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Video Transcript: Identifying Business Triggers for Green IT

An ROI Innovation Report

From the Green IT Innovation Series

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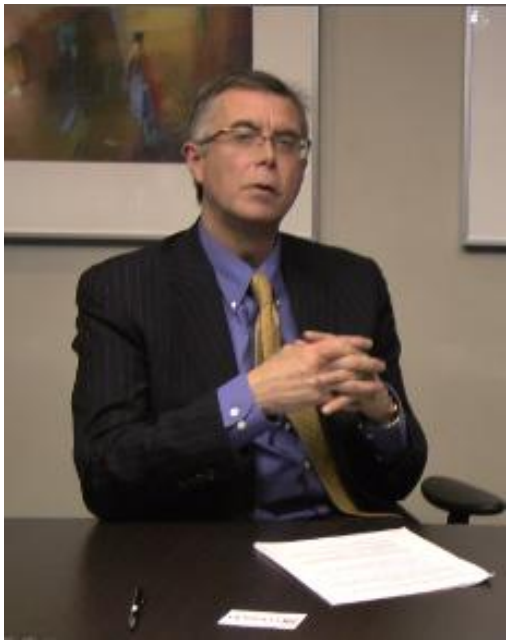
This document contains an edited transcription of a video interview with Steve Sams, Vice President, Global Site and Facilities Services for IBM. We spoke with Steve in Toronto on March 1, 2010. The interview was conducted by Michael O'Neil, Chief Content Officer for IT in Canada.

Michael O'Neil: 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 Facility Services of IBM. Hi Steve. Thank you very much. Welcome to the network.

Steve Sams: Thanks for the invite.

Michael: Let's go ahead and step into the cycle that we use in the ROI Innovation site (http://roiinnovation.itincanada.ca/) that we built to help our viewers understand how to take advantage of the different options that are available to them. Our cycle in ROI Innovation starts with the notion that CIOs, as you've said, tend to be pushed by business triggers. So what are you finding are the business triggers that indicate the need either for a new data center, or for a significant retrofit, that starts this process in motion?



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

Steve: Well, really we see three primary triggers. The first is, data centers don't just happen. They happen because there is IT demand, and the data centers are back-ending the support for that. The simple fact of the matter is that over the last 10 years, the average customer's server capacity has increased by about six times. Their storage capacity has increased by about 69 times. As a result of that, they have grown out of their data center infrastructures.

The thing they built five years ago, 10 years ago, 15 years ago, 20 years ago, just can't support this exploding need for IT. By the way, you and I see it every day. I mean, five years ago, how many of us were carrying around a PDA? How many social networks do our kids get engaged in whether we want to know or not?

Michael: I want to know.

Steve: Yeah. So do I. [laughter]

Steve: I mean how many times can you -- I was in Asia the other day, and I got a little note on my PDA from my bank saying, "Ooh, we are a little concerned about this." I went on my laptop and looked at the images of the checks they were concerned about – both sides. It was an application that didn't exist five years ago. Sarbanes-Oxley forces the bank now to keep those records for seven years at two duplicate sites, so this IT demand continues to explode, and I don't think any of us expects it to slow down. As a result, over 80 percent of our clients see the need to invest in new, or expanded data center infrastructure.

The second major factor is costs. We've all gone through the economic downturn, but independent of the economic downturn, energy costs are exploding. The typical energy cost in a data center infrastructure is doubling every five years. A year or two ago, that represented about two percent of the total energy in the planet. Two percent of the total energy in the planet is basically in data centers. At doubling every five years, the United Nations is predicting worldwide energy use increases by about 50 percent by 2030.

In that same time period, if the growth rate of data center energy use continues at doubling every five years, data centers represent 12 percent of the total energy use on the planet by 2030. That's an unsustainable growth level, because that also reflects costs.

