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# Bruce Ross on Innovation, Infrastructure, and Creative Management

*An Exclusive IT in Canada Interview*



From the ROI Innovation Series

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*This document contains an edited transcription from an exclusive interview with Bruce Ross, President of IBM Canada. Our interview was held at IBM Canada's headquarters in Markham, Ontario in July, 2010, and covered many different subjects: sustainability, cloud computing, innovation, . Video segments from the interview can be viewed on the IT in Canada network.*

**Michael O'Neil:** Welcome to the IT in Canada Network, I'm Michael O'Neil, Chief Contact Officer for the Network and today I have the pleasure of speaking with Bruce Ross, President of IBM Canada. Bruce, welcome to IT in Canada!

**Bruce Ross:** Thank you, Michael.

**Michael:** There are a number of things that I would like to speak with you about this morning. Maybe we could start by talking about the "Capitalizing on Complexity" Report that IBM released in May, which is based on face to face interviews with more than 1500 CEOs from around the world. I was struck by a quote near the beginning of the document, which reads "The world's private and public sector leaders believe that a rapid escalation of complexity is the biggest challenge confronting them." You've been a senior leader with IBM on three continents, and have worked closely with a number of CEOs who have wrestled with complex business issues across all industry sectors. What characteristics define those are successful in not just coping with, but capitalizing on complexity? And can you give us an example or two of Canadian CEOs who you think are do an exemplary job of providing leadership in the current complex times?

**Bruce:** Well, complexity...as we analyze the input from executives around the



IBM Canada President Bruce Ross, pictured at the G8/G20 summit in Gatineau, Quebec

world, and CEOs specifically, the complexity is really defined by the fact that business models in the marketplace are changing. And as business models are changing, they have a few different characteristics. One, the business model is needing to be more global than local. Two, the client relationship and the interaction with the client is different. And business is changing at a much faster pace. So the complexity discussion topic is really around the fact that, as businesses need to change more aggressively and have a broader set of horizons, do the CEOs feel that they've got the capability inside their organizations to achieve what they want to achieve? Eight out of ten CEOs see the complexity point, as you've stated, is actually there, but only four out of ten actually believe that they've got the capability inside their organization to deliver it. So really then it came down to three key areas of focus, I would say, for CEOs.

The first is on *creative leadership* inside their business: how do they untap the leadership potential of their business, not just locally but globally? That includes how do you give leaders experience on a global platform, how do you give them the breadth of diversity and responsibility so that they then can achieve what you need to achieve, not just next year but 10 years now. So that's one key piece: creative leadership.

The second key piece of this is *redefining the client relationship*. As business models change, as new start-ups come out from nowhere, the key is how do you not just interact with your client, but how do you actually give the analytic capability to your client so they actually are far more part of the decision making, around the product definition, et cetera, that you have today.

And the third element is *operational dexterity*: how do you create the operational dexterity inside your business that you need allow the implementation or the execution globally, that yesterday would have just been locally. And that means consistency of process, consistency of capability in the back office, including audit and compliance around the world. That's not an easy thing to do.

And so as they look at those three key focus areas, that's what defines complexity. To your point – who in Canada is doing very well at that? I think we've got some really fantastic success stories in Canada. The financial services industry as a whole, I would say, has done very well at this. You can see how our financial services clients are positioned, not just within North America, but globally, they're the hallmark. It's something to be very proud of as Canadians, what our financial services firms have done. That positions them to improve their global footprint, and as you look at those financial services institutions, many of them are in 40+ countries today. So I think they've done a very good job of that, and I also know in meeting a number of them that they are very focused on that leadership-growth agenda and how to deliver that. I think RIM's a great example as well, with what RIM has done as a very competitive Canadian organization around the world.

So I think there are a few. I think, actually, the energy sector is now in a position to actually start to compete on that. The question is, how do we do more? How do we do more, as Canadians, in moving beyond where we are today?

**Michael:** You have that global background that you were talking about, having led IBM in Ireland before coming here. Do you have some words of wisdom in terms of how to do a better job?

