

The First Atlantic Regional

RESEARCH
MONEY
Conference

Growing Technology Business in Atlantic Canada
in collaboration with the Atlantic Canada Opportunities Agency

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Conference Proceedings

prepared by

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Regional Grounding, Global Growth

Industry Keynote Speaker: Paul Kent

Kent rejoiced in a recent announcement that a research lab for the development of IT security and privacy technologies is about to open at Dalhousie University because he felt it will contribute to the growth of technology-based business in Atlantic Canada. His company xwave, is a home-grown company with an international presence that covered the complete communications spectrum and he shared the story of how they prospered by going with their strengths and leveraging their Atlantic Canadian roots.

They have concentrated their efforts in areas of growth where they have a solid track record. Xwave has developed a near-shore model where they offer U.S. firms outsourcing advantages over off-shore providers. They have been very successful in penetrating this market with their CORIS system which was first developed for the province of New Brunswick and later adapted for the state of Maine where it is fully operational. They are implementing it in Virginia and New Hampshire as well and they are now Microsoft's preferred partner for offender management systems. Halifax-based Diaphonics, a company specializing in voice biometrics technology is now partnering with them to develop an inmate phone system.

Xwave's success has leveraged business for other Atlantic firms as well. Xwave has partnered with a number of other Atlantic Canadian companies with expertise in specific areas for other projects. Those partners gain work as well as a chance to develop an expertise in a certain area. For instance, xwave's resources in Nova Scotia helped them secure a contract under the Maritime Helicopter Program, which is the largest and most lucrative project in xwave's history. The contract has also generated work for smaller firms like Tecsum Eduplus, a Dartmouth-based e-learning provider.

Contractors from Triton Data and ZEDIT Solutions have provided significant help as xwave worked on the Clinical Management System that offers Canadian doctors relevant and affordable access to the GE Healthcare EMR. Leading Maritime Systems, a Charlottetown company is working with xwave to develop and market a wireless port-security solution that will continue to function under emergency circumstances. That technology was being used in the port of New Orleans in the aftermath of Hurricane Katrina.

At question period Kent pointed out how it was important to stick with core competencies and concentrate on careful controlled growth.

And the World will Beat a Pathway to Your Door: Lessons in Innovation and Marketing

Featured Speaker: Robert Bell

Innovation and Marketing are the two most misunderstood words in business. Bell proceeded to debunk what he calls the five myths of innovation. Innovation does not require a disruptive technology. The first mover in the market does not have an advantage, the second or third movers do. It happens anywhere. It does not require genius and it is just a business. The more business-like you make it, the better off you'll be.

Marketing is also a business process. It is the organized discipline of understanding what we're selling and to whom we can sell it. What is the value to the customer and how can we increase it. Do changes in the market threaten the value or change who we should sell to? Can we afford to respond? Can we afford not to respond?

Bell shared a case study from his consulting practice where he discovered a clear understanding of one of his client's problems and showed them how to respond to new market conditions with a relatively modest innovation. After years of strong sales, the client had been seeing its revenue drop precipitously. Bell interviewed his client's customers and found out that technological changes had altered who the buyer of his client's product was within customer firms. The buyer had shifted from the IT department to the management level. His client's sales force was talking to the wrong people! With this new understanding of the customer, the client was able to launch an effective, focused and ongoing market campaign based on an understanding of the "new" customers' needs and sales began to grow again.

Bell pointed out that the technology business is facing greater competition and faster changing markets than ever before. The global economic world has gone from 2.5 billion people in 1985 to 6.5 billion in 2004 and many of the 1.5 billion workers that have been added are just seconds away by broadband. Only continuing innovation and strong marketing will get us where we want to be.

At question period venture capitalist Peter Forton pointed out that some of their biggest winners had come from disruptive technologies and Bell pointed out that there is a difference between the investor and the business owner who has to meet the payroll.

Panel 1: Experiences From the Trenches

Technology business leaders from Atlantic Canada and other regions share and compare their experiences

Byron Dawe, President, Rutter Technologies Inc.

Nancy Mathis, President & CEO, Mathis Instruments

Robert Orr, President, Ocean Nutrition

Moderator: Paul Mills, Vice-President, Atlantic Canada Opportunities Agency

Mills started by asking whether the interface between Atlantic Canadian Universities and the private sector was adequate.

Robert Orr felt it depended upon what your expectations were. He emphasized that we need research in our universities. Universities can outsource their researchers to businesses that need their skills and training, but commercialization should be managed by corporations who understood it. He felt it is a waste of public funds to pump money into universities for commercialization.

Nancy Mathis, who spun her company out a university environment, characterized university research as the “raw material” which the “plant” would convert, filter out the good from the bad, and do a refinement step before packaging and selling it. She felt that investment is needed across the board and that there is too much focus on the portion between the university and industry. In her opinion, the bottleneck is at the receptor company stage. We need to generate more firms and develop them so they know where to look and what to do with the technology once it gets there.

Mills then asked how important a good management team is in attracting partners and taking a product to market. Is it a limiting factor to commercializing technology and helping firms get partnerships and capital?

