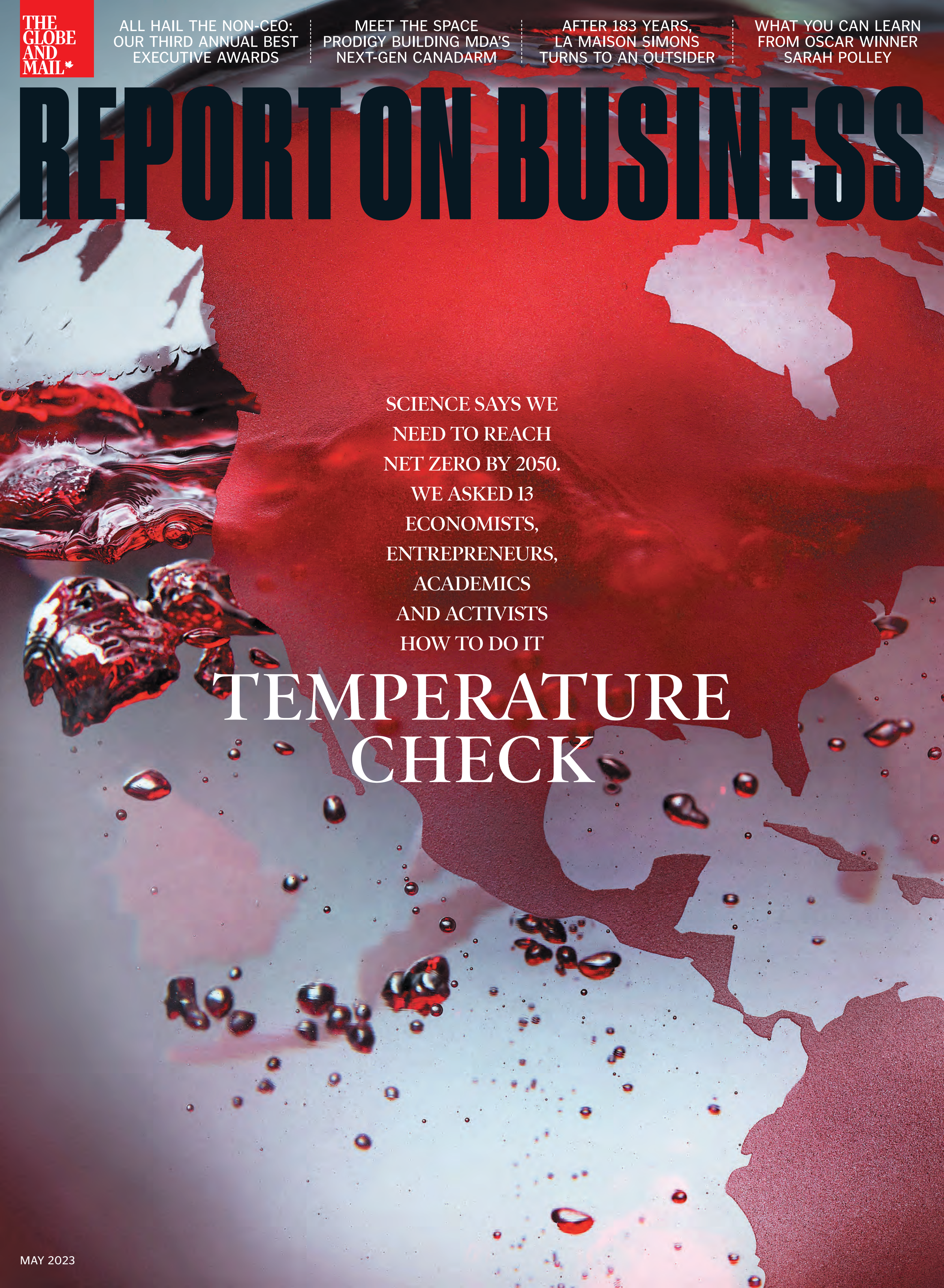

THE GLOBE AND MAIL

ALL HAIL THE NON-CEO: OUR THIRD ANNUAL BEST EXECUTIVE AWARDS

MEET THE SPACE PRODIGY BUILDING MDA'S NEXT-GEN CANADARM

AFTER 183 YEARS, LA MAISON SIMONS TURNS TO AN OUTSIDER

WHAT YOU CAN LEARN FROM OSCAR WINNER SARAH POLLEY

REPORT ON BUSINESS

SCIENCE SAYS WE NEED TO REACH NET ZERO BY 2050. WE ASKED 13 ECONOMISTS, ENTREPRENEURS, ACADEMICS AND ACTIVISTS HOW TO DO IT

TEMPERATURE CHECK

MAY 2023

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Holly Johnson has galactic ambitions for Canadarm3 *Page 44*

COVER PHOTOGRAPH BY THE VOORHES/GALLERY STOCK; (RIGHT) PHOTO ILLUSTRATION BY SAHAR RANA USING MIDJOURNEY

Zero excuses

This month's two feature packages make for an interesting mix. Starting on page 38, you'll find our third annual honour roll of Canada's Best Executives, celebrating senior leaders in finance, operations, technology and more. Among the honourees is Jon McKenzie, formerly the COO of Cenovus, who was instrumental in pulling off the oil producer's $2.9-billion acquisition of Husky Energy. So impressed was Cenovus's board with McKenzie that in April, he succeeded retiring CEO Alex Pourbaix.

This issue also contains a call for progress on Canada's net zero commitments as part of global efforts to limit warming to 1.5°C above pre-industrial levels—a goal the latest report from the UN's Intergovernmental Panel on Climate Change suggests is quickly becoming unreachable. (Our own Jeffrey Jones delivers a pointed call to action on page 26.) We interviewed financiers, economists, cleantech entrepreneurs and First Nations leaders for advice on how to act now. We also talked to Alex Pourbaix, who touts the progress toward net zero made by the Pathways Alliance, a consortium of six companies comprising 95% of oil sands production.

You've likely seen the Pathways Alliance's "Let's clear the air" ads, which ran during the World Cup and Super Bowl, on social media and in print across the country. The campaign trumpets the "clear strides" Cenovus, MEG Energy, Suncor, Canadian Natural Resources, ConocoPhillips Canada and Imperial Oil are making thanks in large part to carbon capture and storage, or CCS—sequestering emissions at the source, then tucking it underground.

But in March, Greenpeace Canada filed a complaint under the Competition Act accusing the alliance of false advertising. It's asking the Competition Bureau to force the consortium to remove all claims related to "net zero" and "sustainable" from their communications.

A key plank of Greenpeace's complaint is the fact that the alliance's plan fails to account for more than 80% of emissions—the ones released when consumers actually burn the oil they extract (which is, of course, the same issue faced by oil producers globally). Furthermore, much of the CCS tech the companies are relying on to reach net zero, by their own admission, doesn't exist yet, hasn't been deployed at the scale proposed or is simply inefficient. Indeed, last year, the Ohio-based Institute for Energy Economics and Financial Analysis released an assessment of 13 major CCS facilities and found 10 of them failed to live up to their touted performance—most by a long shot. For its part, the alliance "strongly disagrees" with Greenpeace's assertions, noting in a statement, "Our campaign acknowledges the oil sands represent a significant share of our country's emissions and that we must work collaboratively...to achieve our goal of net zero from operations."

Consider this, though: The alliance had total profits north of $35 billion in 2022, but it has spent just $500 million so far on its net zero plans. And the six members have asked the federal government to bear more than half the cost of their CCS efforts, estimated at $16.5 billion by 2030.

There's a better way to spend that kind of money—and still make a return. Because while climate change represents the biggest existential threat to humanity, it also represents a massive opportunity—but only if we're ready and willing to look toward a clean-energy future. **/Dawn Calleja**

Send feedback to robmagletters@globeandmail.com

REPORT ON BUSINESS
THE GLOBE AND MAIL*

May 2023, Volume 39, No. 6

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Down by The Bay

Readers had a lot to say about Jason Kirby's profile of Hudson's Bay Co. governor Richard Baker (much of it about his socks—or lack thereof).

