



CUTC
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**Canadian Undergraduate Technology
Conference 2005**

REPORT



Presented by

The McGill Delegation

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McGill Delegation CUTC 2005 Report

Introduction

In the middle of an Ontario-centric conference, the small delegation from McGill University managed to distinguish itself from the pack and prove its reputation as one of the top performing Universities in Canada. It was McGill's first appearance at this annual technology conference which brings together many of the country's best and brightest undergraduate engineering students in a true meeting of the minds. McGill was represented by ECSE students Luay El-Ghafari, Junior Galdones, Farah Qasemi and Renato Rispoli.

Incorporated into the conference was the launch of Microsoft's Imagine Cup 2005, an international technology competition. Delegates competed in one of five categories: Visual Gaming, Office Designer, Short Film, IT IQ, Technology Business Plan. We are proud to report that the McGill foursome of El-Ghafari, Galdones, Qasemi and Rispoli participated in the Business competition and were awarded first prize in their category. Awards were presented at the CUTC Banquet and the winners from each category were encouraged to participate in further rounds, with the Imagine Cup finals being held in Yokohama, Japan.

In addition to the imagine cup, other activities were held such as Technology Workshops, Seminars, Panel Discussions, Technology Exposition and Think Tanks. Keynote addresses featured some of Canada's top IT leaders, including David Yach, Senior VP of Research in Motion, Eugene Roman, Group President of Bell Systems and Technology, Allan Vermeulen, CTO and VP of Amazon, and Rosaleen Citron, CEO of Whitehat Inc. These industry leaders conducted interactive, informative talks and shared with the over 500 delegates their perspectives on the future of technology in Canada.

The McGill team also attended several seminars covering a variety of topics, including: change management, peta-scale supercomputing, and broadband communications.

Keynote Speakers



David Yach – Senior VP, RIM

Research in Motion was one of the first company's to address the need for mobile access to corporate information through the release of their Blackberry device. David Yach addressed the growing demand for interactive, secure access to corporate data through a wireless medium. In his talk, Mr. Yach discussed the constraints that govern wireless communication with contrast to the heavily deployed wired networks. Wireless access to corporate data may be conceptually simple but poses several implementation problems. According to Yach, issues include portability (Routing, coverage zones, reliability), constraints (battery life, bandwidth and latency), and asymmetry. Yach's mathematics background was expressed through real-world economic analysis of the costs associated with wireless data transfer and the proposed network implementation solutions. Aside from the technical functionality of any proposed solution, the design engineer must be wary that the implementation is usable, maintainable, scalable, and affordable.



Eugene Roman – Group President, Bell Systems and Technology

"The future is yours to create, not simply to ride."

- Eugene Roman

Bell is Canada's leading telecommunications company that is currently in the process of developing new technologies to better the lives of Canadians. The focus now is on Broadband Communication and Voice over IP, enabling users to transmit data and voice through the high speed internet medium. Aside from Bell's emerging products and services, Roman's talk emphasized that students need to take a more proactive approach on the future of technology, through their career paths. He encourages the students in attendance to imagine new possibilities and nonconformity. Through a recruiting pitch for his company, Roman took the opportunity to inform the audience, which comprised some of Canada's IT elite, to think about how their ideas and Bell's resources could fuse together to lead the way to an innovative future.



Allan Vermeulen – CTO and VP of Amazon

“Allan Vermeulen has to be the best of the keynote speakers that I attended while at the CUTC” writes Junior Galdones. He had an incredibly enthusiastic way of speaking and a very charismatic and easy to like personality. From the beginning he had the audience with his witty humour and his interesting analogy between Thomas Edison and the creation of the light bulb and the evolution of web services. First he describes Amazon as a technology company, somewhat of a mix between retail and internet, we as consumers are interacting directly with the business Amazon.com. As he describes web services, he thinks of it as a way for businesses to communicate with each other.

The current goal of Amazon Web Services (AWS) is to allow third-party developers to access the huge database of products and information that is available through Amazon.com and to use it to build their proprietary applications and websites for the use of business and/or otherwise. The idea behind web services is fantastic not only because it allows for innovation by all sorts of developers but also from a business point of view it may be lucrative for Amazon and even for the developers themselves. If a developer is able to make profit from his/her site while using AWS then they are required to pay Amazon a royalty fee for using their services. Therefore it was not surprising to note that some people have put AWS to good use and have been able to make a living off of their websites. What can you do with Amazon Web Services you may ask? Well the presentation was filled with great demos of simple applications built with AWS, a few sites worth seeing are: www.simplest-shop.com, www.amazonlite.com, www.musicplasma.com, www.googleduel.com and www.baconizer.com. While these applications may seem “Mickey-mouse” the possibilities are endless, and all it takes is one simple idea to get the ball rolling. To conclude, this speaker’s address was a great introduction to the concept of web services, and by the looks of things there could be tremendous job potential for future ECSE students.