Byron Dawe felt there is a gap in available funding for the early start-ups. His company had the business acumen but not the management structure when they started, so it was a struggle to attract the capital they needed.

Mathis pointed out that venture capitalists invest in people but early companies don't have the “who's who” who've “been there and done that” in their organizations. She felt that firms need fractions of phenomenal people in their area who could add experience and breadth to the management team. She suggested the audience could focus on ways to bring seasoned professionals home and help them set up consultancy roles to help young companies develop because this would make the venture capitalists more comfortable.

There was a lively discussion about the time it takes to close venture capital deals. Venture capitalist Peter Forton pointed out that applicant companies don't have a track record and the VC has to analyze deals based on whether or not the ingredients in the

company can lead to a “cake” that will have value in a few years time. Often there is a critical ingredient missing and instead of saying “no deal” he would point out the gap. Mathis felt that some of the venture capitalist hoops she had jumped through had made her company stronger.

Ron Layden from Dalhousie felt we need to strengthen the interactions between universities and companies. Universities are sometimes antithetic to commercialization but he suggested that they are changing.

Doug Barber from McMaster pointed out the importance of the customer in the equation. Real commerce doesn't occur until a customer has paid you for the value you have created. He has interviewed the CEOs of a number of Canadian start-ups and about half of them could identify a market, but not a customer. He suggested that if about 90% of start-ups fail, then we have to smarten up and do something because accepting failure isn't okay. He also pointed out the importance of the graduates that come out of the universities because they are the ones that made commerce happen.

David Gough from GENIus felt university researchers need more education about commercialization. He also wanted the conference participants to do more than just talk and suggested that a technology information network would be a tangible way to link academia and business to generate some win wins for the community. At the very least, he suggested that there should be a press release or consensus statement at the end of the day.

Jeffrey Crelinsten assured him that the deliverable from the conference would be more than just talk. A proceedings will be posted on the RE\$EARCH Money website and distributed by email to conference participants, and Mark Henderson will write an article in the newsletter. He thanked Gough for his suggestion, asking him to act as committee leader for developing a post-conference strategy and offering to work with him.

When Crelinsten turned his attention to the commercialization issue, he pointed out that it's tempting to try and get more commercialization in universities because that's where 80% of the research is being done in Atlantic Canada. However, it is also important to help companies. He suggested that the audience should get industry R&D leaders in their communities involved in developing suitable strategies.

Graham Sheppard from NBCC Moncton liked Robert Bell's incremental innovation idea. He pointed out that the community colleges and technical institutes married business technology with science and are a rapidly growing alternative to university based pure research.

Dawe responded that his company did focus on incremental innovation. He also felt that universities are better for long term issues and guidance because the company needs the research and development turned around in a six to twelve month time span, and it is difficult for the universities to move that fast. But he is also extremely concerned that

they are so chronically under funded. It doesn't make sense to make it so hard for our youth to get an education in the knowledge based economy.

Mathis suggested people look at why more research isn't happening in private industry. She depends heavily upon her SR & ED tax credits but she has difficulty accessing them because there are differences in how the provinces process them. She pointed out that if tax credits would flow she could invest more money in research. She suggested this group could play a role in fixing this problem.

Orr pointed out that federal tax credits aren't any good to start-ups because they need to make money before they can access them but they need access to the money while they are growing. "So fix it", he declared, adding that he had been asked to be controversial today to stimulate discussion. He felt it was a significant meeting and he urged the participants to come together with a disciplined and focused purpose that would impact the prosperity of the region.

Mills then threw out the three topics his panel hadn't had time to discuss so people could think about them. He wondered about the possibility of a Canadian development procurement fund such as one that had existed in the past before government departments started buying their technology. Is there a role for the cluster theory and how could we apply it in Atlantic Canada? What about the global and domestic focus in market development?

Panel 2: Financing Growth of Technology Firms

Investors and IP experts discuss investment strategies and assess factors for success

Ben Forcier, Vice President, Investment InNOVAcorp

Peter Forton, Senior Vice President-Investments, GrowthWorks Atlantic Inc.

Gregory Phipps, Director, Technology Seed Investments, Business Development Bank Canada

Moderator: Cecil Freeman Assistant Deputy Minister of Business and Innovation for Business New Brunswick

Ben Forcier pointed out that venture capitalists are trying to partner with successful entrepreneurs to help bring them to a different stage of growth. Different stages of growth call for different types of talent in the company. It is important to have a good team that can tap into programs in the community.

Greg Phipps reported that the seed fund of Business Development Bank Canada was set up to focus on pre-commercial companies. About 65% of the fund has gone into university-based initiatives. A tremendous amount of technology has been born in universities but it hasn't been commercialized. He suggested that the reason is a lack of capital. His group at BDC looks for fundamental research that is addressing an existing program or developing a technology that will address a future challenge. There are no management teams to assess at that point, so his goal is to get the company through development, build a management team and get the company to that "A" round of venture capital. BDC can invest \$250-500 thousand at the proof of concept stage and up to \$2 million to get a company to the point of commercializing a technology.

