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THE REAL MEANING OF VALUE

How CPAs are building better communities BY JOY THOMAS

On a business trip to Amsterdam last year, a colleague and I found ourselves sharing a meal with Mervyn King, a hugely influential figure in the world of integrated reporting. South African by birth and a former Supreme Court justice in that country, King has steeped himself in the field of corporate governance and is a true pioneer in the global movement toward more comprehensive corporate reporting. He has served as chair of the Global Reporting Initiative and, more recently, as founder of the International Integrated Reporting Council, of which I am a member.

King's view, once iconoclastic but now widely accepted, is that corporate reporting can't just be about numbers. Because value creation involves human, social, intellectual and natural capital alongside more traditional financial assets, companies must look beyond their business models when they report out their results. Sustainability and outcomes are crucial, while boards, King has argued, need to see quantifiable results when it comes to these other elements of performance.

Professional accountants, as he

reminded us that evening, play a critical role in helping organizations show how value creation is about much more than the bottom line. Though not a member of our profession, King's message is powerful and poignant: that accountants, through their thought leadership with emerging sustainability reporting standards, are making the world a better place. In Peter Shawn Taylor's story, King expands on his thinking.

Picking up on these themes, the March issue of *Pivot* offers a series of inspirational stories about how Canadian CPAs are working to make their communities better.

Sarah Cook, a member of Manitoba's Misipawistik Cree First Nation, gives a moving account of how she has used her CPA training to improve education in the community where she grew up. An assistant director of finance at the Manitoba First Nations Education Resource Centre, Cook is helping to foster massive frontline change; her career is a passion and a calling.

We also have a feature about Mark Lemieux, a soft-spoken but evidently imperturbable CPA who stepped up to untangle the epic mess that is the federal government's Phoenix pay system. Lemieux, an assistant deputy minister in Public Services and Procurement Canada, is putting his abundant communication and collaboration skills to good use in the effort to fix the system.

His work directly touches hundreds of thousands of public servants who have seen their financial lives turned inside out by the broken system. Lemieux's task is Herculean, and one can't read his story without reflecting on just how impressive it is that he wanted to make a difference and take this work on.

At the profession-wide level, CPA Canada's Foresight consultation has now moved into its next phase, which is to take the enormous amount of feedback we received in online discussions and in-person roundtables and put it into action. Foresight is partly about making sure our stakeholders understand the critical role CPAs play in so many industries and sectors. But this process is also about figuring out how to make the profession that much more relevant and technologically current in the age of big data and artificial intelligence.

In other news, we are now formally united as Chartered Professional Accountants right across Canada, thanks to the passage of the final unification legislation in the Northwest Territories and Nunavut.

Finally, I'd like to offer my congratulations to a pair of giants in this profession, Kevin Dancey and Shelley Brown, for their investitures into the Order of Canada. Dancey (FCPA, FCA) served as president and CEO of CPA Canada from 2013 to 2016 and now heads the International Federation of Accountants. Brown (FCPA, FCA) was co-chair of CPA Canada's first board of directors. She was a partner at Deloitte and served on the board of directors of Deloitte Canada for 12 years. She has also been an outspoken advocate of workplace diversity and inclusion. I have worked with both Kevin and Shelley in various capacities and am so thrilled they were recognized with the country's highest civilian honour. •

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FIRST IN

BURNING ISSUE

OIL OR NOTHING?

Even after the current crisis, demand for oil will eventually peter out. That doesn't have to spell disaster. **BY JEN GERSON**

Some startling news hailed from California as 2018 drew to a close. The U.S.'s most populous state has now purchased more than 500,000 electric cars—177,781 of those vehicles in the last year, and 24,686 in December alone. While electrics still comprise a minority of overall car sales, the trend lines are clear: electric vehicle sales are showing exponential growth. And as goes California so, eventually, shall go America. And everywhere else.

Internal combustion will likely be with us for a generation yet, but it isn't unreasonable to think demand for oil and gas will soon plateau and even decline as new, more sustainable technologies become common and affordable.

This could bring a promising new future—or a terrifying one. For an oil-producing province like Alberta, the trend should lead to some serious strategic reimagining; the province is already beleaguered by a lack of pipeline capacity that pushed its oil prices down drastically. And after the 2015 global oil price crash, Alberta's annual revenue from oil sands royalties declined from more than \$6 billion to less than \$1 billion. Unemployment now sits at 6.3 per cent, higher than the national average in one of the youngest provinces in the country.

But the real risk is existential. How does the province adapt when the demand for oil simply begins to peter out?

Research and development that leads to decarbonization solutions for Canadian oil and gas will help. Alberta has already been working in this area, investing in carbon capture and storage, for example. There is even some promising early technology that may eventually be able to extract carbon from the atmosphere, reversing the worst effects of climate change.

Sarah Keyes, CPA, Sustainability Principal at CPA Canada, notes the importance of transforming the labour force for the low-carbon economy,

sands royalties dropped from **\$6 billion**

Revenue from oil

to less than \$1 billion citing Iron and Earth, a worker-led not-for-profit that's retraining oil-and-gas employees to work in renewable resources.

A little-known fact about Alberta: the south of the province is subject to intense winds and long stretches of sunshine, ideally situating it for wind and solar power. As of August 2018, it had 1,483 megawatts of wind capacity—placing it third in the country after Ontario and Quebec. Under its climate plan, Alberta intends to source one-third of its electricity from renewable energy by 2030.

Of course, renewable energy alone won't replace the huge economic and employment opportunities traditionally supplied by oil. So the government is ramping up efforts to diversify the economy. As Premier Rachel Notley put it back in 2015: "Growth used to be taken for granted, but the shock of low oil prices has laid bare how vulnerable these old attitudes have made us."

Researchers are exploring other uses for bitumen, including asphalt pellets and even the creation of graphene or carbon fibres that can be used to replace steel in concrete and wood.

The province is trying to bolster its already strong agriculture sector. Real GDP for agri-food industries outperformed the economy through the worst of the downturn, in 2015 and 2016, and grew again in 2017 to \$6.5 billion. Alberta has courted the high-growth cannabis industry and seen several major growers, including Aurora Cannabis, set up shop, drawn by the province's low taxes, private retail regime, cheap energy and abundant sunlight.

The key, says Ken Kobly, CPA, the president and CEO of the Alberta Chambers of Commerce, is to maintain focus. "I'm old enough to remember four downturns in the economy, and every time we get into one, we seem to have governments of all political stripes say, 'Now we have to study diversification.' Then when oil rebounds it's like, 'Oh, look! A squirrel!' and we lose concentration on trying to diversify."

With two major universities, in Calgary and Edmonton, and a host of colleges, the province is well situated to take advantage of research capital in everything from leading-edge environmental technology to experimental agriculture. "They are great at developing product and ideas for product," says Kobly. "We need to help commercialize them rather than have those ideas go elsewhere in the world."



Two years ago, the province brought in a dedicated tax credit to help businesses invest in new technology. Accountants have played a big role in making it work, says Jean-Marc Prevost, spokesperson for Alberta's Ministry of Economic Development and Trade: "Accountants are often the frontline professionals who find new ways to attract investment to their companies, particularly for companies that are expanding in non-traditional sectors."

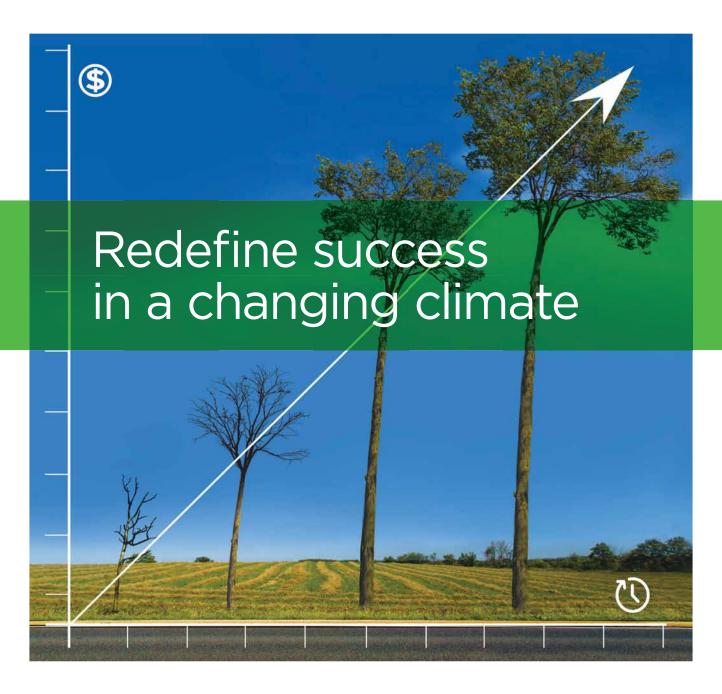
And in 2017, the Alberta government hired a British-born venture capitalist who was considered key in helping another oil-dominant area make the shift from petrochemicals. Laura Kilcrease helped Austin, Texas, evolve into one of the top technology cities in the U.S. She's now CEO of Alberta Innovates, a government-funded corporation that promotes and finances research and technology development. The province is hoping she will help with a similar turnaround.

What it hasn't done is increase her budget. In fact, since the oil crash of 2015, funding for Alberta Innovates has steadily declined, and it cut dozens of jobs in 2017.

Any scrimping on investments in diversification now may mean fewer resources to make the transition in the long run. Moonshots cost money.

And they are worth taking, since Alberta has all the ingredients for success. With a commitment to "evidence-based decision-making," a highly skilled workforce and academic communities coming up with innovative solutions, says Keyes, "there's an opportunity for Alberta to lead the way." •





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SHAM, WOW

A catalogue of recent cons



Amount in flight credits that former WestJet employee Terance Gough covertly issued to more than 100 people who paid him a portion of their value in cash. Gough pleaded guilty to fraud and was sentenced to two years in prison.

"THE BIGGEST CORRUPTION FRAUD IN CANADIAN HISTORY"

How the lawver for the McGill University Health Centre (MUHC) recently described an ongoing scandal involving the hospital. In December, MUHC exec Yanai Elbaz received a 39-month sentence for accepting a \$10-million bribe from SNC-Lavalin in return for helping the engineering firm win a \$1.3-billion contract to build a new super-hospital.



\$500

Typical loss sustained by victims of the new "puppy scam," in which fraudsters post dog-adoption ads online and ask prospective owners to pay only the cost of shipping the dog. When the schemers receive the money, they disappear and no dog arrives.

18



Age of Charles Turner Jr., who faces multiple felony charges in Georgia. Turner allegedly set up an Amazonlike website that allowed him to hack into customers' bank accounts. He then used those funds to "accidentally" overpay his business taxes by more than \$25 million. Instead of issuing a refund, the state caught on to the scheme and arrested him in December.

112 DAYS

Length of time Darryl De Sousa served as Baltimore's police chief before he was charged with failing to pay three years' worth of taxes. He pleaded guilty



GRANDPARENT SCAM

Nickname of the scheme that a senior in Norfolk County, Ont., fell for late last year. Over the phone, an unknown con artist posed as a lawyer for the victim's grandson and said he'd need \$5,000 to make bail after being involved in a car accident.



US\$500,000

Amount that two nuns stole from St. James Catholic, an elementary school outside Los Angeles, to fund gambling getaways to Las Vegas. Sisters Mary Margaret Kreuper and Lana Chang said the money, which they pilfered over the course of more than a decade, came from a rich uncle. "The rich uncle," a student's father said, "was the parents of the St. James students."

"BLOWN OUT OF PROPORTION"



FIRST PERSON

BACK TO SCHOOL

For Winnipeg CPA **Sarah Cook**, accounting isn't just a job. It's a way to give back to her tight-knit community.

Rapids, Manitoba, population 700. Other than a brief stint four and a half hours south in Winnipeg, where my parents got their teaching degrees, I spent my childhood in the community, where everyone seemed to know everyone else. Closeness was valued in the Misipawistik Cree Nation. It was the kind of place where, during winter holidays, kids would trek door-to-door to say Happy New Year to our neighbours, who would always be armed with cookies for the little well-wishers.

That all changed when I turned 15. My parents, both adamant I receive higher education, sent me to Winnipeg to attend my junior and senior years of high school. Those credits would later help me get into university in the city. I lived with my aunties, who were stand-ins for my old community, but adjusting to urban life was tough: suddenly, my new school was the size of my old town, a shock to a shy, bookish teen like me. Instead of finding a new group of friends, I threw myself into my academics. I was a math whiz, which made my auntie, a CPA, proud.

I stuck with the STEM [science, technology, engineering and mathematics] fields throughout high school and well into my post-secondary career at the University of Manitoba. But by my third year, I had to make a decision: either I was headed for a general science degree or I needed to pivot. My auntie suggested accounting, recalling my affinity for math. I gave it a shot.

And that's where I found my new community. I joined an Indigenous business program, where First Nation, Métis and Inuit students could receive mentorship, learn how to write a resumé and prep for job interviews, and get to know other Indigenous people in the city. I thrived in the program, finding a place where I felt comfortable and open in a city that was once daunting to me. In 2009, I graduated with a bachelor of commerce degree, with a specialty in Aboriginal business studies.

More importantly, I had found my calling. I knew I wanted to give back to my communities through my work. While I was working as an accountant at BDO Canada, I mentored Indigenous high-



schoolers through the CPA Martin Mentorship Program. Once a month, I'd take them to university job fairs, teach them how to craft a CV, introduce them to influential Indigenous Manitobans and even hang out with them at the symphony. The purpose of the mentoring program was to encourage the kids to pursue post-secondary education, just like my family had encouraged me. I loved watching them get excited at the prospect.

Now I work a job that combines my parents' love for education with my own love for accounting. I'm the assistant director of finance at the Manitoba First Nations Education Resource Centre, an organization based in Winnipeg that provides support to 56 independent First Nations schools in the province, which are notoriously underfunded. With our help, the schools are able to apply for funding, both for ambitious projects—like the creation of a portable planetarium that travels from school to school—and the most basic ones, including repairing roofs and overhauling gymnasiums.