**Bruce:** [laughs] When you look at this, first of all, I think that, from a leadership perspective, it's not just about participating in another country's economy. It's about living in it and living it day to day, and living the execution day to day, seeing the challenges and the problems and the opportunities from that other economy's perspective. And what we do inside IBM is send people on assignments to other geographies.

When we do, it's not just a two-year thing. It's not just a 12-month thing. For us, you have to be in that business long enough that you set a strategy, execute a strategy, and live the results of that strategy, and then make associated changes. That tends to be three-plus years. I've been out of the country for 13 years, in the UK, Ireland, South Africa, the US, and it's all been about getting that set of experiences that then delivers where you want to be.

In today's IT market, our view is that there's no one, single path. Twenty years ago there was a single path, up to whatever view you wanted to get to. Today it's do you have the right experience set, on a global basis, that'll allow your organization to be successful?

For us, we are a globally integrated enterprise. That doesn't just mean that we have people in every geography. What it means to us is that we've got a balance of skills and economics, those two variables, covered in a specific geography, and that we will need to maintain that competitiveness. In Canada, that means our software development labs – Cognos, our WebSphere capability, web development in the Toronto area, and our Bromont manufacturing plant in Montreal – having to be competitive in their own rights, ensuring that they've got the best skills at the right set of economics. Clearly, Canadian economics are different than India or other places. But if you have enough skill and you've got enough dexterity, then the equation will still work for you. That's how we operate.

**Michael:** Let me pick up on one of the points that you made in that last section. I want to spend some time talking about a few of the major IT trends that are shaping business options for your customers and ask you about how these technologies contribute to business success for Canadian public and private-sector organizations. And maybe we could start with analytics, which you mentioned as part of your last answer. And actually, it seems that everything I read from IBM now is emphasizing the ways that analytics provide essential support for objectives ranging from management of the electric grid to providing support for innovation in small business. How does the effective use of analytics contribute to business success?

**Bruce:** I think the best way to look at it is to look at the world we live in today, and then to go from there into what analytics truly means. If you look at where we are today, we're in a highly instrumented world. By the end of this year, there will be more than a billion transistors for every person on the planet embedded in everything that we do, whether that be in bridges in Hong Kong, whether it be in CCTV cameras in London, or whether it be in the airplanes that we fly in every day from Pearson Airport. So, ubiquitously around the world, the transistors and the instrumentation is there. It's also highly interconnected. It's interconnected, largely enabled by the Web and so the ability to access fast amounts of data is clearly there. The question then is can you turn it into information, and can you turn it into timely information which will allow you then to be able to make decisions - not just business decisions but also social decisions, as you referenced earlier.

At IBM, we call that the Three I's: the instrumentation, the interconnectivity, and the intelligence that can be gleaned from the other two. What we're doing as a business is working on how you create analytics environments within a business world to actually allow that client differentiated experience we talked about in the CEO study, to be able to give that not just to you as a business to determine where you should market your product and how you would market your product, but also to give it to your consumer to allow them to actually design, execute and use their own product. Then clearly from there, it's got a business use but [analytics] also has a social use. I'll give you a couple of examples. If you look at police departments, the Edmonton Police for instance, they're able to use analytics to be able to better deploy

their assets – their people, the officers that are on the street. The ability to be able to identify where you're likely to have problems, to then be able to deploy those assets to that set of problems is a key area.

Other countries around the world are using analytics to do better distribution of food. In Asia/Pacific for instance, a number of countries are looking at smarter food, the Smart Food agenda. Smarter food, what does that really mean? A great example is, how would we use analytics to be able to stop food from rotting in Heathrow Airport during the Iceland volcano.

The supply chains that were impacted by that volcanic ash were massive. It wasn't just car production in Germany and Asia and Japan which was cut by over 50% during that time period, but it was also the fact that you had plane loads full of fresh food that were off to destinations, but because the supply chain ground to a halt you weren't able to redirect it. To be able to redirect that food to restaurants or food banks in the places that [the food] was probably would have saved massive amounts of waste.