My late father was a blue-collar man who was filled with hard-earned wisdom. He always said, "Never trust a man who wears fancy shoes without socks on his feet." **—DebbieTy**

Great read. The man has a knack for unloading assets at the top of the market. That appears to be the key to his longevity. I don't understand where there's any value in the e-commerce operation, and it looks like excellent timing again when he raised a fortune in capital in 2021. Good luck to him, but ultimately it's hard to see The Bay lasting much longer. **—Oceans**

He might believe—or, more honestly, he might want us to believe—that HBC is worth more now than it has ever been, but most of us just see a scattergun real estate strategy and a total lack of retail knowledge. If anyone is going to figure out the retail success story of the future, it is not going to be the sockless Richard Baker. Most of us would certainly take one-quarter of the North American land mass over the sad pile of assets Baker has left. **—keeperjeff**

The Bay is lucky to have someone with his talent running the show. **—Fred8888**

HBC is just a means to an end: real estate. **—ramblinpaul**

Starting to get to the final nails in the coffin. The Bay brand is not important to him/the larger corporate growth goals. The desperate Zellers relaunch is just an ornament to make The Bay look more attractive to the next buyer. **—RAL2015**

I have some real estate investments, but watching Baker, I feel like a third-line winger on the Brooks Kinsmen beer-league no-hit hockey team suddenly thrown into an NHL practice.
Sad about the Winnipeg store. We left there when I was nine, but I still remember going up and down on the elevator, all the while wondering how Mom could find her way through such a huge maze. But what's with the bare ankles? **—app_68916973**

NOTE FROM THE EDITORS: Richard Baker was, indeed, wearing socks; you just can't see them.

Absolutely fabulous

The general consensus on Manulife chief economist Frances Donald, who sat down with Trevor Cole for last month's Exchange interview: She rocks.

Thanks for interviewing Frances Donald and sharing her ideas on where Canada is now and where's it's going. She is absolutely correct in saying the Bank of Canada should not be tasked solely with controlling inflation. (Mark Carney sees it as also being a vehicle to promote equality.) And it's great to see an economist point out what high interest rates are doing to the cost of housing and to the very factor they're trying to control: inflation. **—GMJenkins1**

FD is a modern-day genius. Unbelievably refreshing, relatable and inspiring for young professionals, especially women. And you don't have to agree with her outlook to appreciate all of this (but I do). **—71YM**

Frances Donald displays excellent thinking here. And as her view is "macro," she is ready to pivot to a new strategy when one of the constantly moving parts of this world delivers something unforeseen. She knows "models" are flawed because they are static and often cannot incorporate the myriad variables which affect the market. Being as widely read and knowledgeable as possible helps enable insight to respond with better predictions and anticipate problems. They will never be perfect, but they will be "less wrong." Her reference to the price of chicken, eggs (due to avian flu) and the effect of reduced grain production (due to war) being outside the control of governments aiming for 2% inflation is spot on. **—Annae**

Women Lead Here (kinda)

An interesting take on our benchmark list of women in executive roles.

About 75% of male top-level executives have stay-at-home wives. I would be interested in the percentage of female top-level execs who have stay-at-home husbands. Even if they have nannies, someone needs to manage the nanny, the schedule and fill in on vacation days, take kids to appointments, and be the "default parent." If they divide these responsibilities 50-50 with their partner, they are still competing for positions against men with stay-at-home wives. I suspect that as the birth rate declines, more women will make it to executive-level positions. **—ACN3**

HomeEquity Bank's award-winning culture is powered by the conviction that all Canadians 55 and up deserve the security and comfort needed to live fulfilling lives.

By instilling a strong ethos of fiscal and regulatory responsibility within the organization over the last seven years, Atul Chandra embodies the qualities that make HomeEquity Bank a trusted partner to thousands of Canadians in planning for a financially secure retirement in the home they love.

On behalf of the HomeEquity Bank team, we congratulate Atul for being recognized for his achievements with a 2023 Best Executive Award.

Atul Chandra

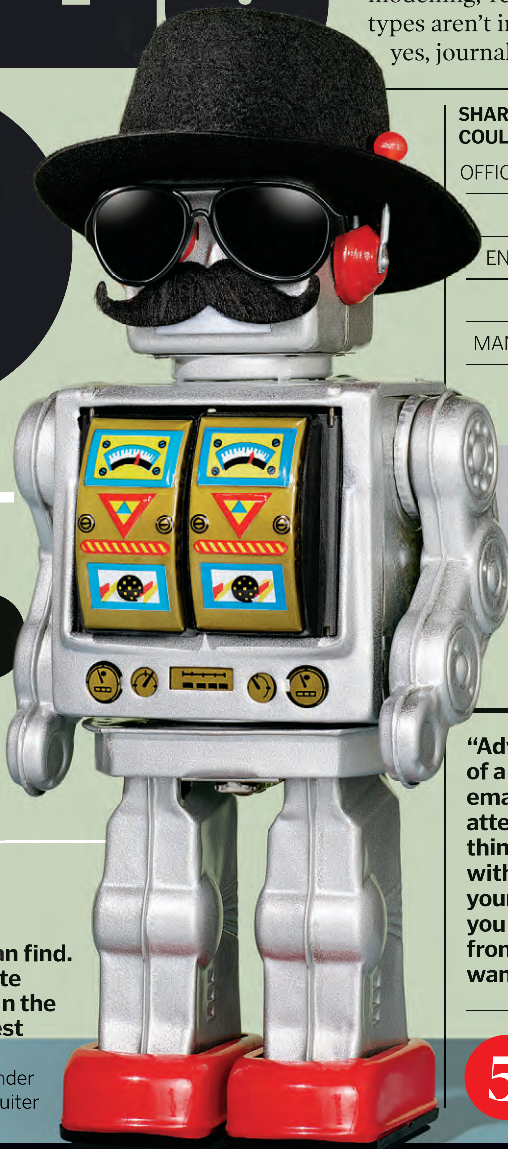
Executive Vice President
& Chief Financial Officer (CFO)

05/23

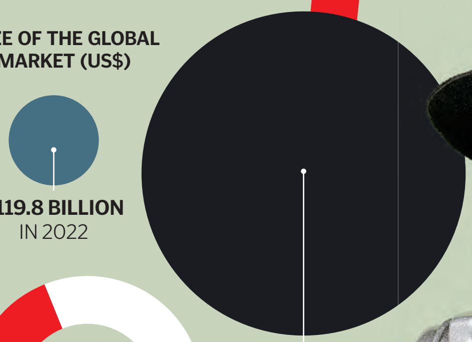
NEW RULES

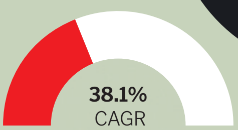
Rage against the machine

We used to think robots were coming for blue-collar jobs—auto assembly, shelf stocking and so on. But in this era of ChatGPT and other sophisticated AI, it seems more likely they'll be coming for those of us who do, as IBM CEO Arvind Krishna recently put it, "clerical white-collar work"—think HR, financial modelling, regulatory filings and the like. Creative types aren't immune, either—animators, artists and, yes, journalists, suddenly all fear redundancy.

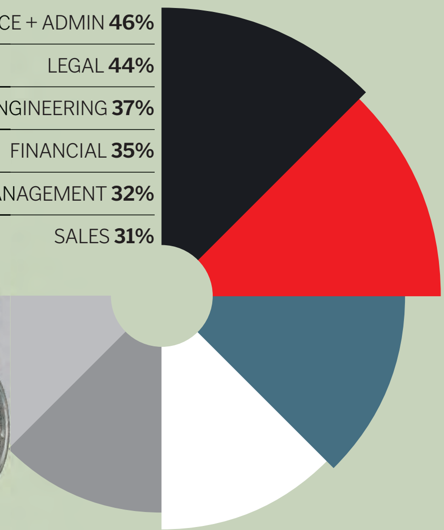


SIZE OF THE GLOBAL AI MARKET (US$)





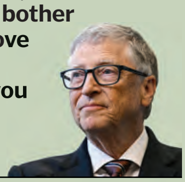
SHARE OF CURRENT WORK TASKS THAT COULD BE AUTOMATED BY AI (U.S.)