I do a lot of behind-the-scenes work, balancing budgets and helping school administrations manage their money. That might not sound exhilarating, but it's created major changes on the front lines of First Nations education. For instance, we negotiated with the federal government to increase funding

"SOME SAY ACCOUNTING IS A BORING CAREER, BUT HELPING SCHOOL SYSTEMS CAN CHANGE LIVES"

to 10 schools in our system, which helped them fix rundown buildings, boost the salaries of teachers and staff, and bring them closer to being able to provide the same level of service that a provincial school can. Some say accounting is a boring career, but helping different people with different issues every day—especially in the school systems—can change lives.

The stereotype that First Nations governance is irresponsible or incompetent with money still exists. Quashing those misconceptions is part of my job—and something I try to do beyond my nine to five. Every year, I return to Grand Rapids and offer accounting expertise to the community, helping folks with their taxes. I plan to start financial literacy sessions, where community members can learn how to make a budget and better handle their money. Armed with that knowledge, I know they can accomplish their financial tasks. As I've learned, sometimes it just takes a bit of support." •

—As told to Erica Lenti

CPA Canada and the Martin Family Initiative jointly sponsor the CPA Martin Mentorship Program, which pairs teams of CPAs with Indigenous high school students. Through regular meet-ups and activities, the program is currently working with 125 students from 34 high schools across Canada to encourage them to graduate, pursue post-secondary education, make personal and professional connections, and learn about career options, including accounting.

INBOX HERO

The fewer the emails, the better the boss **BY KATIE UNDERWOOD**

We all dread "the ping." Maybe it's a beep, a buzz or a silent, menacing pop-up. But once you notice it, your brain can't help but halt whatever project you were plowing through. Why? You've got mail.

Email is widely accepted to be a productivity killer. "It takes two or three minutes after an email is sent off to cognitively re-engage with your job, or with whatever task you were doing before you were interrupted," says Russell Johnson, a management professor at Michigan State University. And, according to a new study on which Johnson was the lead researcher, inundated inboxes wreak particular

havoc on bosses. Johnson and his colleagues asked managers at companies of all sizes to report the frequency and cognitive demands of their email engagement. They found that while lower-level, administrative activities (like assigning tasks and making minor day-to-day decisions) weren't radically affected by a full inbox, "leadership behaviours" (like strategic planning and nurturing employee growth) took a big hit. "Those leader behaviours are key in providing employees with job satisfaction, commitment and

performance," says Johnson. "So beyond failing to complete their own responsibilities, overly emailed bosses may fail to motivate and inspire."

Of course, bosses

won't permanently log off email anytime soon, so Johnson has a few recommendations to help managers, well, manage. Encourage employees to use discretion when cc'ing ("If a person does not need to be looped in, don't"); turn off notifications ("that dreaded chirp"); and set aside blocks of time during the day to check messages instead of responding every time one lands (every two hours, for example). This applies doubly during busy periods like tax season, Johnson says. "Managers' mental energy will already be running low due to work overload and time pressures, so it's important for bosses to 'protect' themselves," he says. One way to do that is to inform employees that they'll take longer than usual to respond to emails, which can alleviate feelings of guilt and also prevents senders "from spending time and mental energy ruminating about why a leader hasn't responded to them." After a while, says Johnson, employees will learn your email habits and "how not to overburden you."

INNOVATOR

BUSINESS AS UNUSUAL

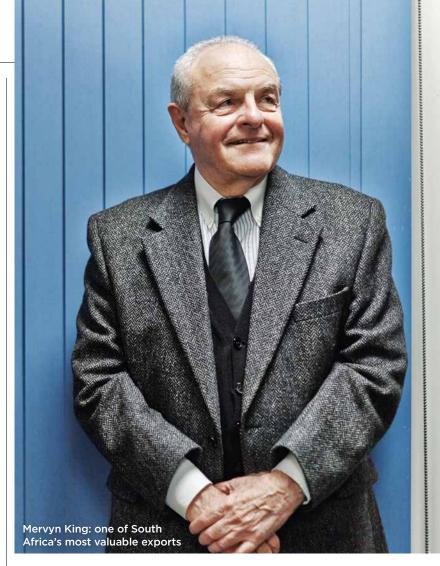
Mervyn King, the godfather of integrated reporting, on why companies need to do good to prosper BY PETER SHAWN TAYLOR

The term "corporate best practices" once had a specific connotation. It meant running a company exclusively to serve the interests of shareholders, even if that meant ignoring other stakeholders, the environment and society at large. Those days of business as usual are over, says Mervyn King, a world-renowned expert on corporate governance and one of South Africa's greatest exports. "What we need today," he says, "is business as unusual."

As the godfather of integrated reporting, King has worked for decades to convince companies to consider, record and act on the social, economic and environmental impacts of their activities. He is chair emeritus of the Global Reporting Initiative (GRI) and founding chair of the International Integrated Reporting Council (IIRC), past chair of the United Nations Committee on Governance and Oversight, and the respected author of several reports on the subject. (He is, however, not to be confused with his namesake, former Bank of England governor Mervyn A. King.)

A vigorous 81 years old—*Pivot* caught up with him while he was on a speaking tour in Australia—King continues to travel the world promoting the need for a dramatic reimagining of corporate decision-making and reporting practices. "The 20th century was an era of unsustainable development within a paradigm of shareholder-centric governance," he says. Such an approach is no longer fit for service in a troubled 21st century. "Our climate is in crisis, nature is in crisis and populations are threatened with global warming. Today, a company has to do well, as well as do good."

This isn't altruism but self-preservation, key to the survival of any business. "Many large pension funds and other investors will simply not invest in a company unless it can express a clear long-term value strategy," he says. What's more, if a firm is found to be damaging its societal, economic or environmental reputation—relying on child labour, for instance, or enabling ecological disaster—it will soon find its prospects, and stock price, heading south.



Rosemary McGuire, director of external reporting and capital markets in Research, Guidance and Support at CPA Canada, agrees that change has come. "Things that companies wouldn't have reported on 10 years ago, like their carbon footprint, are very much on investors' minds these days. And we need to evolve financial reporting and broaden its outlook to reflect this," she says.

Getting firms to recognize sustainability issues is only a first step, says King. Companies also need to embed critical information about their economic, social and environmental impacts as a feature of their reporting framework beyond Management's Discussion and Analysis requirements. The process of setting international standards to achieve integrated financial and sustainability reports began as a joint effort between the GRI, with the support of the International Federation of Accountants (of which CPA Canada is a member), and the Accounting for Sustainability Project established by the Prince of Wales. The collaboration culminated in a meeting at St. James's Palace in London in 2010 that led to the creation of the IIRC. "What was important during that meeting was the acceptance that financial reporting, while critical, was no longer sufficient

on its own," King recalls. "Giving parity to all these other issues requires a mindset change."

King cites Coca-Cola as a firm that is invested in the new reality. Coke substantially reduced its water usage and shifted its marketing and product mix to address complaints about its resource use and social issues such as childhood obesity. Malaysian petroleum giant Petronas is another example. Its embrace of integrated reporting principles has become a strategic advantage in raising capital.

King's work has deep roots in his personal experience. He is a key figure in South Africa—a former corporate lawyer and judge who became an executive in banking and retail and the chair of the country's largest textile firm. King first met Nelson Mandela in the 1950s when he was a young articling student in Johannesburg, and Mandela and his partner Oliver Tambo were the country's first licensed black attorneys. During Mandela's imprisonment, King ran a charity with Mandela's daughters that fed millions of impoverished children. As the country was preparing for the end of apartheid, King was asked to write new corporate-governance rules for a new South Africa. Knowing the enormity of the job, King hesitated. One day the phone rang: "How is my favourite judge?" It was Mandela. "Do it. You are the right man for the job." He agreed.

King invited black South Africans, union leaders and other voices marginalized during apartheid to form a committee to write the new code. "If we had produced the standard shareholder-centric model, it would have been seen that white monopolistic capital was still in control," he recalls. "And that would've been indigestible for a country trying to move away from unequal opportunities." The resulting King Code on Corporate Governance, released in 1994, broke ground as a national standard of business ethics and a crucial first step in the wider acceptance of corporate social responsibility. Subsequent updates to the code added sustainability issues, integrated reporting and enhanced transparency to the list of best practices.

King's work at the GRI and IIRC—the latter is now chaired by Canadian Dominic Barton, formerly of McKinsey & Company—established the conventions for firms to integrate relevant non-financial information into their statutory reporting. Accountants take on a pivotal role here, leading a broad range of professionals, including ecological experts and civil engineers. "Who is the true change-maker in a firm? It is the accountant," he says. "It's the CFO who has to get the C-suite to change their thinking about what really matters to the long-term health



Nelson Mandela urged King to write new rules for a new South Africa. "You are the right man for the job," he said.

of the company." King's vision for the profession is laid out in his 2016 book, *Chief Value Officer:* Accountants Can Save the Planet. As the title suggests, shifting a firm's focus to creating value should involve a title change as well—from Chief Financial Officer to Chief Value Officer. King says he's "tickled pink" to see top headhunters pick up on his suggestion by advertising CVO positions.

The recent work of the accounting profession in the Task Force on Climate-related Financial Disclosures (TCFD) is another major step forward. "CPA Canada is a big supporter of the TCFD," says McGuire, noting the task force "brings an important common language and business lens to the issue of climate risk." By providing granular advice on how to integrate sustainability risks related to climate change into financial reporting, the issue shifts from a theoretical concept to a practical accounting exercise. In an interview last year with CPA Canada president and CEO Joy Thomas, Bank of England governor Mark Carney, a driving force of the TCFD, similarly stressed the importance of having accountants put the work "into action."

King's latest book, *The Auditor: Quo Vadis?* (translation: *Where Are You Going?*), is a timely look at the future of external audits in a world where intangible assets such as intellectual property are just as—and perhaps more—important to investors than audited financial statements. "Look at the S&P 500," says King. "Only 16 per cent of the market cap of those firms is made up of assets on their balance sheets. Things have changed completely today and the audit has to change as well." To evolve with the changes, King is calling for a refocusing of audit codes to place more emphasis on the broader public interest.

Given the scope and significance of King's work, it's something of a shock to discover business was his back-up career. As a young student, his great love was the law; he started work as an attorney in Johannesburg in 1961 and became a Supreme Court judge in 1977, at age 40. Two years later, a fellow judge, Anton Mostert, came to him for advice after uncovering evidence of a clandestine government propaganda fund. As a result of King's counsel, Mostert publicly released the information, causing a political bombshell that led to the resignation of South Africa's president, as well as Mostert's dismissal from a government commission. King later resigned from the nation's top court, on principle. "Some people have called it courageous, or maybe it was stupid. But it was a matter of conscience," he says.

He then thought he might try a corporate job. The world of business has been thinking unusually ever since. •

BY THE NUMBERS

ROUGH ROAD AHEAD

There are more vehicles on Canadian roads than ever before: nearly 23 million cars, SUVs and pickup trucks are registered across the country. But the way we use them is changing. Three-quarters of Canadians avoided driving at some point in 2018 to save money on costs like gas and insurance, while a third cut back to help save the planet. In fact, electric and hybrid sales grew fivefold between 2013 and 2017. Meanwhile, self-driving cars and ride-sharing apps may soon make car ownership seem old-fashioned. Canada's auto industry, facing competition from abroad, is feeling the effects: GM plans to close its Oshawa plant by the end of 2019. Here, a look at the reasons behind our detour away from driving. —Steve Brearton



What the average household spends on...

Groceries

Recreation

Clothing and accessories

Alcohol and tobacco

COMMUTE

Canadian commuters

1996

12.2 MILLION

2016

15.9 MILLION

Growth in commute method, 1996 to 2016









DISRUPTION

Automakers' predictions of what year cars will drive themselves

2017 Tesla	:
2020Toyota, Honda	
2021 BMW, Fiat Chrysler, Ford, Volvo	
2025Renault-Nissan	2
2030Hyundai	:

Canadians who would trust an autonomous vehicle to get them to their destination

Vehicles produced in 2017

China

29,015,434

+1,485% since 1999

United States -14% since 1999

Germany 5,645,581 -1% since 1999

■ Canada

BAD DRIVERS



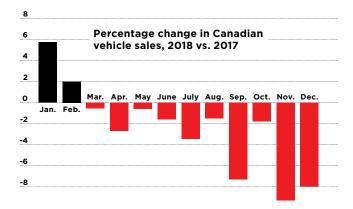
of Canadians claim to be 'good drivers" admit to

having at least one bad driving habit

believe

drivers are red light worse now than five vears ago

disobeyed road signs



"The year-end figures are an emphatic confirmation that auto sales are well and truly winded, and the tale of the tape points to a continued decline in 2019."

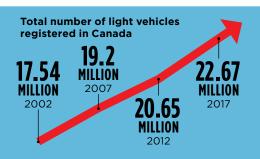
—Bank of Montreal report, January 2019

Average annual insurance costs per vehicle (2017) \$1,251 \$661 \$1,132 \$661 \$1,680 \$1,680 \$796 \$1,445 \$PE ON \$1,445



2017**\$40,137**

Average price of a litre of gas				
1998 51.6 ¢	111.7¢	72.10	140.4¢	
Toronto		Yellowknife		
56.30	t 117¢	50.6¢	141.9¢	
Montreal		Vancouver		
64.4	l¢ 118.6¢	48.9¢	08.3¢	
St. John's		Calgary		



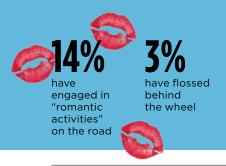








Canadian vehicle manufacturing jobs					
61,589					
	44,481				
1998	2018				



Drivers who reported seeing another motorist fail to signal

Prairies	87%
B.C.	84%
Ontario	77%
Alberta	76%
Quebec	76%
Maritimes	73%

Drivers who admitted to slamming the brakes or steering violently to avoid a crash

48%	B.C.
40%	Alberta
39%	Ontario
38%	Prairies
35%	Maritimes
33%	Quebec



THE WORKPLACE

GHOST IN THE MACHINE

Artificial intelligence has the power to revolutionize businesses—so long as it's not too busy snooping on their employees



ADRIENNE TANNER

An oil company in Calgary recently gathered its employees to roll out a new policy. After the meeting ended, a manager called aside one of the workers and told her, "I see you don't buy in to our new policy. Are you going to be a team player?" The employee was shocked. She hadn't

said a word during the presentation, so how could they possibly know that? Her superiors were monitoring the staff at the meeting for non-compliance cues, the manager explained, and had inferred her hostility to the policy based on an artificial intelligence program's interpretation of her body language and facial expression. The woman, who didn't want to be identified for fear of retribution from her employer, relayed the story to Robin Winsor, an Alberta tech futurist who heads Cybera, a non-profit IT-advancement agency in Alberta. "It creeped her out terribly," says Winsor.

