backbone

TECHNOLOGY | BUSINESS | INNOVATION

MEET THE
WINNER
OF BACKBONE'S START ME UP INNOVATION CAMPAIGN
JOHN MYERS SCORES THE TOP PRIZE

Ditch Your Crappy Passwords

Top Execs Tell You What To Do

Mobile Productivity is Leaving Canada Behind

FROM DETAILS TO DESIRES:

Companies aren't short on data. In fact, with the average large business storing more than 200 terabytes, companies have more than enough data to tell them when, where and who is buying their product. But few Canadian businesses have embraced the potential in all those valuable bits of information. To remain competitive in this increasingly competitive world of ours, data is going to play an increasingly more important role – but not just data; big data.

DATA'S NEW VOICE.

Welcome to the world of big data. Big data isn't just sales and inventory numbers; it is tweets, videos, clickstreams and other unstructured sources. It's the data of desire. And today, we have the technology and tools to make sense of it.

So now, instead of learning which customers it has lost, a company can learn which customers it might lose and present timely offers or products motivating those customers to stay. Using IBM Smarter Analytics to identify which customers were most likely to switch

"For the first time, we can decide which promotions to run based on facts rather than gut feel."

Patrick Neeley
Chief Business Officer, Chickasaw Nation Division of Commerce

THE POWER OF BIG DATA.

Combining big data with company data paints a better picture of the customer.

80%

of the data currently produced is unstructured – coming from sources like images, videos, tweets, posts and e-mails.

MINING MOTIVATION

Enter Smarter Analytics from IBM – software, systems and strategies that help companies combine their own enterprise data with their consumers' unstructured data to see a fuller picture. A big data platform, paired with predictive and sentiment analytics, allows organizations to correlate, for example, sales records with social media mentions for more relevant insights.

to another communications carrier, XO Communications was able to predict likely customer defections within 90 days, reducing churn by 35 percent the first year.

Data can help Canadian businesses become more innovative and competitive players in the Smarter Planet. How do we know? Let's just say, we have the data to prove it. **ibm.com/smarteranalytics/ca**

LET'S BUILD A SMARTER PLANET.

IBM

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THE SUCCESS ISSUE

The winner of our big innovation contest. How a Canadian is changing education in developing countries. Critical advice for young execs.

BY PETER WOLCHAK

Toronto resident John Myers is a successful guy. He was a senior exec at iconic Canadian company Nortel before joining three other ex-Nortel employees at start-up SoftArc. The four sold their product, FirstClass, to Open-Text, worked there for awhile, and then formed a new start-up.

And in May, Myers added another success to his list of accomplishments: his new company, Edsby, won the second-annual *Backbone* innovation campaign. Myers did a great job of pitching to the judges and Edsby, a cloud-based staff and student management system, seems poised for success in the all-important education market.

Edsby's four partners all have kids, and they realized that classrooms "haven't really changed since I was in school," Myers said. The company is working to change that by making schools more efficient.

The best part of winning, Myers said, is the light *Backbone* will shine on Edsby. "We toil in obscurity," he said. "All start-ups do. Our motivation for entering was the visibility *Backbone* can provide. That visibility means it will be easier to open doors to people we need to meet." Myers added he is confident Edsby has a great product in a critical market. "So the question is: will Edsby be a success or will it be a huge success?" We will follow Edsby over the next year, online and in print, to answer that question.

Canada 3.0 highlights success stories Our Backbone200 story (http://goo.gl/slZJE) named Canada 3.0 one of the best conferences in Canada in 2012, and the 2013 version continued that tradition. The conference is the only large gathering focused on Canada's digital economy and on how innovation can be used to create successful businesses. Attendees heard inspiring stories from Canadian and international leaders including Michael Serbinis from Kobo, Reed Hastings from Netflix, Club Penguin's Lane Merrifield, Jian Ghomeshi from CBC's Q and Tom Jenkins of OpenText.

We also heard from a lesser-known light: Suneet Singh Tuli. The CEO of Datawind is currently on-track to deliver 5.4 million Aakash tablets to the government of India. This follows the delivery of 100,000 tablets starting in 2011, after India decided it would use technology and Internet access to improve its economy and help citizens escape poverty.

The seven-inch tablets are very inexpensive to produce. Datawind finishes the touch screens at its Montreal facility, does most of the assembly in India, uses older processors and employs the free Android operating system. The tablets are subsidized by the Indian government and sold to students for approximately $35.

Tuli and his brother Raja, Datawind's CTO, were born in India but moved to Canada at a young age. They have already listed two start-ups on the NASDAQ, but success with Datawind means actually changing the lives of millions of people. "This allows us to bring the next three billion people on-board to the Internet," Tuli said at the conference in Toronto.

And the vision extends beyond India. Thailand has committed to giving all its 20 million students a tablet, and Turkey plans to distribute 11.7 million tablets over two years to students from kindergarten to university. Datawind hopes to win that business, and is currently working on 15 pilot projects in Latin America and Africa.

Those millions of people represent an opportunity to actually remake the education and economic systems of the world's developing nations, and that means Tuli is among the most influential Canadian tech entrepreneurs today.

Managing is about people. We asked six successful Canadian tech execs to share the best professional advice they ever received (page 12), and four identified colleagues as the critical element for success. Dave MacKay summed up the central theme of the article: "I have a strong belief that great people come before customers. If I have great people, I'll have satisfied customers and we'll all make a lot of profit and grow the business."

Building a business is about vision and product and financials and flash, but success starts and ends with the people who help you get there.

Welcome to the new *Backbone*

With this issue, we unveil a fresh, new and modern design. We hope you like it.

WWW.BACKBONEMAG.COM
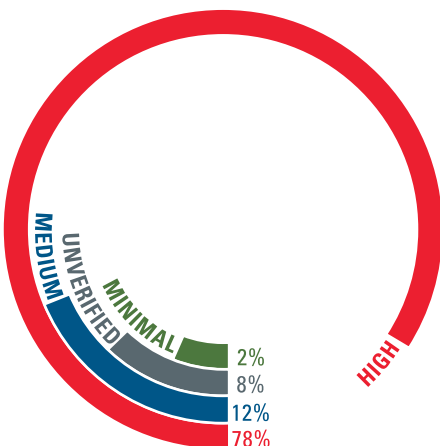
CANADA: Malware Haven?

MOST CANADIAN-HOSTED URLS CONTAIN MALWARE: MCAFEE

RISK SCALE FOR SUSPECT URLS ⊛

UNVERIFIED
MEDIUM
MINIMAL
HIGH

2%
8%
12%
78%

Suspicious Internet Addresses Hosted in Canada
In late 2011: **57,000** As of October 31, 2012: **155,000**

URLS AND RISKS

MALWARE **59%** PHISHING **29%** SPAM **9%** OTHER **3%**

Suspicious Canadian-hosted URLs and their Risks
Malware **59%** Phishing Scams **29%**

SPAM VOLUME SENT FROM CANADA ⊛

33% increase
Q2 Q3

Canadian-based Spam
From Q2 to Q3 2012, the spam volume sent from Canada by infected computers connected to botnets has increased **33%**

NUMBER OF NEW BOTS SENDING OUT FROM CANADA ⊛

25% increase
Q2 Q3

Canadian Infection Rate
From Q2 to Q3 2012, the number of new computers in Canada joining a botnet has increased by **25%**

Source: McAfee Labs, "Casper Telemetry Report Q3 2012" mcaf.ee/canadastats

Canada has a problem with malicious code—malware—and it's getting worse, according to McAfee.

Recent data from McAfee Labs shows Canada is hosting a growing number of suspicious Internet URLs and increasing the amount of spam being sent out of the country. As of October 2012, McAfee said in a statement, 78 per cent of suspicious Internet addresses hosted in Canada pose high risk for Internet goers, and 59 per cent of Canadian-hosted URLs contain malware. And then there's spam: from Q2 to Q3 2012, the amount of spam sent from infected computers in Canada increased by 33 per cent, and the number of new computers in Canada joining a botnet (infected network) jumped by 25 per cent.

WE'RE STEALING LESS MUSIC

2005 was a bad year for worried music-industry execs. One in five American Internet users aged 13 and older used peer-to-peer (P2P) services to download music illegally. But those execs can relax, at least a little: by last year, that percentage had dropped to 11. The volume of illegally downloaded music files also declined 26 per cent, compared to the previous year. Those numbers come from The NPD Group.

Why are we stealing less? According to NPD, it's because the industry has finally given us legal and convenient streaming services. Nearly half of those who stopped or curtailed file sharing cited the use of streaming services as their primary reason, the company said in a statement.

"For the music industry, which has been battling digital piracy for over a decade, last year was a year of progress," said Russ Crupnick, senior vice-president of industry analysis at NPD. "Among other factors, the increased use of legal and licensed streaming services has proved to be an alternative for music fans who formerly used P2P networks to obtain music."

Yahoo!'s Marissa Mayer is Wrong, Wrong, Wrong

AN OPEN LETTER FROM ROBYN BEWS, DIRECTOR, WORKSHIFT

The director of Calgary's WORKshift is amazed that Yahoo!'s CEO is cancelling or curtailing her employees' work-from-home options. The following opinion piece has been shortened; the full version is here: http://goo.gl/ofRSp.

Dear Ms. Mayer,
As the leader of one of North America's most respected and established technology companies, we are astounded that you would miss the opportunity to be an employer of choice by removing your employees' ability to work where, when and how they are most effective. This is obviously top of mind as you draw from the same talent pool in the same regions as your biggest competitors.

Have I missed the key data that supports that people (particularly knowledge workers) produce their most creative and inspired work between 8 a.m. and 5 p.m. while sitting diligently at their appointed workstation?

SHARING THE SAME PHYSICAL SPACE IS NOT REQUIRED TO COMMUNICATE EFFECTIVELY.

Yahoo! already knows this, as your 11,500 employees use technology to collaborate across your offices in more than 25 countries.

To say Yahoo! employees need to be neatly tucked into their cubicles each and every day contradicts your key business of helping people share information globally using technology. It goes against common knowledge about what motivates the employees you are trying to attract.

YOUR WORKFORCE IS YOUNG AND DEMANDS FLEXIBILITY.

Studies show flexibility is a key criterion when evaluating employment options and is often equally weighted to compensation. I suppose if you want to wipe your organization clean of self-starters, Baby Boomers, Gen X and Millennials, by all means, remove all flexibility and manage by presenteeism.

TELLING YAHOOS! THAT THEY MUST BE TETHERED TO LIFE IN A CUBICLE IS AKIN TO ALLOWING SMOKERS BACK IN THE OFFICE.

Like excessive commuting and life in cubicles, the hazards of smoking are well documented. As you know, logic and the well-being of employees prevailed and smoking was ubiquitously abandoned as a norm in the workplace years ago.

BYOD Taking a Firm Grip in Canada

Numbers from Avanade demonstrate just how entrenched the Bring Your Own Device movement has become in Canada.

In a global survey, the company found that 54 per cent of Canadian companies (61 per cent globally) report most employees now use personal devices in the workplace. For basic work tasks such as reading e-mail, online documents and calendar invitations, 46 per cent of Canadian employees use smartphones and 31 per cent use tablets. An additional 31 per cent use tablets for advanced business purposes such as CRM, project management, content creation and data analysis. It's interesting to note that companies are changing processes because of BYOD: 69 per cent of Canadian companies have changed at least one business process, including those in sales and marketing, HR and customer services, and 42 per cent have changed four or more.

we are addicted to
SMARTPHONE APPS

NO KIDDING. MANY RESPONDENTS WOULD CHOOSE TO GIVE UP WATER BEFORE APPS

The *2013 Mobile App Behavior* survey from Apigee is full of scary numbers: 82 per cent of those surveyed said there are apps they can't go without for even a day, including e-mail (57 per cent), Facebook (41 per cent) and alarm clocks (31 per cent). U.S. residents said they couldn't last even four hours without apps. Eighteen per cent of French respondents said they could not order dinner without an app, and nine per cent worldwide said it would be easier for them to invent a new source of energy than delete all of their apps, while 85 per cent admit they would give up drinking water rather than delete all of their apps.

The survey covered 760 smartphone owners across France, Germany, Spain, the U.K. and U.S. People were also asked what basic daily functions they could not complete without smartphone apps:

- 48% Check e-mail
- 32% Wake up in the morning
- 23% Feel happy
- 20% Navigate to work
- 19% Maintain my relationship
- 13% Find dates
- 12% Order dinner
- 10% Impress people

Worse, smartphone users are actually dangerous to others: 53 per cent of drivers across the world admit to using apps on their smartphone while driving. That number was greatest in Germany at 64 per cent and smallest in the U.K. at 30 per cent.

"Kelly asked yesterday and I said 'Yes!' We are so happy. We're getting married August 4. Watch Twitter, because I'll DM your invitation. Ya!"

Social media is taking over wedding announcements, even within Twitter's 140 characters.

A poll of 1,262 Canadian brides by David's Bridal found many are using social media to announce, plan and manage their big day. Forty-five per cent of couples now build special wedding sites and online registries, and many brides find vendors using Facebook (43 per cent), download wedding planning apps (35 per cent) and manage RSVPs online (24 per cent).

And while some use tweets to actually announce their engagement, six in 10 claim it is tacky to shout the news on Twitter or Instagram. Just fine, however, are Facebook (68 per cent), e-mail (67 per cent) or text (59 per cent).

And the social connections continue past the planning stage. Twenty one per cent of brides plan to post updates during the wedding, and one-third plan to log into their networks during the honeymoon. About 45 per cent will post honeymoon photos.

Nine per cent of respondents streamed their wedding on the Internet for those who can't attend the actual ceremony, and 30 per cent are open to the idea.

"While some brides are more private, our poll shows that social media may be turning a traditional wedding on its head as many use various tools and apps to not only plan their big day, but are also integrating it into their wedding," said Victoria Rucks, district manager at David's Bridal Canada, in a statement.

Wear a Suit to Job Interviews

Interviewing for a tech job? Forget that cool conference-freebie T-shirt. Put on a business suit, just like your mom and dad did back in the day. That's the conclusion of a new Robert Half Technology survey that found 33 per cent of CIOs favour a business suit for applicants. Another 29 per cent like tailored separates, while 29 per cent recommend khakis and collared shirts.