So the ability to use analytics to drive a business agenda is critical for us. We also see clients...it's not just for the big clients. It can be used for enterprises large and small. We're working with a company called Rosenau Trucking in western Canada, where Rosenau is using analytics to be able to determine the routes that their drivers drive – the most economical routes, looking at things like traffic patterns, road issues, et cetera. They're able to use that to monitor the consumption of fuel and other high expense items within the whole transportation industry, and they were able to optimize their business.

We think that analytics and the ability to analyze the conditions in which you do business, the requirements that a client needs, and then the execution of how you run your business are key to success.

**Michael:** It seems like analytics has been on the brink of breaking through as an IT market since it was called Business Intelligence, and Management Intelligence and Information Systems before that. Having had a chance to look at Canada and the U.S. and the other countries where you've been posted – is there something that inhibits the adoption of analytics generally or in Canada that you see either starting to erode as we find more adoption by the Rosenau Truckings of the world, or that you think still needs to be addressed in order to get analytics more widely dispersed into the business community?

**Bruce:** Well it's clear from the studies that have been done on our economy that we are not as productive a nation as we need to be. If we're going to be competitive in the future we need to improve our productivity. Analytics is a fantastic way to improve your productivity. The investment that large corporations are making in analytics is significant today. I would say not just in Canada and North America, there's a massive focus on Analytics. I really believe firms are doing that, and I believe that they're doing that for a number of reasons. One is the ability to create a competitive set of offerings and to better understand the market in which they're competing, but two is their ability to drive the productivity in their enterprise.

So, whether it be financial services firms that are actually looking at a large amount of data because financial service is largely information, and the ability to understand currency flows, the ability to understand the economic dynamics of the marketplace, you really need that in order to have a competitive advantage. Because the rest of the world is moving in that direction.

So we as Canadians need to keep up. We're actually seeing great examples of it. Cognos, which is one the key assets in our portfolio...we've spent over \$10 billion on our own analytics capability over the last five

years. The home of Cognos is in Ottawa. We as Canadians in IBM Canada are very proud of the fact that we have this massive analytics capability, and actually I like to say, we “punch above our weight” in terms of our ability to drive analytic solutions to our clients.

You're seeing it sectors like retail, distribution, you're seeing it in financial services - you're starting to see it government for things in social programs for things like smart water, and grid - you mentioned grid yourself...actually it's quite interesting that we sit here the day after the large blackout inside the city and you can see [from the blackout] that there are large issues with the grid in which we work. It's improved significantly since 2003, obviously, but the question is, “how do you create a smart grid system and what are the areas that need development?” It's not just on the consumer end, and giving the consumer the analytics to be able to determine when to use their washer, their dryer, the things that drive cost for them. Giving them the tooling to allow them to manage their consumption, and also the ability to manage the rest of the supply chain in energy.

So yesterday's example is a great example of how analytics coming into play can help us.

**Michael:** Actually that touches on something that we at IT in Canada are very passionate about, which is sustainability and sustainable IT – and I know that IBM is focused on this issue as well through your Smarter Planet initiative. In the editorial for the current issue of our magazine we say, “the days of treating sustainability as a high cost means of demonstrating a corporate social conscience are long gone. Today, green is an essential aspect of effective management.” Is this echoing what you're finding in Smarter Planet? And how are you helping customers to integrate green into effective management strategies?

**Bruce:** Green has been a very broadly used term over the last several years. It's sort of morphed from the “energy efficiency agenda” through the recessionary times where there was less focus on it, I believe, to now [being], “what is a ‘smarter planet’ agenda.” To take that into its components, let's first look at the technology. As a corporation we're not just socially concerned with making greener technology, but also from a business perspective, what does that drive to our clients? If you look at the data centers of the world, not just in Canada, but throughout the rest of the world, they're bursting at the seams.

**Michael:** Yes.

**Bruce:** The amount of power utilization... In some cases you'll find cities or small towns where the data center usage of power is equivalent to the power that's used by the rest of the population.