It's virtually impossible to gauge how many Canadian companies are using artificial intelligence to spy on their employees. But the use of AI in the workplace is undoubtedly on the rise. Some of these applications are convenient (a voice-recognition program that types what you speak) or helpful (an industrial machine that shuts down if it sees its operator is not wearing a hard hat). But as companies increasingly turn to AI for potentially invasive purposes, they may face an ethical dilemma: is it wrong to spy on employees, even if it boosts morale and productivity?

For every innocuous task performed by AI, there is another, more morally ambiguous application. Take the example of the Florida-based software company Veriato, a cyber attack-prevention program that records the computer activity of all employees, "creating a record that can be used as evidence in civil and criminal litigation." Or Teramind, which tracks employee productivity, including the amount of work time spent on social media, project work and apps. Others, like Montreal's Officevibe or France's



26 states have laws prohibiting employers from demanding workers' social media passwords TeamMood, monitor workplace morale with regular surveys, which can be anonymous, that ask employees to record their emotional state and share their deepest concerns about workplace culture.

For employers, the appeal is clear. These programs allow managers to track who's performing, who's slacking and maybe even the reasons why. They can also protect a company, alerting bosses if an employee is doing something to put the business at risk, such as exposing proprietary information, whether out of malice or negligence. "Nothing is more important to a business than its records," says Nancy Flynn, an electronic policy and compliance expert, and founder of the ePolicy Institute in Columbus, Ohio. She says companies have a duty to their clients—and employees—to protect their data. One information leak can potentially destroy a company and render its employees jobless.

Flynn argues AI monitoring is effective and ethically sound, so long as management is completely transparent with staff and monitors only relevant corporate material, not private information. In the U.S., for example, 26 states have enacted privacy laws prohibiting employers from demanding employees' personal social media passwords. (Lawyers say labour laws prohibit this in Canada.) "Really, employers should only monitor as allowed by law and for legitimate business reasons," she says.

Employees agree that transparency is key. In a global survey conducted by American HR software company Kronos, roughly 60 per cent of respondents said their organizations had yet to discuss AI's potential impact on their workplaces, and that they'd feel more comfortable if their managers

communicated what effect it might have. After all, nearly two-thirds of employees surveyed would welcome AI that automates time-consuming work or balances their workload.

Winsor says AI systems should always benefit the business, as well as employees' working conditions. "You can't better the company's bottom line by crushing the soul and creativity of your employees," he says. "If you do, you're no better than a Dickensian workhouse overlord."

But keeping tabs on AI is not always as easy as it sounds, says Chris MacDonald, an associate professor at Ryerson University's Ted Rogers School of Business who specializes in business ethics. AI in its most advanced form is constantly learning and changing, he says. "So, the net result is often that nobody actually knows what's going on inside the black box. There's literally no human programmer responsible." That means it's not always clear what kinds of rules and principles AI abides by. Does a record-keeping application realize that storing messages from a corporate email account might be okay, but that personal correspondence on social media is out of bounds?

AI CAN MONITOR BODY LANGUAGE AND FACIAL EXPRESSIONS TO GAUGE IF AN EMPLOYEE IS BUYING IN TO A NEW COMPANY POLICY

The AI Now Institute, a New York University research centre that studies the social implications of artificial intelligence, is concerned ethical considerations aren't keeping pace with the rapid development of AI. Its 2017 report urges the AI industry to implement ethical codes, strong oversight and accountability mechanisms—things that don't currently exist on a meaningful scale. In the U.S., that lack of oversight has led to a flurry of lawsuits in which employees have fought successfully against companies that demanded too much personal social media information for monitoring purposes.

AI in the workplace hasn't caught on as quickly in Canada, says Jodie Wallis, Accenture's head of AI in Canada. The country places last in a report ranking 10 countries' successful application of AI technologies. That's not necessarily a bad thing. It reflects the fact that nearly three in four Canadian firms have AI ethics committees, the most in all the countries the report surveyed. "In a lot of countries, the organizations are jumping to deploy without being thoughtful about how [they're] going to deal

with ethics," Wallis told the *Globe and Mail*. "Canadian organizations tend to do the opposite: 'Let's think about all the ethics, and then we'll deploy."

In a world where even logging into your computer can require facial recognition, AI snooping in the workplace seems inevitable. Smart companies will be ready with ethics committees and transparent rules, ensuring that their workplace morale program doesn't turn into a game of I Spy. ◆

Adrienne Tanner is a Vancouver-based journalist, former deputy editor at the Vancouver Sun and a frequent contributor to the Globe and Mail and Maclean's.

THE ECONOMIST

TIME TO GET REAL

Populist angst over trade and immigration is distracting from the serious economic issues Canada has to address



RANCIS

It's hard to comprehend sometimes just how much the global political landscape has been transformed by the rise of populism.

The Trump presidency is perhaps the most visible example, but we've seen political parties of that ilk gain tremendous momentum across

Europe and South America in just the last year.

These parties are riding a wave of cultural and economic angst felt by those left behind by the forces of globalization and technological change. In turn, that angst is diverting our conversations toward issues like trade or immigration—issues that are only peripherally related to the economic challenges faced by those the populists are meant to appeal to.

Canada is not immune. We still overwhelmingly support immigration—a recent Environics poll showed that 60 per cent of Canadians disagreed with the statement that immigration levels were too high, and 80 per cent felt immigration had a positive impact on the economy. And a reasonable consensus has evolved over the benefits of free trade—a 2017 EKOS/Canadian Press poll indicated that a record 81 per cent of Canadians supported free trade in North America.

Yet here we are, having just been thrust into renegotiating NAFTA, and with illegal immigration back in the public consciousness. And that's a

For example, Canada is aging. More importantly, one of the largest segments of the population is getting old. The baby boomer generation represents more than one-quarter of all Canadians, and even the youngest among them is turning 54 this year (the oldest is turning 73). In other words, over the next decade or two, we will be seeing more than one out of every four Canadians move into retirement.

You might think that just means more opportunities for young people. And you'd be correct. But it has far greater implications than that. Let's start at the micro level.



I'm willing to bet that wherever you work, a sizable share of the senior leadership of your company is made up of baby boomers. Perhaps you are one yourself. Is your company prepared to lose that share of your senior leadership in the next few years? That experience? That institutional knowledge?

What about those who own their own firms? Perhaps you yourself are a business owner. How many have succession plans? What happens to all these businesses that don't? What happens to their communities?

More importantly, let's look at the macro level.

Economists like to point to a metric called the old-age dependency ratio. Calculated as the ratio between the working-age population (ages 15-64) and the older population (65+), the dependency ratio gives you a picture of the sustainability of government programs by showing you how many people are supporting the system relative to those primarily drawing from the system. Everything from pensions to the tax system to health care spending are implicated here.

Back when the baby boomers were first entering the workforce in the 1970s, there were about eight working-age people for every retired person (who also happened to have a lower life expectancy). Today, the ratio is about four to one. In about 20 years, it'll be two and a half to one.

The fact that low birth rates persist means that this problem just gets worse over time. By 2060, the dependency ratio is expected to approach two to one. Keep in mind this is also going to be an environment with much weaker economic growth than what we're used to. A large, sudden outflow of workers into retirement also means a drag on net labour force growth, which inevitably means lower GDP growth.

Two working people for every one retired person. Let that sink in.

Think about how well our systems work today with a ratio of four to one. Now think about how well they'll work if there were half as many people paying into it in a lower-growth environment.

And that's just one of any number of problems that have serious implications for our future prosperity. We haven't even talked about Canada's poor track record on productivity growth—the other side of the GDP growth equation that policymakers hope can make up for lower net labour force growth. But while Canada was averaging 1.5 to 2.1 per cent productivity growth through the 1970s, '80s and '90s, in the last 20 years we've only averaged about one per cent per year, with few clues as to how to get that number up.

We've also not addressed rising inequality pressures. Policy-makers and academics are in a fierce debate over what to do—how do you raise the outcomes of the bottom 50 per cent of the population without resorting to blunt solutions that might threaten our competitiveness? Do we focus more on investing in education? On skills development? Do we raise taxes on the rich and lower taxes on the poor? To what degree could we even do that without threatening the long-term viability of Canada as a competitive economy?

And how do we address the looming threat posed by new technologies like AI or driverless cars to all sorts of medium-skilled, middle-income jobs around the country, likely worsening the level of inequality we see today?

These are all important questions, and more closely related to the economic challenges faced by those disenchanted with the current system. But we're not talking about *these* issues—at least, not as much as we should be. Instead, we are increasingly being pulled into debates on things like trade and immigration that Canadians thought were largely settled.

And that is just infuriating. •

Francis Fong is chief economist at CPA Canada.



Bennett Jones Bolsters Tax Litigation Team

Three partners, two associates in Vancouver, Calgary and Toronto

Bennett Jones is bolstering its tax litigation team with some of the most highly-respected and experienced tax litigation lawyers in Canada. Ed Kroft Q.C., Jehad Haymour and Deborah Toaze have joined as partners. Ed will serve as head of the firm's tax litigation & dispute resolution practice. Also joining Bennett Jones are associates Sophie Virji and Eric Brown. These new partners and associates will work out of the firm's Vancouver, Calgary and Toronto offices and serve clients across Canada, the U.S. and globally.



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THANK YOU!

To all the faculty who made our 2017-18 tax courses a huge success, **thank you**. Your contributions were invaluable.

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CPA Canada also congratulates this year's **Jeff Jutzi Memorial Award** winners: three facilitators known for their outstanding leadership, engagement and dedication to the In-Depth Tax Program.

Jennifer Reid	Meghan Greene	Matthew MacAdam
Richardson GMP Ltd.	KPMG LLP	Grant Thornton LLP
Calgary	Moncton	Halifax

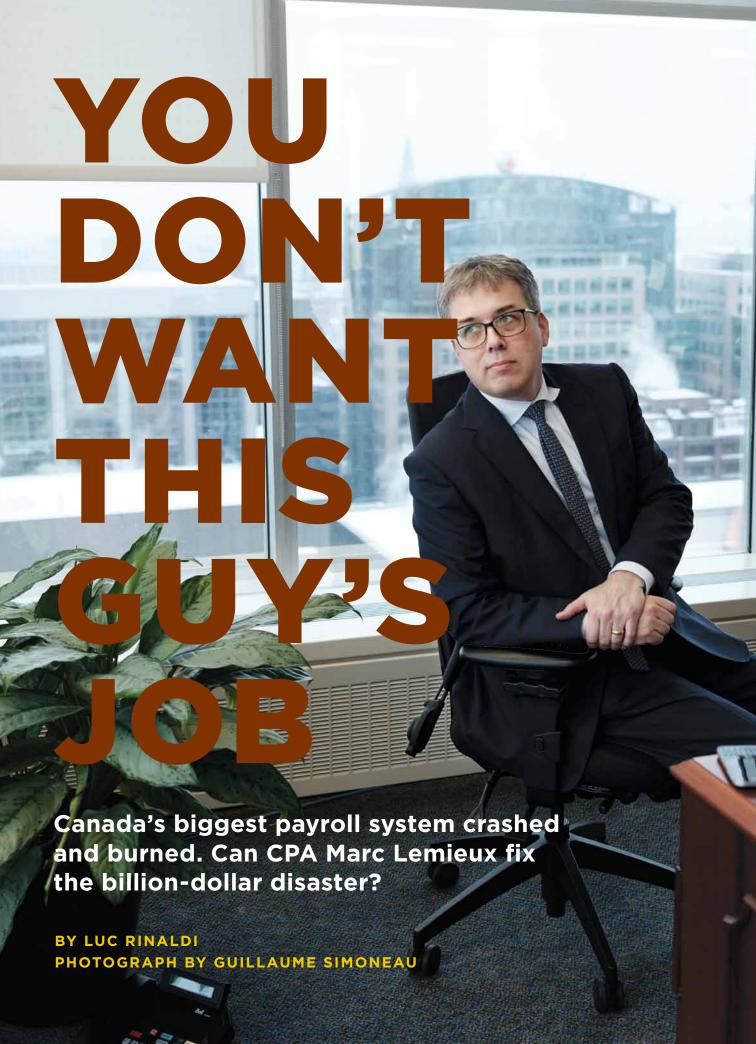
Affan Khalid Mandeep Khosa Nick Kietaibl Hayat Kirameddine David Klassen Henry Korenblum Hetal Kotecha Lawrence Kwong Miles Laing Toi Lam Rob Leavoy Robert Leombruno Greg Leslie Jeremy Levi Tyler Lewis David Lin Vincent Lo Matthew MacAdam Malcolm Macaulay Richard MacDonald Bruce MacPhee Matthew Mammola lan Manson Carla Marchant Jeremy Martenstyn Benoit Martinet Hayley Maschek Justin Mastrangelo François Mathieu

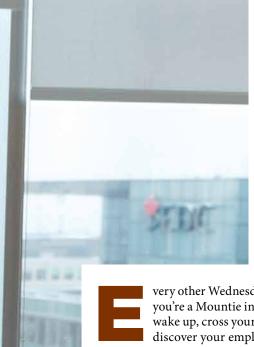
Whitney Mayfield John Mendis Atif Mir Kirill Molchanov Amy Murdock Sean Murphy Allana Murray Shana Najafi Rehan Naqvi Mike Nazarov Christy Ngo Kartik Nurpuri Brad Olsen Joseph Pagliaroli Stephanie Pantaleo Mitesh Patel Suraj Patel Kevin Perkins Peter Phung Anita Poscente Anne Postlewaite Santosh Prasad

Jennifer Reid Jarret Robertson Ryan Robinet Matthew Roman Danvir Roopra Martin Royer Pejman Saket Tony Salgado Tara Salmon Monique Sami Michael Saxe D'Arcy Schieman Simon Sham Henry Shew Sara Siddique Hal Sloan Sean Smith Colin Sondergaard **Stewart Spiers** Gord Squire Garth Steele Mark Stevens **David Stewart**

Yola Szubzda Adam Thompson Silky Tsang Dave Van Voorst Adam Vander Duim Ebony Verbonac Paul Walker Robert Wang Gwen Watson Kelly Watson Jin Wen Bryan Whalen Jacqueline Wu Mary Yang Jacob Youn Lori Yu James Zihrul Gordon Zittlau Christina Zurowski

Quinton Pullen

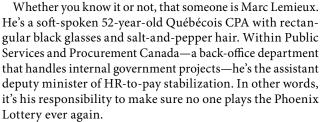




very other Wednesday, Canada's public servants play the Phoenix Lottery. Whether you're a Mountie in Victoria or a federal judge in St. John's, it's the same drill. You wake up, cross your fingers and then check your bank account. If you're lucky, you discover your employer, the federal government, has paid you correctly. If you're not—and chances are, at least once in your career, you won't be—something will be wrong. Perhaps you'll have \$100 less than you should, or \$100,000 more. Maybe you didn't get paid at all. Regardless, that's how the headache begins.