More than 270 CIOs from a random sample of Canadian companies were asked, "Which of the following, in your opinion, is the most appropriate interview attire for someone interviewing for an IT job with your company?" The bottom line: you won't lose a job by overdressing. After all, only seven per cent of CIOs thought jeans were appropriate for a job interview.

Still paying a fortune to the cable company? It's time to check out some options

BY JIM HARRIS

This column began with a Rogers bill. I was paying $200 a month for cable and a PVR, and feeling gouged. I set about to explore alternatives.

The term "cutting the cable" has become popular—a Google search nets 63.6 million results—and there are many alternatives for people frustrated with traditional cable providers.

Netflix: I have been a subscriber since the 2010 launch of Netflix in Canada. For $8 a month, I get unlimited viewing of movies and TV series. It's the best value going, and Netflix landed more than one million Canadian subscribers in less than 12 months.

Some subscribers have complained that the U.S. library is far superior, and thousands of Canadians use services like Unblock-us.com which, for $5 a month, fools Netflix and other U.S. services into thinking they're in the U.S.

Conclusion: For the value conscious, this is the best option. And even the Canadian library has some amazing series.

Digital Antennae: A digital antenna captures HD channels for free. One downtown Toronto condo dweller I know bought an indoor antenna for $80 from The Source and gets 15 high-definition no-charge channels. Outdoor antennae cost a bit more. And you can get a lot for free, including (in the Greater Toronto Area) NBC, CBS, CBC, ABC and PBS. A representative list is here: http://goo.gl/08uI.

Conclusion: Why pay for basic cable when you can get HD for free?

Bell Fibe: I am currently trying Bell's Fibe service. This is a direct competitor to Rogers HD, available in Toronto and Montreal only, and it's a lot cheaper: it starts at $20 a month for the first six months. A mid-level channel package goes for $51, with the best package costing $69. After six months the prices go up, but the regular price of even the best package is $104 per month, less than what I'm paying for Rogers. And Bell's interface is more intuitive and its PVR can store more HD programming.

Conclusion: TV providers offer convenience and a one-stop shop, and Bell does so at a better price.

Smart TV: My new Samsung Smart LED TV uses far less electricity, has a better picture and plugs directly into the Internet, allowing streaming of YouTube and other services. This means homeowners may not need to plug a computer into their TVs.

Conclusion: Some younger viewers spend more time watching YouTube than TV, so next time you go shopping ask "Can this TV stream content?"

Apple TV: And then there's Apple. We've been waiting for the rumoured Apple TV to reinvent TV. iTunes already facilitates innumerable TV and movie downloads, and the latest seasons of most new shows on cable are available once they've aired.

Conclusion: Please wait while this app loads... but fingers crossed.

Piracy: The high fees charged by TV providers creates the environment for file sharing, and there are many illegitimate ways to access content. Web sites point consumers to downloads of the season premiere of *Mad Men* moments after it airs, and services like Pirate Bay, Mega (the reconstituted Megaupload) and RapidShare facilitate millions of file transfers a day.

Conclusion: People don't admit to file sharing, so if we could only find the one guy who is downloading millions of movies a day we could figure out what is going on with this.

Clearly, TV is ripe for reinvention. This started with TiVo, which first liberated us from watching TV at a fixed time. It continues with Netflix, with 30 million subscribers worldwide and 25 per cent of all bandwidth consumed in the U.S. during the evening.

Much like Apple drove the reinvention of music with a 99-cent business model, TV is set to be recreated in an always-on demand model—and for a reasonable price. And the best bet for success will be the company that comes closest to the budget and technical skillset of the most people.

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revisiting
KNIGHT
RIDER

Are autonomous vehicles ready for prime time, or just the stuff of '80s re-runs?

BY LAWRENCE CUMMER

Exhausted and bleary-eyed after a seemingly endless day at the office, you call your car to pick you up. As you climb in, you give it the address of your daughter's school recital and it plots the fastest route using GPS and traffic data. As the engine starts, your favourite music comes on. You reach for your tablet and begin reviewing the quarterly results you had downloaded over the car's wireless network.

Science fiction, you say? Perhaps not. Technology and automotive giants like Google and General Motors are working on autonomous, or self-driving, cars right now, and experts say many of the building blocks are already in place.

"It's coming a lot faster than a lot of people realize," said Philip Gott, director of long-range planning for industry forecaster IHS Automotive. He said self-driving vehicles have less controversy around them, because the consumer benefits are obvious: they save lives, increase personal freedom, reduce congestion and eliminate the "hassle" of driving.

That consumer enthusiasm for autonomous vehicles was echoed in a recent report by auditors KPMG and the Center for Automotive Research. The report, which looked at the insights of leaders in government and in the automotive and high-tech industries, suggested that self-driving vehicles will be well accepted by the market due to the high cost of mobility, the pursuit of improved vehicle safety, the aging demographic of drivers and increased population density.

building blocks

Some of the required pieces are already appearing in the form of driver-assist technologies in modern cars, said Peter Hatges, partner at KPMG and lead of its automotive practice in

Canada. Fully self-driving cars, he said, are more than 10 years off.

Andrew Smart, director of industry relations and business development at SAE International, said one issue is simply how we define this trend. "The buzz around the industry is we need to get the proper nomenclature. 'Autonomous' is the wrong word, because it means that a vehicle will really be driving itself. What the industry is looking at right now is driver-assistance, or some kind of driver support," Smart said.

Experts point to the convergence of rapidly evolving vehicle communications systems and a number of advanced driver assistance systems (ADAS), including in-vehicle navigation, as the enablers of self-driving cars. These include:

Adaptive Cruise Control (AAC)

These systems use laser or radar sensors to maintain a driver-selected distance between vehicles, slowing down when approaching another vehicle and speeding up to a pre-set speed when traffic allows. These eliminate the need for drivers to constantly adjust cruise control for traffic conditions. Single sensor versions are most common, but recently vehicles with multiple ACC sensors have become available.

Lane Departure Warning (LDW) Systems

Initially developed for commercial trucks, these systems use video, laser or infrared sensors to alert drivers if the vehicle is leaving its lane; Lane Keeping Systems (LKS) automatically take steps to correct the vehicle if the warning is not acted on.

Blind-spot Detection Systems

Using radar or rear-looking video cameras, these systems detect vehicles approaching in the driver's blind spot. They flag moving vehicles and do not react to fixed objects like traffic signs. Detectors are located on both sides of the vehicle

to facilitate safe lane changes and can transmit alerts through warning lights or, in some cases, steering wheel vibrations.

Park Assist

Numerous manufacturers have been working on automatic parking technologies over the last decade. For example, Ford's Active Park Assist, found in models like the Ford Flex and Lincoln MKT, uses on-board intelligence and ultrasonic sensors to scan for parking spots and parallel park the car. On the other hand, bird's-eye-view parking systems display the relationship between the vehicle, parking lines and obstacles.

"All of those components exist today," Hatges said. "But the question is how do you put them all together and be brave enough to let the car drive on its own."

For example, he points to the Google driverless car project; the company has already developed a driverless car combining information gathered from Google Street View, artificial intelligence and sensors on top of and around the vehicle.

"The technology is not the issue. The technology is evolving fast," Hatges says. "The question is: what's the real application in the near term and long term?"

decongesting traffic

One near-term application Hatges sees for self-driving vehicles is traffic management to overcome congestion; autonomous driving could take some of the "human element" out of heavily travelled roadways.

"I don't think [drivers] are as good as computers at managing road, traffic and car flow on the highway," Hatges said.

If self-driving cars manage the distance between vehicles and improve the flow of merg-

ing lanes, highways and road capacity can be increased. Autonomous vehicles following each other nose-to-tail would reduce the impact of congestion, and have the added benefit of cutting fuel use due to drag.

Still, some human drivers can serve as inspiration, Hatges said. "You really want to see who's good at this; you have to watch traffic flow in Manhattan and see how the taxi cabs manage the road, and how they use every inch of the road."

road safety

Distracted driving has become a major source of accidents and unsafe driving, whether it's texting, talking on mobile phones or dealing with last-minute work. In addition, the enhancement of in-vehicle infotainment systems will only make it worse. Former General Motors corporate vice-president of R&D Larry Burns has famously quipped that, "for a lot of people, driving has become the distraction."

Self-driving vehicles would sidestep this. "To the extent that the car can safeguard itself… you have that added safety," Hatges said. "What you're [looking at] doing is preparing for the inevitable. You're giving people the information access they seem to crave all the time, but maintaining safety by controlling the car."

But not everyone thinks driving is a distraction. Toronto-based automotive analyst Dennis DesRosiers of DesRosiers Automotive Consultants fears autonomous vehicles would take the joy out of driving. "Obviously, part of the allure of the automobile is the actual driving itself," he said. "A lot of enthusiasts are horrified by the idea of taking control away from the consumer. But as my grandfather used to say, 'Nothing is idiot-proof to a dumb enough idiot.' And too high a percentage of drivers are idiots."

roadblocks ahead

With so much work already done in this area, will you soon be able to order next year's model on eBay and have it drive off the lot to pick you up? Not so fast.

Concept vehicles do exist, such as the General Motors EN-V (Electric Networked-Vehicle), which can drive autonomously, detect and avoid obstacles, park itself and come when called. Google said its cars have logged 300,000 test miles without "a single accident under computer control." Google has about a dozen on the road. But the infrastructure to communicate with such cars and clearance by regional governments remain stumbling blocks, and progress here can be painfully slow when compared with the raceway pace of technology. From a regula-

tory perspective, by the fall of 2012 only three U.S. states—Nevada, Florida and California—passed laws permitting driverless cars.

"The question is (when) will the infrastructure facilitate it?" Hatges said. "There's going to need to be changes there." He does expect existing high-end driver assist systems to become mainstream in the next five years, but "substantially" self-navigating vehicles will not appear sooner than 20 years from now.

TOP
FORD ACTIVE PARK ASSIST
Stunt woman Nina Armstrong parked a Ford Focus on a rooftop, using Ford Active Park Assist. Watch the video here http://goo.gl/EeXp9

BOTTOM
EN-V ELECTRIC CONCEPT VEHICLE
General Motors' EN-v electric concept vehicle is unveiled at the World Expo in Shanghai.

Don't be the smartest person.

WORK WITH THE SMARTEST PEOPLE

6 senior executives share the advice that made a difference.

Success is about hard work, talent, sometimes luck— and the right advice, followed at the right time.

Backbone asked six senior executives, all of whom lead Canadian enterprises with a major stake in technology and innovation, to share one piece of advice that shaped their personal and professional lives, and how they acted on it. Here are their stories, presented in their voices.

BY TREVOR MARSHALL

The Advice:
Don't conform

Origin:
Her father

I came as an immigrant to Canada. I was quite young—about eight years old—and I used to come home from school saying to my parents, 'I can't blend in. The clothes I wear, the lunches I eat, the way I talk—I really want to blend in'. And my dad told me, 'If you blend in, you're going to be like everybody else. You're not going to be different. But if you want to make an impact on this world, you have to be different; you can't conform.'

How it influenced her: When I went to high school, all the girls chose home economics. I went to electronics class. That inspired me to do more things like engineering and math. So I chose that when I went to university.

AMIEE CHAN
Chan is president and CEO of Norsat International, a Richmond, B.C.-based developer and manufacturer of satellite, microwave and other wireless systems with a global client base.

How it helps today: I still often find myself a minority in boardrooms, which are a male-dominated environment in the technology sector. And I find that there are certain cultures that just don't respect a female CEO. But because I've always been different, I find it doesn't matter so much to me. I'm more comfortable with it. In fact, I find that, whether it's in a boardroom environment or in a meeting to collaborate with a partner or customer, I tend to look at things from different angles. And that enriches the conversation. I think it helps in decision making.

I was out of graduate school and just started working at Bell Canada in the early 1970s. And I was fortunate enough as a young employee—a manager—to work quite extensively with one of the vice-presidents. In those days, in large companies, that typically did not happen.

How it influenced him: The advice may sound really simple, but as a young person coming into a company, finishing an MBA, I was all gung-ho to do more and build a career. His advice to me was: 'if you do things that are right for the things around you—whether it's what's good for a company or what's good for a family—everything else will line up to help you to grow and be successful.'

How it helps today: When you're working in the corporate world, and you hold down some of the senior positions, sometimes you have to do things that are not pleasant. Perhaps the company is in trouble and you have to reduce staff levels. If I look back at the people I have fired or let go, all of the relationships are still good. They're still friends and most of them would work with me again. So I look at my relationship with people, because we're dealing with people at the end of the day. Every business transaction or business decision impacts people. There's a human being on the other end somewhere.

The Advice:
Do what's good for the things that surround you

Origin:
A vice-president at Bell

KARNA GUPTA
Gupta is president and CEO of the Information Technology Association of Canada, the voice of the country's ICT industry.

The Advice:
Read 'If' by Rudyard Kipling

Origin:
His father

My father told me to model myself, and my life, after the poem. It covers everything about how you deal with things.

How it influenced him: I've pretty much been an entrepreneur all my life and I think one of the characteristics of entrepreneurs is they treat a failure the same way they treat a success—we just pick up and carry on. The words 'resilience' and 'tenacity' could be used [in] a number of the lines in the poem.

BILL HUTCHISON
Hutchison is chair and CEO of Hutchison Management International and chair of i-Canada, a not-for-profit alliance that fosters the development of intelligent communities.

How it helps today: While I've been involved in a number of businesses and generally have a pioneering or entrepreneurial nature, I have created about 14 consortia or associations...for which I was either a founding director or the founding chair. I did this in parallel with my work, and they're not easy things to do. But I have an ability to encourage people to join me and go after things that we have collectively felt needed to be done, generally as the result of the evolution of technology and how to make Canada a better place. The point is that when you stick your head out to do these things there are always lots of doubters, so you have to keep your mind focused on where you're trying to get to. This applies to life and to business.

The Advice:
Look to your right, and look to your left. The people beside you are going to be involved in your career for the rest of your professional life

Origin:
Terry Matthews

JIM ROCHE
Roche is president and CEO of CANARIE, the national organization that designs, delivers and drives adoption of digital infrastructure for Canada's research and education communities.

I started my career working for Terry. I came out of university about the same time he started Newbridge Networks. This advice was something he said at a staff meeting.

How it influenced him: I thought to myself at the time, 'Nah, that doesn't happen. We're going to work here for a period of time and then we're going to move on to something else and our paths will go in different directions.' But Terry turned out to be completely right. The gist of the advice he was giving was really that business is about relationships, and progress is made not only through technical innovations but, probably more importantly, as a result of the relationships that we form during our career and how we go about leveraging those relationships to accomplish our shared goals. That turned out to be profoundly valuable advice for me in my career.