Phipps didn't feel that it is the role of universities to commercialize technology but they play a role as a catalyst. When they are exposed to a unique technology they have some decisions to make. Do they have the resources to throw at it? Do they want to spin it out to an existing company, or try and attract capital and people to build their own company?

Peter Forton from GrowthWorks Atlantic Inc. pointed out that the venture capital business is a business. If they don't generate a return for investors, no one will invest in their fund and then they have no money to invest in companies in region.

Freedman asked the panel if there is an access to capital problem in Atlantic Canada.

Phipps suggested that there isn't one, because venture capital in Atlantic Canada is no rarer than venture capital anywhere else. Venture capitalists have a business model. They look for the home run with a big payoff because they will need it to cover the expenses of the companies that don't succeed. Only two out of ten companies will ultimately succeed. Venture capitalists usually invest in about 1-2% of the deals they see.

He's looked at 100 business proposals and invested in five, so 95% of the people who have approached him are unhappy. However he feels good quality companies will ultimately attract capital.

Ben Forcier pointed out that InNOVAcorp had examined 60 business plans and invested in 6 companies for a 10% deal yield. In the US the deal yield is only 7-8%, but he felt there may have been a backlog of deals here. However some of those companies have had a challenge in accessing adequate growth capital.

He also pointed out that there has been more money raised in the US in the first six months of 2005 than in all of 2003. That \$6 million raised so far is looking for good deals and companies in the Atlantic region should be able to attract some of it.

Forton emphasised that companies need to attract funding throughout the various stages of their development. He pointed out that money comes with philosophies, objectives, and agendas. People need to understand what these are at each stage when they are taking the money. Any gaps in funding will abort the company's development and traditionally the access problem is in the very early stages.

Technology companies tend to be very expensive to develop. IT companies consume \$15-20 million in capital from conception to exit and biotech companies can consume from \$30-50 million. It's like a high stakes poker game, and the angel investor has a limited number of chips they can risk. There's always someone across the table raising them. Things never work out like they anticipate. The angel investor is going to have his hand called and have to fold and it will cost a lot of money. Forton feels this is why angel investors are gun shy about IT companies. He has never seen a start-up company succeed in its first attempt to commercialize. It's possible that something has to be done from the standpoint of public or fiscal policy to reduce the risk to the angel investor.

He feels there is very limited seed capital available in Canada as a whole. This is a problem because when you do life science you have to go big or go home. He doesn't feel the region has the capital to invest in life science. It could be an interesting problem for people who want to create companies in the next few years. Where is the capital going to come from? He feels that government has a critical role to play in the very early stages to help advance the companies to the next level where they can be picked up by the venture capitalists.

One way to guarantee capital is to have a good management team in place that is in tune with the reality of the global market place. The management team needs to have delivered in the past and demonstrate that it will in the future. This helps raise funds in the first place and guarantees you won't have to do it again.

Investors play a role as catalysts said Phipps. He suggested that if entrepreneurs, IRAP, NRC and others thought like investors and looked at things like the true market opportunity and what kind of human resources companies had to execute their business plan; it would help them separate the wheat from the chaff. BDBC is working with

Springboard to develop a course or workshop that can help everyone understand the due diligence process that investors use when they are looking at an opportunity.

At question period, Lynda Leonard asked if Atlantic Canada has a good supply of interested angels who could bring expertise as well as cash to companies. Phipps said that he tries to build the management team of the companies that they invest in but it's a very labour-intensive process when you are building them up from the seed stage. He's managing six now and can't possibly keep up. Now he is trying to build a roster of some of the "been there done that" seasoned entrepreneurs and executive and insert them into the process to mentor the entrepreneurs. If he doesn't have the angels with experience to put in the money, he'll put in the money and go find the experience.

Forcier pointed out that the US has a significant high net worth angel community with experience building start-ups that are willing to partner with people in a position to grow a new business. Atlantic Canada doesn't have this history of success in the IT sector. He feels there is a huge knowledge base in the university sector but there isn't a huge base of successful entrepreneurs to partner with new start-ups. InNOVAcorp also tries to insert successful entrepreneurs into their startups and their model is to coinvest with angels and act as a supplement.

Forton felt that Atlantic Canada lacks experienced people with focussed experience in management who understand the technology markets that the companies are moving into. He felt you need a mix of angels at the management and board level, some that can bring business experience and others with specific technology experience.

Gisele Levesque from Université de Moncton wondered about the possibility of bringing new ideas and new products to existing small businesses so they would already have the management skills. How could they attract small businesses and maximize the innovation in the area?

Forton pointed out that their business model is to take small businesses and grow them into large ones because keeping them small won't generate the portfolio returns that they need. Forcier felt that there are a lot of small to medium enterprises in Atlantic Canada that have fantastic growth potential.

Ron Freedman felt that Robert Bell could add "the start-up company" to his list of innovation myths because 99.9 % of all companies in Atlantic Canada or the world are existing companies. Investing in a new company and a new technology doubles the risk and is a sure way to lose money. He felt it is more important to put money into existing companies that are looking for a new product to gain an edge.