To get the money you're owed—or pay back what you're not—you talk to HR or submit a form online. Depending on which of Canada's 101 federal departments and agencies you work for, you might call the pay centre, a 1,000-employee office in Miramichi, a riverside

town in New Brunswick. Then you wait a week, a month, a year, hoping your issue gets resolved—and that no others pop up in the meantime. When tax season arrives, you pray that your T4 is accurate. Mostly, you just wish that someone would fix this mess.



It's a tall order. The federal government is Canada's single largest employer: it doles out \$22 billion to roughly 270,000 people every year. Since early 2016, when the Phoenix pay system was introduced, almost two-thirds of those workers have been paid incorrectly at least once per year, many of them much more frequently than that. As of March 2018, the government owed employees an estimated \$369 million, and employees owed \$246 million back. It's tough enough to get a dozen beer-league hockey players to pitch in \$300 for season registration, so imagine giving and taking \$615 million to and from more than 100,000 different people. That's what Lemieux and his team have to do, not taking into account the thousands of new cases that appear every pay cycle or the root problems that cause them.

Phoenix was meant to save Canada \$70 million per year, eliminate tedious work and update an antiquated payroll system. By the Senate's estimate, it will instead cost taxpayers \$2.2 billion by 2023. "It's an incomprehensible failure," Canada's auditor general, the late Michael Ferguson, FCPA, wrote bluntly in one of two audits his office performed on Phoenix. NDP MP David Christopherson put that into context in a public accounts committee meeting: "When Mr. Ferguson uses words like 'an incomprehensible failure,' in that world, that's about as close to swearing as you can get."



The auditor general's report identified a slew of reasons for the fiasco: flawed software, a lack of testing and employee training, an imperative to stay on budget and schedule, and a non-existent accountability structure. But Lemieux is more interested in the future than the past. "I don't know how many times we can say we are sorry about this," he says. So he doesn't apologize. Instead, he praises public servants for continuing to show up at work every morning. "We feel for them. Some employees have very difficult pay issues," he says. "I'd like to thank them for being patient with us. I know it's stressful." He also knows that, for those burned by Phoenix, the only satisfactory apology is a fix.

There's no other option. Though the government intends to replace Phoenix—it's currently testing a number of alternatives—a new system will need to source essential employee data and pay history from the existing one. "Regard-

less of whether the government stays with Phoenix or moves to something else," Ferguson said in a government operations committee meeting, "it needs to get Phoenix stabilized."

ay in the public service has never been perfect. Before Phoenix, departments handled payroll themselves using an inefficient patchwork of finicky old systems. So the Harper Conservatives vowed a countrywide cleanup: every department would start using the same system, Phoenix, managed in large part by a new 550-employee office in Miramichi, which lost 200 jobs

million. If that meant they had to leave out certain features, so be it. Human pay advisors would find manual workarounds, they reasoned. "Because they wanted to stay within schedule and within budget, they cut some of the functionality within the software," says Jean Goulet, the principal who led the Phoenix reports for the office of the auditor general. "They cut on readiness at the department level, and that led to the disaster as we know it."

Phoenix was doomed upon delivery. According to the auditor general's reports and an independent 2015 review by research firm Gartner, departments and agencies reported chronic errors during testing. The system couldn't perform 100 necessary functions, like providing proper compensation for terminations, paid leave and acting pay (i.e., temporarily working a higher-paid position). Pay advisors in Miramichi, who were supposed to resolve those issues manually, didn't



"When an auditor general uses words like 'incomprehensible failure,' that's about as close to swearing as you can get."

when the Conservatives scrapped the long-gun registry in 2012. (The pay centre's original location, in the same building as a Money Mart, was unintentionally prescient.) The government put three senior Public Services bureaucrats in charge of the project and officially named it the Transformation of Pay Administration Initiative. Everyone called it Phoenix; it's easier to fit on a placard.

The project was incredibly complicated, like the HR equivalent of string theory. Because each of the federal departments and agencies had their own collective agreement, they all calculated pay for overtime, promotions, maternity leave and other types of work differently. Altogether, Phoenix needed to assimilate more than 80,000 different pay rules.

In 2011, IBM won the contract to build the system and requested \$274 million to do it. The three bureaucrats instead instructed them to proceed with the approved budget: \$155

fully understand the system, either. They kept encountering errors they couldn't decipher. "No one could read the Gartner report and have any other conclusion than, 'Oh my god, the *Titanic* is

heading for an iceberg," Conservative MP Kelly McCauley said. Staff, departments and unions all recommended delaying Phoenix's rollout, and suggested keeping the old pay system in place just in case the new one imploded.

But the three ranking bureaucrats ignored the warnings. They cancelled independent audits of the system, reported near-perfect internal test results and then, in 2015, scrapped a plan to pilot Phoenix in a single department. "It was like somebody putting on a major play and saying, 'Dress rehearsal, shmess rehearsal. We don't need to worry about that,'" said Christopherson, the NDP MP.

At the same time, the bureaucrats assured their bosses that everything was running smoothly. "The bad news stopped there," says Goulet. "There was definitely a lack of oversight. Everything got channelled through the three Phoenix executives." As a result, he adds, "There was no way for the

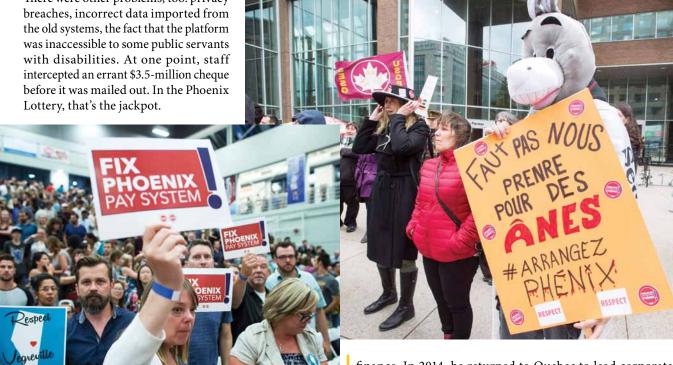
deputy minister to have a clear view of exactly what this was." Senior leadership was more concerned with the 2015 federal election anyway. Phoenix was a back-office project, says Goulet, the type of thing that wouldn't typically attract attention from the higher-ups, "especially when they were being told that everything was fine."

It wasn't fine. When Phoenix went live in February 2016 under the new Liberal government, it broke immediately. The system couldn't properly process a staggering number of pay requests, so Miramichi staff began manually overriding the system on a case-by-case basis, both slowing down the pay process and introducing errors. When the backlog ballooned, management removed review and approval steps to save time, only making the problem worse. It didn't help that Phoenix's back-end software would, without warning, stop working for days at a time, forcing pay centre staff to work evenings and

weekends to cram between blackouts. There were other problems, too: privacy

Part of it was Lemieux's experience. He grew up in Quebec City and studied economics at Laval in the 1990s. He became an environmental manager at the province's largest gas distribution company, and then joined the public service in 2003, working for Environment Canada as a senior economist focused on climate change. He added an MBA and a professional accounting designation to his resumé along the way. "When I did my MBA, I started to grow the ambition to lead an organization," he says. "The accounting training was well aligned with that. It gave me the opportunity to learn more about the profession and create networks within the finance community."

Lemieux spent a decade climbing the rungs of the Atlantic Canada Opportunities Agency, an economic-growth organization run by the federal government in Halifax, where he was eventually appointed director general of administration and



ike most public servants, Lemieux had no idea Phoenix was going up in flames. In 2016, when the system was implemented, he was living in Montreal with his wife, a fellow public servant with whom he has three university-aged children. As he puts it, "I was not someone from Ottawa."

But that summer, Ottawa called. It was Marie Lemay, a former colleague who had been appointed the new deputy minister of Public Services and Procurement. She was overseeing Phoenix and asked if he'd help her fix it. He'd started hearing horror stories about the pay system and knew it would be an explosive file in the national spotlight, so he wondered, "Why me?"

finance. In 2014, he returned to Quebec to lead corporate services at Economic Development Canada, a Crown corporation based in Montreal that helps Canadian companies find international business. "I was looking for a challenge," he says of the move. There, he met Lemay, who later gave him his true challenge: Phoenix.

Beyond Lemieux's experience, Lemay hired him for his temperament. She saw him as a composed leader who would place an emphasis on collaboration, speak directly to employees and champion their needs, as he had in previous roles. "Marc is known to be a people person, putting his employees' well-being and interest at the centre of his activities and accomplishments." Whereas Phoenix inspires enraged hair-pulling, Lemieux disarms tension. "If my staff come to me in the middle of a crisis, I tend to calm them down instead of adding pressure," he says. "That creates a space where we can find a solution."

Lemieux started the job on Oct. 31, 2016, an appropriately ominous date. At the time, public servants weren't yet panicking over Phoenix. "There was a big time delay," says Martin Paradis, an Ottawa CPA whose clientele includes about 15 federal employees. At first, they assumed the pay errors were annoying mistakes, not a countrywide crisis. "For the first 12 or 18 months, people were in denial, thinking, 'It's going to get fixed. It's going to get fixed...'"

But clues of a larger problem began to surface. Elsewhere in New Brunswick, an executive-level public servant who oversees pay for about 2,000 employees—and who requested anonymity for fear of retribution—started noticing payroll anomalies. He got too much every paycheque; his boss had issues, too. A recent retiree was still receiving her salary, while one employee got paid

\$75,000 for no reason at all (the man shrugged it off and said, "I don't pay attention to my bank account"). So the executive set up weekly calls with national headquarters to sort through the errors. "Nobody wants to touch their pay now," he says. "It's a nightmare."

Tax season is its own horror. If the government pays an employee an extra \$40,000 and she receives a post-tax sum of \$25,000, the government still asks for the full amount back. (In January, Finance Canada released draft legislative proposals to address this issue, and union leaders say they are confident the problem will be resolved soon.) Plus, a fictional five-figure bonus might disqualify someone for certain social benefits. "It's impossible to get 100 per cent of it sorted out, because so often you get error upon error, and it's just a big snowball," says Paradis. "I guarantee a quarter of the cases are still uncovered, because people don't even know. They don't realize their T4 doesn't make any sense."

Public servants began calling Paradis with Phoenix woes, asking, "Can you fix this for \$200?"—the amount of an accounting credit the government provides public servants affected by Phoenix (additional credits are available in some

cases). "I would have to spend 20 hours fixing it. I don't think so." It's not worth it for him to take them on as clients, but he occasionally helps them fill in and review a spreadsheet of supposed and actual earnings, in order to pinpoint the issue. "There are three things you have to reconcile: what's deposited in your bank account, what's on your pay stub and what's on your T4. Those are often three very different things." And sometimes none of them is actually correct.

"There's no simple solution. If you try to impose one, it's only going to be more chaotic."

By June 2017, Miramichi was overwhelmed by nearly 500,000 outstanding pay errors. Protests erupted across the country on a regular basis. Rather than wait for the pay centre to resolve their problems, some federal employees quit. Others deferred retirement, cashed in RRSPs or took out loans.

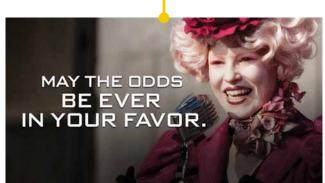
The past year's headlines haven't helped. IBM secured an additional government contract last May, and in November unions took issue with a proposed federal worker wage increase that they say would not match inflation. Additionally, the three bureaucrats responsible for Phoenix were never fired—one was shuffled into another role within Public Services, and the other two are now retired.

The deputy minister who oversaw Phoenix's rollout also retired, and his replacement, Lemay, has since moved to the Privy Council Office. They're just two of the five people who have held the job since Phoenix was announced. "The number of different people who served in the role as deputy minister makes it...difficult to identify somebody as accountable," Ferguson said in a committee meeting. "Either by design or accident, it almost seems as though Phoenix was set up in such a way as not to have somebody who was specifically

THE BEST MEDICINE

On payday, Phoenix causes headaches. On Twitter, grim humour.

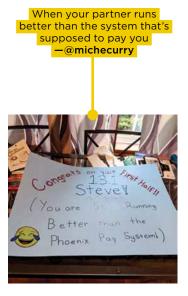




Dear Colleagues,

Payday tomorrow. Maybe.

