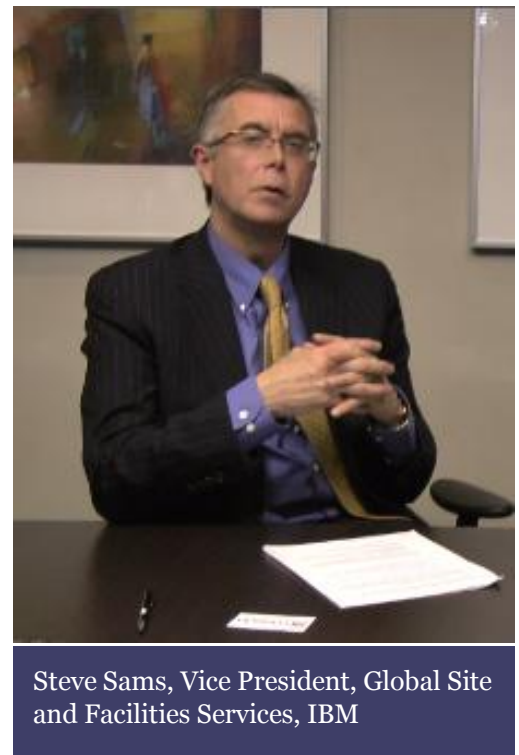
Michael O'Neil: Hello, and welcome to the IT in Canada Video Network. I'm Michael O'Neil, Chief Content Officer for IT in Canada, and today I have the privilege of talking with Steve Sams, Vice President Global Site and Facilities Services with IBM. Hi, Steve. Welcome to the Network!

Steve: Thanks for the invite.

Michael: So, I have several questions that I think are really important to help our visitors understand the key considerations of greening the data center. Before I get started, I'd like to better understand the context from your perspective. Your title is Vice President, Global Site and Facilities Services. What is it that you do in this role, and what does it have to do with Green IT?

Steve: Michael, I run a services business on a worldwide basis that is really focused on helping customers with their data centers. We help customers with their data center strategy. We help customers with the design and build of data centers all around the world. We help customers with relocation and consolidation of those data centers, and we're starting to build practices around the operation of those. We have roughly 700 professionals around the world that are helping customers in this environment. Quite frankly, the focus on green is data centers are energy hogs. A data center typically is using 40 to 80 times the amount of energy per square foot or square meter as traditional office space.

As an example, IBM's data centers -- the ones we own ourselves -- represent about six percent of our floor space, but they represent 35 percent of our total energy bill as a corporation worldwide. So a bank, as an example, my guesstimate is that their data centers represent 50 to 70 percent of the total energy consumed by the



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

bank. Data centers are big things from an energy perspective, and making them greener can have a big impact.

Michael: You start that cycle with strategy, and go all the way through operations...

Steve: What is also interesting is we found that energy, or bring green, is a great metric to indicate the operational efficiency of an organization. If an organization's IT facility is very energy-inefficient, it typically is very operationally inefficient. Typically when we find savings around the energy metrics...for every dollar we save a client on energy we find that they save \$4-6 on other things: people costs, staffing costs, other resources, other technology, et cetera.

Michael: Now, is that because good operations are reflected in energy efficiency and operational efficiency, or is there something about green operations that leads to reduced operational cost and other aspects?

Steve: Let me use a little analogy, and I'll make it up on the fly. Maybe it won't be any good, but we'll try it. If you went into a house and you found that it was very energy-inefficient, you might find that they're leaving their light bulbs on 24 hours a day, that they don't turn off the TVs, that they – there are a whole bunch of things. Those things, by the way, aren't just indications of energy efficiency, they are also saying, "I'm utilizing these devices." The television set, it's on 24 hours a day, but I'm actually only watching it two hours a day. The efficiency I'm getting out of that television is not very good for the amount I'm paying for energy for it, or maintenance for it or the replacement lifecycle for it or anything else.

What we are finding is these energy gaps, the areas where we find that customers are energy-inefficient, actually are great indicators of operation inefficiency as well.

Michael: You mentioned that you and your organization own some IBM responsibility for data center operations. So, does that mean that you're involved with the Big Green initiative?