The number of companies that do research has plummeted in the last few years. There are fewer companies doing research today than there were 15 years ago, even though there is all this government money available through new programs. He felt we need to focus on improving existing companies so they can renew themselves with new products and effectively establish new start-ups within their own companies.

Phipps pointed out that there are financial services focussed on the growth stage of companies. Forcier suggested they encourage partnerships with existing companies who don't have the expertise and cash flow problems that start-ups do.

Leonard asked how we could engage small business if they are having a hard time doing more research. Forcier suggested we stop talking about research and start talking about sales, because you need to generate sales to gain credibility.

Barber then asked the panel what role exit strategies play in their decisions. Forton replied that it is obviously important and they ask themselves how they are going to get out before they invest in a company. However he doesn't manage his companies to an exit strategy. He focuses on growing the company because then the exit will happen.

Tim Shaw from NikDesign shared his frustrations with cash flow and he was disappointed to hear that it was always an issue.

Bell pointed out that the magic words aren't "we'll help you with research." They are "We'll help you sell more stuff."

Doug Robertson agreed that the customer is important but in the policy business they have to look at certain benchmarks. He was concerned that research and development performers have been on the decline for a number of years and this is happening in every province except Quebec.

Forcier pointed out that the take-up on the SR & ED program is below the national average here in Atlantic Canada. This could be for the reasons that Mathis had pointed out earlier and he agrees the emphasis needs to be on the ED portion as well.

As Crelinsten thanked the panel for doing a great job he emphasised that smart companies do research because the customer wants it, not because someone measuring data wants them to. So one has to analyze carefully why companies aren't doing research and address the business case for doing more.

Growing a Company: It's not only the Technology that Counts

Featured Speaker: Bob Glandfield

Bob Glandfield, the President & CEO of the Innovation Synergy Centre in Markham shared some of the business advice he gives his clients.

He finds that the CEOs and owners of technology companies may be good engineers and brilliant people but nobody's really told them how to run a business. If they don't know how to do that they will fail. Once the prototype is up, forget about the technology, he cautions them. Start to understand the business. You have to understand your market, understand your customer, and learn about sales and marketing.

Funding is important to most of their clients but over half the challenges people face are related to marketing, sales, and branding. Others have trouble with financial matters like getting invoices out in time, collecting receivables, or how to deal with the bank.

Working capital is always an issue, so he advises them to get those invoices out quickly, collect as soon as you can and keep inventory low so you won't drive working capital needs through the sky.

It costs 10 to 100 times more to take a product to market than it does to develop it. Small companies often get sidetracked and forget they need to market their product.

Many people sell themselves out of business. When he worked at IRAP, he used to draw a cash flow curve to show companies how fast they'd run out of money once they started to sell. The most important thing a CEO has to watch is his cash flow. If it isn't in balance, you can be out of business. If it is, financing becomes easier.

Entrepreneurs need to know themselves because building a company is challenging and there's a lot of risk. They need to know what they are selling and what the benefits are, who their customer is and what's in it for them. They should put it all into a 30 second elevator speech and practice it. Then be sure you talk to the right people.

They should check out their competitors and maybe even phone them for a quote. They could even get a partner out of it, if they have a solution the competition can't offer and perhaps the competition has a better distribution system.

When the Innovation Synergy Centre does competitive business intelligence for companies and discover that the market is very crowded, they find niche markets where many of their business have been very successful. Companies will often change their target client 3-4 times before they get it right. It takes 2-3 times longer than you expect to take a product to market so you need to be prepared for the extra costs.

Many small companies don't have advisory boards but they should get trusted mentors on their side or have some people who have "been there" that they can talk to. They should keep investors and bankers in the loop because they may help them avoid problems and surprises are usually interpreted as bad management.

At question period Barber asked if the Synergy Centre trains their mentors. Glandfield explained that they have a stable of mentors with their own areas of expertise. The Centre tries to figure out why the company is there and then focus on the solutions and refer them to the appropriate mentors and services right away.

When Crelinsten asked whether he or his clients had decided to focus on business advice instead of technology advice, Glandfield explained that even at IRAP he'd found himself giving business advice because the companies tend to know most about technology and least about business. Furthermore, inside IRAP your technology knowledge becomes shallower and your business knowledge becomes broader the longer you work there. Crelinsten also asked what kinds of people seek advice from the Synergy Centre. Glandfield explained that the companies tend to be in the ICT and health care sectors because that is where their database works but they don't exclude anyone.

Panel 3: Best Practices from the Research Community

Researchers from academia, government and the private sector describe how they work with firms in various sectors to help them succeed

Dave King, President & CEO, Genesis Group, Memorial University of Newfoundland
Wade MacLauchlan, President & Vice-Chancellor, UPEI
Rodney Ouelette, CEO & Scientific Director, Beauséjour Health Research Institute
Moderator: Rob James, Director - Corporate Policy and Strategy, NRC

Rob James asked the panel about interface between the institutions of higher learning and the private sector. Should they try to strengthen it and if so how?