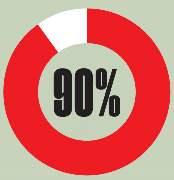


54%

Portion of Canadian companies already using AI. Among the most common uses: data collection and analysis, fraud detection, sales and marketing decision making and bookkeeping/accounting

"Advances in AI will enable the creation of a personal agent. ...It will see your emails, know about the meetings you attend, read what you read, and read the things you don't want to bother with. This will both improve your work on the tasks you want to do and free you from the ones you don't want to do" —Bill Gates





Portion of companies that use AI tools to filter and rank job candidates

"You want the simplest, most boring resumé template you can find. You want to write like a caveman in the shortest, crispest words you can" —Ian Siegel, cofounder and CEO of ZipRecruiter

50% of knowledge workers will use a virtual assistant by 2025, according to Gartner

USE OF AI BY INDUSTRY

TECHNOLOGY	17%
FINANCIAL SERVICES	15%
HEALTH CARE	9%
EDUCATION	8%
GOVERNMENT/PUBLIC SECTOR	6%
TELECOM	5%
MANUFACTURING	4%
RETAIL	4%
MEDIA	3%
ENERGY	3%
DEFENCE/SECURITY	3%
OTHER	22%

"I am utterly disgusted. I would never wish to incorporate this technology into my work at all" —legendary animator **Hayao Miyazaki**, director of Studio Ghibli, commenting on an AI model

1,000+

Experts (including Elon Musk and Steve Wozniak) who signed an open letter calling for a pause on AI research until we are sure "the effects will be positive and their risks...manageable"

PHOTOGRAPH DAN SAELINGER/TRUNK ARCHIVE; (GATES) JUSTIN TALLIS/AP

THE EXCHANGE

The outsider

Bernard Leblanc is the first non-family member to run Quebec-based retailer La Maison Simons, which has been in business since 1840. It's a lot of pressure—especially as it continues to expand outside its home province

BY TREVOR COLE

What's in a name? When you're a famous, historic, family-run business, the answer might be "everything." For 183 years, the name Simons has resonated in Quebec, signifying both the retailer of exclusive fashions and household décor, and the founding family that has run the retailer for five generations. But now all that's changed. La Maison Simons started expanding across Canada several years ago, to cities where the name resonates not at all. And for the first time, the family business is being led by someone from outside the family. Bernard Leblanc has history with the retailer. He ran product development and purchasing for seven years before spending 15 years among the snowmobiles and Sea-Doos of BRP. In 2014 he returned to Simons as chief operating officer, working with CEO Peter Simons to begin the cross-country push. Now the reins are in his hands, and if Simons fails as a national brand, Leblanc's name will be mud. We spoke to him in Quebec City.

You've been in charge at Simons for a year now. How's it going?
Things are good. We have enjoyed a very strong recovery, post-COVID-19. We have just completed the best year in the history of the company. (1) I have a very strong group of people around me, full support of the family and the privilege of having access to my predecessor—Peter being part of the senior leadership team and continuing to remain engaged in the company. So, it's been a successful transition.

We'll drill down into some of those points. Let's start with the fact that you're the first non-family member to lead Simons in 183 years. Why did that happen?
First off, the next generation—the sixth generation of the family—is starting to learn more about the business, but they are still relatively young. The two brothers who own the company, Peter and Richard, have five children. The eldest is 26, the youngest 19. None are directly involved in the business. The family was kind of in this gap between the current leadership within the family and the next generation, and I was their COO at the time, running many parts of the business. Peter felt it was a good time for us to transition to this new model. And it was an opportunity to posture differently as we continue to grow, as the environment continues to change.

What does having you as CEO allow Simons to do that it couldn't do before?
One, it's allowed for shared accountability within a broader leadership team. The company was very focused around one view and the individual that was in place. Now we've been able to diversify that leadership team with strong individuals to support the broader strategy going forward. And as the company grew, there was a need for a little bit more formal governance. So, we established a separation between the family council, an independent advisory board and an operating leadership team that each had their role to play.

When you took over the top job, you said you felt an "element of pressure." Tell me about that pressure.
As you come in to be the first of anything—in my case, the first non-family member taking over—clearly you don't want to be the one who drops the ball. I have an immense admiration for Peter, and what he and the family have built over the years. And obviously I want to live up to that reputation that's always been very positive.

Despite the fact that Simons has been around for 183 years, a lot of Canadians don't know it. For those readers, how would you describe the store?
We bring a unique experience to market. One that is focused around our core brands, which are our exclusive brands (2) that touch on junior ladies, contemporary ladies, more work-related ladies apparel and the same spectrum around the men's range. That's complemented by a unique home décor offering. Of our product assortment, 70% is exclusive to Simons, developed and designed by our teams in Quebec City. We also endeavour to find some of the most innovative and creative international or Canadian brands that are potentially new to market. Each store has its unique dynamic. We try to create environments that speak to the location in which we establish, and we commission various works of art to be displayed in each of our locations. (3)

If most of your products are unfamiliar to people, how does that complicate the process of attracting new customers?

1. As a private company, Simons doesn't disclose financial results. But it says that in 2021, its revenue returned to pre-pandemic levels, and that in 2022, it grew revenue and operating profit by "high double-digits."

2. Exclusive Simons brands for women include Twik, Icône, Contemporaine, Miiyu and i.Five5. For men, they include Le 31, Djab, i.Five5 and Rituels. Its high-end brand is Édito by Simons.

PHOTOGRAPHS AMANI YASMIN


simons

Clearly, it's part of our brand recognition challenge. The first part of our challenge is to ensure that the master brand—Simons itself—builds a notoriety and awareness across the country. We've been working very hard in communicating our brand, and our brand promise, in the markets outside of Quebec. The next challenge is then to tell people about our various exclusive assortments, each of those brands and that brand promise. So, it's a challenge getting them to know it. But once they do, the adoption rate is quite compelling.

Many retailers focus on either high-end products or lower-end. Why does Simons offer a mixture?

It's the breadth of the customer base, being able to appeal across a broad spectrum and offering products that evolve along with the customer's taste and evolution in their life. We believe in that breadth of offering. I think we've found our sweet spot of complementarity between value-priced elements and more luxurious elements.

Speaking of high-end, were you surprised by Nordstrom leaving?

Yes, there was an element of surprise. **(4)** I would qualify them as a strong retailer and a strong merchant. I can't really speak to what led to their demise in Canada. But the reality is that there are very well-established luxury players in the country, and it was probably a challenge for them to dislodge that loyalty.

We've seen other retail outsiders, such as Target, flop in Canada. Since Simons is an outsider in much of the country, what can you learn from those failures?

That you have to go in with a patient, long view of things and accept that it takes time to win the hearts of clients. We are a people organization, and we believe in the power of human connection. And once we establish that connection with our clients, we want to deploy this exceptional service that differentiates us.

3. Artists include Douglas Coupland and Philip Beesley.

4. Nordstrom opened the first of its 13 Canadian stores in 2014. The company says it lost money every year in Canada, and in March, it announced that it would close all stores by June.

5. When talking about omnichannel retail, Leblanc often uses the term "frontierless commerce."

When a Target or a Nordstrom fails here, do you say, "Good, one less competitor to deal with"? Or does it create a negative environment?

It potentially weakens the industry for a period of time, until things settle down and restabilize. It's a shockwave in the industry, so it's never a celebration. It does create opportunities, however. It can let us offer a new option for clients that maybe have lost their favourite retailer.

It took a long time for Simons to start expanding across Canada, and the expansion has been very measured. Why go slowly?

Patience. Perhaps a bit of conservatism. At the same time, it was never our intent to be the largest retailer by any circumstance. We always wanted to be one based on quality, and one where we felt we could always deliver on our service promise. So you need to take it as the organization is capable of digesting it.

What's the state of the retail market you're slowly expanding into?

Post-pandemic, we've seen things return to normal. And we are sensing two things converging. Online sales and sales through digital channels have increased dramatically. On the flip side, we've seen a return of traffic and interest into the physical store environment and the capacity to have human connection. Where we're able to bring our physical and digital assets together, we have an opportunity to create a truly uni-fied environment that's void of rupture points and allows for the customer experience to be very fluid. **(5)**

How do you create a human connection in online shopping?