-@TRexdeej



responsible." In another committee meeting with Public Services leadership, McCauley, the Conservative MP, said, "I guess we should give you a DeLorean and Doc Brown to send you back to the future to answer some of the questions. Because we keep asking about stuff, and you weren't there."

emieux wasn't there, either. "He came on board after everything exploded, basically," says Goulet, who adds that both of the auditor general's reports focus primarily on the time before Lemieux's arrival. And because the first of those reports was published about a year after he took the job, neither Lemieux nor his colleagues fully understood the scope of the problem. So, his first order of business was understanding what went wrong and why. He called IBM, consulted Public Services staff, met with department HR heads, sat in on meetings with ministers and their deputies, and took monthly trips to Miramichi. At the pay centre, morale was low—overworked staff couldn't make a dent in the backlog, and they were tired of being yelled at over the phone by Phoenix victims. Lemieux witnessed a lot of anger and impatience, but saw an appetite for change, too. "At first, it was a challenge to make sure that people understood that there's no simple solution. If you try to impose one, it's only going to be more chaotic," says Lemieux. So he stuck to the strategy that got him the gig. "We needed to truly listen to them, see what their limits were and address their needs. That's how you build trust."

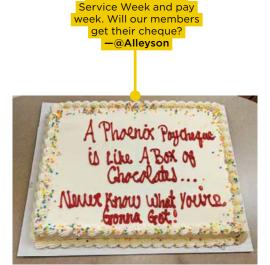
Eventually, Public Services began unleashing its master plan. (Lemieux oversees 455 employees and answers to associate deputy minister Les Linklater, whose time is also largely occupied by Phoenix.) The government provided additional training and support for its existing employees—a mental health ombudsperson saw 500 staff between February 2017 and June 2018. Public Services also hired 1,000 new permanent workers. Some of the new staff went to Miramichi, some worked out of new or reopened offices in cities including Winnipeg and Gatineau, and some landed in the departments serviced by Phoenix. "There's no question that helped," says David

Hamilton, an acting project coordinator at the pay centre. "Working directly with an HR person at the department has improved things immensely. They're eager and want to work with us, and our response time is much faster."

Lemieux and co. also implemented "pay pods." In Miramichi, employees typically specialize in one area—new hires or unpaid leaves, for example. "We had nobody who could deal with *all* of the cases that might come up for an employee," he says. "So the staff suggested grouping people with different expertise. They wanted to work as a team." Lemieux ran a pilot project, putting a pod of 25 disparate specialists in charge of pay for three government departments. Since January 2018, the trial has reduced the pay error queue in those departments by more than 46 per cent. Now, about half of the departments serviced by Miramichi have pay pods. "All of that was a proposal that came from the team on the ground," says Lemieux.

He's hoping steps like these can curb the backlog. But for Phoenix's underlying technological issues—software glitches, missing functions, bizarre errors—Lemieux realizes neither he nor his staff has all the solutions. So he's looking elsewhere. "Basically, we're telling the private sector, 'We have these issues. What's your solution?'" he says. "It could be an IT or an AI company. It could be a pay company that wants to sell us their expertise so that we can move forward faster."

Those companies' ideas could help fix Phoenix—or replace it. Lemieux is focused on stabilizing the system and fixing public servants' pay, but the federal government's ultimate goal is to create a new platform altogether, which will import data from Phoenix. In November, the Treasury Board, the body that reviews and approves government spending, selected five bidders—including Toronto's Ceridian, which handles pay for one-fifth of Canada's private sector—to each create a prototype of a federal payroll system. The 2018 budget earmarked \$16 million to begin the replacement process, but further details, including the value of the final contract, have not been announced. Depending on whom you ask, the new system could take as long as five years to arrive.



It's National Public



"If the government



That one colleague

who got paid \$37,000

instead of \$1,500

@sad_can_gov_emp



rom his corner office on the 21st floor of an Ottawa skyscraper, Lemieux can see the offices of thousands of public servants who would rather not wait five years. He can see the streets where they've marched and burnt Phoenix effigies in protest. He can see Parliament Hill, where Conservatives slam Liberals for fumbling Phoenix and

Liberals slam Conservatives for starting it—and where politicians and bureaucrats routinely promise this will never happen again.

Public Services leadership and the Treasury Board say they are implementing new policies and clearer lines of accountability to prevent another Phoenix. And everyone agrees that government payroll needs to be simplified, so that neither Phoenix nor a replacement system has to accommodate 80,000 pay rules. Public servants will find out if these changes make a difference

Public servants will find out if these changes make a difference if and when Canada implements a new pay system. Only its success—or failure—will prove whether the government learned any lessons from Phoenix.

In the meantime, things are slowly improving. Public Services says additional staff and pay pods have further decreased the backlog; in December 2018, beyond its normal workload, Miramichi processed 6,000 more pay requests than it received. Still, Lemieux is hesitant to say when Phoenix will be fully stabilized. "It's difficult to predict when it's going to happen," he says. "At one point, we predicted the backlog would be gone by such a date. Well, we missed that date—by a lot."

But even Phoenix's most vocal critics praise Lemieux. "It's a little funny to say this," says Goulet, who authored the auditor

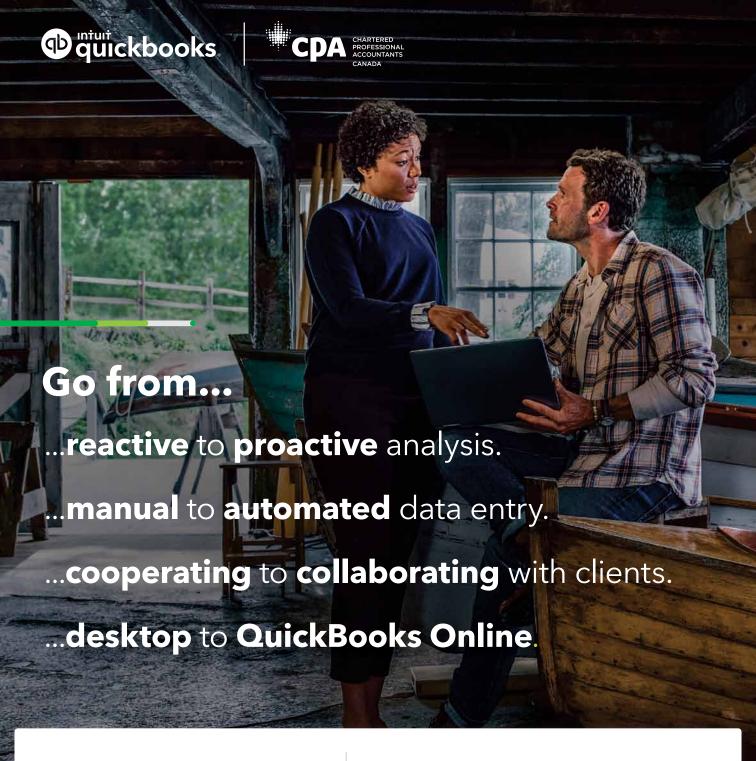
general's damning reports. "The relationship with Marc, from my side, has been a good one. He's been very co-operative." Chris Aylward, the national president of the Public Service Alliance of Canada, a union of about 180,000 federal workers, was sympathetic for—but not envious of—Lemieux's position. "Marc is doing the best he can with a broken system."

"People are doing long hours and showing leadership at all levels. That gives me energy."

Lemieux remains optimistic. "We all need to pull in the same direction now," he said softly at the end of an interview in his office. "I see employees doing very long hours and showing leadership at all levels. That's something that gives me energy."

It was just before 5 p.m. on a November afternoon, and a Public Services communications staffer interjected to remind Lemieux that he needed to get on the road: he had another meeting scheduled—about Phoenix, of course. "He doesn't finish at five," she said with a smile, hinting at the untold hours that Lemieux spends hunting for a solution for hundreds of thousands of federal employees.

He's trying to find a solution for himself, too. Every payday, Lemieux gets charged a small, ever-changing amount for a parking spot he doesn't use anymore. He brushes it off. "My problem is really minor," he says. "It can wait." ◆



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BY BRYAN BORZYKOWSKI **ILLUSTRATION BY MATTHEW BILLINGTON**

To keep up with splashy start-ups and co-working spaces, corporate landlords are giving Canada's offices a high-tech makeover

ver since it was founded in 2003, Dream Unlimited has run its business like every other big, boring real estate operation: it buys commercial buildings across Canada, leases out the space, collects rent and that's about it. It's certainly a profitable strategy: the Toronto-based real estate investment trust (REIT) made about \$120 million in net rental income in the first nine months of 2018, and the global real estate market is worth trillions upon trillions of dollars.

Collecting rent will always be central to any real estate business, but companies like Dream are starting to realize that may not always be enough. In our tech-fuelled future, the traditional way of doing things isn't going to cut it. "Real estate has been operating the same, without any big



PHOTOGRAPHS: GYEKYE BY **EVAAN KHERAJ**; COOPER, ALIMCHANDANI COURTESY OF SUBJECTS

innovations for a very long time," says Pauline Alimchandani, a CPA and Dream's chief financial officer. "Things are beginning to change."

In many ways, they already have. Start-ups are ditching rows of cubicles in favour of open-concept offices tricked out with tech. WeWork, the frontrunner in a vast cadre of rapidly expanding co-working spaces, lets tenants book conference rooms and find workspaces on their smartphones. If companies like Dream don't adapt, their tenants will rent from the REITs that do. "You see how companies like Uber or WeWork can change the land-scape so quickly," says Alimchandani. "We realized that for us to compete with a company like WeWork and to stay relevant to our tenants, we need to offer increasingly better experiences."



So, last year, Dream did something most businesses fail to do until it's too late: it started funding its disrupters. In partnership with Toronto-based Relay Ventures, Dream created Alate Partners, which provides capital to "proptech" companies—that is, innovative technology firms focused on the property sector.

Just like financial technology (i.e., fintech) has disrupted the financial sector, proptech, a nascent but rapidly growing industry, is starting to change the way people think about and interact with real estate, whether that means urban skyscrapers or suburban single-family homes. Enterprising entrepreneurs are building tools to help renters find space faster, collecting data to help companies know where to rent, and trying to cut out real estate agents altogether.

Through Alate, Dream has invested in commercial real estate start-ups like Arrive (formerly ParkWhiz), which helps companies with vehicle fleets find, book and pay for parking, and Lane, a platform that lets workers access building amenities. Through the Lane app, tenants can, for instance, sign up for wellness programs, submit maintenance requests and hear about office events, while their employers and landlords can send out maintenance alerts, monitor parking and create employee handbooks, among other things. Not only will Dream have a stake in these and other proptech companies; it can also offer their services to Dream tenants.

Though proptech is still young, it's only a matter of time before it transforms the real estate sector. According to PitchBook, a Seattle-based financial research company, \$3 billion in venture capital was poured into North American real estate start-ups in 2018, double the amount that was invested in 2014. PwC found that the North American proptech market was worth US\$7.3 billion in 2017, up from US\$4.6 billion in 2016, and that number is only going to grow. Dream, for one, plans to be on the crest of the wave. "To be a landlord of choice, we need to have a more personal connection with tenants," says Alimchandani. "It's changing from just collecting rent cheques."

ofi Gyekye, Lane's 30-year-old founder, is one of the entrepreneurs hoping to make a mark in the proptech business. Since founding his first business at age 22, he's been in enough corporate buildings around Toronto to know that, by and large, they're soul-sucking spaces. "The workplace experience is pretty abysmal," he says.

But when Gyekye started working on Lane, the term proptech didn't exist. He had experience building enterprise software, and he saw an opportunity to enhance the tenant experience. So he founded Lane, which is available in a number of buildings that house offices of the Big Four firms. The platform may soon let employees book meeting rooms, obtain guest passes from security, buy gym passes, receive discounts on cafeteria food, locate vacant parking spaces, while companies will be able to see how many people use various rooms, where they spend their working hours and whether they renew their gym passes. That information will help them better tailor the workplace experience to their staff's needs, says Gyekye. "It streamlines everything."

Today, proptech is still a relatively unknown field. "It was not on the radar when we started," he says. "We've seen a few players in the space since, but real estate moves exceedingly slowly as an industry."

A new accelerator is trying to change that. Lane was one of 10 companies chosen to participate in Colliers International's first proptech accelerator, which it launched last year with Colorado-based Techstars. Its goal is to turn fledgling proptech start-ups into viable operations. Like Alate, it focuses exclusively on commercial real estate and takes an equity stake in the companies it works with (it wouldn't say how much).



Colliers is betting that the proptech industry will explode on numerous fronts, transforming building design, data analytics, Internet of Things technology and more. David Bowden, CEO of Colliers International Canada, sees a future where electrical, heating and ventilating systems are entirely automated—"that's a market in the billions of dollars," he says—where data can tell companies how its employees are using its spaces, and where retailers know in advance if a store will be successful or not.

One of the companies in the Colliers accelerator, New York's A Retail Space, uses geo-tracking smartphone software to give retailers precise data on how many people pass specific buildings, and the demographic group to which those passersby belong. That can help companies decide where to set up shop. "Knowing that information makes an investment significantly less risky," says Bowden.

Other companies in the accelerator include MapYourProperty, a Toronto-based business that helps land developers, urban planners and others conduct feasibility studies, identify zoning issues and conduct environmental assessments. Sweden's Raybased, meanwhile, creates wireless networks that allow commercial real estate operators to monitor and control electrical, heating, ventilation and lighting. Colliers has also invested in companies that can predict real estate market trends and help university staff and students more easily find housing.

All sorts of companies are entering every facet of the proptech space, but Gyekye thinks improving the office experience is going to be one of the industry's central focuses, especially considering about 47 per cent of Canadian workers are unhappy with their jobs, according to Hays Canada. Part of the reason for that dissatisfaction is because of our offices. Numerous studies have found that open offices stifle collaboration, decrease productivity and increase absenteeism. These spaces aren't going away, so companies have to find ways to make them better.

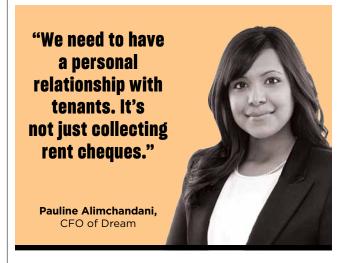
The technology to do so exists. Proptech companies are hoping to give those tools a foothold in offices by making them user-friendly. They're hoping to do for real estate what Uber did for cabs, what Wealthsimple did for investing and what SkipTheDishes did for delivery.

nlike in those industries, however, it's the large companies that are driving the change in the real estate world. Banks may be investing millions in digital transformation now, but that's only because fintech up-and-comers have eaten into their market share. While Gyekye thinks that proptech "is entirely disrupting" the real estate market for the better, Bowden thinks it's complementing it. "I would say it's less about disrupting the market and more about assisting it," he says.