How it helps today: When I'm involved in a negotiation, I recognize that the negotiation is just one instance of the building of a relationship with the people or with the company with whom I'm negotiating. While there are a ton of transactions that go on in business, each transaction is important only in the broader sense of the relationship you're forming.

A number of years ago I launched the Clean Technology Practice at Deloitte. And in order to really tell our internal folks that we were serious, I asked David Suzuki—who I didn't know at the time—to be our keynote speaker.

How it influenced him: He was telling me this in a sustainability context, but far more broadly what he's saying is that when we decide to stay in a community, in a place, it's our obligation to make that place a better place. People moan about the country, they say 'It's a big problem, I can't deal with it' yet, particularly for people with a C-level perspective, if it's not them who can change the direction, who can? I mean, this is our country: we can do whatever the hell we want! It's not someone else's problem: it's our problem. And by the way, it's going to be our children's problem, and our grandchildren's problem soon—if it's not already. So, are we going to allow someone else to make those decisions for us?

How it helps today: One of my big drivers from an OMERS Ventures perspective is, when I look at the future industrial strategy of this country and where the future jobs will be for our children and for our children's children, one of my biggest anxieties is that outside of natural resources my level of optimism starts to decrease. One of the areas I think is a tremendous opportunity is innovation-based industry. That is really the impetus behind our ability to deploy capital and at the same time make a lot of money for our pension members, because I think this is a great opportunity for our future generations here.

The Advice:
The most powerful words in the English language are, 'I am staying'

Origin:
David Suzuki

JOHN RUFFOLO
Ruffolo is CEO of OMERS Ventures, the venture arm of one of Canada's largest pension funds, with nearly $61 billion in net assets.

The Advice:
The only way you're going to get to the top is by being pushed up by your people

Origin:
John Watts, then-president of Computing Devices

DAVE MACKAY
MacKay is president of Ceridian Canada, a human resources company with more than 40,000 Canadian clients across all industries in the private and public sectors.

He was a real people person, which I really enjoyed, and he felt people really make the difference in a business. A lot of people talk about it, but not many act on it. When I went into management, I was an ambitious guy—I wanted to go fast and far—and he told me to settle down. He advised me to create great people, who would then push me up and out of the way.

How it influenced him: It's something that really struck home with me; it changed my philosophy and my approach. When you're new to management you want to be the smartest guy. This taught me not to be the smartest guy, but to have the smartest people and the best people working for me.

How it helps today: One of our key objectives for our organization is to be one of the best employers. It's a foundational element to how I operate the business. I have a strong belief that great people come before customers. If I have great people, I'll have satisfied customers and we'll all make a lot of profit and grow the business.

PREPARING STUDENTS FOR THE JOBS OF THE FUTURE

A digital media master's program that emphasizes experiential learning

A few years ago, you couldn't get a job in this business. That's because the job didn't exist. Today, the demand for Social Media Strategists, User Experience Designers, Digital Product Managers and Scrum Masters is exploding as media migrates to tablets, ebooks and iPhones.

Drawing on a rich history as an innovator in education, the University of Waterloo is responding to shifts in demand for a new breed of knowledge worker by launching a graduate digital media arts program. The Master of Digital Experience Innovation (MDEI) is geared to both graduating university students as well as working professionals hoping to expand their skillset and position themselves for the jobs of the future.

"This program is unique in Canada," explains Christine McWebb, Director of Academic Programs at Waterloo's new, state-of-the-art Stratford campus. "It is the most innovative, inherently trans-disciplinary program out there. It integrates creativity and design with business and technology."

Students come from a variety of work experiences and disciplines – from computer programming and graphic arts jobs, to philosophy and biology degrees. They study everything from marketing, design principles and practice, to User Experience (UX) – one of the hottest job categories this decade. And as an added bonus, students also complete the educational portion of the Project Management Professional (PMP) certification during the program.

The academic emphasis is on creativity, collaboration and team-based learning, combined with hands-on experience, through major industry projects with companies like Google, Desire2Learn and CIBC. In fact, the experiential learning part of the program is a huge draw for many students.

"You're not just hiring a right-out-of-school grad," explains student Josh Garofalo. "You're hiring somebody who has really tried to apply everything they've learned in the past year into a real-world experience." The major projects mean students not only get valuable, real-world experience, they may get a head start on the competition for job openings at companies where they intern.

Recruiters like Elisha Zagerman at Vitamin T in Toronto, which places talent for design-minded companies like ad agencies, mid-sized companies as well as start-ups, says combining theory with practice is likely to increase students earning potential over the long-haul.

Having both theoretical knowledge and real life experience sets you apart.

"I think that hands-on experience is extremely important when preparing for the job market," Zagerman explains. "Having both the theoretical knowledge and real life experience sets you apart and increases your skillset."

Many graduating students also have their eye on starting their own businesses. In fact, supporting the growing potential for new digital media and technology companies in Stratford is a major goal of the program. The University has launched an accelerator centre in Stratford with a focus on nurturing area start-ups and early stage tech companies – including innovation from students and academic research projects.
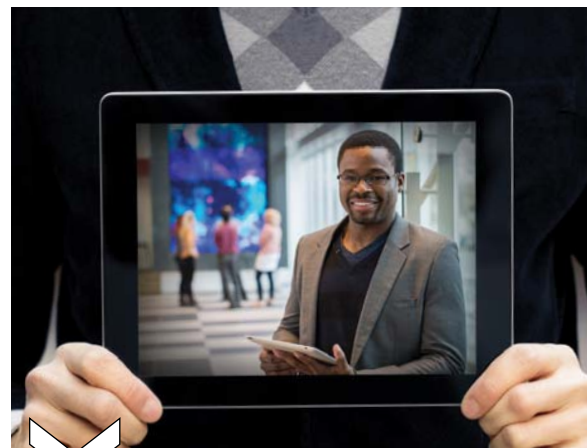
Major Projects

» Team-based projects at partner companies like Google, Desire2Learn and CIBC

» Projects designed by course instructors, students and industry coaches

» Trans-disciplinary teams teach students to draw from a range of team skills and strengths

» Students learn all facets of project management, from conceptualization to implementation

Project Management Certification

» Complete the educational portion of the PMP certification

» Program includes 35 hours of project management education

» Students practice what they've learned during team-based, industry projects

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Want to find out more about the MDEI program?

Get in touch with Program Coordinator, **Amanda Connolly** 519-888-4567, ext. 23004, who would be happy to answer your questions.

WATERLOO | STRATFORD CAMPUS

uwaterloo.ca/stratford-campus

HELP (REALLY) WANTED

Skills shortages in the tech sector are making it harder for innovative businesses—and Canada's economy—to grow. So what's an employer to do?

magine having to hire the entire population of Waterloo, Ont., or Kelowna, B.C., just to keep the economy and your business moving forward. That's about the size of the collective challenge currently facing Canada's Information and Communications Technology (ICT) sector, according to the Information and Communications Technology Council's report *It's Time for Action*. The report states that "Between 2011 and 2016, Canadian employers will need to hire some 106,000 ICT workers—more than 17,000 per year—posing a significant recruitment challenge."

If you're a start-up or an established Canadian employer in any sector looking for tech talent, hiring is a significant obstacle to your ability to innovate and grow, one that requires new approaches to recruiting and retention.

BY LISA MANFIELD

APPLY WITHIN

Despite a lagging economy and a national unemployment rate hovering around seven per cent, hiring activity in Canada's tech sector has bounced back from recession levels and has gone into a bit of a frenzy.

A 2013 Robert Half special report entitled *The Demand for Skilled Talent* puts the unemployment rate for several professional positions at less than half the national rate, creating what it refers to as a tale of two job markets: high general unemployment on the one hand, and skills shortages in certain areas on the other.

"The special report found continuing confidence in [the need to hire] technology staff," said Leslie Heathers, metro market manager (western Canada) at Robert Half Technology. "Eighty-four per cent of tech executives were confident in their firm's growth projections, and 15 per cent of CIOs said they planned to add IT staff in the first quarter of 2013."

But it's not just the actual high-tech sector that's hiring. Tech skills are now in demand in every industry. "High-tech is pervasive, and not just in traditional high-tech industries," said John Reid, president of the Canadian Advanced Technology Alliance (CATAAlliance). "Across the board now, you need a more sophisticated skill set."

WHERE THE DEMAND IS

With tech skills needed in sectors ranging from health care to oil and gas, a wide range of industries are feeling the crunch when it comes to finding the talent they need to expand. "With the aging population, there is a focus on efficient health-care delivery, and this is a key sector in need of skills," Reid said. "There's also much greater demand for jobs related to mobility applications and big data. There's a significant demand for data warehouse analysts in all companies. People have to understand the data they're collecting and how to build marketing plans with it, and this is a key growth area," he added. "Social media marketing is a significant job that is new to the scene for all companies. And software development, engineering and Web development aren't new, but they are in constant demand and short supply."

According to Heathers, key tech industry needs driving the demand for tech skills include IT security, help desk services, application development and tech support.

And across all sectors, technical occupations seeing the most demand, according to Benjamin Tal, deputy chief economist at CIBC, include managers in engineering, architecture, science and info systems; professional occupations in natural and applied sciences; civil, mechanical, electrical and chemical engineers; human resources

and business service professionals; and technical occupations in health care, among others.

"There is no surplus of labour in the tech sector, unlike the excess labour we saw in tech around 2002/2003, when people were graduating in excess from tech programs just as the market crashed," Tal said. "The shortage is above average now, and this will continue. The industry is evolving so much and different skills are needed all the time."

And the situation isn't about to improve anytime soon. "I think it's going to get worse," Heathers said. "Jobs are growing daily and there are only a certain number of candidates. Employers want a certain amount of experience and candidates have to get that experience somewhere."

Demand for technical skill sets does vary by region, though. "The shortage in technical skill sets is more profound in western Canada," Tal said.

Heathers has seen this demand first-hand. "In Ontario, it's not as much of a candidate's market, because there is more population there. More people are moving to Alberta—and especially Edmonton. Vancouver is a video game city," she added. "And in Edmonton, it's all about SharePoint. The numbers are surprising. A year or two ago we wouldn't get IT positions, and today we are. Firms are now investing in the tech they require."

AN EMPLOYEES' MARKET

With the tides turning in favour of employees, it's not as easy as turning up the dial on recruitment efforts for companies in need of skilled workers. With more demand on a limited pool of talent, many companies have to work harder to attract the people they require.

For BuildDirect, a 125-person building supplies e-commerce company that has doubled in size over the last six months, recruiting challenges have stemmed from the extremely competitive nature of its hometown—Vancouver. "In Vancouver, there are a lot of tech start-up companies, and everyone is competing for the same talent," said Heidi Rolston, v-p people. "We've managed to find people here so far. In the last four months we've added seven people to our IT team, but if that became 70 people, it would be a lot harder."

While it typically takes BuildDirect four to five weeks to fill a position, if that position is in IT, Rolston said, the timeframe can extend to four months. "If we can't get people in as quickly as we need, it delays growth in the business. You depend on those people. An added challenge for us is that we're looking for very specific people. We have a very entrepreneurial culture; we're not necessarily looking for entrepreneurs but for people who have that spirit. Certain types of people will thrive here, and we're looking for those kinds of people. We have a strong focus on learning and getting better every day, so we need people who have a learning orientation and educators who can help customers understand our products."

BuildDirect's story is one James Clift has heard over and over again. But for the CEO of KarmaHire, it wasn't until he had to solve his own pain points in hiring that he came up with the idea for an innovative solution: a recruitment marketing platform that allows employers to better market themselves to potential employees. "The hardest thing for companies to do is to get the right people to apply," Clift said. "The trend now, led by San Francisco start-ups, is to build a company brand by doing everything they can to attract the right people."

Today's most desirable candidates want to know about a company's culture, benefits and why they should work there, something traditional job postings don't tend to communicate very well. "Look at the job market from an engineer's perspective," Clift said. "The number one thing they want is a great work environment. The number two thing they want is good people to work with. And finally, they want interesting problems to solve; they want to be working with interesting technology. These people are in demand. They don't buy into the 'here's what you can do for us' approach. It's about 'here's what we can do together.'"

Clift surmised that giving job postings a facelift could solve this problem, and a year ago, launched KarmaHire to help employers better attract talent.

> SECTORS WITH THE GREATEST DEMAND FOR IT WORKERS: IT SECURITY, HELP DESK SERVICES, APPLICATION DEVELOPMENT AND TECH SUPPORT.

5 WAYS TO ATTRACT AND RETAIN SKILLED WORKERS

In a market jostling for high-tech skill sets, employers need to work harder not only to find critical staff, but also to retain employees when opportunities for movement abound, said Leslie Heathers, metro market manager (western Canada) at Robert Half Technology. Here are five ways to attract and retain tech staff:

ACT FAST:
"Clients need to be more educated about how fast they need to act. Talent gets snapped up—especially at the senior level," Heathers said.

USE SOCIAL MEDIA:
"That's where candidates will look, especially Facebook and LinkedIn."

OFFER COMPETITIVE SALARIES AND BENEFITS:
Last year tech salaries averaged $80,000, but this year there's been a $10,000 upswing, so companies need to budget closer to $90,000. "Employees also want to know: 'Do I get an iPhone? What kind of tech do you have? Can I work from home?' They want work/life balance."

SUPPORT CAREER AND PERSONAL GROWTH:
Candidates want to be able to go back to school, or to take time off, or be compensated for overtime. "Employers have to be willing to train employees and they have to be flexible in their job requirements or pay extra money."

ADDRESS BURNOUT:
Technical work is rife with tight timelines, long hours and pressure to deliver, and this can lead to stress and unhappiness. In a tight job market, the last thing you want is unhappy employees.

"We're reinventing the job posting," he said. "We take a standard ad and create a story around the whole company."

Clift's template is image-based and includes photos, maps and, soon, video. "We look at recruiting from a brand perspective. How do you make sure you're first in mind. How do you optimize for those touchpoints? Seventy-five per cent of people browsing ads are window shoppers and they're already employed. But if they see the right one, they just might apply."

KarmaHire's platform integrates with job aggregators like Indeed.com and Simply Hired, and has resulted in conversion rates three times higher than the industry average.