That's the biggest challenge, to execute in a way that differentiates you from the next best online operator. It's about experience. It's about ensuring our customer service promise—the satisfaction that customers have in the product and the trust that they have in coming to us, that if it doesn't meet their expectations, we'll always stand behind our product. To me, it's about ensuring that the expectations of the brand are met, regardless of the touch points with the customer.

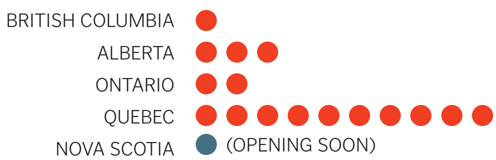
Can you be more specific? What makes Simons's online experience different?

Within the digital environment, we try and use past purchase information, navigation information, to be able to personalize the experience as much as possible. Ensuring that we're able to recommend items that will fit with the style patterns that you're looking for, that will complement the outfits you're looking to build and so on. We also look to ensure that our online offering and our store offering is aligned. Some retailers have a very different offering online or in store. We've tried to ensure a consistency. And regardless of the channel, we try and ensure that the experience is consistent.

Let's move to the economy. How are you being affected by inflation and the prospect of a recession?

Things have relatively stabilized.

SIMONS STORE LOCATIONS



PHOTOGRAPHS (LEFT) COURTESY SIMONS

In the past 12 months or so, there had been turbulence in the environment, relative to transportation costs, supply chains were under pressure, raw material prices were very, very volatile. Thankfully, a lot of that is behind us. But it's very difficult to get a clear line of sight. I'm not sure what to expect. The economists don't seem to be sure what to expect, and the bankers either. There's no doubt there are potential headwinds on the horizon. On the flip side, there is an opportunity for us to continue to acquire clientele, build brand awareness and gain loyalty. So, even if the industry as a whole were to reduce, we have market-share gain opportunities.

The likelihood of recession isn't affecting your plans at all?

Our new store in Halifax is coming to market in the first quarter of 2024, and it was part of our expansion plan from the get-go. I still believe there's opportunities for us to expand our footprint in the greater Toronto and Vancouver areas. **(6)** If we look at Montreal, where we have five stores, and we look at the two other major cities in the country, where we only have one store each, there's potential for us to better service the clients in those areas. So, we have been actively seeking opportunities.

I want to return to the challenges of leading this company now. Earlier you mentioned the new advisory board. It's not a fiduciary board. So what does it do for you?

It keeps us aligned. We put together a competency matrix. We selected the independent members of that board. We have an independent chair of the board. And we use them to guide our decision making, to validate prospective opportunities, and we use them for wise counsel, honestly, in order to ensure that we're making the right decisions for the company.

How does that advisory board differ from the family council?

The intent of the family council is to educate the next generation on what it means to be a good owner and a good shareholder. How to ensure that the values and the heritage of the company are protected, that the family name is used in line with the views of the family, and so on. And they use the advisory board to be the liaison between their vision of what they see for the family, and the leadership team within the organization. We're just ensuring that the responsibilities are clear for each of the pillars, and that we're able to have good communication and good alignment with each of the stakeholder groups.

6. Simons has 10 stores in Quebec. Outside that province, it has two stores in Edmonton and one store in each of Mississauga, Ottawa, Calgary and West Vancouver. Its Halifax location is scheduled to open in the spring of 2024.

When Peter handed leadership to you, he said, "Time to maybe put the ego aside." I noticed he said, "maybe." How tricky has the transition been?

I couldn't have asked for a better transition. We have worked very closely together over the last number of years. We have very complementary strengths. We appreciate each other as individuals. We seek each other's counsel on a regular basis. And frankly, I think both of us know that we don't have all of the answers to all of the world's questions, and so we're stronger as a team.

There was a recent controversy regarding the Simons marketing campaign built around Jennifer Hatch and her advocacy for medical assistance in dying. Whose decision was it to end that campaign?

It was mine.

In the stories I read about that decision, Peter Simons was interviewed, not you. Why did you take a back seat?

We lived through it together, as a team. Ultimately, Peter had been—well, Peter remains—kind of the voice of the brand. And part of his role as the chief merchant is the brand resonance in the market. And given he had been the voice at the launch of the campaign, he remained the voice throughout. And ultimately we felt that it made sense for him to continue to be the spokesperson for that campaign.

And why did you choose to end it?

We were focused on a message of hope, of celebration, relative to an individual's accomplishment in their life. And at some point, we felt that there was potential for misinterpretation, or potential for hurting certain perspectives, okay? Or being hurtful toward certain individuals or certain groups. That was certainly never the intent of the campaign. And so, when you feel that you're at a tipping point, where your intent to do good has the potential to do harm, I felt it was best for us to eliminate the risk of being misunderstood.

Going forward, how will that experience inform your efforts to promote Simons?

Ultimately, I think we always have to listen to our hearts. We are well intended. We have to be sensitive to multiple perceptions. Like anybody in the world, we're not perfect. We learn from those moments where perfection has certainly escaped us. If you've made a mistake, you need to withdraw quickly from that mistake and focus on the original intent, which was good, at the very beginning.

This interview has been edited and condensed.

Trevor Cole is the author of five books, including the novel Practical Jean, *which won the Stephen Leacock Medal for Humour.*

4.4 That's the upward estimate of the number of parking spots for every car in Canada

BIG IDEA

Home truth

Do anti-speculation measures targeting real estate actually work?

Over the past five years, Canadian policy makers at all three levels of government have become enamoured with a set of measures ostensibly designed to take some of the energy out of the real estate market, that bucking bronco of an industry whose gyrations affect, well, everything. The list, in fact, has grown in both heft and ambition: foreign buyer taxes (Ontario and B.C.), vacant home taxes (Vancouver and Toronto), stricter capital gains tax rules targeting flippers (national) and, finally, a two-year moratorium on most foreign buyer acquisitions, which came into effect last fall with the passage of the vaguely dog-whistley Prohibition on the Purchase of Residential Property by Non-Canadians Act.

You don't need a political science degree or a stint in government to understand the impulse. Our escape-velocity real estate prices—the consequence of a constellation of factors from financialization to underinvestment in social housing to the unwillingness of municipal councils to up-zone residential neighbourhoods—have made Canada's housing sector one of the least affordable in the world. While the Bank of Canada's interest rate hikes in late 2022 and early 2023 have pushed prices down somewhat, the implacable reality is that most real estate remains well beyond the reach of the average family. What's more, it will take years for housing construction drives, such as the one promised by the Ford government in Ontario, to bring supply more in line with demand.

So, what's a politician to do? Well, how about a bit of misdirection? Blame speculators, especially if they're from, well, elsewhere. As it happens, governments from, well, elsewhere have been doing the same thing. London, Hong Kong, Auckland and Paris have all imposed taxes on foreign buyers, and U.S. jurisdictions are following suit—a dynamic that could catch up with Canadian snowbirds, who buy up a lot of vacation property in Florida.

But do anti-speculation policies aimed at foreign buyers actually work?

With some caveats, most analysts say they have little impact and may, in fact, cause local real estate markets to become even more brittle. In a note published in late February, CIBC chief economist Benjamin Tal was scathing in his verdict on the foreign buyers' moratorium. "The damage is real," he wrote, noting that foreigners account for only 2.2% of Ontario's housing stock. "Many commercial real estate deals have been cancelled or are on hold despite the fact that they have nothing to do with residential housing. Developers that are partly foreign-owned or rely on foreign equity cannot proceed with purpose-built developments that, in our view, are the most effective tool to tackle Canada's housing affordability crisis." (In its latest budget, the feds amended the act to ensure foreigners can buy and develop commercial real estate.)

A University of Virginia study, published in the *Iowa Journal of Law* in 2021, picked up a similar thread, arguing that the source of resilience of a real estate market is the same as that of an investment portfolio: diversification and asset allocation. "Outside investors make holding local real estate less risky by introducing new and uncorrelated risks to the demand for that real estate," wrote Andrew Hayashi and Richard Hynes. "When foreign investors purchase U.S. real estate to diversify their portfolios, they simultaneously bring the benefits of diversification to local homeowners by reducing the risk of a collapse in housing demand when the homeowners want to sell."