Bowden thinks proptech will allow landlords to be more efficient. For instance, if data reveal that the only small meeting room in an open-concept office is constantly being booked, he can add more rooms like it to future properties. The more he can use proptech to help tenants, he says, the better it is for his business.

While Bowden doesn't think proptech start-ups will make

stalwarts like Colliers obsolete, he says creating an accelerator will give his company a clearer view of the future. "It gives us an efficient way of assessing the technology that's coming forward," he says. "If we're assessing 1,000 property technology concepts on an annual basis, we'll have a great understanding of what the future might look like." And if some sectoraltering technology does come along? If it's part of the accelerator, Colliers will have a stake in it.



In some ways, whether proptech is going to disrupt or compliment companies is besides the point. The staid real estate sector is about to change in dramatic ways, and companies need to decide where they fit in, says Courtney Cooper, Alate's director of corporate development. "A lot of real estate companies are trying to be innovative and figure out how they want to operate and serve their customers going forward," she says.

Cooper thinks great results can come from collaboration between industry incumbents and tech companies. The startups have the big ideas, the venture capitalists have the funds and the real estate companies can put the technology to use. "Everyone's trying to figure out how to offer the best value to tenants," she says. "Real estate companies are looking to adopt more tech, and they're signalling to tech entrepreneurs that things are changing."

Of course, some in the industry are apprehensive about the coming change, but Alimchandani for one is excited by the possibilities. Dream may be a real estate operator and developer now, but she thinks it could soon start playing a significant role in how people live and work. She says Dream's tenants want communities where everything from retail and transit to workplaces and green spaces are integrated through technology. The company has already invested in a platform that will allow tenants to order groceries to their offices or have dry cleaning delivered to the trunk of their car while they work. "It's easy to see how a platform like this could have multiple uses within an integrated community," she says.

However proptech plays out, the real estate industry is guaranteed to change significantly over the next decade. "In 10 years, we'll have a different way of interacting with people in our communities," says Alimchandani. "Traditional thinking about real estate is becoming obsolete." •

Faces of the Future

BY ALI AMAD

Every day, the accounting profession evolves.

Technologies like artificial intelligence and blockchain are poised to revolutionize the field, and the world is increasingly relying on accountants and auditors for much more than crunching numbers. Luckily, the latest recruits are up to the challenge. They come from every corner of the globe. They're bright, ambitious, and some of them are already sitting in the cubicle next to yours.

Meet six new or soon-to-be CPAs shaping the future of the profession.

Rosoleen Rutherford

Age 36 / Surrey, British Columbia Senior accountant at DMCL

WHY ACCOUNTING

Rutherford was born in Greece, lived in Indonesia and eventually settled in Nanaimo, B.C. She dreamed of becoming an archaeologist ("but it was terribly boring"), then worked in retail and restaurants before going back to university, where she took an accounting elective. "I felt pretty silly being 28 and not knowing what an income statement or balance sheet was." But once she got the hang of it, she was hooked; it felt like solving a puzzle.

WHERE SHE SEES HERSELF IN 10 YEARS

In five years, Rutherford hopes to be a manager at DMCL, so that she can support accounting students and cultivate a fun work environment. She plans to get another designation, too. "Accounting is such a vast field and there's so much to know, so having another designation will give me confidence to provide more tailored services."

ON THE FUTURE OF ACCOUNTING

"Change is inevitable," she says.
"Technology constantly gets
blamed for job losses, but society
has always been able to adapt."
She predicts tech like AI will
create new accounting jobs and
value-added consulting services,
and commends organizations like
CPA Canada for providing ongoing
education. "There are always going
to be people left behind, and
they're the ones we need to help."

HOBBY

A bookworm and aspiring author, she's spent countless nights reading until sunrise. "That's why I can't read during tax season!"



WHAT SHE'S DOING NOW
Rutherford works for DMCL, a
mid-sized accounting practice in
Greater Vancouver. She pursued
a CPA designation because,
wherever she's worked with
accountants, she's found it to be
an inclusive work environment
with rewarding challenges.



Tatsuya Aoki

Age 24 / Toronto
Staff accountant at EY

WHY ACCOUNTING

Growing up in Japan, Aoki loved numbers and economic theory, but he felt overwhelmed in his first accounting class. He embraced the challenge, the same way he taught himself English. "Accounting is the language of business," he says. He moved to Canada in 2013 and earned a graduate diploma in professional accounting.

WHAT HE'S DOING NOW

Aoki joined EY full time after graduation. "The learning curve at a public accounting firm is pretty steep," he says. He wrote the CFE in 2018, finishing in the top one per cent and making the nationwide honour roll. "It was so rewarding. It was like I was competing with myself, not with others."

WHERE HE SEES HIMSELF IN 10 YEARS

He wants to branch into behindthe-scenes work at EY, focusing on audit quality, risk management and the complex, case-based issues that arise with major clients.

ON THE FUTURE OF ACCOUNTING

Aoki worries blockchain may replace the need for human intervention in audit. "I don't completely understand blockchain, so that's where the fear comes in," he says. He credits CPA Canada for its efforts to expand members' skillsets beyond audit and traditional accounting areas. "As CPAs, we should help clients mitigate their fear so we can all transition together."

FUN FACT

He once gave a speech in front of the Japanese imperial family.



Melynda Love

Age 27 / Winnipeg Manager at MNP

WHY ACCOUNTING

Love first became interested in business during high school. She learned how to do payroll, handle invoices and file returns while working part-time at a manufacturing processing company. As a perfectionist, she loved the precision of accounting. By 20, she'd founded her own company, Lovely Designs, building websites, teaching accounting skills and providing IT support for small businesses.

WHERE SHE SEES HERSELF **IN 10 YEARS**

Love hopes to help other women in accounting reach leadership roles, and advocates for equality among genders, orientations and backgrounds within the profession. "St. Mary's Academy" her Catholic high school-"taught me the idea of service to the community."

ON THE FUTURE OF ACCOUNTING

Love worries that problems will arise as tax returns and bookkeeping become "commodity services" detached from professional judgment. She cites cloud accounting software that promises simple do-it-yourself solutions. "I have had very few clients who did not require adjustments before filing their returns. Technology provides a false sense of security that everything is being taken care of."

WHAT SHE'S DOING NOW

She's a manager in assurance services at MNP, which gives her a bird's-eye view of corporations, charities and government bodies alike. She makes sure every day is different. "The work-hard-playhard lifestyle is very real in accounting. I encourage my co-workers to be themselves and inject a little fun into everything."



"The workhard-play-hard lifestyle is very real in accounting"

Mylène Pellegrino

Age 27 / Montreal
Assistant controller at Michael Kors

WHY ACCOUNTING

Pellegrino has always wanted to create her own business, and accounting seemed like a good first step. While studying at Concordia in 2013, she interned at Michael Kors. "Accounting for handbags and shoes felt like a dream," she says. The employee discount was a nice perk, too.

WHAT SHE'S DOING NOW

After working her way up to assistant controller at Michael Kors, Pellegrino became a CPA. The CFE was the hardest exam she ever took. "Waiting for the results was the longest two months of my life," she says. "But it was worth it. I cried when I found out I passed."

WHERE SHE SEES HERSELF IN 10 YEARS

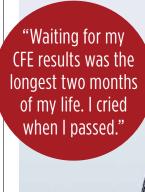
Pellegrino wants to be the head controller of a company and then start her own fashion label. Despite stiff competition and narrow margins, she's drawn to and inspired by the industry's creative energy.

ON THE FUTURE OF ACCOUNTING

Pellegrino believes that CPAs will play an increasingly prominent role in compliance, due to more rigorous reporting standards and government regulations, particularly when it comes to the environment. "We now need to use more professional judgment than in the past."

FUN FACT

She's an avid believer in astrology. "Scorpios like me are ambitious, passionate and intuitive individuals," she says. "When we set a goal, we will do whatever it takes to reach it and will never give up."





Lawrence Qianyu Zhang

Age 23 / Toronto Public accountant at MNP

WHY ACCOUNTING

Zhang grew up in Guangdong, China, and moved to Canada when he was eight. He excelled at science and computers but became interested in accounting in part because he earned silver in a high school accounting competition. He valued the soft skills that came with pursuing the CPA designation, like strategy, teamwork, communication and problem solving.

WHAT HE'S DOING NOW

After graduating with a master's degree in accounting, Zhang joined MNP, where he conducts audits for public companies in industries like technology and mining. Last year, he won the Governor General's Gold Medal and \$5,000 for getting the highest CFE score in Canada. "I was surprised I managed to get the top prize," he says. "I was just happy that I passed."

WHERE HE SEES HIMSELF **IN 10 YEARS**

Zhang eventually wants to be a manager, so he can mentor aspiring and new CPAs. "MNP's mentorship program helped me get the gold medal," he says. "I appreciate those who helped me, and I want to support a future CFE writer in the same way."

ON THE FUTURE OF ACCOUNTING

Zhang believes AI will dramatically change accounting, so he's being proactive, adding skills beyond his technical accounting knowledge. "AI can be a good thing," he says. "With manual work being automated, accountants can focus on creative value-added work that will be more useful for clients."

HOBBY

In university, Zhang picked up cooking as a way to unwind after long study sessions. He recently made steamed pork buns from scratch.

> "Al can be a good thing. Automation will let accountants focus on valueadded work."



Anthony Ramos

Age 28 / Halifax
Senior associate at Deloitte

WHY ACCOUNTING

At 18, Ramos left Rio de Janeiro to study English in Canada, with the end goal of studying law. "There's a lot of corruption in Brazil," he says. "I wanted to become a public lawyer to help those in need." But law school turned out to be too much of a time and financial commitment, so he opted for economics, which is how he discovered accounting. "Non-accountants think accounting is just numbers, but I see the life narrative of a business behind those numbers."

WHAT HE'S DOING NOW

Ramos works in value advisory at Deloitte. He says coming to Canada alone with no ties taught him how to be resourceful. "When I find an issue, going to my manager is never my first choice. I try to come up with my own solution."

"Accounting isn't just numbers. I see the life narrative of a business behind those numbers."

The CFE process was stressful, he says. "I have so much respect for anyone who succeeded before me."

WHERE HE SEES HIMSELF IN 10 YEARS

Ramos is currently pursuing a Chartered Business Valuator designation. His long-term goal: "I just want to be able to provide opportunities like the ones given to me."

ON THE FUTURE OF ACCOUNTING

Ramos has seen AI improve audits and create fraud-detecting algorithms. He's concerned tech may eliminate traditional roles like bookkeeping. "Being a CPA today isn't about looking at spreadsheets. You have to think outside the box."

FUN FACT

Ramos spent six years in a military school in Rio de Janeiro, where he had to wear a uniform and march every day. "It taught me a lot about respect, discipline and hierarchy."

For more profiles, see cpacanada.ca/news

APH BY RILEY SMITH

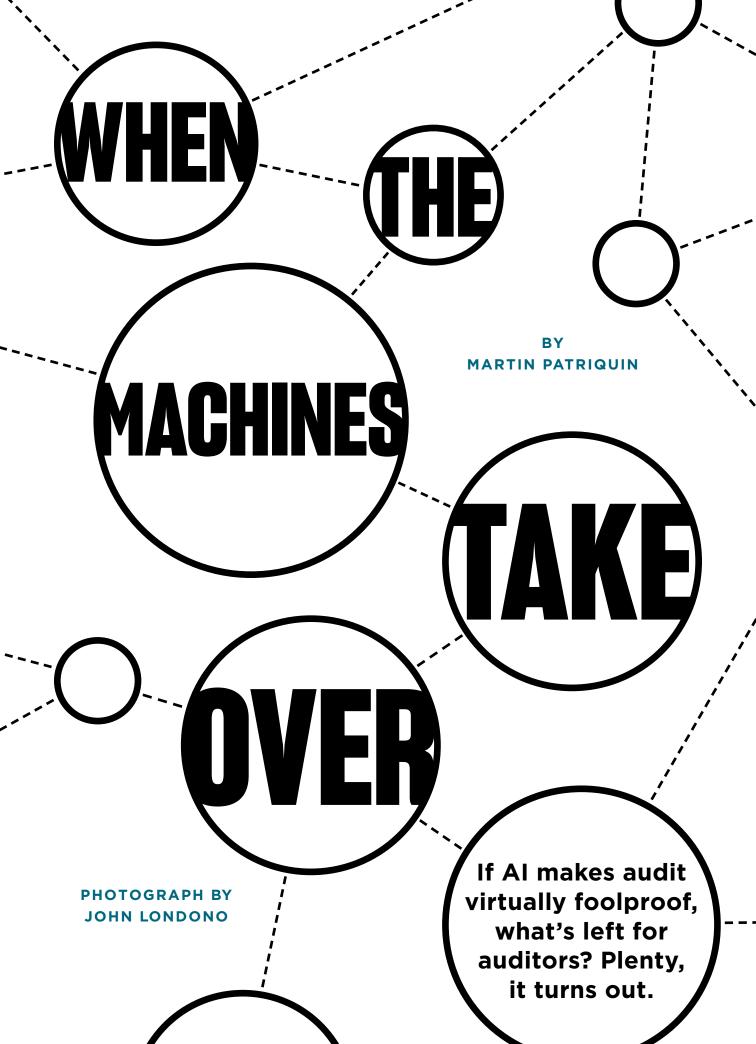


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olon Angel decided the accounting industry was in trouble in 2015, at an American Accounting Association conference. He was listening to a speaker— "Very smart; I'm not going to share his name," Angel says—who at one point told the audience that accountants should learn SQL, the (notoriously complicated) datamanagement computer language.

"I lost it," says Angel, who has black curly hair and a habit of hammering out his syllables with his fingers as he speaks them. "I literally started screaming. Never. This is stupid. Accountants go to school, spend a lot of time getting their CPA. They should never become data scientists, scripters or SQL experts."