Steve: About three years ago, we announced Project Big Green. Project Big Green was really focused on helping drive energy efficiency across the data center infrastructure. It was primarily a collaboration between three parts of IBM: the services organization run by myself, the technology organization that focuses on all the new servers or technologies that we bring to the market, and the software organization that is building the building blocks to manage and measure things. Basically, we found that this issue is not solved by focusing on just one element here. It needs focus on all three – meaning, you need to actually be using energy-efficient technology in an efficient way.

Having servers that the average utilization is three percent of -- meaning only three percent of their available capacity is what is being used on average -- means that you're not using that asset very efficiently. It's using a lot of energy, and quite frankly you're wasting energy, capital cost, the software cost for that server, et cetera.

We find that the same happens with the data center. About 60-70 percent of the energy that comes into a data center is being used by the data center infrastructure: the power systems, the cooling systems, the generators, the chillers, et cetera.

What you want to do is ensure that the data center infrastructure is using very little of the energy, and most of the energy is actually being used for productive use for IT, which right now is typically only 30-40 percent of that energy use. We're trying to make sure that we run the data center infrastructure data very efficiently.

The third portion is we found that clients generally just lack the facts. They don't know what their energy use is. They don't know how that matches against their workloads. They don't know what their utilization of technology really is. By having measurement and management systems that first give them the facts so they become enlightened, they get some perspective on how much savings there is. They begin to realize how much of the savings is, quite frankly, low-hanging fruit – things they could do very quickly, like turning off the lights in the home analogy – and save a bunch of money doing that.

[The next step is] then building tools that don't just provide information, but also start managing this autonomically or automatically, so that they get to not pay attention to it any longer because the systems start providing some of this management themselves. Those are really, we think, the three bookmarks. The technology side, the services side, and then the management and measurement side that bring the two together.

Michael: There were a couple of really fascinating observations in there. One was that 30 percent of the power entered into the data center actually represents a useful workload. Then maybe see that servers, for example, are typically utilized less than 20 percent of the time, most of them 10 percent of the time, so now we're down to three percent of the electricity coming in.

Steve: Right, it's sad. [laughter] I mean, all it says is there's a lot of waste in there.

Michael: It does that there's a lot of waste.

Steve: Getting a bunch of facts on the table can help customers work through that.

Michael: I heard another IBMer once give the analogy that if you were stockpiling cardboard boxes in your business, and you put 97 of them in a pile, and you said, "We're only going to use these three. We're going to leave these 97 aside," and you kept doing that, the management would look at you and say, "You're crazy. You can't throw away those 97 boxes."

Steve: Well, it's interesting. I actually think that there is a transition coming around CIOs around the world. The transition is that CIOs, I think, are shifting from "respond to their clients at all costs," to "respond to clients based on what actually makes good business sense." I think the model was, if the clients things he needs 10 new servers, then I'm going to supply those 10 new servers as quickly as I can. What they're discovering is that those servers aren't being used very much. They're being used three percent of the time, five percent of the time, 10 percent of the time.

That's not a very good use of the corporation's capital or the organization's operating costs, because they're paying for energy, maintenance, software, all of the other things around those servers.

I think the model is changing in that CIOs – and it was probably driven by the economic downturn – say, let's step back and say, "Is the model we're really running today the most efficient, effective that I possibly can?" And the answer is no, in most cases.

The poor CIOs are in this dilemma where 70 percent of their budget is being spent on maintenance activity, not necessarily adding new value to the organization. I think the data center space has a great opportunity to change that paradigm – to take a whole bunch of cost out of the data center infrastructure and hopefully give it back to the CIO to do things that can take aggressive cost out of the organization, can give them competitive advantages, can make their employees more productive, do things that add real value, not just keeping the lights on in the data center.

Michael: Well, that's a great place to check in here. Your prescription for that is to build the three components that you bring to bear on the situation together: the services to optimize the data center operations; effective technology, to make sure that you're getting the best payback on the power as it is delivered into the products that are being used; and then software, to both help you to understand the issue and also to provide autonomic management of some of the components inside the system.

Steve: You know, Michael, you're exactly right. It's very clear to us that addressing just one part of that puzzle is insufficient. You have to bring all three pieces together.