Dave King felt there are problems but the interface is strong. Most university professors are a lot like entrepreneurs, working long hours, running labs, employing students and looking for funding. However there are philosophical differences that make it difficult to get them together with industry. At Memorial they try to strengthen the interface by providing access to university facilities for businesses and transferring technology out to them. They have an incubator called the Genesis Centre where they bring technology out and start entrepreneurs up. Again he finds that the most important part is the business part and they have an advisory board for every company so they can give them the kind of support that Glandfield talked about.

Industry also has access to all researchers in Atlantic Canada through Springboard, a cooperative effort of the universities with a mandate to transfer technologies out and bring private sector money in. There is opportunity for a win-win situation where the university can get to do the research they want and the private sector can get what they want—a product to take to market.

MacLauchlan pointed out that they have to make the interface work because as a region “we have our backs against the wall.” We will only succeed together because we can surely fall alone. The universities may be doing 80% of the research in Atlantic Canada, but collectively we are only doing about 40% of what the University of Toronto does. We need to work together with urgency and focus. He emphasized that there are only a limited number of areas where we can put ourselves on the map in a sustainable way.

For example, Prince Edward Island’s BioAlliance, a collaborative effort between research, business, education and other sectors, was created in a short period of time and it is working.

Supporting students is one way businesses can strengthen their relationship with universities. Graduate students and post-doctoral fellows are critical to the research and commercialization process. They also cross-pollinate ideas and prepare the next generation. If everyone walked out of the conference with the resolution to find \$15-20,000 to support a graduate student, they would have accomplished something.

Rodney Ouellette pointed out that every scientific discovery is a spark that could lead to business opportunities. He noted that we have a lot of great minds in Atlantic Canada and many of them are in the universities, but a lot of their time is taken up by teaching and other administrative tasks, so companies are fighting for their time.

His organization the Beauséjour Health Research Institute is devoted to research and occupies an important space between the private sector and the university. He suggested that they could act as a research SWAT team to help move a project along to meet the needs of the private sector, tapping into their scientist partners if necessary.

James asked how do we approach the win-win relationship and what is the quality of graduates coming out of the universities.

Orr wanted to know how you measure economic growth generated by R&D money. He admitted that there are great spin-offs at most universities but universities do eat up a lot of the funding. He also wanted to know why AIF funds have to be repaid by the private sector but not the universities. Is it just another way of getting money into the under-funded universities?

He felt that most of the universities in Atlantic Canada don't think of themselves as service providers. They are uncomfortable partnering with industry because they think it compromises their intellectual integrity. His company has a collaboration with a university in China because they have a skill set, cost proposition, and time turnaround proposition that works for his company. If he has a question late at night, he can call them because they work from 8 am to 10 pm.

King pointed out that we do find researchers late at night in Atlantic Canadian labs, but he agreed that universities don't think of themselves as contractors. But they are willing to think of themselves as partners and they need someone like him to orchestrate deals between companies and researchers. Springboard is trying to do this.

MacLauchlan pointed out that not every university sector would be able to have a quality, scale, and link up to market that would be sustainable. But it is also important to build and contribute to the knowledge economy through service. Their Population Health Research Group is working with dairy herds across Atlantic Canada and into Quebec to research best practices, detection of diseases, and animal handling. There won't be any new intellectual property from that work, but it contributes to a sustainable and successful economy.

Ouellette pointed out that universities lack the scientific infrastructure needed for commercialization and that could be one reason why they don't have to pay back AIF funds. Some capacity has been built now, but commercialisation doesn't happen overnight.

Forton pointed out some of the difficulties investing in university tech transfer. When he tried it, he found that it was everyone's hobby but nobody's occupation, because there

were so many competing academic priorities. He also has to make sure he secures the intellectual property and that's not easy. It's easier in the US because the university owns the research and venture capitalists don't have to worry about a student coming back some day with a claim that they own an invention.

There is also a dearth of commercial research expertise. They need a Chief Science Officer who can manage a project through a commercial agenda as opposed to an academic one. The end point may not be to build companies; it might be getting the technology to the point where it can be licensed to someone who can take it the rest of the way.

King agreed that the number of start-ups spun out of universities based on the research is small, partly due to the lack of management capability that had been discussed. The best bet might be to transfer it to an existing company or a serial entrepreneur that has already been successful.

Barber pointed out that graduates are the most important thing that comes out of the universities. He noted that the culture of science and tech is very strong in Canada, but graduates are weak on the human side. They need to be more broadly learned so they'd come out with some knowledge of themselves and how to make commerce happen.

MacLauchlan remarked that this is often spoken of as managerial skills but is actually character. Literacy and communications skills are also a challenge. At UPEI they are creating a Centre for Enterprise and Entrepreneurship tied in with their BioSciences cluster. We also need to create a science and innovation culture that is more broadly about creativity and create the types of communities where the people are going to want to live.

Vaughn McIntyre of Accelerator Inc. felt we should try to tap into some of the talent that is moving back to Atlantic Canada. The Pan-Atlantic concept has all kinds of potential. There are 44 organizations in the Atlantic region that want to help businesses but it is so fragmented that they are spending too much money to get it to the right places.