To be fair to the unnamed source of Angel's ire, he was trying to address a serious challenge for the accounting industry. The audit landscape is changing. Investors are increasingly relying on unaudited information to assess companies, and some high-profile business failures, such as Carillion in the U.K., have prompted many to wonder how auditors missed the underlying problems. A key issue remains the "expectation gap" between what audits are really meant to do, and what the politicians and public often think they should do—i.e., guarantee that every transaction is examined and every potential problem is caught. "If the profession is not meeting the demands of society, then that is our problem, not theirs, because without the trust and confidence of wider society, we cannot deliver," Michael Izza, chief executive of the Institute of Chartered Accountants in England and Wales, told this magazine in 2018.

The reality is that auditors assess high-risk areas. They aren't required to verify every transaction and flush out every oversight or fraud within the ledgers of the companies they investigate. The sheer volume and complexity of data required to run a modern company is structurally overwhelming. That's why the unnamed speaker told his audience to learn code. Angel thinks he has a better idea: harness artificial intelligence to perform deep, expansive dives into the data-laden innards of companies large and small.

That idea came to the 36-year-old Ottawa-based entrepreneur out of frustration and a desire to bring order to chaos. Angel was born in Brazil, where he had a chaotic childhood, to put it mildly. His parents had a messy divorce, and he spent part of his childhood in the French West Indies; his family was isolated for six months in Guadeloupe during Hurricane Hugo in 1989. "It was every man for himself," he says. "There was no rule of law."

Angel spent his early years in tech in Silicon Valley, and later moved to Ottawa around the time Bernie Madoff went from fêted investor to the face of financial chicanery. Angel remembers marvelling at how, despite the supposedly advanced auditing tools available to the industry, Madoff was able to fool generations of investors and auditors, not to mention the U.S. government, mostly by the force of his own personality.

"The Madoff case really resonated with me because the SEC and [the big firms] don't hire unqualified people. They hire very good people, and yet they weren't able to catch that fraud scheme," Angel says. "Risk management as a whole is completely outdated. In a dynamic, fast-moving world, controls need to evolve dynamically and be adaptive, and large organizations don't have that capability."

The end product of Solon's frustration is MindBridge Ai. The Ottawa-based company produces Ai Auditor, which uses artificial intelligence to do what is often physically impossible for flesh-and-blood auditors: review and analyze 100 per cent of a company's transactions. The company says Ai

Auditor greatly enhances the ability to detect risk, fraud and mistakes-and that it might just revolutionize the industry.

> Others think so, too. MindBridge, which has more than 70 employees, has raised \$13 million in total funding from venture capital firms including New York-based Reciprocal Ventures, Toronto's The Group Investments and San Francisco-based 8VC, along with the National Bank of Canada. It has 200 customers in 10 countries.

MindBridge is far from the only player. Just a short drive away in Ottawa, another company called AuditMap.ai applies machine learning to internal audit, and the Big Four are all investing in their own tools. Such automation will likely cause casualties in the industry—but perhaps not the kind most imagine. "AI will not replace auditors," says John Colthart, MindBridge's general manager of audit and assurance. "Auditors that use AI will replace auditors that don't."

odern auditing was born during the Industrial Revolution. From the outset, audits were meant to increase transparency and boost public confidence in the manufacturing behemoths dominating the economy, as well as the banks servicing them. Of course, auditing is far more difficult today than it was 175 years ago. "Companies increasingly operate across borders; rules and regulations continue to proliferate; and capital markets, products and transactions evolve at a much faster pace than accounting and audit standards," reads a 2014 Forbes Insights report.

Eli Fathi uses the analogy of a lake. An electrical engineer by training and serial entrepreneur, Fathi joined MindBridge as CEO at its inception in 2015. Because today's companies are increasingly large and complex—deep, wide lakes auditors limit themselves to little pieces of them to determine their financial health, he says. "It's like going to the corner of a lake and the fish aren't biting, and from that you say there are no fish in the lake," says Fathi, a slender and direct man who shares Angel's obsession for detail.

MindBridge's solution is to virtually test the whole lake. From its decidedly nondescript offices in the outskirts of Ottawa, the company hoovers up customer-provided data, including general ledger transactions, accounts payable, accounts receivable and income statements. Ai Auditor, which





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launched in February 2017, analyzes the data using a hybrid of AI techniques to identify anomalous patterns of activity that warrant further investigation. It learns by precedent what constitutes a regular transaction, and then picks up and flags irregularities into "low-," "medium-" and "high-" risk baskets (irregularities can be as benign as a mislabelled expense, or as serious as diversions of capital). The software thrives on data, becoming better at its job as it gobbles up more of the stuff. MindBridge now has upwards of 600 million data points, which sit in cloud servers somewhere in the ether. There isn't so much as a server room in the office.

"Just following the standards and using the tools of the moment is no longer good enough," says Fathi. "The accounting industry is reaching a point of inflection where senior people who know how to find these problems are retiring, the tools and standards are all outdated and it's time for a forklift replacement. We need to update standards, retool the team and retrain them."

Ai Auditor has already had success rooting out errors and fraud. Last fall, Gary Krausz, an American CPA who heads the accounting and auditing department at a firm in Los Angeles, was able to uncover evidence of fraud to the tune of US\$2.8 million. Krausz's company was hired to audit a consumerproducts manufacturing company that suspected one of its employees. (Krausz wouldn't divulge the company name, citing privacy concerns.) The company, which had about \$160 million in sales, needed to analyze 18 quarters of its general ledger—over 6.2 million transactions.

Krausz uploaded the mountain of data to Ai Auditor and performed an audit. It found the bad transactions, calculated their value and pinpointed the specific user perpetuating them. The employee in question had posted large amounts in irregular accounts on multiple occasions. The evidence provided was used in the prosecution of the case.

"We fed the client's general ledger data into the software without any filter, and the 'bad transactions' popped right out in our sample of high-risk transactions. It's as though the bad transactions were meant to be found," says Krausz. "Doing this audit on our own would have taken at least five times longer."

indBridge isn't the only business bringing AI to audit. In December, Lemay.ai, another Ottawa start-up, announced a spinoff company called AuditMap.ai, which uses machine learning to automate, improve and speed up the internal audit process. "The internal audit function of many organizations—especially at public companies and governments—is gigantic, mandatory and not very effective," writes co-founder Daniel Shapiro. "Applying deep learning accelerates audit functions by resolving routine legwork bogging down the auditors' ability to assess and report with no compromise on quality."

Meanwhile, the Toronto firm CaseWare, which develops software for accountants and auditors, harnesses artificial intelligence across its audit analysis platform. The AI tool performs a deep dive into transactional and industry data to provide insights that auditors can use.

The Big Four firms are also embracing automation. In 2015, Deloitte won the International Accounting Bulletin's Audit Innovation of the Year award for technology including Argus, its cognitive audit application, which uses machine learning and natural language processing to extract accounting information from virtually any document. In late 2018, the firm also announced plans to triple the Canadian staff count of its AI practice, Omnia, to about 1,000 over the next two years. EY, too, provides AI consulting services and, on its website, reports, "We are embedding emerging technologies such as Artificial Intelligence technology across our end-to-end audit process." KPMG, meanwhile, has partnered with the team behind IBM's Watson supercomputer to develop Clara, a "smart audit platform" that incorporates AI, data analytics and other technologies.

PwC, for its part, has spent "hundreds of millions" on AI and automated technology over the last several years. In 2017, the London-based accounting behemoth partnered with H20.AI, a Silicon Valley developer of open-source artificial intelligence systems, to build a "bot" capable of analyzing billions of data points in order to detect aberrations within general ledger data. The bot, known as GL.ai, is the initial module of Audit.ai, PwC's suite of AI-based products.

Yet much of PwC's investment in machine learning has actually been spent on its flesh-and-blood employees. "A lot of the cost is actually in people," says Michael Paterson, national assurance leader for PwC Canada. "It's the broad upscaling of all our people in the next few years around automation and being able to work with data. For AI to work, you need data and people who can work with and understand its results."

In other words, PwC isn't hiring fewer people because of AI. Rather, it still hires the same number of accounting students if not more—and the company is employing people with different skill sets than it did even 10 years ago. This reflects a broader truth when it comes to AI: by performing the oftenrote tasks like data acquisition, formatting and inputting data, automation allows humans to instead give "value added" services to clients. Paterson says this will make auditors' work more interesting. "The need for insights and analysis and trust around information is actually increasing," he says. "Assurance jobs are going to continue to exist, but they're going to be more important. Being a CPA, working in assurance, understanding a client's business, talking to people and adding insights—that's the stuff that's challenging and valuable."

Currently, artificial intelligence and machine learning tend to shine in the "front end" of an audit, the labour-intensive bit of the practice in which incoming data from various enterprise resource-planning software platforms are harvested, shaped and made uniform. The "back end"—interpretation and analysis of the results—remains the purview of humans.

Angel likens Ai Auditor's progress to that of self-driving cars. Their autonomy is measured in levels, from one (driver braking assistance, lane departure) to five (full automation). "MindBridge is at level four, where the driver can still override the machinery but the car is driving itself," he says. "Similarly, the auditor is always in control of the auditing process. They can always override the process."

It begs the question: what about level five, where humans aren't necessary at all? In 2016, World Economic Forum founder Klaus Schwab published "The Fourth Industrial Revolution," a 192-page future-casting compendium of data-based predictions of how technology will shape the world in the coming decades. Among its predictions: a high likelihood that 30 per cent of all audits will be performed by AI by 2025—a number that will only increase as artificial intelligence is adopted in the industry. "An environment can be envisioned in the future where AI replaces a range of functions performed today by people," he writes.

Like Schwab, the MindBridge executives are already envisioning a time when the company can issue audited statements on behalf of its clients—a prospect that would arguably take auditors out of the equation altogether. Others, however, doubt a fully automated audit will ever come to fruition.

CPA Carol Paradine, CEO of the Canadian Public Accountability Board (CPAB), says that while AI has incredible potential to improve audits, not everything can be automated. Human auditors can apply professional judgment and examine biases in ways AI can't, she adds, pointing to a fraud she uncovered early in her own career. She noticed something was fishy when she visited a company she was auditing and found significantly fewer employees than she expected. "I found it because I was physically out at the site," she says. "Artificial intelligence will be able to verify whether certain calculations are correct, find outliers and look for unusual contracts. But it probably won't be able to verify that an employee actually works for that organization—or even exists. Not all frauds or unusual transactions can be identified by running data through algorithms."

Artificial intelligence poses regulatory hurdles, too. "One of the challenges with AI as a regulator is that you no longer have the same visibility to how the technology works," she says. "You're inherently putting more reliance on what I call the 'black box'"—that is, a self-taught AI platform that coders, regulators and even auditors themselves may not fully understand. "As firms implement artificial intelligence, they will likely have a number of questions around how to demonstrate that enough work has been performed," she says. "They may look for guidance from the standard-setters." If and when those standards are being developed, she says, CPAB will provide input.

"In some cases, AI will help auditors do what they need to do faster—such as reading lease contracts, identifying lease terms, analyzing large data sets to identify anomalies or uncover subtle relationships that a human may have not been able to identify themselves," says Taryn Abate, director of audit and assurance at CPA Canada, which recently released a foundational resource called "A CPA's Introduction to AI: From algorithms to deep learning, what you need to know," in collaboration with the American Institute of Certified Public Accountants. CPA Canada will be following up with papers on big data and AI, and on audit and AI. "It is my belief," says Abate, "that AI will augment the role of auditors, rather than replace them."

MindBridge's Colthart agrees. "My first thought is: if auditors do their job right and adopt technology, they will not go away," he says. "My other thought is: if they don't, they will be removed altogether." •

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Nanoleaf's panels can pulse and change colour to music or a video game

EXTRAORDINARY ITEM

THE SHINING

An LED upstart is facing off against the giants with lighting that changes colour and promises to last a lifetime BY MATTHEW HAGUE

THE GAMBLE: Toronto-based Nanoleaf claims to make the world's most energy-efficient lighting—the LEDs in its bulbs and panels are 87 per cent more efficient than compact fluorescents and last up to 20 years. Starting at around \$25, they're also eight times the price of a regular bulb. Sure, consumers want smart technology, and the US\$26-billion global lighting market is expected to double in three years. But can you build a business on a bulb that never needs to be replaced?

THE PLAN: Nanoleaf is trying to create a niche. Rather than fight the multinationals—Philips and GE dominate the market with combined revenues of US\$10 billion—the company is focusing on design and innovation. Its newest invention is the Canvas, which consist of wallmounted lighting panels (\$300 per set) whose colour can be changed and customized using a smartphone. Hospitals are using them in light-therapy treatment, but the biggest market is music lovers and video game players. The panels are touch-activated and sync to tunes and soundtracks, creating dramatic light shows as people dance or play. "We're trying to make lighting fun," says Leslie Chen, Nanoleaf's manager of communications. "We want these products to help people express who they are."

THE RESULT: When Canvas launched late last year, it was available for sale in 40 countries through Nanoleaf's retail partners, including Home Depot, Best Buy and Apple.com. Although exact financials are private, Nanoleaf says it's currently earning multi-millions in revenues. In other words, the future looks glowing. •







OUTWARDS

THE BUTLER DID IT

Butlers are becoming the must-have amenity at high-end hotels. And they handle a lot more than your luggage and laundry. BY CHRIS JOHNS

You never forget your first butler. Mine was a plucky and gallant young fellow named Oat, and, to be perfectly honest, I had no idea what I was supposed to do with him.

Oat was employed by the Siam, a luxurious hotel in Bangkok where they like to say, "Life without a butler is barely worth living at all."

After some gentle coaxing on his part, I agreed to let Oat unpack my suitcase and arrange for my clothes to be pressed. Eventually, I let him run me a bath and, before the trip was up, he organized a visit for me to one of Bangkok's best street food stalls. He fixed things so I could skip the hours-long lineup, then ordered a bottle of Chablis that chilled in a silver ice bucket—definitely not the standard offering at a rickety roadside stall while I waited for my kai-jeaw poo and char keow teow.

Back home, it took me two weeks to unpack my suitcase on my own without a butler's help and some of the clothes from that trip haven't been properly pressed since.