It's an approach that's worked for Invoke Media, a 50-employee Vancouver-based digital agency with an in-house start-up incubator currently working to get seven start-ups off the ground. "We're looking for innovative thinkers who can collaborate across teams," said Keith Ippel, COO at Invoke.

"Traditional recruitment tools don't get the job done. We've put out a great brand and great story, but sometimes you need someone immediately and you need to stitch together many disparate siloed channels with a single unified message. KarmaHire allows us to more seamlessly recruit across different channels, and it gives us actionable intelligence—analytics around applicant tracking. Finding the right fit takes time (six to eight weeks on average) and KarmaHire has been able to shave time off. We haven't had a lot of success with anything else."

Rolston has also used KarmaHire for Build-Direct, in addition to the same job boards the company has always used, and attests that "it does a better job of telling candidates who we are, which helps candidates make a decision about applying. We've created a unique employee experience, one that is compelling," she said.

PUTTING PEOPLE FIRST

With skills shortages only getting worse, finding the right tech staff now means adopting a people-first approach, putting more stock in potential and fit than on a direct skills match. "Companies are realizing it's not about the exact skill set, it's about the right people," Clift said.

And nowadays, the right people in tech aren't the same faces that have dominated the sector for years.

"We're moving into a time of women-led leadership and diversity," Reid said. "All these skills are in demand globally, and people are mobile now. We're in a highly competitive job market along with China, India and even Australia. Canada needs to attract talent internationally, and employers need to understand multiple cultures and how they work."

TOP ▲
KIETH IPPEL
COO, Invoke Media

LEFT PAGE ◄
JOHN REID
President, CATA Alliance

LEFT TOP ROW
BENJAMIN TAL
Deputy Chief Economist,
CIBC

HEIDI ROLSTON
v-p people, Build Direct

LEFT BOTTOM ROW
JAMES CLIFT
CEO, KarmaHire

LESLIE HEATHERS
Metro Market Manager,
Robert Half Technology

LIGHTEN YOUR LOAD

AVOID BACK INJURIES WITH LIGHTER TECH AND COMMON SENSE

BY JASON RODHAM

WE'VE ALL BEEN THERE: it's the night before a big business trip and you're standing over your suitcase wondering what you should bring. You need the smartphone, laptop, tablet, projector, mouse, Ethernet cable, e-reader and the huge tangle of chargers, cords, dongles and associated peripherals that go with them.

Or do you? "What I'm most concerned with is weight," said Marnie Downey, president of ergonomics consultancy Ergo. "If you've got too much weight and it's not centred or it's not positioned properly, you've got torque forces."

Those torque forces are generated when you carry a briefcase over one shoulder, for example. In order to keep from falling over, your body tilts to one side. "If you're carrying that laptop all the time," Downey said, "those awkward forces can lead to pain and stress."

CHANGING HABITS

That's why Darren Arbic, a physiotherapist with PT Healthcare Solutions, puts a "big emphasis" on the preventative side of the equation. "We have to educate people on how to carry things properly, how to decrease their load and how to be smarter with the stresses they are putting on their body."

As a former member of the Israeli Defense Forces, independent IT trainer Mitch Garvis understands the value of a well-packed load. "When I was in the military, we never went anywhere without taking everything we needed."

Although he spends two-thirds of his life on the road, travelling from city to city, "I didn't think about the weight I was carrying until after my car accident." The aftermath of the collision caused him to evaluate what he carries every day, and one tech acquisition made that reassessment easier: he bought a Microsoft Surface Pro, a tablet that runs Windows 8 and has the power of a full-blown PC.

Weighing in at a paltry two pounds, "the Surface made me sit down and evaluate the things I really needed versus the nice-to-haves."

Prior to his acquisition of the Surface, it was not unusual for Garvis to appear at the airport with three or even four laptops and all the sundry equipment. Now his entire tech load-out for an extended business trip adds up to just 13 pounds. "The heavier the load the harder it is for me to get to sleep at night."

Downey, who has been providing businesses with practical solutions to their ergonomic challenges for more than 15 years, said it's critical to get "people to think about what they really need to take to their meetings."

In the end, "it comes down to assessing how you're using your equipment." In an era when most people reflexively reach for the nearest technology when they encounter a challenge, Downey said the least cumbersome and most efficient technology is often the most obvious. "The lightest load you can carry is still a pen and paper."

HOW TO CARRY IT

But weight isn't the only variable. How evenly and efficiently your technical load is distributed is almost as important. Downey said people who frequently carry unnecessary loads should strive "for a neutral posture."

When she's on the road, for example, she uses a pull cart. "I stack everything I need on there and pull it behind my body, rather than carrying things that are awkward." That means ditching the briefcase with the strap that was designed "in pre-laptop times" and opting for a modern messenger bag or ergonomic backpack that will distribute the load across your body. Comfort and stability can be improved through options like a good harness configuration, padded shoulder straps and a stout back pad.

IT trainer Garvis carries all his clothes and equipment in a large Swiss Army/Wenger backpack, with an Ogio messenger bag tucked inside. When he gets to a new city, he dumps the Wenger in the hotel room and carries the Ogio around for the day.

Physiotherapist Arbic always carries his ergonomic backpack. "It might not be the most cutting-edge look," but in our society "there's way too much emphasis on appearance rather than doing what's best for your body."

It's not uncommon in his profession, for example, to have to ask a client: "Do you want to continue to do this because it looks good, or because it's in your best interests?"

TIPS
FROM THE EXPERT

Darren Arbic, Physiotherapist with PT Health, offers these recommendations for managing your technical load:

REDUCE WEIGHT
"If there's anything you can take away from the load, that should be your primary objective."

DISTRIBUTE EFFICIENTLY
"If you have to carry a heavy briefcase, try alternating it from shoulder to shoulder."

IMPROVE PHYSICAL FITNESS
"Our goal is not necessarily to alter what a person is doing, but get them to increase their strength and muscles in order to carry that load."

THINK POSTURE
"If you're in a proper postural position that load can be transferred more efficiently."

OPTIMAL LOAD

So how much weight do you reasonably need to carry? Here is one possible business travel kit:

DEVICE	WEIGHT	FEATURES
LAPTOP		
11-inch MacBook Air	2.38lbs	Small, light, full featured
TABLET		
Google Nexus 7	12oz	7-inch, very light, doubles as an e-reader
SMARTPHONE		
iPhone5	3.95oz	The lightest of the market-leading handsets
CARRYING SOLUTIONS		
Tom Bihn Western Flyer backpack	1.79lbs	Backpack straps can be folded inside to convert it to a laptop bag
ACCESSORIES		
Optoma ML500 Portable Projector	2.5lbs	A niche product for presenters on the move
Belkin USB 4-Port Ultra-Mini Hub	1.6oz	Compact design ideal for travel
Voltage Valet Travel Power Strip	8oz	Works with both foreign or domestic voltages
Jabra Speak 410	2lbs	Speakerphone for audio conferencing, music
Microsoft Arc Touch Mouse	3.1oz	Folds flat for easy storage
Western Digital My Passport external hard drive (500MB)	48.6oz	Lightweight, portable storage

TOTAL: 13.5 POUNDS (SLIGHTLY ROUNDED) OR 6.1 KG

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Education software
start-up edges out
the competition at
annual awards
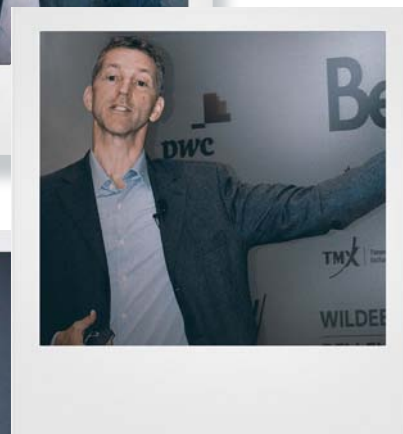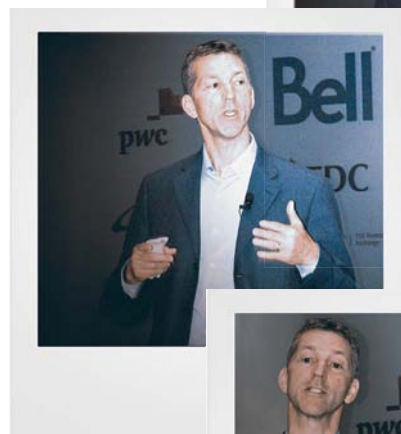
BY LAWRENCE CUMMER

A Canadian education innovator made the grade at the second-annual *Backbone* Start Me Up Innovation Campaign, bringing home top honours amid stiff competition.

Edsby, a cloud-based social learning platform that aims to help schools, teachers and parents better communicate with each other, took home top prize, the bulk of $100,000 in services, mentoring and products. Edsby and the team behind it impressed the judges at the campaign's competitive live pitch-off. Held May 6 in Toronto at the TMX Gallery of the Toronto Stock Exchange, the event was the culmination of months of work and multiple judging rounds.

The calibre of presentations this year was excellent, even compared to last year's strong slate of contenders, according to editor Peter Wolchak.

"We thought we had a tough time choosing a winner last year. If anything, the competition was stronger this year and, at the same time, there was more variety of solutions. We had gamers, infrastructure cloud solutions, wearable tablet frames, and end-user, B2B and enterprise software."

While the inaugural competition featured mostly early-stage software companies led by first-time entrepreneurs, the campaign this year also featured serial entrepreneurs, some of whom had already tasted significant success.

The competition asked 10 of the country's brightest emerging talents to convince a panel of judges—each with extensive background in entrepreneurship, research, software or professional services—that they had the right stuff. Each was given 10 minutes to sell a product or service to the judges.

This year's expert panel consisted of: Wolchak; Lance Neale, president and CEO of Van-couver-based integrated marketing firm Station X; Andrew Maxwell, chief innovation officer at the Canadian Innovation Centre; Eugene Bomba, head of PwC's emerging company services practice; Darin Graham, president and CEO of the Ontario Research and Innovation Optical Network (ORION); John Cardella, executive vice-president and chief people officer at human capital management software firm Ceridian Canada; Paul Day, vice-president of information and communications technology at Export Development Canada (EDC); Perry Dellelce, managing partner of legal firm Wildeboer Dellelce; Valerie Fox, director of the Ryerson Digital Media Zone (DMZ); and Mike Edwards, executive director of Grow Lab and co-founder of Launch Academy.

Contestants were judged on innovation merits plus the ability to execute and succeed with their business plans.

AND THE WINNER IS…

John Myers, president of Edsby, was widely considered by the judges to have "outpitched" his competitors. While his product obviously had to be very strong to win, Myers' strong performance on stage was critical in pushing Edsby to the fore.

Specifically, he painted a strong picture of the challenge school boards face with outdated communications between parents and teachers, and said cloud-based solutions could solve this problem. "We did some fundamental research and in talking to school boards and teachers, we found things work the same way they did when I was in school in the '60s: paper in the backpack is still the primary form of communication," Myers said during his pitch. "We came to the conclusion that teachers keep the three-ring binder companies in business these days, and even teachers who are tech savvy and try to do interesting collaborative things…are still pretty low tech."

Myers and his partners (brothers Steven Asbury, vice-president of engineering, and Jon Asbury, vice-president of design, and H.E. Scott Welch, vice-president of sales and marketing) have worked together for nearly three decades. Originally colleagues at Nortel Networks in the 1980s, the four ended up running CoreFour, creators of FirstClass, which was purchased by OpenText in 2002.

"One of the reasons we've been so successful is we have very complementary skills sets," Myers told attendees and judges. After selling their first start-up, they naturally gravitated back to the education industry because of an absence they perceived in top-tier software.

"The big guys just don't focus on that sector, and the little guys who build software, most of it doesn't work really well," he said.

Their solution allows teachers to use a Web interface to manage day-to-day tasks like attendance, grades, course planning and communications with students and parents. Students can use a smartphone or tablet to keep track of assignments, and parents can similarly find out how their child is doing with a few quick taps on their mobile devices. Cloud-based, the solution doesn't require an infrastructure investment from the school boards that use Edsby, and the software ties into the district's own security and authentication management system for security control.

Work began in 2010, with a pilot launch in 2011. Already the company has exceeded its 2013 goal of signing up 200 schools. Seed capital has been provided by CoreFour founders, but they are investigating the option of taking on outside investors to shore up sales and marketing efforts.

Myers suggested the software takes advantage of a growing trend of modernization in school, in which students are provided with mobile devices or are taking part in the BYOD (bring your own device) trend.

"Our focus is that we transform schools," Myer said. "We help them move to the cloud."

A CLOSE SECOND

Winnipeg-based start-up PO-MOtion was selected as runner-up. CEO Meghan Athavale said her chief motivator for entering the competition was a berth at Ryerson University's Digital Media Zone incubator, part of the prize package.

PO-MOtion creates interactive floor and wall displays that work using standard projectors, cameras and computer hardware, where competitive solutions lock users into proprietary equipment. These can be used as advertising or marketing vehicles or simply for fun at a party. A video demo is here: http://vimeo.com/63219629.

Whereas CoreFour's founders combine more than 100 years of tech innovation experience, Athavale suggested PO-MOtion stumbled onto innovation gold. "We started throwing parties where people could come and interact with projections on the wall," she explained. After she and business partner Curtis Wachs completed their first event using the original iteration of their motion controlled projector software— dubbed the Wonderland Interactive Party— guests posted videos on YouTube that quickly went viral. The two soon found themselves being asked to produce interactive experiences for major brands.

"So we're a company started entirely by accident," Athavale said. "We ended up creating a platform around the interactive displays we were building so that agencies with a high level of creativity but no development skills could make their own engaging, physical, interactive displays."

FOCUSED ON INNOVATION

The importance of innovation to the Canadian economy rang through the messages the judges delivered to the crowd, and was central to the comments from guest speaker Don Tapscott.

In his opening remarks, the author and business guru shared with the nominees five principles for innovation success: collaboration, refreshed intellectual property, transparency, interdependence and integrity. "A rising tide can lift all boats," he said.

And that tide of innovation Tapscott espoused is key to the success of the Canadian economy. He called innovation key to jobs, to social development and to the next generation, who face record levels of youth unemployment, but who would have an easier entry into the market if not for what he called "structural impediments," such as financing.

"This ought to be the halcyon days of entrepreneurship, because little companies can now, thanks to the Web, have the capabilities of big companies without the main liabilities of bureaucracy, and legacy culture and systems, and so on."