Use is going double by every five years, but the cost is also increasing anywhere between 10 and 20 percent, depending on the country, every year. So energy use goes up, and energy cost goes up, which means you are having a huge multiplier in terms of what the total cost of energy is from your IT facilities.

Michael: Well, it's funny - you use the word unsustainable, and there are really two perspectives from which that trend is unsustainable. One, you mentioned costs, as one factor in there. What fraction of your customers, are actually seeing those electric bills, and having to react to the increased cost of the power that is being pulled through the data center?

Steve: Well, last year, the average worldwide for energy cost increases, was 12 percent. It varies pretty widely. I mean we saw some states in the US where it basically doubled in a year.

Michael: But does the CIO see those bills as part of their operating cost?

Steve: It depends. There's an increasing trend. I just saw a survey by one of the big survey organizations that said on average 30 to 40 percent of the CIOs were now holding responsibility for the energy bill. That's up from about 10 percent two years ago. But still, it's only 30 to 40 percent versus 100 percent.

Michael: Well, directionally that makes sense. But I would still quibble with 30 to 40 percent, that wouldn't ring true in my experience.

Steve: That could be. It's their survey data, Michael, so I don't know whether it's fact or....

Michael: Does it ring true in your experience? Do you see that?

Steve: I think it's getting close. When I ask an audience, if I have an opportunity to ask an audience, "How many of you are focused on energy efficiency?" The audience typically, now we are in the 70 percent range. "How many of you are responsible for the energy bills?" I see numbers in the 50 percent range. We may be seeing the larger customers where the bills are bigger. In small organizations, I would be very surprised if they were trying to break their energy bill into sub-segments.

Michael: Well, they are not separately metered. The other aspect of sustainability is the carbon footprint that gets pulled along with that 2-12 percent. If you ask that same audience keep your hand up if you are actually concerned about the carbon footprint associated with that, do you think the numbers would go up or down?

Steve: I think it depends. First of all, I think the general trend worldwide is up – but I think it really depends upon where you are around the world. If I was talking Europe or Japan, I'd say they're [in a position of] leadership. In many cases, Europe now is mandating carbon emissions standards. They are providing levels of, "here is your base case, and I want you to be down by 20 percent three years, five years from now." The second set of priorities I think are in Asia. The priorities there are they are less sensitive to government intervention, but they are more concerned with growth. They want to continue to grow their business, even if the government infrastructure for energy creation isn't keeping up with the pace of their growth. They are trying to get energy efficient, so energy isn't a curb on the growth of their business.

In fact, I had heard a reference that said China is adding the energy creation capacity of France to their infrastructure every single year. I don't know if that's fact or fantasy, but I think they are adding big capacity every year as they grow and explode as an economy and the same is true in India.

Michael: Even so, that's only beneficial if demand is not growing by more than the total demand in France.

Steve: Absolutely. I think the laggards here are the North Americans. I think the challenge for them is -- I think they're becoming sensitive to it, especially when you talk to the university student population, they are very sensitive to the whole environmental thing. But we've grown up in environments where we're rich in natural resources, we haven't seen brown-outs, we're not concerned with Russia turning of the oil spigots and having lights go dim in Spain. We don't have any of those political issues, so we're a little bit dumb and happy -- is maybe the politically incorrect approach.

Michael: But it's much more a reputational issue – without a cost on carbon, it's much more of a reputational issue.

Steve: Absolutely, and I think that will change over time.

Michael: So sorry, you said there were three factors, you mentioned growth and IT demand, you mentioned increased pressure on cost, and I cut you off before you got to the third.

Steve: The third is, we're finding that customers really want to be responsive to change. We did a CIO survey last year, and we found that the number one issue from CIO's is, it's very difficult for them to respond very quickly to significant change. Look at the data center infrastructure. In many cases we're talking about data centers that are – 70 percent of them, according to a survey – are more than seven years old. In fact Gardner evaluated them as...

Michael: Sorry, 70 percent of data centers are over how old?