**Michael:** Right.

**Bruce:** So there are issues there. And the ability to drive down the energy footprint inside those organizations is massive – the ability to reduce the amount of floor space that's used is significant – and we're very focused on that. Our new Unix technology, our “Power7” technology, has got massive consolidation capabilities. We look at scenarios where we're taking two- to three thousand servers of the last generation of our competitors and we're actually able to consolidate them down over tenfold. So you could take 3, 000 servers, turn it into 300 servers. The type of energy efficiency you get, Michael, is over 90%.

**Michael:** Wow.

**Bruce:** We're not talking 10%; we're talking 90% reduction in power. *That's* the capability of the technology that's in place today. The reason that's important is the level of the ability to take this highly instrumented world that's interconnected that we have and to create the information and intelligence that's necessary to execute these analytics requires a lot more power.

**Michael:** Right.

**Bruce:** So how do you do that? How do you analyze all that data? We're very focused on saying the building blocks need to be highly efficient – that's the hardware technology. Driving the social agenda of it on the green side of things is where we're putting a lot of our research dollars. So we're leveraging our capability to do this, in health care and health science, and also in water. For instance, we're working in locations like Galway Bay in Ireland where we've got probes that are in the ocean that are analyzing massive amounts of data of how are pollutants moving through the oceans. How does that affect the fish population? As the chemistry of the water changes, what happens to the dynamics of the whole ecosystem? And then taking that information and providing that in an analytics engine to marine biologists. We're also using it to actually show local restaurants what fish is likely to be caught.

**Michael:** [laughs]

**Bruce:** If you actually go on the Galway Bay website that's driven by us, you can see that. Now, that has a business impact, too, because if you can start to analyze streaming information, streaming data that way, then you can start to use that in real time supply chains, as we talked about with food. Or if you think about with currency movements and financial services...or if you look at transactions in retail where you may have a thousand stores and have millions of transactions per day. The ability to analyze that and drive decisions is what we're focused on.

**Michael:** I think that's a great illustration of how Green and analytics tie together into an ecosystem. You started that off by saying that Green has been a broadly used term. Another term that I see broadly used – everywhere I look, it seems – is "cloud computing." I guess actually, we contributed to that by building the first issue of our magazine around our cloud research. I'm interested in what you're seeing when you talk to customers. In your opinion does cloud offer real solutions to real business problems? And if so, what business problems does cloud address? And why does it do so better than conventional IT architectures?

**Bruce:** I really believe that cloud computing and dynamic infrastructure will be two synonymous terms that really define the future of computing. As you consider what we've talked about so far, where we've talked about the fact that data centers are expanding...they're pushing out the walls of the data center, that the power utilization is huge. We can't ignore the fact that most of the technology that's sitting on the data center floors is not actually being used.

**Michael:** Right.

**Bruce:** Right? So you've got low utilization levels in a high degree of those servers. Cloud computing and dynamic infrastructure, in our view, is the ability to be able to quickly deploy technology to the workload that's necessary. Your power plant. The technology power plant behind the business models that you or someone else would be running. In order to be able to dynamically allocate that capability, it requires not just hardware, but massive amounts of sophisticated software to be able to do the dynamic allocation of resources. And then the re-prioritization of resources.

**Michael:** Right. And enough concentration of demand in a single location to make that a meaningful capability.

**Bruce:** Exactly. And so, some key areas where cloud is actually going to play a significant role are test and development environments, where you're trying to test environments at full load. Also in desktop virtualization, where we're seeing a massive movement of people starting to use mobile devices; the use of a laptop is actually declining, as [we gain] the ability to get that information on, whether it be your smarter phone or whether it be in your PDA, but the ability to access information. Where is that data? How is it accessed? And how do you dynamically allocate more capacity to the person who wants to run some of these analytics models from their Blackberry. That capacity sitting behind the four walls of data centers, that are not necessarily run by you, is absolutely key. The key thing is to be able to manage and move that capacity to support the business need. I think that's really where the value of cloud computing is going to come from. That's what we're really focused on driving within our client set.

**Michael:** It's interesting that you mention test/dev. The lead article on our site today talks about a case study in which the organization doing the adoption of a cloud approach moved from 180 test/dev servers to one rack by virtualizing that environment, and also gained 45% efficiency through right-sizing – so, not the 90% that you've achieved, but still 45% of a mid-sized data center...