Backbone will hold this contest again next year, to help a new set of entrepreneurs get closer to their dreams.

JOHN MYERS
President, Edsby

MEGHAN ATHAVALE
CEO, PO-MOtion

THE TOP TEN

This year's *Backbone* Innovation Campaign saw a wide mix of challengers, all with top-notch inventions and ideas. In the end there can be only one, but all 10 had the opportunity to present and to network with the judges and attendees.

AIRSEMBLY

AirSembly is a software layer that enables service providers to quickly sell cloud services using traditional distribution models and existing infrastructure. This basically provides commercialization and delivery middleware for VMware.

"We see a great opportunity in that service providers desperately need these capabilities and there aren't competitors in the market today," Ben Morris, vice-president of sales at AirVM, told the crowd. AirVM is the Kanata, Ont., developer of AirSembly.

EDSBY

The 2013 award winner, Edsby is a cloud-based social learning platform that enables school districts and private school to transform the way teachers, students and parents engage with each other.

FLEETBIT

The flagship application of Winston Inc. offers taxi services a fast, affordable way to launch branded mobile booking and payment apps. The company has been cash-flow neutral since October 2012, bolstered by the white-label approach it takes with its taxi and limo service customers.

"The metrics for our white label app are pretty fantastic," boasted Aidan Nulman, CEO. Next step for the company is to investigate partnering with airlines and travel agencies to create a mechanism to easily integrate taxi into their service. "Our vision is to be the Google Ads for the taxi industry."

GLITCHSOFT

A developer of premium mobile games targeted at the core fans of action and superhero content, Glitchsoft recently released *He-Man: The Most Powerful Game In The Universe* for iOS.

Andrew Fisher, executive producer at Glitchsoft, said his company's strength comes from its patented stack of IP tools and best practices, delivered by a veteran team, each with about 10 years' experience in mobile gaming development—nearly a lifetime in that industry.

GOPAD

The first hardware finalist in the *Backbone* Innovation Campaign, GoPad transforms an iPad or iPad mini into a wearable computer that hangs around users' necks, allowing them to remain hands free.

A serial inventor, Peter Kielland, founder and president of Visionary Technology, has more than 30 patent applications under his belt. He funded the manufacturing of 850 first-generation GoPad's and sold all of them internationally, and has now moved onto a new model that supports the mini and offers improved ergonomics.

JOIST

A tool for contractors available today on the iPad, iPhone, Android and the Web, Joist lets contractors—such as roofers, landscapers and home renovators—create on-site estimates, send invoices and manage products from anywhere.

"Traction has been phenomenal," said Justin Kathan, co-founder of Winnipeg-based Joist. In only weeks, the app grew to have more than 1,000 contractor accounts. "And what we've found is that 60 per cent of those contractors have used the app to create and send an estimate to their customers."

MOUNT KNOWLEDGE

The brainchild of president, CEO and co-founder Erwin Sniedzins, who has over 18 years of managerial experience at Xerox, Mount

TOP ROW LEFT TO RIGHT
JUSTIN KATHAN
Joist

BEN MORRIS
AirVM

ROCK TREMBATH
PO-MOtion

MIDDLE ROW
IVAN LUKIANCHUK
Will Pwn 4 Food

JOHN MYERS
Edsby

ERWIN SNIEDZINS
Mount Knowledge

ALEX GLASSEY
StratPad

PETER KIELLAND
GoPad

BOTTOM ROW
AIDAN NULMAN
Fleetbit

YILUN ZHANG
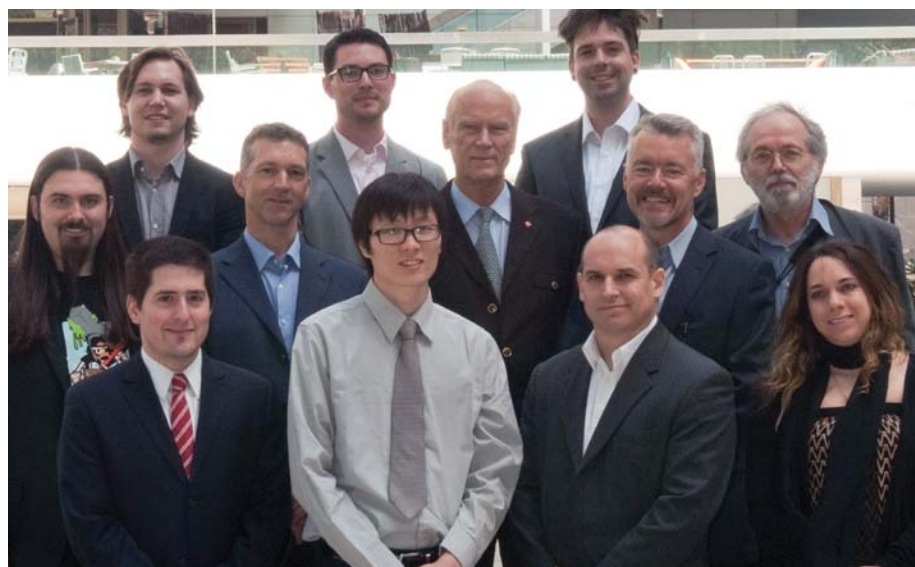Fleetbit

ANDREW FISHER
GlitchSoft

MEGHAN ATHAVALE
PO-MOtion

To view all presentations on video go to:
BACKBONEMAG.COM/ STARTMEUP/VIDEOS

Knowledge promises to allow students to learn subject matter up to 300 per cent faster than traditional learning methods. Using an intelligent engine that automatically creates more than 100,000 exercises and tests, the software also provides 32 per cent better learning outcomes, Sniedzins said.

He said his "ah-ha" moment came when hearing monks chant while recovering from altitude sickness during a climb of Mount Everest. He called Mount Knowledge a "Ferrari" of e-learning.

PO-MOTION
Campaign runner-up PO-MOtion uses any Web camera or IR sensor, projector and computer to create physically engaging wall or floor displays through simple design tools, with no coding required.

STRATPAD
Providing "innovation for entrepreneurs," StratPad is an iPad app that teaches strategy, finance and business planning to entrepreneurs and small and mid-sized business (SMBs), helping them create investor-ready reports and track progress toward goals.

Start-ups can use the solution to crowdfund the business plan developed in it, said Alex Glassey, CEO of Victoria-based Glassey Technologies, developer of StratPad. "If you're thinking this sounds like TripAdvisor meets LinkedIn, that's exactly where we want you to be," he said. "We have transformed the lives of our customers, and in doing so, transformed our own."

WILL PWN 4 FOOD
Capitalizing on the interest in competitive gaming and micro-transactions, Will Pwn 4 Food develops action games for Web browsers in which players compete for cash and prizes.

Currently focused on growing its user base, Will Pwn 4 Food aims to give gamers something they're missing today. "The problem is, these competitive gamers don't have anywhere to go," said Ivan Lukianchuk, founder and "Master Chief Executive Officer" of the Kitchener, Ont.-based start-up.

DodgeBots, its first game, allows up to 15 players to join for a dollar and the top five people split the pot. Add-ons can be purchased, including the ability to buy back into the match. These add-ons increase the pot—and Will Pwn 4 Food's share.

BACKBONE
START ME UP

TAPPING IN TO THE INNOVATION ECOSYSTEM

Being a successful start-up requires great ideas, dedication, courage and more than a little help—the help of an ecosystem of investors, incubators, accelerators, mentors, networkers and others, who bring financial assistances and connections, but also expertise and experience. One of the benefits of the *Backbone* Start Me Up Innovation Campaign is that it taps into that innovation ecosystem with a who's who of sponsors, and they reward competition winners with the wisdom of their years of industry experience. And, of course, the actual prizes are great too.

The campaign sponsors come from different industries but many share common advice for start-ups around building strength on strength, the need for deep market understanding, and the importance of single-mindedly focusing on factors that lead to growth. This expert advice comes from their own experiences fostering innovation inside their organizations, running successful start-ups or helping others thrive, and it showcases their commitment to Canadian innovation.

Dedication to innovation must actually be a constant ongoing experience for all companies, suggested John Cardella, campaign judge and Chief People Officer of Ceridian Canada. "You have to evolve," he told the audience at the Live Pitch off in Toronto on May 6. "If you don't evolve, you perish."

In that way all companies—small, medium and large, start-up or deeply entrenched—can benefit from advice on how to be better innovators.

OPENING SPEAKER
Don **TAPSCOTT**
CEO, The Tapscott Group
Author, Speaker and Consultant

Steve **DIETRICH**
Publisher, Founder
Backbone Magazine
President, Publimedia

Jeffrey **SCHWARTZ**
Vice President, Marketing,
Bell Business Markets, Bell Canada

SECOND & LIVE ROUND JUDGE
Eugene **BOMBA**
Canadian Leader of PwC's Emerging
Company Services

SECOND & LIVE ROUND JUDGE
Andrew **MAXWELL**
Chief Innovation Officer,
Canadian Innovation Centre

SECOND & LIVE ROUND JUDGE
Lance **NEALE**
President and CEO, Station X,
WalterTrax and Marqui Software

SECOND & LIVE ROUND JUDGE
John **CARDELLA**
Executive VP & Chief People Officer,
Ceridian Canada

SECOND & LIVE ROUND JUDGE
Perry **DELLELCE**
Managing Partner,
Wildeboer Dellelce

SECOND & LIVE ROUND JUDGE
Valerie **FOX**
Director, Ryerson Digital Media Zone,
Ryerson University

SECOND ROUND JUDGE
Dragan **NERANDZIC**
Chief Technology Officer,
Ericsson Canada

SECOND & LIVE ROUND JUDGE
Paul **DAY**
Vice-President, Information and
Communications Technology,
Export Development Corporation

SECOND ROUND JUDGE
Bram **SUGARMAN**
Associate,
OMERS Ventures

SECOND & LIVE ROUND JUDGE
Mike **EDWARDS**
Executive Director of GrowLab,
and co-founder of Launch Academy

SECOND ROUND JUDGE
John **WEIGELT**
National Technology Officer,
Microsoft Canada

SECOND & LIVE ROUND JUDGE
Dr. Darin **GRAHAM**
President and CEO,
Ontario Research and Innovation
Optical Network (ORION)

SECOND ROUND JUDGE
Ron **SHUTTLEWORTH**
Technology Analyst,
M Partners and Managing Director,
Razor Capital Partners

Canadian Innovation Centre · EDC · ITAC · ACTI · orion · Bell

CERIDIAN · GrowLab · STATION X · TMX Toronto Stock Exchange | TSX Venture Exchange

Digital Media Zone · Invest Ottawa | Investir Ottawa · pwc · WILDEBOER DELLELCE LLP

START-UPS NEED A STRONG BRAND
BRAND IS WHAT SEPARATES THE START-UP WHEAT FROM INDUSTRY CHAFF.

According to Lance Neale, president and CEO at Vancouver-based marketing, communications and tech firm Station X, developing a strong brand identity makes the difference when start-ups are bringing their ideas to customers, partners and investors.

"Once you know the idea is feasible, have a proof of concept and are moving into commercialization, it's important to start to look at your market and start to develop a marketing strategy and articulate what kind of brand you're going to

combines a unique mix of technology, strategy and creativity. Inspired by the secret intelligence headquarters where British Prime Minister Winston Churchill brought together an eclectic mix of thought leaders during World War II, the name told an important story about the new merged group.

Like the 12,000 mathematicians, cryp analysts, linguists, engineers and clerks who worked tirelessly to crack Nazi codes from the secret Bletchley Park location, Station X in Vancouver

brand identity and voice begins. Once these elements are established, Neale noted that a business (start-up or otherwise) is then in a very strong position to build out an effective marketing and communications strategy.

"Every successful entrepreneur will tell you that winning isn't just about having a great product or solution. This is only the beginning," Neale stressed. "To achieve success as a start-up you have to beat the odds, and this is done with the help of a strong team of supporters expert in various disciplines, through hard work, some luck—generally a by-product of hard work—and, if I may say, quality marketing."

For start-ups armed with great ideas, but not always extensive bench strength, Neale said it should be sought out, either through advisors, recruitment or acquisition, as in the case of WaterMarq, through partnership, or outsourcing.

"If you don't have marketing skill in house, you should find an expert that can help you."

Because Station X is itself a growth-oriented business in tech and communications, it is frequently approached by businesses looking for advisory or capital support. In addition, Neale has worked with and advised entrepreneurs and students through numerous organizations, such as Simon Fraser University, on teams focused on commercialization.

He stressed that in countless dealings with start-ups over the past decades (he's actually not that old), Neale can usually tell ones lacking in marketing expertise. "What I see most from

> "TO ACHIEVE SUCCESS AS A START-UP YOU HAVE TO BEAT THE ODDS, AND THIS IS DONE WITH THE HELP OF A STRONG TEAM OF SUPPORTERS EXPERT IN VARIOUS DISCIPLINES"
>
> Lance Neale, CEO, Station X

build," he said. "This is especially true now that we're in a time when content marketing is such an important part of the marketing mix."

In this way, start-ups and even more established players need to be looking at both their brand, and its "voice", through social media like social networking, blogging and micro-blogging (like Twitter).

"If you can do this at the phase where you're commercializing, it can really help you with your efforts to raise capital," he advised entrepreneurs.

By the time start-up businesses reach the phase of having to raise capital to invest in revenue growth, they should be doing so with a clear brand identity, developed out of a strong, ironclad business strategy, he suggested.

Station X underwent its own branding process in 2011, when ad agency TBWA\Vancouver was acquired by WaterMarq Technologies Inc., and merged with its Web marketing software division Marqui CMS. The new brand needed to reflect the character and essence of a firm that

is staffed by modern-day code breakers working diligently to crack the code to better results and growth for its clients in today's complex marketing environment.

The Station X brand leaves a strong impression with its most important stakeholders—its staff, shareholders and customers, an impressive

A STRONG BRAND IDENTITY MAKES THE DIFFERENCE WHEN START-UPS ARE BRINGING THEIR IDEAS TO CUSTOMERS, PARTNERS AND INVESTORS.

mix that includes QHR Technologies, Mercedes Benz, YMCA, E-Comm 911 and Ballard Power Systems.

Most of its engagements start with the same fundamentals that Neale prescribes to a start-up: a brand blueprint that defines the key brand components. Once defined and agreed on by stakeholders, the creative process of building

them is unrealistic expectations around their pitch, and it usually means they don't have a marketer on their team.