Others have also questioned the logic. "I think it's very misguided," says Andrey Pavlov, a professor of

ILLUSTRATION NADA HAYEK; PARKING SOURCE CANADIAN ENERGY SYSTEMS ANALYSIS RESEARCH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25 YEARS

HOUSE-PRICE-TO-INCOME RATIO (Q2 2022)
A measure of house-price growth versus income growth

finance at Simon Fraser University's Beedie School of Business. "They're really like a Band-Aid solution to a heart attack. They don't solve the immediate problem that's in front of us, which is insufficient supply. On the contrary, they actually reduce supply going forward because every time you interfere in the market through some sort of 'clever' solution, that increases the risk to market participants."

Economist Thomas Davidoff, who holds the Stanley Hamilton Professorship in Real Estate Finance and heads the University of British Columbia's Centre for Urban Economics and Real Estate, offers an empirical perspective gleaned from the province's own experiences with such policies. B.C.'s foreign buyer tax had some impact, he found, but mainly at the very top of the market. "There was not much success in really improving affordability," he says.

When Diana Mok, an associate professor at Western University who studies urban real estate economics, looked at Ontario's foreign buyer tax, she found it affected only 350 transactions across the Greater Golden Horseshoe in the second quarter of 2020. What's more, when she worked backward from the total amount collected, she discovered that the average home caught by this levy, which is 25% of the purchase price, sold for almost exactly the average home price in the region. "The picture that's painted," she says, "is, number one, the number of foreign buyers is not big, and number two, their purchases are not in any particularly high segment of the market. They are just like any average Canadian buying and selling in the housing market."

It's important to acknowledge that some of the anti-speculation measures of the past few years weren't just sops to political pressure. B.C., for example, endured a money laundering crisis in the 2010s that flooded casinos, luxury car dealerships and residential neighbourhoods with crime proceeds from drugs, human trafficking and tax evasion. An expert panel reported in 2018 that more than $7 billion in dirty money had found its way into real estate, causing prices overall to rise about 5%. Comfortable and expensive Lower Mainland houses were torn down to make way for mansions that sat conspicuously empty—signals that prompted the B.C. government to enact a foreign buyer tax and then a vacancy tax.

Vancouver's vacancy tax—which has been emulated in a growing number of cities, including, as of February 2023, Toronto—appears to have produced a response from owners sitting on empty dwellings that could otherwise be rented out. The tax is hefty enough—1% of assessed value in Toronto—that it won't be seen as just a slap on the wrist.

The City of Vancouver's latest empty homes tax report, released last fall, found that the number of vacant homes covered by the bylaw (there are some exemptions) fell 36% between 2017 and 2021, with about 9,000 new condo units added to the long-term rental pool between 2018 and 2021. The tax, in turn, generated more than $115 million for the city, which it says it uses to invest in grants to affordable rental housing providers and land that can be banked for housing development.

Davidoff, who advised Vancouver on its vacant homes levy, points out that tax dollars are fungible, so earmarking funds is more of a political gesture than an administrative one. But, he adds: "We live in a political world, and having popular support for a policy is important."

Pavlov, for his part, says the vacancy tax is not a long-term solution. "This is just a one-time increase in rental supply that did absolutely nothing for the rental market, in that the vacancy rate did not move at all," he says, adding that one of the perverse outcomes of the tax is that, by expanding the number of available units, it slightly dampened demand for new home construction. While Pavlov acknowledges that those extra and now occupied rentals are "not nothing," he says the most meaningful policy solution will come from adding a lot of supply, especially in low-rise neighbourhoods that have been off limits to intensification for generations.

So, does the business of imposing anti-speculation policies come down to picking your poison—political pressure to tamp down on bidding wars on the one hand, and an assortment of measures, some of which may backfire, on the other?

Davidoff offers policymakers a few rules of thumb: One, taxes are always better than bans (at least the government gets something out of it); and two, if the solution is to be a tax, focus on use of the property and not nationality of the owner. "Who has a more adverse effect on affordability in Vancouver," he asks rhetorically, "a guy from Brazil who rents his place out to a local, or a guy from Toronto who uses the place as a pied à terre?" **/John Lorinc**

Big Idea is produced with the support of our advisory panel

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Associate Dean, DeGroote School of Business

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SOURCE STATISTA

Leveraging data is key to meeting net-zero commitments

Look under the hood of any organization's sustainability strategy and you'll find a complex, often incomplete framework that's generating unprecedented levels of data.

"Setting climate targets, understanding emission baselines and creating a roadmap to get to net-zero depends on an abundance of data points, and types of data, which most organizations are not used to dealing with," says Zlata Huddleston, partner at IBM and team lead of its Canadian consulting sustainability services.

In the growing focus on environmental, social and governance (ESG) performance, the ability to collect, leverage and report accurate data – and do so in a secure, efficient and transparent way – is crucial.

There are many moving parts. For tracking greenhouse gas emissions, for example, organizations across industries don't just report on emissions relating directly to their operations (Scope one). They must also gather data on indirect emissions from the purchase of energy to power their operations (Scope two), and on emissions generated from their supply and value chains (Scope three).

"It's a challenging path. But it presents new opportunities for organizations to harness data and take a leadership position in a low-carbon economy that depends on energy sources producing lower emission levels," Ms. Huddleston says.

Her team at IBM Canada helps financial institutions, corporations and governments to define sustainability strategies that support their commitments and reporting requirements. This includes how organizations use data and technology to collect and measure emissions and other climate-related data, analyze results, and develop effective strategies to act on

their net-zero commitments. IBM's experts offer off-the-shelf sustainability software as well as bespoke solutions to help guide energy transition and manage climate risk.

Organizations often lack automated processes and analytics to gather the information they need and organize it meaningfully. This can lead to data duplication, resulting in erroneously high emissions reporting, and then higher costs as governments put a price on pollution with strict carbon tax frameworks.

Ms. Huddleston points to IBM's work with Canada's banks as an example of the complexity. When calculating Scope three emissions, banks want to collect data on their borrowers. The same one might use more than one borrowing banking product. So, a bank could be accounting for that data multiple times.

That's just one example of how duplicated emissions can factor into a bank's full-scope reporting. When data processes are not well developed, banks run the risk of reporting the same emissions twice or even three times over, she says.

An organization's needs go beyond basic dashboards for data reporting. They also must be able to clean, standardize and evaluate data to better manage climate change risk and other sustainability concerns.

"Organizations manage many types of risks, including operational, market, compliance, credit, insurance and liquidity risks. Climate risk has become a transverse risk that must be integrated into all of those to provide a true picture of overall risk today and in the future," Ms. Huddleston says.

Just a few years ago, that was difficult to do efficiently, accurately, and quickly. Now, she says, emerging technologies including artificial intelligence (AI) make it possible. New digital tools like natural language processing allows organizations to automate gathering and organizing diverse paper, digital, audio and video data. All of it can then be analyzed with the help of AI tools to provide useful insights.

Foundational to these tools is cloud-based computing that can be seamlessly integrated with an organization's existing enterprise system. "Cloud computing allows organizations' data infrastructure to adapt more quickly and easily in this environment of ever-changing regulations and guidelines," says Ms. Huddleston.

IBM is a leader in hybrid cloud implementation, relieving clients of the increasingly burdensome and costly task of keeping up with regulatory and technological change, she adds.

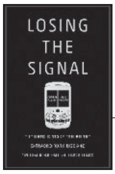
Such technologies do more than identify, understand, and mitigate risk, she says. Organizations that adopt these tools effectively are well positioned to adjust to evolving climate and market conditions. And they're more likely to find new opportunities for growth. Climate is not just about risk, it's also about opportunities.

In the agriculture sector, for instance, IBM is using AI-powered climate modelling to better predict weather patterns and help clients identify new potential sources of revenue.

For Ms. Huddleston, it's about keeping up with change while also becoming leaders in the new economy. She says Canada has an opportunity to leverage technology in high-growth industries to drive expansion and productivity.