**Bruce:** That's a great example of what it can do for you, because those environments tend to sit there idle for most of the time before you need to use it. Another great example is our Wimbledon website. If you look at our Wimbledon website...we just finished Wimbledon. We run Wimbledon. We run that environment over a two/week period. Over that two-week period we had over 800,000 downloads of an iPhone applet from the website onto iPhones for people that are just walking around inside the Wimbledon facility.

**Michael:** [laughs]

**Bruce:** So the demand for capacity was massive. We also were able to defend against several different viral attacks and intrusion attacks over the course of that amount of time. Hundreds of thousands of them, to be specific. A high availability system that has massive peaks, as you can imagine, of usage during that period of time... How do we re-allocate that capacity? Even within the Olympics... while the Olympics were going, we were managing the capacity on that website so in the hours that the site wasn't actually being heavily used – two, three in the morning – we were dynamically allocating that workload to run our IBM.com business. We can meter that and actually show how we re-allocated the capacity to IBM.com in different parts of the world where we had usage responsibilities. As we see the access in the Wimbledon site come up, we re-allocate the capacity and move it over. So the balancing act and managing workloads on that computing environment is the core, in our view, of the cloud environment.

**Michael:** I think that's a great example of how if you're able concentrate demand in the cloud, you're able to do efficient allocation of resources across it.

Let's step away from new opportunities for a moment, and look instead at managing risk: the risks that are inherent in the business and the risks inherent in the technology – as you mentioned with the attacks – that are used to manage that business.

At IT in Canada, we tend to view security, privacy, compliance, and continuity as four aspects of a single issue: the need to manage data and systems as essential 24 by 7 assets that limit the potential for legal or reputational exposure through leaked information or viruses or the kinds of attacks you were talking about – or the sorts systems outages that we were prone to when the power went off here yesterday, or what have you.

Looking at this issue through the lens of your international experience, how effective do you think Canadian enterprises are at addressing these four areas? And where do you expect to see Canadian IT management focus in the next year or two, as they look to improve their organizational capacity to deliver security, to deliver privacy, to deliver business continuity, and support for regulatory compliance?

**Bruce:** I think that as you look at those four characteristics that you talked about, that what it really says is that the technology integration into today's business models is greater than it ever was before. The need and the requirement to have secure systems that are highly available has a material and significant impact on the bottom-line results for the corporations that are running them. Frankly, there are very few business you can think of, if any, that don't massively require that capability. So I would agree that those four are significant areas of focus. Within the IBM company, we take these extraordinarily seriously. We take it seriously for multiple reasons. From a compliance perspective, from a regulatory perspective as you talked about, you can't do business in geographies unless you're going to be compliant.

**Michael:** Right.

**Bruce:** And you have a requirement not just to the regulator, but a responsibility to your shareholders to be running a business that is secure and safe and that executes with sound business judgment. We take that very seriously, so whether it's loss of data, whether it's in management of data...right through to having a business continuity plan. Those are all critically important to us. We have a big business of business continuity in Canada. I think Canadian firms, more and more, have started to look at their web channel and that process that they go to market with as mission critical. I wouldn't say we're leading the way in Canada; I'd say we're right with the rest of the pack in terms of developing business continuity strategies.

That continuity strategy, by the way, is not just a physical technology, but it comes down to the people as well. We as an industry have learned some hard lessons. I think that we need to think about those lessons in terms of...well, 9/11 and some of these other instances where we did learn some hard lessons where we've had to then improve. I think the one thing on business continuity testing is that I think it's not something that you can just go through a test and have it fail in a certain area and say "OK, I understand why that failed, so I don't need to do it again."

**Michael:** Right. [laughs]

**Bruce:** You need to come back and actually complete the effort. For us, on the continuity side, I think we're very competitive.

**Michael:** Did you find that your customers learned interesting lessons through the G-20 Summit that was recently concluded, where they had to work remotely and test those capabilities?