"They tend to show this prediction of hockey stick revenue growth, and without a marketing strategy behind it—without an honest defining of the marketplace, the true opportunity, in quantifiable terms—it's meaningless."

IS FIBRE RIGHT FOR MY BUSINESS?

If any of the following statements apply to you, **FIBRE MAY BE A GREAT FIT FOR YOUR BUSINESS:**

I want to **ENABLE VIDEO** conferencing for faster, easier, and more-efficient collaboration

E-COMMERCE or a **TRANSACTIONAL** web site is critical to my business' success

I work with an **OFF-SITE HOSTING** provider for my IT needs

My business stores and backs up customer information for use with **CRM TOOLS**

CLOUD COMPUTING applications are part of my product offering

I plan to provide **WI-FI SERVICE** to guests or visitors in all my office locations

I have multiple users and Internet service **DEGRADATION IS NOT AN OPTION**

PREPARING YOUR BUSINESS FOR GROWTH

Being able to adapt to new changes in information processing and peaks in Internet usage without the worry of delays makes fibre Internet an optimal choice to ensure a business is well-prepared for its continued growth.

"It is important for businesses to investigate both current and future needs," says Darcy Richard, Director of Product Management at Bell Business Markets, who recommends looking to fibre optic services—such as fibre-to-the-node and fibre-to-the-business from Bell—that provide enhanced reliability.

"Start-ups by their very nature need to prepare for growth," Richard says. "In fact, right out of the gate a lot of companies are starting with some fairly advanced collaboration tools and video conferencing capabilities, and those businesses are going to want Internet service that is more robust."

Fibre provides the "lightning fast" Internet speeds needed to fuel innovation in emerging businesses, according to Richard.

"Fibre is the future. Fibre connectivity can easily handle sudden peaks in Internet usage and download and upload speeds."

For start-ups and SMBs using the cloud to support business through an external hosting provider, the need for robust connectivity is even greater. "Furthermore, start-ups are now using cloud-based clients instead of data software from their PCs," Richard notes.

Richard points to the fact that businesses of all sizes and across all industries are becoming more dependent on the transferring of information, driving the need for better Internet performance. Richard also mentions that the increasing need to support multiple users—including employees, partners, customers and guests—is a trend that's driving the requirement for the levels of speed and reliability that fibre connections provide.

The increased use of video conferencing in business — to collaborate between business units, with teleworkers, and also with customers, prospects and partners—is another significant driver for fibre optics, according to Richard.

"Video conferencing minimizes the need for employees to travel long distances to meet clients and fibre Internet enables the Highest-quality of video conferencing," Richard says. That quality can be particularly important for small businesses and start-ups when doing business with external clientele.

"Using fibre Internet shows your clients that you are professional as it makes your business look well-equipped with the latest technology to respond to customers' needs," he says. "This is especially important if you're trying to drum up support for your business."

Fibre-optic technology also eliminates any concerns a business may have about consistency or reliability of their Internet connection.

Again, Richard stresses that for businesses of all sizes, fibre optics can help accommodate the adoption of future technologies.

"You may look at the speeds available from fibre and think, 'I don't need that right now,' but the more your business grows, the more data you'll be transferring, uploading and sharing, and therefore, the more speed your business will need."

EMERGING-COMPANY COUNSEL FROM PWC SENIOR MANAGER

START-UPS NEED STRONG TALENT, NOTABLE CREDIBILITY AND DEEP MARKET FAMILIARITY

Start-ups seeking success must have strong talent, notable credibility and deep market familiarity, says Eugene Bomba, senior-manager at PwC LLP.

And all are areas in which his firm can help. A specialist and national leader of PwC's Emerging Company Services—which focuses on early stage tech companies, from pre-revenue to early funding and growth—Bomba recognizes the value an innovation eco-system provides early-stage companies.

passion, since it cannot be trained. Diverse skill sets in sales and marketing, internal operations, as well as product development are also crucial. "You don't need three or four people who are all developers."

Externally, he recommends start-ups talk to their network to find good services firms. "Everybody knows everybody," and firms that serve the needs of start-ups tend to be recognizable and, like PwC, demonstrate a commitment to the sector.

even friends and family—and use those connections to build warm introductions to others.

"At the end of the day, those in this space see a lot companies. Your message in the first six months should be very different from the message in 18 months or two years."

INDUSTRY KNOWLEDGE:

Certainly a start-up can't be expected to know everything, but Bomba stresses the importance of spending time to understand the sector being entered.

"Do your due diligence around the market," Bomba advices start-ups. "Show that you're aware of your competitors and know your differentiation."

It is okay, he adds, if there are competitors in the space, but entrepreneurs must be prepared to explain how they are better than organizations with 10 to 15 years of experience. They must also be prepared to combat resistance to change.

"Chances are what you are offering is a new way to do things people are already doing," he

> "PEOPLE LIKE TO HEAR ABOUT A GOOD IDEA THAT SOLVES A PROBLEM AND SETS GOALS, AND THEN HEAR THOSE GOALS WERE MET."
>
> Eugene Bomba, senior manager at PwC LLP.

"That's where we come into play; connecting people with the start-up ecosystem," he says. "If you don't know angel investors or people who can help you with finance then your professional services partners should help make introductions for you."

As well, PwC can draw on its wealth of experience with other start-ups to provide neophyte companies with solid advice and lessons learned. Boba reiterates that start-ups need to do three things well to ensure they are on track.

THE RIGHT STUFF:

Bomba stresses the need for entrepreneurs to surround themselves with the right people. "The right team might not figure out a solution to a problem on the first try, but good people working with the same goals and passion will usually figure it out."

This need applies both to the business team and its professional partners. Bomba says start-ups must look for employees and partners with

START-UPS NEED TO BE PREPARED TO INVEST TIME AND SHOW CREDIBILITY-BUILDING TRACTION.

SHOW GROWTH:

Bomba said that funding doesn't happen overnight and start-ups need to be prepared to invest time and show credibility-building traction. "Just because you aren't going to be funded tomorrow doesn't mean you can't be starting the discussion," Bomba urges. "People like to hear about a good idea that solves a problem and sets goals, and then hear those goals were met or exceeded a few months down the road, and so on."

To show such momentum, he recommends sharing reasonable milestones with the market. With each set goal, start-ups should highlight their achievements with potential investors—

adds. "Change management and helping people understand that value of change isn't always the easiest thing to do."

In that case, a little market intelligence can go a long way. For example, in PwC's latest Vision to Reality survey of Canadian technology, CEO unease over revenue was found to be the biggest concern of the last 12 months. To this end, Bomba suggests start-ups don't hesitate in taking their money-saving or revenue-generating technologies global.

"Where some have struggled in the past is not thinking outside the country in terms of sales," he says. "You don't have to establish a fully functional business ready for scale before you sell outside."

THE FIVE Cs OF START-UP SUCCESS

DARIN GRAHAM,
CEO & PRESIDENT,
ORION

The tech market is witnessing a true move towards convergence that demands start-up companies focus on what Darin Graham, president and CEO of ORION, calls "the five Cs."

As head of the Ontario Research and Innovation Optical Network (ORION) and a partner at strategy company Innov8tive Minds, Graham sees firsthand the demands placed on entrepreneurs.

To succeed, Graham says start-ups must incorporate into their strategies connectivity, computing, cloud, (data) centres, and collaboration.

(ORION) ONTARIO RESEARCH AND INNOVATION OPTICAL NETWORK

CONNECTIVITY: The demand for connectivity is "blowing through the roof." ORION will be testing (Tbps) terabit per second throughput on its network within a year to meet its customer demands. "It's become clear that broadband connectivity is essential; if you don't have it you're economically stalled."

COMPUTING: Even applications that are "paper-thin" and running on mobile devices or thin clients require some heavy computing power. This is even truer, Graham notes, as applications collect and leverage customer data. Put simply, "big challenges require more computing."

CENTRES: The huge explosion in Big Data requires big, reliable data centres to house it. "At ORION we handle more than 100 TB of data a day on our network and that's growing at 50 per cent per year." Applications with video will only expand that demand, and lead to what Graham says will be "Extreme Data."

CLOUD: Graham says that despite naysayers, "Cloud is without question the way to bring applications that will help business." However, he adds that North America is behind. Start-ups must be looking at how to enable customer access anyplace and anytime via the cloud.

COLLABORATION: Nothing can be done alone anymore, and no single organization can accomplish something on its own, Graham says. "The real earth-shattering work that's occurring is true collaboration between organizations with a variety of skills."

Start-ups should look at the five Cs like a checklist. It's absolutely necessary for a company's idea to incorporate at least three of the Cs to have business value. For areas without expertise, partnering should be leveraged.

When you start having four or five of those things, "you will have a huge impact. Then you have real value to bring," he says. "If your product touches all five, that's when you clearly understand where the market is going and customers' needs.

THREE RULES FOR START-UP SUCCESS

MIKE EDWARDS,
EXECUTIVE DIRECTOR,
GROWLAB

Life-long entrepreneur Mike Edwards says start-ups need three things to succeed: focus, thought leadership and system hacks.

And Edwards, executive director of GrowLab, knows the tech start-up game. He has more than 20 years of experience investing in and building tech companies. He co-founded Area-Connect, a localized search directory, which generated significant return to its shareholders when sold in 2006. Since 2010, he has invested in more than 50 technology start-ups.

GROWLAB

FOCUS: "Do one thing and do it well," Edwards says. Mentorship can help, he said, but ultimately entrepreneurs must buckle down and ask themselves daily what needs to be done, and with each activity on that laundry list then ask 'why?'

Here GrowLab can help. "It helps you focus because, instead of just yourself, you have five people asking you, 'Why?' 'Why?' 'Why?' 'Why?' 'Why?' every day, and making you focus on what's important."

It also helps grow the start-up's network through international connections and a strong focus on Silicon Valley.

THOUGHT LEADERSHIP: The industry wants to see that start-ups know their stuff. "If, as an investor, I'm reviewing your app, I want to go onto the blogs of your specialty and know you're a thought leader in this space.

"So if you're creating a productivity app, I want to know that you're contributing content and being innovative in that space."

SYSTEM HACKS: Edwards suggests start-ups must aggressively "hack the system." For example, when competing in a competition like the *Backbone* Start Me Up Campaign, he recommends starting with a clear understanding of the rules, what the winner has to provide to win. "Always win based on the rules of engagement."

The same holds true in the 'competition' of growing the start-up business. "Everything that goes on is a chapter or verse—a unit—in the continuum of a growing company. I first need to 'win' getting people to believe in my idea, then 'win' at hiring a cofounder, then a customer, and so on."

One of the system hacks he recommends for start-ups at the stage of raising money is to get on AngelList. "It's the most efficient way to market your product," he says. As well, once tech entrepreneurs are looking for funding, GrowLab can connect them with its global network of start-up veterans and investors.

CULTIVATING START-UP SUCCESS THROUGH CROSS-POLLINATION

Start-up success doesn't come in a vacuum. In fact, start-ups should surround themselves with the perspectives and insights that come from contact with different disciplines and sectors, says Valerie Fox, executive director of the Digital Media Zone at Ryerson University (DMZ).

She advises the winners and participants of the second-annual *Backbone* Start Me Up Innovation Campaign to seek out insights and share ideas with other entrepreneurs from within and outside their industries, and of different sorts and sizes. "Peer-to-peer mentoring can be extremely beneficial, especially when surrounded by companies in different stages of growth."

Still, she stresses too the need for entrepreneurs to make solid contacts and build relationships with strong, established businesses that can provide a winning mindset as well as business opportunities. "The challenges of an established company are different, and if you're a start-up and hope to grow, it's really good to plug into what's going on."

Located at the Ryerson University campus in downtown Toronto, the DMZ creates a unique environment that cultivates the sort of cross-pollination Fox says is critical to start-up success. The incubator opened in 2010, but has grown in leaps and bounds alongside the start-ups it has helped flourish. Over the last year, the DMZ had to add 5,000 square feet, which it quickly "filled to the brim," Fox says, with the 28 new start-ups that joined the facility in 2012 and early 2013.

"It has gotten to the point where we're helping about 200 Canadian innovators at a time,"

cosmopolitan city, the DMZ doesn't set limits on entrepreneurs around their length of involvement in the program, meaning—all under the same roof—start-ups in different stages of development, with different backgrounds and experience, all mingle to mutual benefit. The program is designed to provide a flexible workspace where entrepreneurs collaborate on the next great social and commercial innova-

tions, giving young Canadian entrepreneurs a boost by bridging the resource gap faced by early-stage companies.

As the DMZ focuses attention on helping Canadian start-up businesses grow, Fox says Ryerson has recognized the need to encour-

dent, graduate or professional and provides an opportunity to combine their area of study with specialized learning in digital innovation, entrepreneurship and industry problem solving.

The DMZ is open to Ryerson students and alumni, but also any entrepreneurs with great ideas. Ryerson students are selected through "StartMeUp," a business start-up program run by Ryerson's award-winning Enactus Ryerson initiative and a committee of industry leaders, faculty experts, peers and mentors. Ryerson alumni and non-Ryerson entrepreneurs come in through the DMZ admissions process.

"On that note, we have in the last year opened up the doors to international scholarship, and we've had six international fellows from India and two from Israel," Fox says. "It was a fantastically successful program, because the companies from India and Israel were introduced to Canadian entrepreneurs and there

> ## "PEER-TO-PEER MENTORING CAN BE EXTREMELY BENEFICIAL, ESPECIALLY WHEN SURROUNDED BY COMPANIES IN DIFFERENT STAGES OF GROWTH."
>
> - Valerie Fox, Executive Director, Digital Media Zone, Ryerson University

was great cross-pollination. In fact, one of the international companies actually joined with one of the Canadian companies and created a third company."

To help their participants build relationships with industry, the DMZ has about 100 guests per week who visit, are pitched by the local start-ups, and share their insights. In addition, this year the DMZ is launching an accelerator program. "It's not only to accelerate the growth of the businesses here, but we invite industry in to bring their challenges, and we can build multi-disciplinary teams to solve them."

Fox reinforces that one of the most important tools for a start-up is an open flow of ideas. "Surround yourself with the right people, build a culture of collaboration, a culture of sharing. That has helped every one of the companies here, and us at the DMZ, thrive and be as successful as we have been."

ONE OF THE MOST IMPORTANT TOOLS FOR A START-UP IS AN OPEN FLOW OF IDEAS.