"Canadian companies are already taking a leadership role, implementing standards that align with the best global practices. It's still a work in progress, but these efforts will not just bode well for the bottom line, they're also the right thing to do, as time is running out."

In March, the UN's Intergovernmental Panel on Climate Change Synthesis Report stated that we are heading towards 2.2-3.5 °C warming, which would have dramatic impact on human health, the biosphere, food security and the global economy. Many of those risks could be avoided if we would stay within 1.5 °C warming. "It is achievable, but only by dedicating maximum resources to technology-enabled climate action," says Ms. Huddleston.



REREAD THIS BOOK

Losing the Signal

The Canadian-made film ***BlackBerry***—which hits theatres May 12 and is already getting rave reviews—is based (uh, *loosely*) on the 2015 book written by *Globe and Mail* journalists Sean Silcoff and Jacquie McNish

WHAT YOU CAN LEARN FROM...

Sarah Polley

Last year was a huge one for the 44-year-old Toronto-based writer and director. She published a bestselling book of essays called *Run Towards the Danger* and directed the critically acclaimed film *Women Talking*, which went on to win her the Oscar for best adapted screenplay. Polley's transformation from unwilling childhood sweetheart to Hollywood A-lister offers plenty of inspiration for leaders. **/Dawn Calleja**

1 Reinvent yourself

As a kid, Polley was best known for playing the precocious Sara Stanley on *Road to Avonlea*. Her early acting career was so loaded with trauma (including a literally death-defying role in Terry Gilliam's *The Adventures of Baron Munchausen*) that she quit altogether, eventually finding her place behind the camera. Just because you've built your rep as one thing doesn't mean you can't successfully pivot—and possibly even find your true purpose.

2 THERE'S NO SUCH THING AS BAD LUCK

Polley was in the midst of adapting *Little Women* for Sony in 2015 when she suffered a severe concussion that forced her to give up what must've seemed like the project of a lifetime. (Greta Gerwig's adaptation was later nominated for an Oscar.) But then producers Frances McDormand and Dede Gardner hired Polley to take on *Women Talking*, and now she's an Oscar winner.

3 RUN TOWARDS THE DANGER

There's a reason this is the title of Polley's shocking/tragic/hopeful collection of essays. In search of relief from her debilitating concussion symptoms, a celebrated brain-trauma specialist in the U.S. advised her to stop coddling her noggin and start doing all the things she'd been avoiding—the ones that seemed hardest. Spoiler: It worked.

4 Vulnerability is not weakness

First Polley opened up about her own family history in her 2012 documentary *Stories We Tell*, which revealed that the man she thought was her father wasn't. "Making this film was the hardest thing I've ever done," she told the CBC at the time. Then, in *Run Towards the Danger*, she delved into her mother's death when Polley was 11, her painful scoliosis, her paralysing stage fright and her assault by disgraced former CBCer Jian Ghomeshi as a teen. But Polley understands that negative experiences help build empathy, and being open about your struggles can inspire and bolster others, whether they're complete strangers or colleagues in the office next to you.

5 Be a force for good

Women Talking is all about, well, women. And Polley—who spent the better part of a decade focused on raising her three daughters—wanted to ensure the almost entirely female cast could balance work and home life. Shoot days were limited to 10 hours versus the typical 16 so everyone could get home to their families. Polley also had a deep fear of subjecting the many children who appear in the film to the same agony she'd endured. "We had a policy on set where if a kid got bored or uncomfortable in any way," she has said, "we just stopped." Proving that excellence doesn't have to equal misery.

ASK AN EXPERT

I'm now the boss. Is it still okay to hang with my former colleagues/now underlings?

Staying friendly—or even friends—isn't just okay; it's your goal here. A better question is how to preserve friendships despite shifting power dynamics. First, a caveat: "Recognize this isn't just up to you," says Miriam Kirmayer, a clinical psychiatrist and connection expert in Montreal. "Both parties have to choose to stay friends." Sad but true, your new *underlings* (especially if you call them that) might not be comfy grabbing beers with the boss. Or maybe nothing will change. "Realistically, you'll find yourself somewhere in the middle," says Kirmayer. Like every other relationship, communication is key. "Before you start the new role, have an honest and practical talk." Besides clearing the air, says Kirmayer, "you're setting the stage for later conversations, however awkward." Now's your chance to become a cool boss—albeit with some new boundaries. "You probably can't complain about certain people at work anymore, and they'll probably want to complain about you sometimes." Don't take it personally; better yet, carve out that space for them by sometimes skipping after-work drinks or ducking out early. Acknowledge it's weird and make a joke if you can. "Talking about it, whatever you say, will be very helpful," says Kirmayer. "The worst thing you can do is say nothing at all." **/Rosemary Counter**

PHOTOGRAPH ARTURO HOLMES/GETTY; ILLUSTRATION JOE MCKENDRY

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Succession's final episode airs May 28. At the start of the season, bookmakers made odds on who'll take over Waystar Royco. They were, um, not overly accurate

DECODER

Banking the busts

On July 3, 1934, Lydia Lobsiger became an unlikely icon of America's problem with failing banks. Her story made the front page of *The New York Times*, and *Time* magazine regaled readers with the tale of the "scrawny bespectacled widow in a cotton dress." Lobsiger's achievement: She collected "check No. 1" from the Federal Deposit Insurance Corp. when her bank, Fond Du Lac State Bank in East Peoria, Ill., became the first to collapse in the wake of the FDIC's creation.

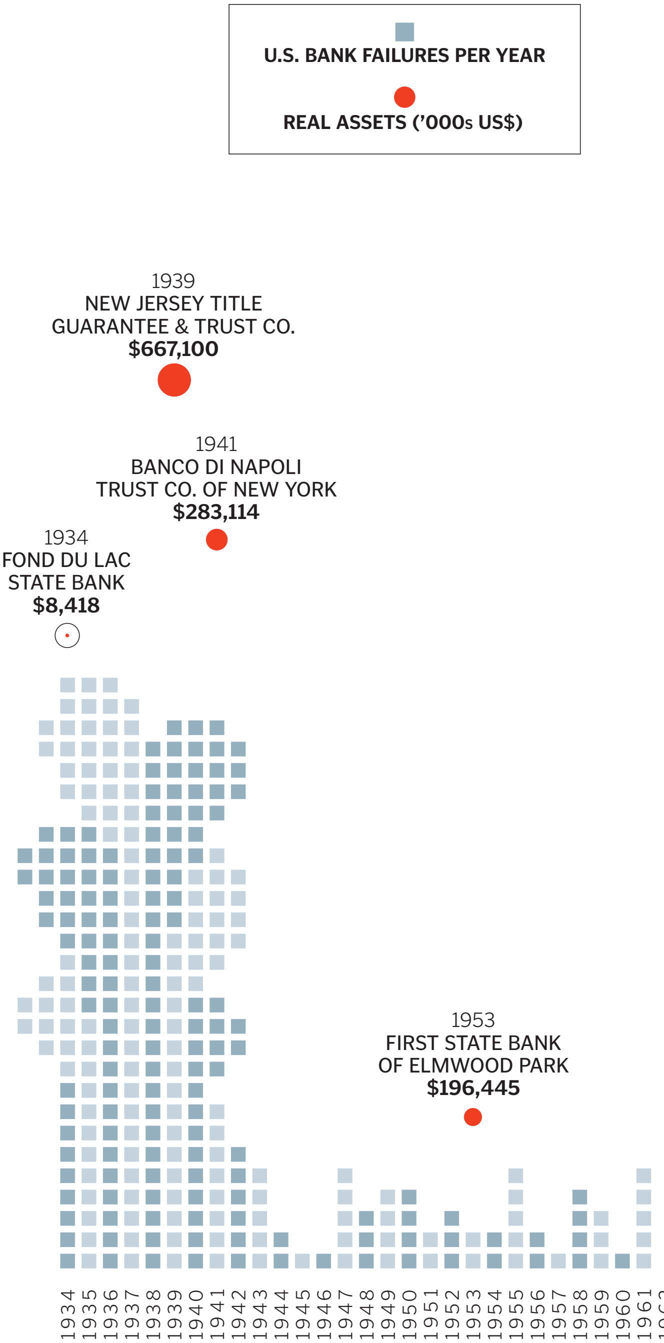
Multitudes would follow—not just depositors seeking to reclaim their savings under the FDIC system, which insures bank customers for up to US$250,000 of their deposits—but also banks. In the ensuing years, more than 3,330 American institutions have collapsed, more than 560 of those since 2000. All told, in inflation-adjusted terms, their combined assets totalled US$2.9 trillion at the time of collapse, according to FDIC data.