Rosaleen Citron – CEO of Whitehat Inc.

When Rosaleen Citron speaks in front of a crowd, she truly takes over the room. She projects an aura of confidence, leadership, humour, energy and most importantly courage.

She is the chief executive officer of Whitehat Inc., an industry leading Information Technology Security Provider. Due to security concerns and strict confidentiality policies, Whitehat can’t make the list of its clients public, but it can be assumed that some of

today's leading corporations have utilized Whitehat's services to secure their IT systems. The IT security industry is a constantly evolving one. With the constant innovation and improvement of the skills of today's "hackers", a company's IT systems are in constant danger of being attacked by outsiders. Important information may be prone to attacks by viruses, Trojans and an endless list of predators that can use the smallest security hole to take over the entire database of a multi-million corporation. It's in a world like this that the services of companies like Whitehat are not only required but crucial to a company's survival.

Before being named as Chief Executive Officer of WhiteHat Inc., Ms. Citron gained valuable experience with one of the worlds largest Enterprise Software Providers and ISS Technologies Inc., a Bell Canada subsidiary. In 1993, with two decades of experience in the Canadian software industry, Ms. Citron founded 4comm Inc. as a computer security solutions vendor. With her customer support philosophies, extensive experience and industry knowledge she was instrumental in pioneering enterprise-wide security solutions for Fortune 500's in a specialized market sector in its infancy.

Ms. Citron is one of Canada's top women executives in high tech. She's engaged for her insight and expertise in publications such as the Globe and Mail, the Business Journal and the Wall Street Journal.

As an active member of the Computer Security Institute (CSI), the Information System Security Association (ISSA), and the Women's Executive Network, Ms. Citron is actively pursued for speaking engagements throughout North America. Ms. Citron is amongst the Profit and Chatelaine Top 100 Women Business Owners for 2002 & 2003 and has been nominated for the Ernst and Young Entrepreneur of the Year Award. Most recently Profit Magazine had nominated Ms. Citron as Canadian Woman Entrepreneur of the Year.

The keynote speech by Rosaleen Citron was very impressive and influential. Her speech was full of tips and suggestions to newly graduates in the field of IT who would like to go the extra mile and work their way up to entrepreneurship in this highly competitive and evolving industry. Some of her helpful tips and advice are as follows:

- Know something about everything and everything about something.
- Be a team player.
- Run, don't walk, when opportunity knocks.
- Set goals and live them.
- Learn the meaning of "endurance".
- Don't pay attention to others. Your work alone should be the focus of your attention.
- Have one-on-one talks with your boss.
- Bosses have the right to see what you're doing at your workspace. Don't assume that you can keep anything from them on the job.
- Make the distinction between "job" and "career path". Let go of the former; keep the latter.
- Learn to recognize unexpected opportunities (detours in your career path)
- Find mentors and keep them.
- Listen to your gut feeling.
- Stay at the top of your work.
- Never stop learning.

- Choose your life partner wisely. They play a very important role in everything you do.
- Get as many certifications as you can.
- Don't mark time. Go the extra mile.
- Keep corporate info to yourself.
- Stay open to relocations.

On being asked a question about women in engineering and the IT field from the McGill delegation, she gave a very impressive short speech about the empowerment of females in this industry.

Seminars

Off-site seminar – Bell TechTour of the Broadband Home



Bell's Broadband Home showcase at 207 Queen's Quay is the most recent display demonstrating Bell's latest products and services under the Consumer Services Development team. The delegation learned more about why Bell is a leader in technology, what it is like to work at Bell, the people, the work environment, and experience the vision of Bell's Broadband Home. The tour will included a couple of presentations from the consumer services development team and the HR department while also demonstrating some of the recently launched products such as Sympatico MSN services, online gaming, music store, VDSL and other products and services in development.

Bob Picard, Partner Brock Solutions – Change Management

Projects within an organization usually require employees to adapt to a new process or environment. Projects that are driven by costs reductions, acquisitions, divestitures, or regulatory compliance are likely unpopular with current employees. Special attention, beyond traditional engineering project management techniques, is needed to change negative behaviors and culture for long-term success.

The presentation described a proactive approach to managing this aspect of a project and the set of tools that should be used by project leaders and supported by management. When these tools are used effectively, the culture change required from existing employees will be more successful, lifecycle costs will be reduced, and the change will be sustainable.