King also agreed with Pan-Atlantic collaboration. The 14 universities are already collaborating through Springboard and they are also working with the NRC-IRAP network.

MacLauchlan was also struck by the amount of seasoned talent that is around. UPEI is trying to create a memory bank of some of those people. PEI probably has about a thousand millionaires who are part-time or seasonal residents and he wanted to know what we are doing to connect with them.

Lynda Leonard from ITAC wanted to know how the panel measured outcomes. King said they are looking at success at the end. He uses the number of interactions between university researchers and the private sector like partnership initiatives, joint AIF or NSERC proposals. He also likes to count successful start-up companies.

MacLauchlan said they have good baseline data on jobs in the biosciences cluster and they were aiming to triple it within five or six years. They hope to take R&D investment from \$15 to \$40 million in five or six years and have an aggressive sales target for the future.

Everett Roche from MRSB Consulting services reminded Orr that ACOA and AIF were introduced to cover a gap in private sector research in Atlantic Canada as well as a lag in research dollars going to the universities.

A good research project is one where the private sector has a problem and goes to the university for help and then pays the university a royalty for the solution once they commercialize it. He felt a lot of small companies in Atlantic Canada don't know how to use the SR&ED credit properly and they need to be educated about the value of coming to the universities to look for solutions to problems.

As the panel summarized their thoughts on the session, King pointed out that leadership is the key to making things happen. He felt we had the leadership about 18 months ago when the federal government started talking about an innovation strategy and everyone bought into it. Universities committed to tripling their commercialization output and put structures in place to do so. AIF was funded and NSERC and CIHR put money towards commercialization and not just basic research. He isn't sure if that leadership is still as strong but he feels that all the elements are in place and he would like us to keep going and great things will happen.

MacLauchlan pointed out that in Atlantic Canada, we can work together as communities in a way that many people in the world envy. We need to do the most important things quickly though because we only have 5 or 6 years to change our trend lines.

Ouellette remarked that we need to increase communication between the private sector and scientists.

As Crelinsten thanked the panel he pointed out that according to Thomas Friedman, author of *The World is Flat*, the developed countries that aren't doing well in the flattening world all have one thing in common. They have too many natural resources. So as Canadians, we should be scared. He also felt it is important for programs like AIF to begin collecting output data such as how much money is being made by firms that receive assistance, where are the people going from universities that receive assistance, and are the companies that are created surviving? Such output metrics relate to the economy, as opposed to input measures like number of patents, number of companies created, number of graduates.

Panel 4: Wrap Up

A panel of experts reviews the day's proceedings and recommends next steps

Yves Gagnon, Visiting Executive, Atlantic Regional Office, NSERC

David Gough, President, GINI University Services Inc.

Jeff White, Vice-President, Deloitte & Touche, Corporate Finance Inc.

Moderator: Lynda Leonard, Senior Vice President, Information Technology Association of Canada (ITAC)

Lynda Leonard started by asking the panellists what was the wisest thing they had heard today and what was the most outrageous.

Yves Gagnon had been surprised at the misunderstandings between the different stakeholder groups in the room. It is a priority for Innovation Team New Brunswick to engage industry so industry leaders can help them understand what makes companies successful. Venture capitalists have to make good deals so we have to convince them that we are the deal to invest in. He clarified that universities should remain in the business of creating knowledge and training students and industry should remain in the business of sales. He expressed concern that Atlantic Canadian universities are training a higher proportion of the Canadian student population than other regions and according to his calculations this cost is more than all the research funds that come into the region. He also pointed out the major shift in focus at the university level. When universities were asked to commercialize their research results ten years ago, there was a massive opposition to the concept especially from the professors' unions. Now we have IP lawyers working in universities, tech-transfer offices on campus and the universities are getting together through Springboard to transfer knowledge to industry and society.

He pointed out that there are people in university that you wouldn't want to work with because universities work on the entire spectrum from fundamental research all the way up to technology transfer and commercialization. We still need to maintain fundamental research in the universities because it is the foundation of innovation and creating new knowledge. We need to find the overlap between industry that wants to work with universities and university researchers that want to work with industry.

Gough felt that one of the points that came out of the conference was that it is all about partnering. If we want to grow, we have to be open to partnering with academia, government and business. We have to concentrate on delivering value and he agrees our backs are against the wall and we have a five year window. But we do have what it takes down here. We have to concentrate on making sales. There may be deficiencies in risk capital, talent, and jobs but they are all solvable if we think outside the box. It may be true that there are no companies in the top 100 for R & D spending, but perhaps there needs to be another list for SMEs because there is R & D here in Atlantic Canada and we needed to change that misperception.

White also agreed that there seems to be a gap between industry and university, and industry and venture capital; but he felt some of it could be covered through education. He pointed out that successful entrepreneurs will have struggles like those we heard of in the first session. In the early stages, the payroll problem forces you into a financing problem and the ability to get talent affects your ability to get capital. We should also be thinking globally to raise capital so we can increase our odds of getting it.