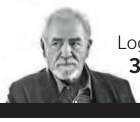
Deadbeat banks and the FDIC have been in the spotlight since the collapse of Silicon Valley Bank and Signature Bank in March sparked fears of a banking crisis. In a desperate move to forestall the further spread of bank runs at other institutions, the FDIC moved to safeguard all deposits, even in accounts holding more than US$250,000.

For Canadians watching the chaos unfold, the sheer numbers involved are staggering—as is the fact that this keeps happening again and again. After all, in Canada, bank failures are extremely rare. The last collapse occurred in 1996, when tiny Security Home Mortgage Corp. of Calgary shut its doors, and its 2,600 customers turned to the Canada Deposit Insurance Corp. to be made whole. And the last bank failure to spawn anything like a system-wide bank crisis was Home Bank of Canada, way back in 1923.

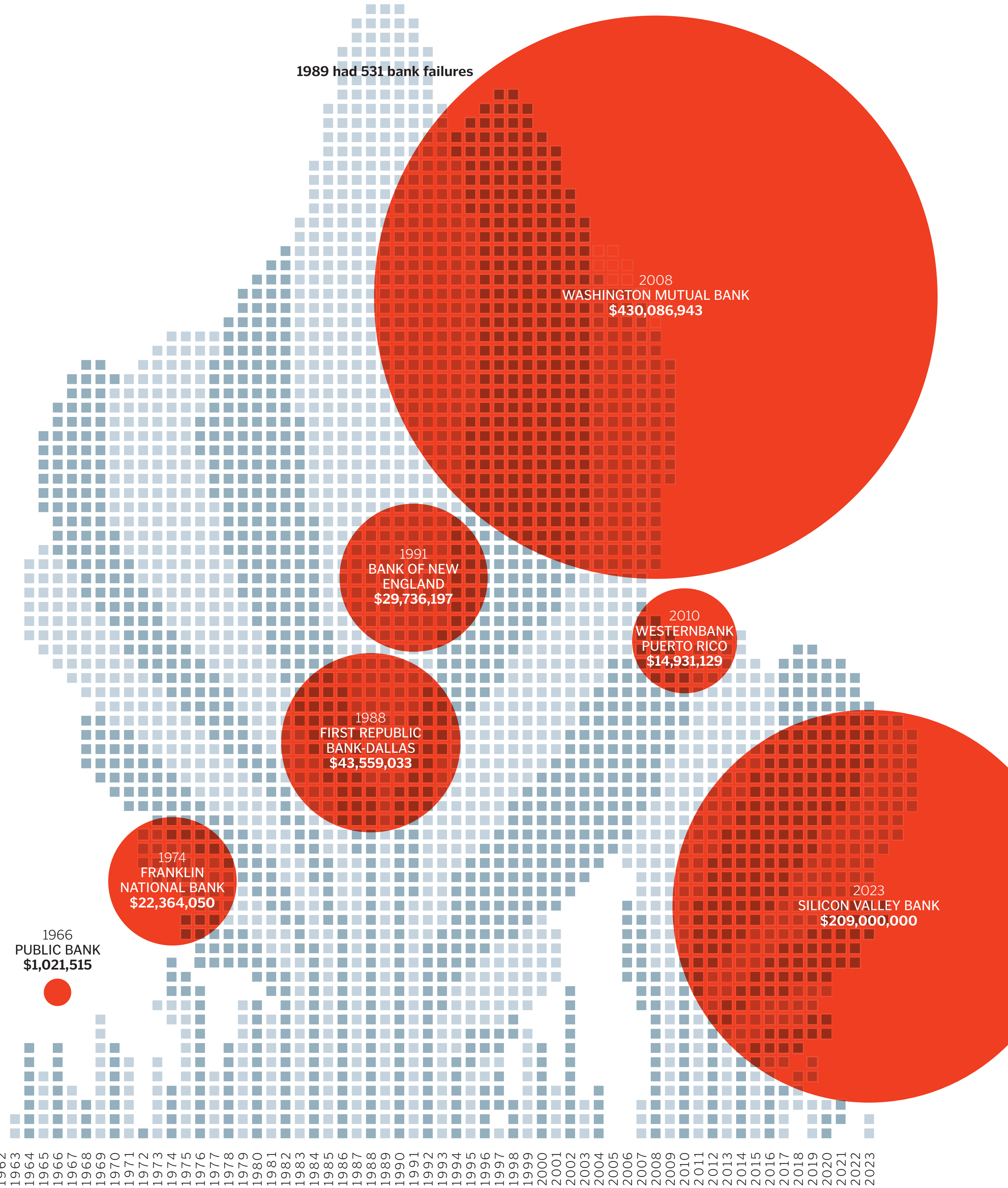
Instead of a populist-driven aversion to big banks that has spawned the highly fragmented U.S. landscape of thousands of regional and community banks, Canadians have accepted (fees and service grumbles aside) that it's better to have five highly concentrated, highly regulated, well-capitalized banks with deep, nation-wide deposit bases. In other words, an entrenched oligopoly rather than semi-regular turmoil. **/Jason Kirby**

TOP RIGHT: CHARLES SYKES/AP





Logan Roy 36.4% | Lukas Mattson 33.3% | Tom Wamsgans 21.1% | Roman Roy 11.1% | Kendall Roy 11.1% | Siobhan Roy 11.1% | Cousin Greg 6.3%



FOR YOUR CONSIDERATION

BLACK DIAMOND GROUP LTD.
CALGARY

REVENUE (2022)	**$324.5 MILLION**
PROFIT (2022)	**$26.4 MILLION**
THREE-YEAR SHARE PRICE GAIN	**463%**
P/E RATIO TRAILING	**13.6**

If the share price of a Calgary-based company that provided modular accommodation in remote areas plunged in the 2014–15 Alberta oil-patch bust and bottomed 2020, you might keep avoiding it. But you could also be missing out on its promising turnaround and diversification into other businesses and markets.

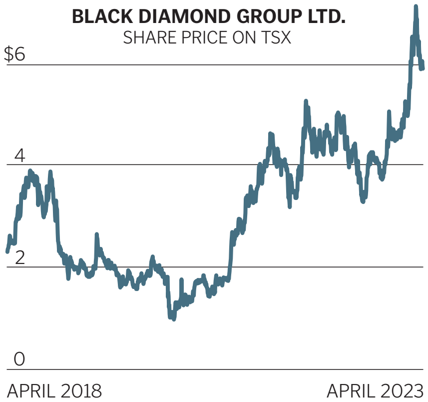
Black Diamond CEO and co-founder Trevor Haynes, who's 56, has ridden the roller coaster all the way up, then down, and hopefully back up again. Founded in 2003, the company's shares soared to more than $35 by early 2014, then hit rock bottom near $1 when COVID-19 took hold, and have climbed back to more than $6.

Haynes says the darkest hours were in 2017, when Black Diamond tried to set up meetings with institutional investors in Toronto and was told: "Nobody wants to see you. Not one account."

Perceptions are often reality in the stock market, and they were partly justified. Black Diamond buys modular buildings and rents them out. By 2014, about 90% of its revenues came from petroleum and the oil sands. "We were very much an oil field services company," he says.

But the bust prompted Black Diamond to get back to a core idea: augmenting highly cyclical resource revenues with steadier ones from other sectors and regions. "Our model was to balance the two," says Haynes.