That was in 2013, when it felt like hotel butlers were still something of a novelty. But three years earlier, the trend forecasting group TrendWatching.com coined the term "brand butlers" and suggested brands "focus on assisting consumers in making the most of their daily lives versus the old model of selling them a lifestyle if not an identity."

Today, butlers are fast becoming the must-have amenity for high-end hotels, cruise lines and even some airlines. The International Guild of Professional Butlers estimates that there are currently a few million professional butlers in the world, and notes that while there has been a steady increase of butlers in the last 30 years, the past decade has seen a surge in the profession.

In New York, the St. Regis has offered butler service for more than 100 years. And when the chain opened in Toronto in November 2018, it went full bore on the butler front, offering the amenity to every one of its 258 guest suites.

"Think of them as a personal point of contact," Heather Wadel, executive butler at the new St. Regis Toronto, says of the hotel's roster of five who can deliver your morning coffee, unpack your bags, press your shirt and are available online to answer questions around the clock. "The goal of our butlers is to create a very bespoke and highly personalized experience for our guests," Wadel explains. "We would have reached out to the guest before their arrival to find out why they're coming, what time they're coming, what their needs are, be it dietary restrictions or mobility issues, and doing everything we can to truly make their stay seamless."

High-end cruise lines like Silversea and Crystal Esprit, a boutique, all-suite yacht in the Crystal Cruises fleet, provide butlers to all of their guests, and Etihad Airways offers Savoy Academy-trained butlers to passengers flying in the airline's luxurious threeroom flying apartment, the Residence.

"The luxury market is competitive," says Melanie Brandman, founder and CEO of luxury travel experts the Brandman Agency, "and one way for high-end hotels to differentiate themselves from the competition is with service. Even the nicest Airbnb isn't going to have someone there to unpack your bags for you or bring you Aspirin in the middle of the night."

Steven Ferry, chairman of the International Institute of Modern Butlers. based in Clearwater, Fla., says the expansion of butlers beyond their traditional roles is changing the profession. "You have a vision of the butler as old-style, stuffy," he says. "Some hotels still have that idea, but more and more hotels are waking up to the fact that the baby boomers and the silent generation are no longer the major market."

The Conrad Maldives Rangali Island, for instance, meets the needs of younger clientele by keeping an Instagram Butler on staff. This photo



with their inner William Wallace only have to ring up the Tartan Butler. This specialized butler, whose research services are gratis, will do a deep dive into your ancestry to figure out which clan you belonged to and arrange to have a custom kilt made (kilt costs not included). And high up in the Pyrenees, La Pleta Hotel and Spa offers guests their very own Ski Butler. Drop your steamy boots with him at the end of a long day on the slopes and they'll be polished, sterilized, dried and presented to you warm and raring to go for first tracks the next morning.

Not to be outdone, the Dorchester provides an e-Butler to help out with any technological challenges, the Viceroy Riviera Maya in Mexico contracts a soap concierge to help guests find their ideal artisanal soap blend, and the tanning butler at the Ritz-Carlton Hotel, South Beach makes sure all of the hotel's poolside guests are sufficiently lubed and properly SPFed. At Las Ventanas al Paraiso in Los Cabos, "dog butlers" provide your pooch with everything from walks on the beach and bespoke menus to dog massages and "doga"i.e., dog yoga-to ensure their canine chakras are in order.

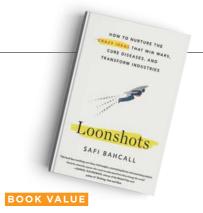
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Meanwhile, guests staying at the Skyloft suites in the MGM Grand in Las Vegas have access to a dedicated 24-hour butler who can handle any and all off-hour cravings. In addition to keeping the party rolling by making sure bars are stocked with clients' favourite beverages, Skyloft butlers also make bespoke playlists to set the mood.

Guests of the Balmoral Hotel in Scotland who would like to get in touch

Jessica Cook, a luxury hotel sales and marketing executive, says this increasing specialization reflects a change in the industry as a whole. "Luxury travel has shifted considerably in the last few years from the conspicuous to the meaningful," she explains. "Where we see butler service now is much less about the white glove service. They're more of a lifestyle assistant or personalized one-on-one concierge who can curate itineraries and experiences for guests on a completely bespoke basis." While making sure, of course, that they don't waste any precious time unpacking. •



DO GET ANY CRAZY IDEAS

What really drives the rags-toriches innovation cycle? It's not what you think. BY BRIAN BETHUNE

Most Canadians will remember Nokia, the Finnish tech giant that ruled the mobile market in the 1990s. But they won't recall it the way Safi Bahcall does. For the American physicist turned biotech entrepreneur, Nokia is exactly what he's writing about—in a negative sense—in Loonshots: How to Nurture the Crazy Ideas That Win Wars, Cure Diseases, and Transform Industries. Back when Nokia was selling half the cellphones on the planet, a Fortune story celebrated the innovative, "winning culture" of "the least hierarchical big company in the world." True enough, right up to 2004, when the same management team shot down a crazy idea from Nokia engineers: an internet-ready, colour-screen, camera-equipped phone.

Nine years later, that idea—in the form of the iPhone—had taken over the market and Nokia sold its mobile division, after watching a quarter of a trillion dollars evaporate from its market cap. So much for the "it's the culture, stupid" catch-all explanation offered for innovative organizations, says Bahcall in an interview with Pivot. The "squishy" favourite premise of social scientists, he adds, leaves them at a loss when the same organizations ossify, because it misses the fact that culture describes behaviour far more than determining it. Bahcall's book is a hard-data scientist's analysis of what really drives the rags-toriches innovation cycle—new idea, commercial success, full stop—and

how to keep the virtuous innovation circle spinning in perpetuity. Step one: realize culture is not the engine.

"Structure drives culture," Bahcall says, and structure follows natural laws, just as H₂0 "is water when warm, and its molecules run around in a randomly chaotic way—call it a pattern of behaviour—and solid ice when it's cold, with its molecules locked rigidly into place."

Human organizations have their phase transitions, too: once they reach a certain size, usually about 150 people, they will need more formalized structures and will inevitably become hierarchical, status-focused and hostile to change. But Bahcall believes structure, like other physical laws, can be managed. Corporations and governments can continuously nurture "loonshots," the against-all-odds concepts that are the main source of future success (and profits). They just have to keep their organizational water hovering near freezing, at a point where slush, open water and solid ice all coexist. They need to love their "artists" and "soldiers" equally: the former are the thinkers who come up with the loonshots, the latter the workers who maintain the group's "franchises" (yesterday's loonshots monetized), and

thereby provide the funding for what will become tomorrow's franchises.

Bahcall offers a host of historical examples to buttress his case. None is as instructive as the story of statins, the class of drugs credited with saving millions of lives from heart disease over the last 50 years. Statins began as a blue-green mould found on some rice in a Kyoto store in 1972. Akira Endo, a young Japanese food scientist, was convinced fungi, which have a bewildering array of antibacterial defences, held the key to lowering LDL—the "bad" cholesterol that elevates the risk of heart attacks. The Kyoto mould delivered what Endo was looking for: a molecule that blocked LDL production, the precursor to Lipitor and Crestor.

But his wonder drug was almost buried before it could save a single life. It was only Endo's off-the-grid perseverance—his trials with chickens, undertaken with a letter of resignation in his pocket, began without authorization from his employer—and his willingness to share his research with outsiders that allowed pharma giant Merck & Co. to pick up the torch.

Bahcall extracts a lot of lessons from the statins saga. Foremost is that the best ideas are not necessarily fated to triumph: loonshots arrive "covered in warts" and teeter on the edge of extinction more than once. They need champions, financial resources and large workforces to succeed, and no human structure naturally provides all three simultaneously. Small start-ups are loonshots' natural habitat, but they lack resources. Larger companies are inherently rigid and biased to the tried and true. Even with the best intentions, he says, "good teams kill great ideas."

With that, Bahcall moves to solutions: empower a Chief Incentive Officer (CIO). "Ultimately, what does a leader want?" asks Bahcall. "Motivated people. Why isn't there somebody at a high level whose sole job is to figure out how to motivate Joe Smith, 17 layers below the CEO?" Only part of that involves money. Even for people weighed down with daycare and mortgage costs, "soft equity" matters as much or more, Bahcall notes. For designers and programmers, "it's a huge motivation to win the respect of their peers, and win an industry award." CIOs with a broad overview of the organizational workforce can offer low-cost help there, by ensuring good work is entered in industry competitions. Or a CIO can identify the number of employees burdened by lengthy commutes from the same geographical area, and ask: how would the benefits in employee loyalty and retention stack up against the costs of opening a satellite office nearer to their homes?

The position Bahcall contemplates would require a sophisticated, innovative financial officer, someone who understands budgets and "both the quantitative and the less quantitative aspects of what motivates people." That is to say, half accountant and half cognitive psychologist. Is this Bahcall's own loonshot idea? Not quite, laughs the author, who has seen a few executives who fit the description in place already. But they're still rare and, partly for that reason, well worth the investment. Bahcall notes that in the battle with competitors for talent, loyalty and new ideas, having a good CIO is like "bringing a gun to a knife fight." •





INVENTORY

IT'S SWEDISH FOR SHRINKING

IKEA is opening smaller stores where shoppers can test drive furniture and order for delivery. Will it be enough to lure the Amazon and Wayfair crowd off their couches? BY MATTHEW HAGUE

Last summer, when IKEA cut the ribbon at its latest Canadian outpost, on the edge of Quebec City, more than 4,000 people were lined up outside to buy new Billy bookcases, Malm beds and suspiciously cheap meatballs. The store didn't open until 9 a.m., but the parking lot was full at least six hours earlier. Some people started camping out the night before, even though it was pelting rain.

Such brand fervour explains how IKEA has become the world's largest furniture retailer, with global revenues of US\$44.6 billion last year. That predominance, however, is far from secure, and the scene in Quebec City might not soon be repeated. Over the past few years,

the increasingly challenging retail market—with its switch to online sales, and the millennial migration to the downtown core—has forced IKEA to rethink its reliance on suburban, car-centric markets.

Which is why, in 2017, after profits dropped by 26 per cent—the first such dip since 2009—the company shelved plans for new big-box stores in Tennessee, North Carolina and Arizona, Instead, "over the next three vears, we will become more accessible and convenient for our customers with new store formats, city locations and a better digital offer," said Tolga Öncü, retail manager of the IKEA Group. That means smaller spaces—new stores that are one-quarter the size of

its typical 300,000 square-foot locations—and better e-commerce tools. To that end the company recently acquired TaskRabbit, an on-demand, smartphone-based service that quickly matches customers with helpers to assemble furniture.

The shift is evident at one of its most recently opened stores in central London, U.K. Instead of a cavernous space with a maze-like layout that wends past just about every piece in the IKEA catalogue, the diminutive, so-called "planning studio"—just 17,530 square feet—looks more like a glass-walled Apple store and has a tight focus on kitchens and bedrooms. No items are stocked in-store. Instead, shoppers can book one-on-one sessions with salespeople to find the right products, then use one of many iPads to order what they want for home delivery. Another planning studio is set to open in downtown Manhattan in 2019, with 30 others to launch globally over the next three years. Kristin Newbigging, public relations manager for IKEA

Canada, will only say the brand doesn't "have any specific expansion plans to share" yet. However, she continues, "it is still our goal to grow and expand IKEA in Canada"—so it's a reasonable guess that Canadians will be sampling a mini-IKEA before long.

The question is, can these changes revive the brand? "I think what they are doing is really smart," says Craig Patterson, editor-in-chief of Retail



Insider, an online industry magazine. "A lot of people, including me, don't like going to the suburbs for their shopping. And I don't see the end of brick and mortar anytime soon. Retail spaces are valuable for increasing brand engagement and awareness. People like lying on the mattress and feeling the pillow before they buy." Even young people. According to a survey done by American magazine Home Furnishings News, 63 per cent of millennials' indoor home furnishing was purchased from a bricks-and-mortar store.

Still, online sales are growing fast, and one major challenge will be catching up to the data-mining capabilities of digital natives like Wayfair and Canadian upstart Article. Both operate in the U.S. and Canada and are beating IKEA in revenue growth. In 2018, IKEA's global sales ticked up a respectable five per cent, the majority of which came from its physical stores, not its website. Wayfair, on the other hand, saw revenues jump

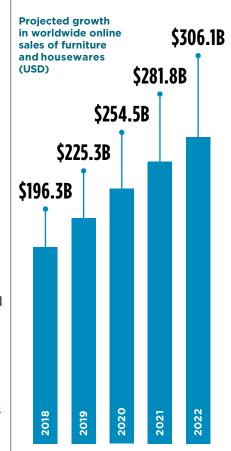
by 47.7 per cent. Vancouver-based Article, on the other hand, projected a doubling of its revenues. (Actuals have not been disclosed.)

A big reason for the success of both companies is how they track and target potential customers using the granular data that comes from every click, like, share and order online. "We are constantly collecting information," says Article CEO Aamir Baig. "We are always looking for insights that will help us answer our customers' questions before they even have to ask, and provide an amazing shopping experience even without physical stores. I definitely see the future being this way." Article makes it easier to buy furniture sight unseen with simple exchange and return policies: it will coordinate pickup of most items with its delivery partners, while Wayfair will issue a return label for most purchases, good for 30 days.

The biggest threat of all, however, might be Amazon. It's one of the world's savviest data miners, and although it only recently launched two in-house furniture lines manufactured exclusively for the company—Rivet for modern pieces, and Stone & Beam for more traditional—it's been aggressive as usual. While IKEA, which often wins customers with affordable prices, retails sofas for an average of US\$800 (less than Article), Amazon is beating that by nearly US\$500. It's also offering free delivery on its furniture, which IKEA has yet to do.

Bob McMahon, CPA, BDO Canada's national retail and consumer business leader, sees strengths on both sides. Amazon, he says, is "the most competitive on price and convenience, both things that shoppers value very highly. That said, consumers still want choice and brands they know. Which gives IKEA some runway to test and implement this strategy." Challenging its old way of doing retail is critical, he says. "[IKEA] is still the biggest in their area, which is a huge asset, but they can't take that for granted. Look at Sears. They were the biggest, they didn't innovate, and now where are they?" ◆

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