Jim Mitchell, Sun Microsystems Labs - Towards a Peta-Scale Supercomputer

In July, 2003, DARPA (the U.S. Defense Advanced Research Projects Agency) awarded Sun Microsystems one of three 50M\$US contracts for a 3-year research program to develop in an integrated way the technologies that Sun would use to develop a peta-scale supercomputer in the 2010 time frame. DARPA calls this the High Productivity Computing System (HPCS) program.

Sun's notional system that we are exploring is called Hero (because it can be of heroic size). Perhaps its single most important technology is Proximity Communication, which enables chips in a system to communicate without wires by being placed every close to one another. The biggest impact of proximity communication is that it enables

Sun to develop a peta-scale machine with a globally addressable memory, which not only has high performance, but which also increases programmers' productivity by enabling a much simpler programming model than current, "cluster-like" supercomputers.

In his talk, Jim Mitchell described some of the fundamental technologies in Hero and how it can increase productivity in technical and scientific computing.

Technical Workshop

Beyond Email: BlackBerry Data Communications - RIM

RIM's BlackBerry handheld can be used for communication beyond email. This Lab consisted of two parts. In the first part, we learned to use a server side application to "push" an image to a BlackBerry. Then we had the opportunity to complete a BlackBerry application that listens for the incoming pushed data, accepts the pushed image data and displays the image on the BlackBerry. In the second part, we completed a BlackBerry application that connects to a web server, and then downloads BlackBerry Plazmic content for displaying.

Tech Expo

TechExpo is an event that showcased a diverse portfolio of technology, and offered delegates a high level of interaction with vendors, academic researchers, and undergraduates alike. Engaging personalities, special events, and an exhibit floor with cutting edge technology solutions for both today and tomorrow were all part of the TechExpo experience.

For companies, the TechExpo offered the opportunity to talk one on one with a younger market on a more personal level. TechExpo encompassed a wide variety of technological solutions, and showed not only what is attainable for the present, but what the future is capable of. In essence, TechExpo offered the delegates a sneak peek at the newest wave of technology, and gave the exhibitors the chance to demo their products to a prime demographic. TechExpo was all about bringing the future one step closer.

Imagine Cup

The Imagine Cup is an annual event held by Microsoft Corporation. It brings together thousands of students from all over the world in competition based events that range from movie making to software coding. CUTC kicked off the Imagine Cup events by hosting 5 events during the conference.

1. Project Hoshimi – Save the day!

Like games? This interactive visual gaming seminar will be sure to get your pulse racing! You are Ori, and your beloved Professor Hoshimi needs your smart nanobots to help him fight the deadly disease within his body. Help save the day by planning strategy and programming your own artificial intelligent bots using Imagine Cup's official contest AI SDK.

2. The Spirit of CUTC

Capture the spirit of CUTC through creative media! Delegates will take a series of photos and/or videos and incorporate them into a short film or slideshow that expresses the spirit of our conference. Take a dive into the heart of CUTC and see if your presentation can rise above the others. Group sizes must range from 1 to 3 members and each group must supply their own digital camera.

3. IT IQ

Think you know your stuff? IT IQ is a fast-paced interactive game where participants race to complete thrilling questions. Players can demonstrate their expertise in the IT field, or just come out to show their competitive spirit. Teams will have to think fast on their feet and work together to be acknowledged as champion.

4. MS Office Mindstorm

Tell Microsoft what you really think of their Office Suite of applications! Put your creativity and imagination to good use and present your ideas for add-ons or improvements to an MS representative. This is a fantastic opportunity to work with Microsoft and voice your opinions. Microsoft is waiting to discover you!

5. Let's Do Business!

Imagine a world where technology dissolves the boundaries between us. Are you interested in starting a sustainable business that serves and betters society? This workshop will guide you through the early stages of business planning, featuring a guest speaker who will share his insight and knowledge of the entrepreneurial world. Learn the ins and outs of creating a successful proposal and put your creativity and business instincts to practical use!

This was the first time McGill was represented at CUTC. We participated in the *Let's Do Business!* event and won first place. Awards were presented to the delegation during the closing banquet.

Think Tank

ThinkTank is an event that allows leaders from industry and academic institutions to come together with delegates to discuss important economical, environmental and societal issues. This event was an opportunity for delegates and leaders to brainstorm and discuss ideas, opinions and criticisms that deal with certain contemporary issues pertaining to technology. The focus was on initiating discussion, producing potential solutions to pressing problems, and allowing the delegates to make new connections. ThinkTank is as much about the experience of expression as it is the ideas that come out of it.