Fox enthusiastically notes. "It's growing so much that we actually have moved into another 20,000 square feet, which will allow us to help over 400 entrepreneurs."

Last year's Innovation Campaign award winner, EidoSearch, has moved into the new space, which now has grown to nearly 37,000 sq. feet.

As well as being in the centre of a lively

age new entrepreneurs to follow their business-building dreams. To that end, last year the University began offering the Digital Specialization Program, bringing together students from any background to form an inter-disciplinary team that develops future products and services that can be commercialized. The Digital Specialization Program is available to any stu-

PASSWORDS:
you're probably doing it
WRONG

HOW TO MAKE YOUR ONLINE LIFE MORE SECURE

BY GAIL BALFOUR

You take the name of your childhood pet, but add a "3" where the "e" should be. And then you add the birthdate of your second child for good measure. If this password creation method sounds familiar, beware. Chances are good that a hacker has already thought of it, too.

The scary truth is that hackers are getting much better at cracking passwords and most small and medium-sized businesses (SMBs) are far more vulnerable than they realize.

According to a large-scale study of password habits conducted by Microsoft Research in 2007, most Web users have about 25 accounts that require passwords but use an average of only 6.5 passwords to secure them.

Here are some other considerations: there are many free, readily available password cracking programs; an ever-growing list of leaked passwords is allowing hackers to quickly create algorithms to guess password variables; faster computers come up with billions of combina-

tions every second; and dictionary files containing millions of words combined with "rainbow tables" (huge sets of pre-computed combinations of letters, numbers and special characters) can overpower systems by repetition. This last process is known as "brute forcing" in the programming world.

Still feeling confident? Ironically, according to Bruce Johnson, co-founder and vice-president of technology of ObjectSharp Consulting, a technology training and consulting company based in Toronto, passwords that humans find the hardest to remember are usually ones that computers find easiest to brute force — to use a hacker verb.

What most people define as complex—a few characters that use numbers or symbols to replace letters in predictable patterns—are a walk in the park for many hackers, Johnson said. "Like confiscating tubes of toothpaste before you get on a plane, [complex passwords] make us feel better but it's not any safer."

1 PASSPHRASES VS. PASSWORDS

A better solution may be to use a longer "passphrase" rather than a traditional password. This is combination of three or four random words that have meaning to you and thus are easy to remember, but will not follow patterns hackers are expecting, he said. And if you include at least 15 characters, they could take years to crack.

Graeme Clark, director of IT operations at Toronto-based Points.com, an online loyalty program tracking firm, also advises his staff to "go long" when it comes to passwords. "Bad guys know people generally choose the minimum length they need to, and this makes it a lot easier to brute force a password."

Adding one extra character to an eight-character complex password increases the difficulty to guess by 100 times, and adding a 10th character makes it 10,000 times more difficult, Clark said.

And then there's reuse. "It's always a challenge to drive home the idea that it's not okay to use the same password everywhere. In a perfect world, you'd use a unique password for every account you have. People can and do actually do this, however, it generally requires software assistance in the form of some password generation and escrow software."

2 ONE-TO-MANY APPROACH

One company offering such a tool is Fairfax, Va.-based LastPass. Users can download the basic program as a browser add-on; all the encryption is kept on the user's end. The program manages the authentication, so all the user needs to remember is a master password. "We will hang onto the locked box for you, but we don't have the key," said LastPass online community manager Amber Gott.

Gott said password reset requests account for about one third of help desk calls at a typical company, and enterprise users spend a little more than an hour a month retrieving forgotten passwords. "If you are a 50-person team, that means you've lost 50 productive hours that month."

3 DIFFERENT NEEDS

Despite this, Clark said it can be tough to convince most SMBs to go to the length of password management tools, so at a minimum he suggests people take a stratification approach. Pick a password for high security needs (such as online banking) that you don't use anywhere else. Pick another for medium security needs (e.g. e-mail), and pick a "throw away" one that you only use on sites you don't fully trust.

"This approach can involve using as little as three or four passwords, and adds a significant amount of safety," he said.

Another common mistake is to use the same password to access both internal and external systems, said Efrem Habteselassie, principal of ACIS Consulting, an enterprise search and systems integration company based in Toronto. "One tip is to never reuse your server admin password for any other purpose. Hackers will try to harvest passwords and use these against all of your servers."

TOP ROW (LEFT TO RIGHT)
EFREM HABTESELASSIE
Principal, ACIS Consulting

AMBER GOTT
Online Community Manager, LastPass

MIDDLE
BRUCE JOHNSON
Co-founder and Vice-President of Technology, ObjectSharp Consulting

GRAEME CLARK
Director of IT, Points.com

BOTTOM
CARMI LEVY
Technology Analyst Consultant and Journalist

DAVID SENF
Vice-President, IDC Canada

10 MOST COMMON PASSWORDS OF 2012

1	PASSWORD	6	MONKEY
2	123456	7	1234567
3	12345678	8	LETMEIN
4	QWERTY	9	TRUSTNO1
5	ABC123	10	DRAGON

Source: SplashData

4

LEARNING THE HARD WAY

Habteselassie recalled an event where his company was hit with a Trojan attack. "They were then able to remotely control our servers and use them to send out spam e-mails by impersonating us. To gain such access they must have found our administrator password."

He said since the attack, the company's password policies have become much stricter. "As a small company, we have over a dozen passwords. It is a hassle to have to manage all of these, but ultimately it is a balance between the need for security and the process overhead for managing multiple passwords that must be changed periodically."

David Senf, program vice-president, Infrastructure Solutions Group at IDC Canada in Toronto, agreed different passwords for different needs are essential, noting that the complexity of the password itself should not leave you feeling complacent.

"Quite likely a Web service such as e-mail, banking, social networking or prominent online shopping sites have measures in place to thwart an obvious attack such as an alphabet attack.

"(But) password authentication is but one small part of an overall security strategy. Make sure that different passwords are used for different devices and online services. As demonstrated by the large leak of LinkedIn passwords recently, many users of the service who use the same username and password for other accounts were left exposed."

Carmi Levy, an independent technology analyst and journalist based in London, Ont., added that today's distributed, global environment necessitates a much different approach to security than it did in the past.

"The password has outlived its usefulness as the single lock on the front of the online door. While it may have been sufficient in an era of behind-the-firewall systems, [it now] needs to be complemented by addtional layers of access security that effectively balance convenience and protection."

5

WHAT ABOUT THE CLOUD?

According to Senf, security remains the number one reason Canadian firms shy away from cloud computing, although in general the cloud has more stringent security measures in place than the average mid-market company does.

"SMBs don't have the skilled security staff on payroll to proatively assess risk and put the proper countermeasures in place. For a cloud provider, that's a key component of their business."

Still, there have been recent examples where the cloud has spectacularly failed, such as the widely publicized case of Mat Honan, a technology journalist who had virtually all of his online accounts broken into by anonymous hackers who subsequently wiped out huge chunks of his data across multiple devices.

In an editorial for *Wired* magazine, Honan admitted there were a couple of things he should have done differently: backing up his data, not "daisy chaining" his accounts together, and using a two-factor authentication for his Google account, rather than just a password.

"The story of Mr. Honan...went viral precisely because of who he was, that knowledgeable folks like him shouldn't be as vulnerable as this. But they are. And as a result, so are the rest of us," Levy said.

TOP 5 SECURITY TIPS FOR SMBS

1. PICK PASSWORDS WISELY
Be smart about them. Try for 10 or more characters; don't use predictable words or patterns. Use different ones for different accounts. Consider a password management program or using passphrases instead.

2. ENCRYPT YOUR DATA
If you lose a laptop or other mobile device, your sensitive information is at risk. Drive-level encryption conceals data and makes accessing it almost impossible for anyone who does not have the password, said Bruce Johnson of ObjectSharp Consulting. "Users won't notice the difference."

3. STAY UP-TO-DATE
Keep your OS (Windows, Mac OS), applications (Adobe, Office) and browser (Chrome, IE) patched and up-to-date, said David Senf of IDC Canada. Free services such as Secunia can help make this easier.

4. IMMUNIZE AGAINST MALWARE
Don't forget the basics: ensure you have a good antivirus/ anti-spam program running in the background, said Johnson, who added there are many available for free, including Microsoft Security Essentials.

5. PLAN FOR DISASTER RECOVERY
E-mail is the number one application companies want back online first when a major interruption happens. "The good news is that more than 70 per cent of large and midmarket firms in Canada have some form of disaster recovery plan or insurance in place," Senf said. "The bad news is that fewer than half of small businesses do."

SQUEEZE EVERY DROP FROM EVERY IT DOLLAR

The best targets for your company's tech budget

BY IAN HARVEY

Pity finance execs and CIOs. Budgets are shrinking while the pace of business is increasing, and companies expect technology to deliver more functionality for less money. This reality is driving companies to scrutinize every dollar spent on technology.

Company priorities vary with sector, size, stage of development, etc., so we gathered a cross-section of opinions from enterprises to start-ups to help you make the right buying decisions.

START-UP: AXONIFY

When it comes to start-up leaders, few are as experienced and savvy as Carol Leaman, currently helming online learning provider Axonify. Leaman is a star in the Waterloo-Kitchener-Guelph Tech Triangle, having overseen more than a few tech start-ups.

She grew revenues at virtual reality start-up FakeSpace to $30 million from $2 million, and subsequently drove her next venture, PostRank, a Web analytics provider, to an acquisition by Google. Axonify provides online learning and training programs for a variety of industries based on a platform of behavioural science.

As a chartered accountant, Leaman is no slouch around numbers, and she's equally adept at technology, but the question of where to place her IT money stumped her for a moment. "We're a start-up so we have almost everything we need," she said at first. "We have computers, mobiles, Salesforce, all that... If I had a dollar it would go straight into sales and marketing, because that's what we need right now."

She paused, then added: "We have a couple of tablets though and we use them for sales booths at trade shows. Maybe we'd give every salesperson a tablet so that when they're with a potential client they can demonstrate the product quickly and easily in a mobile setting. That would work."

START-UP: CYBORG TRADING

Start-ups are lean machines. Every nickel goes into building the idea and then marketing it. Cyborg Trading is no different, even though the maker of automated trading software for the financial services sector started making money after its first year in business.

Since then, it's attracted close to $3 million in VC and federal government funding. Cyborg's ethos is automation, but it's not just a product, it's a way of working, said Ben Bittrolff, chief financial officer, who started the company with two partners six years ago.

"I'd put [funds] into more automation for our own systems and processes," he said. "We're big on automation. Part of it is that start-ups are lean but I think part is that our median age is 33, so we tend to look for automation software

first, rather than a large company, which would strike a committee to investigate and then have a consultant come in."

Cyborg is already on-board with SaaS offerings like Salesforce and other cloud-based services, and strives to avoid adding layers in the corporate structure.

"We want to be flat and organic, not have three layers of management," he said. For example, Cyborg has just implemented TribeHR, which automates just about every HR function.

"It's live on the cloud, the employee has access to certain parts of it and when they book vacations, for example, that goes onto a public calendar so we know, oh, Ginny is gone that week," he said. "It also automatically updates org charts if a job changes. The employees also keep it updated, much like a LinkedIn page."

Keeping it in the cloud means Cyborg only

pays for the software time it needs. He also likes that for most of the time there's no money upfront, meaning his mythical buck stretches further right out of his pocket.

"We can start for $20 a month and go to $2,000 when we need to," he said. "I want more of that."

SMB: SCOTTISH LION

Being a small retailer in a niche market doesn't mean you can't have a big footprint, and no one knows that better than Innis Campbell, managing director of the Scottish Lion, an online Nova Scotia-based purveyor of traditional tartans and all things Highland.

When he took over eight years ago, there were three stores and 14 employees. Today, he's down to 3.5 employees and no stores, but sales couldn't be better.

The difference is technology and the way the former IT worker—a graduate of Corel "university"—has set out his stall online. "At first we used QuickBooks and these systems from Bell and others, and we had to constantly input and re-input data; we were inputting shipping data from orders manually," he said.

The first breakthrough was switching to NetSuite. Its modular Web design, display and secure shopping options allowed him to easily build an online retail presence and shopping cart. The next was hooking up with Google AdWords three years ago.

"If I had a dollar I'd put more it into Google AdWords," he said. "I know the keywords pretty well and I've got it worked out so I get people looking to buy, not just researching Scottish culture."

AdWords have paid him back tenfold, he

said: "If sales are slow I can put $100 into Ad-Words and get $1,000 in sales. So, if I had $1 to spend, I would want to advertise but I think I would also spend it on Google AdWords Training to enable my company to use the system and all it offers more effectively."

ENTERPRISE: YELLOW PAGES GROUP

Reinvention is not something large-scale enterprises tend to do well, but it's adapt or die for Yellow Pages Group (YPG), the company indelibly remembered for the classic yellow block of paper which would thud onto doorsteps once a year.

While the paper-based directory's markets are shrinking, there are still a few places around the country where it remains the go-to source for local search. Still, digital is the future.

The last couple of years have been a maelstrom of change, said chief technology officer Paul T. Ryan, as legacy systems are overhauled or replaced and new processes are created. "Instead of one product once a year, it's been a big change," he said. "It's created a lot of stress."

Last year, YPG created more than 300 positions in IT and digital media. While the delivery platform is shifting, the key cornerstone of the business remains the same: it's all about the data.

The big difference now is that the data isn't static anymore, it's fluid and therein lies the company's challenge: tracking through the 500 gigabytes of data generated every day by businesses and consumers using online and mobile search.

Understanding what consumers are looking for, how, when and where they search, what content gets noticed, which ones lead to follow ups, and how their business customers can better build content and engineer more timely offers are all variables YPG has to capture, analyze and act upon, usually within a 24-hour period.

"We have to collect the most timely information, not just hours of operation and business proposition and specials, but also new pictures of their restaurants and what's new," Ryan said. "Content is the lifeblood of engaging consumers on mobile search." More to the point, he said it's understanding the data through analysis and enriching it to better respond to searches, which is where YPG sees its path.

So far, it has been effective. Since the shift to digital began, 38 per cent of revenues ($367 million) has been driven by digital sales, ranking YPG in the top 10 of Canadian digital companies.

"We need to know if people start searching for winter jackets suddenly in an area, why that is and if it's because of a storm coming, [and then] how our advertisers can push out offers to those potential customers," he said. "That's a huge value. If I had an extra dollar that's where I'd put it: more analysis to develop more rules that we can layer on top of searches."