Steve: Seven years old. Gardner viewed those as basically, technically obsolete. When you think of the changes in technology, technology changes every three to five years, if not faster. Data centers are kind of built to last 20 years. You've got this mismatch of old data center infrastructure in this constantly

changing technology environment. And quite frankly, it's not just technology that's changing, it's also computing models that are changing. You ask a CIO, "What are you going to do with your data center infrastructure?" or "How are you thinking about new data center infrastructure?" "How's cloud going to impact that?" It's a big question for him. In our view, designing environments to be responsive for the unknown, because our ability to be able to predict either the growth of our business over 20 years or the changes of technology over 20 years is slim to none.

Michael: Sure, the concentration of heat in the data center has changed radically.

Steve: Yeah, ASHRAE [American Society of Heating, Refrigerating and Air-Conditioning Engineers] , which is one of the engineering bodies that provides standards for data center design, their view is the density of technology increases by a factor of 20 times every ten years.

Michael: So, you're one of these 70 percent of firms that have the technically obsolete data center. You have a need where your heat profile is expanding in ways that your infrastructure can't handle or your requirement for more storage, more servers, is not being met, what factors point you towards a new data center, or towards a retrofit? What is it that makes you lean one way or the other?

Steve: Basically, there are two things. First is the age of the data center. If the data center was built 10, 15, 20 years ago – in most cases, they may have their limited access to more power capacity within the physical power infrastructure of the location that they're in. That data center may have been built 15 years ago, and there may have been nothing around it at the time, but quite frankly, now there's a lot around it, and that has used up a lot of the grid energy that was available there.

The second thing is, in addition to age, are there really available, the capabilities to retrofit the existing site? That may be – back to age – it may be access to incremental power. It may be the ability to take that site, move the production workload somewhere else, while you're physically doing a major retrofit to the existing site – because if you're going to pull down walls and change the plumbing and heating and electrical and cooling systems, it's not like you're just going to put plastic sheeting around your technology and hope that it's OK.

In many cases, we find that customers don't have a good place to transition the technology to, while they're retrofitting an older data center. Unless they can do it in stages – so if you can isolate part of the facility in a way that both provides the availability level for the components you need, and separates it out from major construction zones that might be occurring somewhere else, then it's possible to do that [retrofit].

Newer sites, however, generally do have the opportunity to upgrade them on the fly. Even in old facilities, sometimes some very minor changes can have major impact. So the technology is an example, right?

If you can take 10 servers that are running at three percent utilization, and take out nine and leave one, and move all the workload on that one server at 30 percent utilization, you've just freed up 90 percent of the available power and cooling capacity with that data center infrastructure. You've eliminated nine-tenths of the software bills, maybe, nine-tenths of the maintenance bills, maybe, depending upon what the applications are, and if they're using the same software, etc. You've eliminated 90 percent of the energy consumption. There are some things that you can do in older sites too, that can significantly have impact.

Michael: That's very interesting. Let me ask one more question before we abandon the business triggers issue and move on to the next one. You have a perspective that's worldwide, across many different sizes and types of customers. Over the next five years, what fraction of them do you think are going to be faced with the business triggers that say, "you need to either build new or retrofit?" Just "business as usual" operations is not going to be one of your options.

Steve: Over the next five years, I think it's going to be close to 100 percent. The simple fact of the matter is…in a current survey, when we survey how many people will have to make significant investments by building a new data center or investing in an existing data center infrastructure in the next 12 to 24 months – the results are well over 80 percent would say yes. So in a 5-year time period, my view is we'll get to 100 percent. Clients are just – you know, the simple triggers that we described earlier: IT growth, increased expense around energy, and flexibility for new demands that are going to hit their business, are hitting everybody.

As we all try to become leaner, meaner, more efficient, more competitive, then we're trying to do more with every single dollar of IT spend. In most of the cases, IT is part of the solution to be able to get the organization into this more efficient, more effective, more responsive environment.