It's also all about development and getting ready for sale. There is a capital gap at the very early stage of the company when they are trying to raise the first half to one million dollars which may only get you close to that first beta product. He felt this could be a risk because everyone would be going to the same source but it could be addressed with programs aimed at that area. In other places, some of that gap is filled by angels that have had one or two exits. We are moving towards that now but haven't established that track record of companies with successful exits that have come back in.

The skills gap is also an immense challenge, but it is a solvable problem. With the world connected by broadband that person with the necessary skill could be in Toronto or Silicon Valley. He believed universities are a great source of the next great idea, but we could do a better job of moving this research out into the world of commerce. He held up King's group at Memorial as an example. He pointed out that the theories expressed in *The World is Flat* could be a threat or an opportunity where we could reach outside our region or country to solve some of our challenges. He also expressed a sense of urgency, cautioning that if we are still talking about the same things in five years we will have missed the window of opportunity and will then only be able to participate at the commodity level.

Leonard then asked the panel to assume that MacLauchlan's estimate of a five year window of opportunity is right and asked the panel what the future of the region would look like if we were successful in building the knowledge based economy we wanted.

Gough felt that the world would get by without Atlantic Canada but he didn't think Atlantic Canada could get by without the world. In the next five years he wants to see a cooperating tri-sector company or initiative that forces everyone to work together to grow technology firms. It is short sighted to "poach" technology companies from other provinces and he'd like to see the 40 or so organizations with mandates to serve business work together. He'd like to see regional industry associations, governments working together on a PanAtlantic basis and a virtual Atlantica university. He pointed out they are already working together with Springboard. In less than five years he wants an attitude of "We have done it and we can do more."

White's plan was not as grandiose. He felt we have to reward attempts and not quash the idea of start-ups because 80% fail. He also agrees that we have to be more regional in focus. We have a better chance of calling ourselves a cluster if we pool together as a region.

Graduate students are absolutely critical because they are a huge source of ideas and ingenuity but we don't foster entrepreneurship so we need to promote it.

Gagnon claimed linguistic difficulties if he had used the world misconception in the wrong sense in his earlier comments. He didn't agree that it is going to be sales that will grow technology. He insisted that it will be people. We need a well educated and highly trained workforce who could perform and interpret research as well as people with leadership in politics, management, and sales. We need more industries engaged in innovation and strong universities to train students and highly qualified people. We need strong links between academia, industry and government and the tech transfer offices were the link between industry and the universities.

During the open mike portion, Robert Orr pointed out that he hadn't heard anyone say that business doesn't want to work with university nor that we don't need core research in our universities; but he had heard venture capitalist and corporate people say we need great talent coming out of our universities. He felt that the objective of the conference is to let government be enablers of economic success. The panellists had been asked to comment on tax credits and university interaction in a way that would create a community committed to the same thing.

He had been purposely controversial in his comments to get us to the place we'd like to be. There are opportunities here but the Canadian economy has its back against the wall and our issues aren't just our issues. He expressed the hope that the various governments and industry and the universities would get together and figure out how to create niches so we could compete globally. We need openness and honesty so we could build trust and focus collectively on the issues.

Tim Shaw pointed out that he'd heard more about reaping the reward of successful technology than he had of growing it. He was worried about the gap between venture capital and seed money and was disappointed that no one had come up with a solution for it.

Barber wasn't against the idea of uniting the Atlantic Provinces, but he wanted to counter the idea that you had to be big to be prosperous. In 2003, there were 12 countries more prosperous than us and only the US was bigger. The other 11 countries had a smaller population than Ontario. There is no reason that New Brunswick or Nova Scotia couldn't match Iceland for instance. But when you are small, you have to trade to be prosperous. Canada currently has a positive trade balance in agriculture, forestry products, minerals, energy, and a smidgeon in automotive, but we run a deficit in knowledge based products. It will take focus and innovation on a number of levels, not just science and technology, to succeed as he urged everyone to get on with it.

White agreed that we could capitalize on our opportunities even if we are small. Robert Orr's company is a good example of a company that chose to innovate locally and capture the world. He emphasized that we need to reward the entrepreneurs who are willing to go into battle and pick them back up if they fall.

Forton felt that we could close the venture capital gap by improving the risk portion of the equation. In early stage companies, the difference is the people who are leading them. He suggested that either ACOA or the provincial governments could look at programs to help pay for executive recruitment fees for board members who might work for nothing or next to nothing. If they can't be found in the region, firms should be free to go elsewhere to find the specialized expertise and access to markets that they need.

Johannes Larsen pointed out that about 15% of IRAP funds have been invested here even though Atlantic Canada only has 8% of the population and he felt that these statistics are good news for Atlantic Canada.

Then Leonard called for one concrete suggestion from each panel member as a wrap up to the session.

Gagnon said we need to involve industry and academia in the definition of public policies related to economic development; maintain public funding to fill the gaps in the development of technology businesses; hire one student to work on a research project; and increase communication because it takes time to share knowledge.