ENTERPRISE: NEXJ SYSTEMS

As a serial entrepreneur, Bill Tatham is always focused on opportunity, but he's just as focused on making the world a better place, so perhaps not surprisingly, his buck would go back into his people.

After leading the management team that knocked start-up Janna Systems out of the park with a $1.76-billion buyout in 2000, Tatham found early retirement wasn't all it was cracked up to be. After funding a few start-ups with his new wealth, he decided to get back in the game in 2005, launching NexJ Systems.

It's similar in premise to Janna Systems in that it offers Customer Relationship Management services to the financial and health sectors, but it leverages cloud and social media to a much greater extent. "The great thing about the mythical dollar is...it's also an extra dollar!" he joked. With no hesitation, however, he says he'd put his money into a Personal Health Coach, a cloud- and social-media based service enabling personalized wellness and disease management between a patient and a health coach, using online portals and mobile devices.

Now you can take this as self-promotion, because it's a concept NexJ has developed for its clients, or you can take it as a trend in corporate management that recognizes that employees, not shareholders, are the great assets of an enter-

prise. "In pursuing our ambition to be a global leader in the market, obviously actualizing the employees is a great desire," Tatham said. "And it's key to accomplishing our objectives."

The goal of any company is to get employees to share and buy into the vision and then expect that every decision, every individual action is made in reference to that vision, he said, without sidesteps or wasted steps.

"In empowerment, education has to be focused upfront," he said. "Hiring is a challenge sometimes, but training people so they understand the mission and the messaging around what we do is critical to achieving empowerment."

Then, he said, a well-trained and empowered workforce is great, but how do you ensure employees stay focused and empowered? "I want to keep them healthy and well and keep them empowered and motivated at peak performance, minimizing days lost to sickness, personal reasons or mental health; to minimize downtime."

That's where investing in employees will pay off, he said. "Say a person has diabetes. She would take a picture of each meal and e-mail it to the counsellor. Twenty minutes later she'd be asked how she feels after eating. Or a sensor in her shoes [would prompt her] to take 10,000 steps a day."

In his eyes, those are dollars well spent.

MOBILE IN CANADA

EYES ON THE ROAD, FOOT ON THE BRAKE

HIGH DATA COSTS, LACK OF VENTURE CAPITAL AND A SIGNIFICANT TALENT GAP ARE JUST SOME FACTORS HOLDING US BACK

BY GAIL BALFOUR

Canadian companies want to invest in mobile technology: large enterprises want mobile to increase productivity, while small and medium-sized companies look to the technology primarily to drive innovation. But regardless of the reason and the willingness to invest, we're falling behind.

"We feel very strongly that no matter where you live and what demographic you are a part of, you need to be mobile, because everything is going to be pushing through that mobile device and that mobile Internet over the next decade," said Sara Diamond, president of Toronto-based OCAD University.

Diamond was one of several speakers at a roundtable discussion hosted by Ottawa-based CATAAlliance and *Backbone* magazine that brought together Canadian business leaders to discuss the state of mobile technology adoption in this country. She presented recent OCAD research and a mobile action plan that highlighted the crucial need for government and industry to work together to increase investment in, and support of, the mobile economy in Canada.

"Industry, in many ways, has to drive this transformation. But the public space and government have a very critical role to play here," Diamond said. "There are some concerns that (Canada is) pulling back on research and incubation investment, when that's been incredibly productive (in the past). You look at RIM for example. There's this relationship in this space between solid university education and start-ups, and we've got to continue to support it."

Another speaker, Namir Anani, president and CEO of the Information and Communications Technology Council (ICTC), said the breakneck growth in the mobile marketplace underscores the importance of Canada's need to invest in it more seriously—and the need to do so right now. "The mobile economy is not growing by four or five per cent as traditional systems (do)—it's growing by more than 25 per cent. In fact, research shows the apps economy to have a growth potential of between 25 and 42 per cent per year."

PRODUCTIVITY = COST SAVINGS

Anani quoted some staggering numbers. There are currently about 27 million mobile subscribers in Canada, and 67 per cent of them use mobility as a business tool. This adoption has already led to a four per cent productivity gain for business. "This four per cent equates to approximately $1,800 saved per person, per year. We estimate that even a one per cent productivity gain in Canada equates to approximately $15.8 billion, so this is huge."

His research estimates that the mobile apps economy already employs more than 50,000 Canadians. This number is expected to increase to 78,000 by 2016. "Imagine that in terms of the potential in the creation of jobs here in Canada," he said. "It's not about the devices; it's about the immersive experiences these apps can provide. Because that is really where the power is, and where the commercial aspects of the business opportunities are taking place."

All of which begs the question: if all of this is happening, why is Canada not making greater strides?

"Our biggest weakness is talent, talent, talent," Diamond said. "Even though we are production houses of talent at the university and college level, we are not producing enough, they are not focused enough and we are not retraining enough." Anani's research backs this up. He said that Canada will need to fill about 106,000 critical information communication technology (ICT) jobs by 2016. And, unfortunately, fewer students are signing up for these courses and career paths.

—to provide mobile services—and even to contract those out if it's needed," she said. "Partnership is also needed between government and the private sector to roll out high-speed mobile networks in rural and northern communities."

In order to encourage competition and drive down costs, the federal government should consider offering a tax rebate for mobile users below the poverty line, and provide Wi-Fi access through publicly funded institutions.

"Driving down the price of data rates is critical. The cost of doing business in Canada is really an inhibitor for companies outside mobile industries to adopt mobile solutions. We need to facilitate this," Diamond said. "On the other hand we have to look at some areas where we feel it is very important for Canada to be able to lead, particularly in m-commerce. We want to make sure that we have an opportunity to develop that talent so we are not in a future where data is controlled by our neighbours to the south, and where we don't have the ability to build the financial infrastructure of the future."

LET US BE LEADERS

The topic of data charges struck a nerve with event attendees, one of whom elaborated on what he termed the "horrendous cost" of data in Canada.

"You can develop all the technologies you want, but if you don't adopt them, you don't get productivity. Government programs are not about productivity, they are about developing new products," said Andrew Maxwell, chief innovation officer and director of partner relations with the Canadian Innovation Centre, based in Waterloo, Ont.

"So if, as a country, we really want to be a leader in mobile, we need to adopt. Yet the government taxes our adoption of mobile technology by maintaining incredibly high costs of data. It's cheaper for me to buy a data package in the States and use my American phone in Canada," he said.

"I am not suggesting the government should solve the problem. I am just saying they should get out of the way."

> ## "WE ESTIMATE THAT EVEN A ONE PER CENT PRODUCTIVITY GAIN IN CANADA EQUATES TO APPROXIMATELY $15.8 BILLION, SO [MOBILE] IS HUGE."
>
> Namir Anani

This is one reason the ICTC has begun investing in programs for students in grades 11 and 12 in more than 150 schools across the country. These programs are designed to teach kids about technology, business and communications with a creative lens and a fun approach. "It's been a hard climb, but we have managed to get some of the top industry (players) into these schools. It's a collaborative effort to try to build awareness at a younger age, because that is where the thinking behind innovation starts to take shape. Who better to embrace this than digital natives: they grew up in this space."

HIGH COST OF BUSINESS

Another challenge in Canada's mobile space is that it is too pricey, Diamond said. As a result, our access to capital and venture funding is very limited. So despite the fact that our country is an attractive locale for foreign investors,

particularly from Brazil and India, "there is a general sense that (mobile technology) is still too expensive in Canada, and it doesn't attract enough innovation."

So how do we fix it? Diamond's research and action plan pinpointed five priority areas Canada needs to focus on: learning, health, government services, entertainment and mobile commerce. And she has some ideas about where to start.

The federal government could reduce costs by decreasing tariffs, she said. Trade associations need to start acting as "matchmakers" and build bridges between the mobile sector and industries needing mobile services. The government could also provide funds from spectrum auctions to invest in Canada's research and skills training.

"There's a tremendous opportunity for government to migrate services to a mobile platform

WORK AWAY FROM HOME,

Full computer, 658 grams
DELL LATITUDE 10 WITH PRODUCTIVITY DOCK ◄

Microsoft has not set the tablet world on fire, partly because each flavour of Windows 8 tablets has a flaw: Windows RT tablets can't run most Windows software, while full Windows 8 models like Microsoft's Surface Pro are expensive and have poor battery life.

That makes the Latitude 10 an interesting device. It runs full Windows 8 but uses the lower-powered Atom processor. This delivers great battery life—I typically got nine hours from the battery, far longer than Surface Pro users expect—and the price is a bargain: at time of writing, the base model cost $600. (The cheaper Essentials version shaves $75 off but isn't worth considering.) And it weighs only 658 grams, or 1.5 pounds. I also like Dell's $170 Productivity Dock. It adds full-size HDMI, four USB ports, and a headphone and Ethernet jack. Adding a monitor, keyboard and mouse gives you a full Windows 8 PC.

The Latitude 10 isn't perfect. Dell, surprisingly, doesn't offer a matching keyboard case, as it does for its Windows RT XPS 10. And the Atom processor can become bogged down: the system stuttered a little when I tested it by opening a bunch of programs and streaming Rdio online music, but the performance is normally fine for a business machine. The $600 price tag plus its great battery life make the Latitude 10 a tablet well worth considering.

Tough to define, easy to like
SAMSUNG GALAXY CAMERA ➤

So, you like Android devices but you also like digital cameras with big image sensors and optical zoom. And you don't want to carry two things.

Samsung has you covered. The Galaxy Camera is a full-on 4.8-inch Android device running Jelly Bean (Android 4.1). You can use it to check your e-mail, read a book, play a game and watch Netflix. And it is also a capable 16.3 MP digital camera, with a 21x optical zoom, 15 shooting modes and a pop-up flash. It sports Wi-Fi and available 3G/4G cellular connectivity.

The idea is perhaps a little gimmicky but the Galaxy Camera actually manages to perform its two basic functions quite well. $600.

THEN KICK BACK

Carry on
BOOQ BOA COURIER 10 (TOP) AND TIMBUK2 POWER COMMUTE ➜

Stuffing $1,200 laptops and other gear into cheap and poorly designed bags can make commuting and mobile work less enjoyable.

Timbuk2's new Power Commute solves a common problem: running out of juice on the road. The $200 bag adds a Joey T1 battery to the company's excellent messenger bag. Before a trip or a day of business meetings, plug the bag in to charge the battery and then any device that uses a USB cable—smartphones, tablets, e-readers, iPods, GPS units, etc.— can get juiced on the road. The Power Commute is a great bag that also keeps your devices humming.

Booq's Boa Courier 10 embodies a cardinal travel rule: carry only what you must. Designed for 10-inch iPads, you can fit a Dell Latitude 10 with a Logitech K810 Bluetooth Keyboard and a mouse or even the new Samsung Chromebook into it. There isn't a lot of room for anything else, but the bag is stylish, small and light, making it perfect for tablets or short trips. $100.

Travel connectivity
VOIAMO GLOBALGIG ▲

This one is for business travellers: the Globalgig creates a Wi-Fi hotspot using cell data. It currently works in the U.S., the U.K., Australia, Ireland, Hong Kong, Sweden and Denmark. Pricing varies; the cheapest option is a monthly charge of $17 for 1GB of data, plus $99 for the device itself.

I used the Globalgig at a large industry conference in Texas and it provided reliable connections at good speeds.

TV where you are
SLINGBOX 500 ▼

Remember Slingbox? You'd be forgiven for forgetting, as the 500 and 350 are the first new Slingboxes in about four years. But the value proposition is the same: plug the box into your TV or DVR and it digitizes your television signal and sends it to your notebook, tablet or smartphone. This means you can watch your TV channels anywhere you can get an Internet connection. Travelling in China and want to watch a CFL game or provincial election? No problem.

The 500 ($300) delivers a 1080p signal, HDMI support and Wi-Fi. At $180, the 350 still delivers 1080p but drops the HDMI and Wi-Fi. Either box does a good job of delivering your TV to your mobile device.

EVENTS

FOR MORE DETAILS ON THESE EVENTS GO TO **BACKBONEMAG.COM/EVENTS**

JUNE

SES TORONTO
Toronto, Ontario
June 12-14, 2013

INFORMATION TECHNOLOGY LAW SPRING FORUM
IT.CAN, Toronto, Ontario
June 17-18, 2013

CUSTOMER EXPERIENCE STRATEGIES SUMMIT, WEST - 2ND ANNUAL
Vancouver, British Columbia
June 18-19, 2013

ATLANTIC VENTURE FORUM
Halifax, Nova Scotia
June 19-20, 2013

METABRIDGE
Kelowna, British Columbia
June 20-21, 2013

WESTERN CANADIAN HEALTHCARE SUMMIT 13TH ANNUAL
Kelowna, British Columbia
June 24-25, 2013

JULY

ACCELERATEAB
Calgary, Alberta,
July 10-11, 2013

AUGUST

GROW
Vancouver, British Columbia
August 14-16, 2013

SEPTEMBER

CANADIAN WIRELESS TRADE SHOW
Toronto, Ontario
September 25-26, 2013

BANFF VENTURE FORUM
Banff, Alberta
September 26-27, 2013

CANADIAN MANUFACTURING TECHNOLOGY SHOW (CMTS) 2013
Mississauga, Ontario
Sept. 30 – Oct. 3, 2013

ITECH SUMMIT
Edmonton, Alberta
October 8, 2013

OCTOBER

SECTOR - CANADA'S PREMIER IT SECURITY CONFERENCE
Toronto, Ontario
October 8-9, 2013

ITECH SUMMIT
Vancouver, British Columbia
October 10, 2013

SDEC13 | SOFTWARE DEVELOPMENT AND EVOLUTION CONFERENCE 2013
Toronto, Ontario
October 21-23, 2013

IT.CAN CONFERENCE 17TH ANNUAL
Toronto, Ontario,
October 24-25, 2013

NOVEMBER

COUNTERMEASURE
Ottawa, Ontario
November 4-6, 2013

60 YEARS IN CANADA

Ericsson is the world's leading provider of communications technology
and services, delivering leading edge telecommunications solutions
to Canadians since 1953. We have invested more than $4 Billion in R&D
in Canada; and as one of the top 10 corporate R&D spenders in the
country, we are bringing Canadian innovation to the world.

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ERICSSON