**Bruce:** I think, probably, the story is still coming out on that one. But I would say that a number of our clients learned the ability to, yes, run from a continuity site, but also to work remotely. And so a lot of them, probably with virtual networks, et cetera, were able to run their businesses from their homes and remotely. Was productivity hit? Absolutely it was hit. So is this a clean piece? No. There were significant productivity hits. So we learned from that. But, was business able to execute? Yes, business was able to execute. Would people argue that it was able to execute at 100 percent? No, absolutely not.

**Michael:** [laughs]

**Bruce:** But then, on security, when you come back to the front end of it, when you talk about security, to me it starts with asset management. If you don't know where the asset is, and what it is, then you can't manage it. And if you can't manage it, that means you don't know whether it's secure. And so, for us, it starts with asset management. It ends up with the secure interfaces and the technologies that support it. The audit process that we use, we use consistently, globally. So I could tell you, when we do IT audits inside IBM and for our clients, they are consistent worldwide. When we look at it, when we say we're audit-compliant, we're talking about audit compliance on a global basis, not just on a local basis. That's important to us.

We've made huge investments. We purchased ISS. We just bought another firm, BigFix, that's known for the ability to do desktop compliance, but also patch management, at up to half a million assets at a time, where you can do patches on it. And within our own organization, we deploy all these technologies.

I talked about Wimbledon. If you take 100 percent of the attacks that are on a website today, it tends to be about 40 percent of them are denial-of-service attacks. So the question is, how do you avoid allowing those attacks into your network at all? And that's where we use a lot of the appliances out of our ISS business to actually stop the ability to get into the network. Because as soon as it's in the network, even if you handle it within the network, you've still created huge amounts of traffic.

So that's just one statistic that we focus on.

**Michael:** If you were advising Canadian IT managers – and I guess you are, since you're on camera – where would you advise them to focus over the next couple of years in shoring up the security, the privacy, the compliance, and the continuity aspects of their business?

**Bruce:** I think, for one, from an IT [perspective], and certainly from a web channel – and I think it's a business channel; it's not an enabler; it's a channel for doing business – I think it's extraordinarily important to make sure that you have consistent, auditable IT processes for the disciplines, whether it be change management, problem management, asset management, and security management within your business – user-ID management specifically. Those processes need to be in place, they need to be adhered to, and they need to be followed, and I think the audit function within the business needs to help manage that. With regulatory compliance, it's about being able to manage that [activity]. And this is an area where it's going to require investment, continual investment, in order to stay ahead of the bad guys.

I think that you'll continually look at how that part of your business is architected for the future. Not just where you want to be today, because if you look back at the CEO study, as business models change, the architectures and the interaction with those people are going to change as well. So you need to not just architect for today but architect for tomorrow.

So I would be looking at my processes and making sure they are completely auditable and robust. I would be looking at the technologies that support those, the tooling that supports those to make sure that I have that. And I would be looking at the architectural decisions that I am making in my environment to make sure my architecture is able to support where I want to go. Because that is the only way you can handle those peaks and valleys of capacity.

When I talk about how we are able to move dot com workload in to take up the spare capacity, we are actually doing that across three data centers worldwide. We have a facility in Boulder, Colorado, a facility in Hortolandia Brazil, a facility in the UK, and we are actually managing the capacity around those three locations to be able to deliver the experience that clients are looking for.

**Michael:** Thanks so much. That's great. The future comment that you made gives me a great point of departure for how I would like to wrap our discussion, which is to take a minute or two to talk about innovation. There is widespread concern that Canadian industry isn't driving enough innovation to keep our companies and our economy competitive. And we have seen several initiatives spring to help stimulate the Canadian innovation, such as the One Million Acts of Innovation initiative that IT in Canada is helping to launch with a coalition of industry and academic and CIO partners. I know you are very passionate about this issue as well. What in your opinion are the two or three steps that we as a nation should take to ensure that we are capitalizing on the potential of IT to drive innovation?