Gough wanted to keep the dialogue going. He called on the organizers of the conference to have monthly or bimonthly conference calls to take the minutes of the conference and start some action items right away. He urged everyone to join linkedin.com so we would all know who we are. We could also form a group and get on with it.

White felt we should continue or increase the funds in provincial innovation funds to help deal with that early seed capital gap. We also need to foster entrepreneurship as a viable and rewarding career path after university. He referred to a program at UNB which is teaching entrepreneurship skills to engineering students. Gough pointed out that they had started up an entrepreneurial program at GENIus and offered to share the experience with UPEI because MacLauchlan is interested in starting one there.

As Freedman closed the conference, he pointed out that entrepreneurship is alive and well in Atlantic Canada. RESEARCH Money had tried to create a neutral ground for dialogue between the stakeholders. This was a start not a finish. Since there seemed to be a desire to do something out there, he suggested they do an annual report on Atlantic Innovation and promise to deliver it every year so the region would have something to measure its progress. Atlantic Canadian problems aren't very different from problems in the rest of Canada and the rest of the world.

Then he thanked the conference organizers and supporters.

Suggestions arising at the conference

There were no formal motions or votes taken but here are some of the suggestions that arose at the conference.

Panel 1

What you need is fractions of phenomenal people in your area who can get close to the company and add experience and breadth to the management team. This is a program the audience could focus on. How do you bring seasoned professionals home and help them set up consultancy roles within your departments to help young companies develop. Twenty per cent of five people who could add to the management teams would make the venture capitalists much more comfortable. Nancy Mathis

A technology information network would be a tangible way to link academia and business to get some win wins in the community. At the very least there should be a press release at the end of the day or summaries of good discussions. David Gough

If the SR&ED money would flow, I would continue to invest more money. That's what is throttling me right now and I think that's something that this group could play a role in fixing. Nancy Mathis

Federal tax credits aren't any good to start-ups because they need to make money first before they can access them. You need access to the money while you're still growing. So fix it. Robert Orr.

Panel 2

Angel investors are very gun shy about IT companies because of their high risk factor. Maybe something could be done through public or fiscal policy to reduce the risk for those investors. Peter Forton

The government has a critical role to play in the very early stages to help advance companies to the next level where they can be picked up by venture capitalists. Peter Forton

Entrepreneurs, IRAP, NRC and others should think like investors and look at things like the true market opportunity and what kind of human resources companies have to execute their business plan. BDC and Springboard are developing a course on this topic. Gregory Phipps

Focus on existing incentives and support to existing companies to develop new products and services rather than start-ups from universities. Gisele Levesque, Ron Freedman

Put an emphasis on the ED portion of SR&ED tax credits. Ben Forcier

Panel 3

If everyone walked out of the conference with a resolution to find \$15-20000 to support a graduate student, they really would have accomplished something. This would be one real step that individual businesses could take to support the relationship with the universities. Wade MacLauchlan

The best bet is to transfer the technology to an existing company. Serial entrepreneurs would be a good approach. They would have experience and could spin off a company based on the technology. If we could transfer the technology to an existing company, we should do that. Dave King

We need to have broader learning in the universities. What we are doing is half okay, but it would help if graduates came out with some knowledge of themselves so they could make commerce happen. Doug Barber

Programs like AIF should begin collecting output data such as how much money is being made by firms that receive assistance, where are the people going from universities that receive assistance, and are the companies that are created surviving? Jeffrey Crelinsten

Panel 4

If the skills gap is a specific area that is hampering the deal flow with the venture capitalists, the government could target some programs towards that area. There are some programs but they aren't targeting that problem as much. Jeff White

One concrete measure governments (either ACOA or the various provincial governments) could take is look seriously at having programs to help pay for executive recruitment fees and searches for board members who may work for nothing or next to nothing. Peter Forton

I'd like to see a measurable and cooperating tri-sector company or initiative committed to growing technology firms forcing everyone to work together. David Gough

I'd like to see regional industry associations, governments working together on a PanAtlantic basis and a virtual Atlantica university. David Gough

We have to reward attempts. We need to reward the entrepreneurs who are willing to go into battle and support them. When they get knocked down, pick them up and say. "Come on let's keep going. Jeff White

We need to: involve industry and academia in the definition of public policies related to economic development; maintain public funding to fill the gaps in the development of technology businesses; hire one student to work on a research project; and increase communication because it takes time to share knowledge. Yves Gagnon

The organizers of the conference should have monthly or bimonthly conference calls starting next month to take the minutes of this conference and start some action items right away so that we can have a second one of these next year. We might even want to have biennial video-conference calls as well to get us together. We could all join linkedin.com so we would know who everyone is. We can keep up the dialogue going and actually form a group, the Atlantic Technology or the Atlantic Tech Business Group and get on with it. David Gough

We should establish or continue provincial innovations funds that can supply seed money and increase their funding. Jeff White

If we want to retain our talent, we have to instil in graduates that entrepreneurship is a viable and rewarding career path to take after university. Jeff White

Publish an annual report on Atlantic Innovation and make a promise to ourselves to deliver it every year and measure our progress against it. If we don't measure it, we aren't going to do it. Ron Freedman