Several questions were pondered such as:

1. How can we create the necessary environment and capabilities to stimulate innovation in Canadian society?
2. What can we do to foster collaboration among individuals and organizations (e.g. government, industry, and academia) in Canadian society?
3. How can we create the necessary environment and capabilities to stimulate entrepreneurship in Canadian society?
4. How can we create the necessary environment and capabilities to stimulate leadership in Canadian society?
5. What can we do to encourage responsible use of technology in Canadian society?

Delegates were randomly seated in groups of ten, and each table was assigned a notable figure from the industry and/or the academic world. The fact that this event created an opportunity for the delegates to come together and mingle was greatly appreciated. One of the delegates, Farah Qasemi, was part of the table that was assigned the topic: *“How can we create the necessary environment and capabilities to stimulate entrepreneurship in Canadian society?”*

The team was to discuss possible answers to this question under the supervision of John Hantaoumakos, a leading IT consultant in the Canadian IT industry, and CEO of Hanell Consulting Inc. Following are the issues the team touched on, while discussing this topic.

“How can we create the necessary environment and capabilities to stimulate entrepreneurship in Canadian society?”

➤ *The difference between “self-employed” and “entrepreneur”*

You need to have a business of your own to be self-employed. To be an entrepreneur, you just need to start something new and market it. You can be an entrepreneur while working for someone else – even in a corporation!

- *How do you become an entrepreneur? Are you born one? Do you have to go to school for it?*

You certainly have to have certain personality traits to be able to survive as a successful entrepreneur. However, assuming that if you “have it in you”, you don’t need any schooling or education is not very smart. The “education” doesn’t necessarily have to be in the form of a university degree – you can teach yourself the principles of entrepreneurship at home using books and online tools. Mentorship and inspiration are also key components in training to be an entrepreneur.

- *What are some important entrepreneurship “drivers”?*

- Passion
- Ability to take risks
- Leadership
- Ambition
- Communication skills
- Self Motivation
- Desire to be one’s own boss
- Support by those around you

- *Can you be an entrepreneur while working for a corporation?*

If you think studying in the IT field means getting chained to your computer for the rest of your life, you’re wrong. You CAN get out on your own. Even ‘within’ the corporation you’re working for. Many pointed out that once you graduate, you really can’t be picky about the type of job you choose, because your first and foremost priority is finding a job in your field that pays well! However, the misconception that’s common among many graduates is that entrepreneurship simply can’t be tried or attained successfully that early on in one’s career. No matter what the size of the company you work for, you still can be an entrepreneur, while keeping your own job. It’s easier in smaller companies. However, the one thing that should be kept in mind is that whether you work as an entrepreneur from “inside” or on the “outside” of a major corporation, you still have to do everything to sell your idea. Being on the inside certainly gives you advantages, but you can’t assume that just because you’re on the inside you have it much easier than the others.

- *How can we create the necessary environment and capabilities to simulate entrepreneurship in the Canadian society?*

Keeping all of the above in mind, following are the conclusions our team came to:

- We need education and resources readily available in our society for those who want to take a shot at entrepreneurship. There should be different types and levels of education available so that those who face certain restrictions (time, money, dedication etc) can still have access to learning all the basics of entrepreneurship with no hassle.
- Education comes hand in hand with mentoring programs. Mentoring is very important in the development and encouragement of entrepreneurship in the society. A lot of entrepreneurship skills can’t be learned from books – learning comes from experience. Those who have had this experience should be able to

- pass on their knowledge to those who are new in the field, again, with no hassles.
- Inspiration is definitely needed for the society to welcome entrepreneurship with open arms. The government can play a part by projecting not only the failures of entrepreneurship (Enron, anyone?) but also by promoting the successes that new entrepreneurs have faced. Media plays a very important role in forming a society's opinions and ideas. We need more supportive media outlets when it comes to entrepreneurship in the society.
 - Family education and awareness is vital. Many people simply don't try their shot in entrepreneurship because their families don't support them enough. Many families would rather have their newly graduates work under stable, non-risky conditions. This outlook needs to change.
 - To distinguish and foster entrepreneurial skills early on in one's life, children's mentors and guidance counselors at schools should keep an eye out for such skills. They should make sure they educate those who are interested and make them fully aware of the qualities they need to acquire in order to become successful entrepreneurs.

Due to time constraints, these are the only issues we could talk about. All in all, ThinkTank was a very fruitful experience.

Acknowledgments

This conference was a first for the Electrical, Computer and Software Engineering Student Society of McGill University (ExCESS for short). When I was asked to be the McGill Ambassador to the CUTC two months before the conference, I was excited and worried all at the same time. I would like to thank the Faculty of Engineering, the Department of Electrical and Computer Engineering, and the Principal's Office for their generous donations. Without these funds, McGill would not have been so well represented at the Conference.

- Luay El-Ghafari, Ambassador to the CUTC