**Bruce:** Innovation is core to long term success in my opinion and in our view. It's going to take a concerted effort on our population to maintain our position in the global economy. There are more competitors today. There are emerging competitors. There are competitors in terms of other economies that don't have the bow wave of depreciation in investments that have been made in the past that they have to overcome in order to close a business case. I like to talk about the fact that Nigeria and Kenya have 100 million cell phones between them. So what does that do for them? It is the ability to leap frog other geographies. They are not going to have analog phones, they are going right to new technologies. So what is our ability as a nation to continue to innovate?

And we know we don't just need to innovate for where we need to be tomorrow, we need to look at our innovation strategy for decades to come. At IBM we spend more than half a billion dollars a year in Canada specifically, in research and development. That's across our Cognos facility, that's across our Toronto lab environment here, that's across our Bromont facility. So we are continually looking to innovate and we are continually working to change.

I think that there's a necessity on us as a business to drive our own agenda. So we will continue to drive our own agenda, to continue to innovate inside the environment with our execution here and our ability to execute globally. So we as a Canadian organization, we look to do very well in our own country and we look to give something back to the global economy so that we are actually very relevant.

So, I think it starts with us in terms of having an agenda. I think there are other things that need to happen though, too. We are not graduating enough engineers, enough computer science people from the programs inside our environment today across the country. We need to do better job at that. We need help from the government and from the education world to actually incent our younger people to go into those professions and to develop that. I think the ability for the government to help enhance and incent research and development in our country is critically important.

**Michael:** Are there countries that do a really a good job of that?

**Bruce:** Sure. There is no mistaking the fact that the United States is able to generate a lot of significant innovation. You've got the hotbeds of it obviously in California, we also have that in the 128 in Boston, and you have different parts of the country that are incenting and working to incent innovation the geography. We need to do the same here. We've got some great companies that have started up, RIM being a great example of that, the question is how do we generate more and how do we foster more. So that's a critical requirement, and I think as the federal government is working on the digital economy and the view of what the digital economy is, we will be contributors to provide our point of view as well on that to they're doing. To me it goes well beyond just providing broadband.

**Michael:** Right [laughs] .

**Bruce:** This is not where we are just providing broadband to everyone in Canada.

**Michael:** Well, a lot of the debate is around the content of the streams over that broadband.

**Bruce:** Exactly, how do you use it, how do we as Canadians create a...What's our smarter agenda for the country? I think things like, we are one of the biggest cities in the world, and yet we are one the only ones that doesn't have a high speed rail link between the airport and the center of commerce. It 's not all about people being able to work from home or remote locations. We are going to need to be able to give people the ability to move quickly through the city. So there are some infrastructure elements I think on the agenda. There is the view of how do you leverage the network, not just have the network, and then there is investment in the education, and then there is obviously our own corporate agenda that we follow.

**Michael:** So, last question – if you were the CEO not of IBM Canada but a Canadian SMB, what two or three steps would you be taking to ensure that IT contributes to innovation within your firm?

**Bruce:** I am not sure that I would look at it any differently than I look at it today because I think as IBM, running our Canadian operation, we look at our ability as a company here in Canada...how do we ensure that we are very much focused on growth, and how we are going to grow, and how we are going to be relevant within the company. So, I think one, it starts with your people and your leadership, and is your leadership really focused on not where the puck is today but where the puck's going to be the future, and do you really understand the technology that's out there, and how the technology can help you? And do you have an awareness of business models elsewhere in the world and how do you leapfrog them?

So for us, if I were to give two pieces of advice, I'd say, number one, have a leadership team that's got a diversity in terms of their capability and their experience set, and a knowledge and understanding of technology and how it's used on a global basis, specifically for your business model to drive success. That would be one.

And two is, understand your market. Where is your market? Is your market local, inside the country? Is your market global? And then, how are you actually solutioning for that global environment – do you need own all of your supply chains or not, what are you truly taking to market? You may not want to own all of your supply chains, you may want to leverage other supply chains, which we also do.

**Michael:** Bruce, thank you so much for speaking with us today! On behalf of the IT in Canada Network, I am Michael O'Neil. Thank you for joining us.

**Bruce:** Thanks Michael.