BLACK DIAMOND GROUP LTD.
SHARE PRICE ON TSX

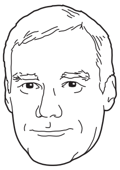


Through a mix of acquisitions and organic growth, the company expanded geographically and by sector. Black Diamond contacted mining companies, building contractors, school boards needing portables, disaster recovery agencies and communities at risk. The company now has thousands of customers, and construction and education are its biggest revenue segments, with oil and gas just 7%. Geographically, just over half of revenue comes from Canada, with about a third from the United States and almost 10% in Australia.

Since bottoming at $153 million in 2016 and 2017, revenue is now back near the peaks of 2013 and 2014. And in late 2021, Black Diamond reinstated the dividend it cut in the oil-patch bust, then suspended. At eight cents a year (paid quarterly), it's still far short of the eight cents a month during the boom years, but Haynes says, "I think it's the best use of capital right now."

Tenant expectations have also moderated—not the single hotel-style suites common during the oil boom, but not the double-occupancy rooms with washrooms down the hall when Haynes started in the business, either. As he puts it, "I don't see us going back to that, and I think it's a good thing."

Is the stock still a bargain? Haynes doesn't want people to dismiss his answer as CEO talk. But "yes, we are undervalued." **/John Daly**



FOMO INVESTING

5 things we learned from Nicolas Piquard

Investment frontiers can pay off big, but the risks and volatility are scary. The price of lithium, the critical mineral in electric vehicle batteries, shot up from about US$6,000 a tonne in mid-2020 to more than US$80,000 late last year, before skidding down to less than half that recently. How do you ride this wild market? **/JD**

1. Piquard is a VP and portfolio manager at Horizons ETFs who runs the firm's Global Lithium Producers Index ETF. How big is the opportunity in lithium? Your laptop battery probably has six small lithium cells in it; an EV battery has 1,000 cells. In short, he says, the global lithium market is now "an order of magnitude bigger."

2. With governments pushing EVs hard, growing demand for lithium "is basically being legislated into existence," Piquard says. But supplies are concentrated in just a handful of countries, including Australia, China and the Lithium Triangle—Chile, Argentina and Bolivia. Despite Canada's traditional mining expertise, we'll likely not be a top producer.

3. Mining is often politically controversial, but there are twists with lithium. The traditional worries about pollution and harm to local populations are there. ESG, however, could work for or against producers. Consumers may like the concept of phasing out internal combustion engines, Piquard says, but "there could be pushback if the energy transition becomes too expensive."

4. Swings in lithium spot prices can be hair-raising. That's why major buyers such as Tesla lock in long-term supply at stable prices. And GM is investing US$650 million in a Nevada lithium mine. Piquard says volatility might moderate further if traditional mining conglomerates such as BHP and Rio Tinto decide that "if a car company is buying [a lithium mine], maybe we should, too."

5. The sector may be new, but some classic investing principles apply. "I guess I'm eating my own cooking, but a diversified portfolio makes sense," Piquard says. His ETF tracks the Solactive Global Lithium Index—the world's 25 biggest producers by market capitalization—with a maximum of 10% of the fund invested in any one company.

PHOTOGRAPH MARK RIMMER


IEUX
6
22
BOS
2
Reebok

SMART MONEY

JEAN-FRANÇOIS TARDIF

PRESIDENT AND PORTFOLIO MANAGER
TIMELO INVESTMENT MANAGEMENT INC.

Jean-François Tardif is laser-focused on making money when equity markets go nowhere. He buys compelling stocks cheaply when they tank and sells on periodic rallies. This active strategy, along with shorting securities, helped his $339-million Timelo Strategic Opportunities Fund gain 7.2% in 2022 when North American markets sank into the red. The hedge fund has also outpaced the S&P/TSX Composite Total Return since inception in 2013. His $188-million JFT Strategies Fund, a closed-end offering that he oversees for CI Global Asset Management, is run similarly. We asked Tardif, 54, why a buy-and-hold investing approach is a losing game now and why he's bet on Profound Medical, a medical device play.

What is your outlook for North American markets?
I expect the market to go sideways for a few years. So, when stocks are overbought and have had a nice rally, it's time to take profits. When the market gets scared and stocks are oversold, it's time to selectively buy. We need to work through the excesses of the past 13 years after the 2008 financial crisis, when there were zero interest rates and massive money printing. Those created bubbles that are being unwound in sectors such as technology and real estate because of higher interest rates. The collapse of Silicon Valley Bank is just one example.

You're upbeat on the energy sector. Why?
Long term, I am bullish on oil because of tighter supply due to underinvestment in new production by energy firms, and growing demand by China and other non-Western countries. Oil could easily hit US$100 per barrel, but I wouldn't rule out US$200 within 10 years. There is a potential risk of the oil price falling in the shorter term because of a recession. However, that may not be the case if OPEC Plus cuts production to keep oil around US$70 per barrel.

What's an oil play that you favour?
We own Total Energy Services, which supplies products and services to the oil and gas industry in Canada, the U.S. and Australia. It generated lots of free cash flow during the pandemic, when many companies were burning cash, and was able to pay down debt. The stock is still very cheap. That's because it's a smaller-cap name not well covered by analysts, and some investors avoid energy names because it doesn't fit their environmental, social and governance (ESG) mandate.

What is your view on natural gas?
Oil has more upside than natural gas because oil is harder to find, but I also expect growing demand for gas. Its commodity price depends on local markets and is sharply higher in Europe than it is in Canada. We like Vermillion Energy for a potential replay of Europe's 2022 energy crisis. Gas prices went through the roof after Europe cut off supply from Russia following its invasion of Ukraine. Europe was lucky to have a mild winter, but it is a question of timing when it has a normal, or worse, a very cold winter. Vermillion will benefit because it produces gas in Europe, too.

Why do you own Interfor when lumber prices have plunged from pandemic highs and the housing market is weak?
Interfor is a pure-play lumber producer whose stock price, I believe, has hit the bottom of the cycle. North American housing construction is down because of higher interest rates, but there will be a shortage of homes as the population grows because of immigration. The supply of lumber is tight, partly due to British Columbia reducing timber cutting. If interest rates drop because of a recession or an economic slowdown, we could see an upswing in housing construction and rising lumber prices.

Profound Medical is a top holding. What's the attraction?
This Canadian company has approval from the U.S. Food and Drug Administration for its laser-type procedure to treat prostate cancer. It can reduce the risk of infection compared with surgery, which can have side effects. I believe that Profound's procedure has the potential to become the new standard of care. Its equipment is now used in many hospitals, but it's still at the beginning of awareness among doctors and patients. Hopefully, its revenues will have a hockey-stick curve over time. I believe that its stock has multibagger potential. **/Shirley Won**

TIMELO STRATEGIC OPPORTUNITIES FUND (JFT701 MASTER SERIES)
ANNUALIZED % TOTAL RETURN*

S&P/TSX COMPOSITE TOTAL RETURN INDEX

*RETURNS TO FEB. 23, 2023; SOURCE TIMELO

PHOTOGRAPH ALYSSA MINTON

Celebrating Canadian business leadership

Meet this year's Inductees to the Business Hall of Fame

Every year, the Canadian Business Hall of Fame honours the lifetime achievements of Canadians who have served as outstanding leaders in business, innovation and philanthropy. Inductees are recognized for their national and international impact, as well as for serving as mentors and role models to Junior Achievement (JA) youth, who represent Canada's future business leaders. This year's Companions of the Order of the Business Hall of Fame are Hugh Anthony Arrell, Chief Jim Boucher, Madeleine Paquin and Edward Sonshine. The induction ceremony will be held on May 11 at the Metro Toronto Convention Centre.

Hugh Anthony Arrell

Stay humble. Work hard. Be kind to others. Those are the words Hugh Anthony (Tony) Arrell sees every day on a placard on his desk to remind him of what truly matters in business. To Arrell, who grew up in the farming community of Caledonia, Ont., character is everything. "Pay attention to the people you're going to work with, and who your boss is going to be," he says. "Having a good mentor can change everything." Arrell received an MBA from York University's Schulich School of Business and held top executive positions at investment firms for several decades before establishing Burgundy Asset Management Ltd. in 1992. He continues to be active as chairman, analyst and investor, while serving on numerous boards and contributing his vision, leadership and philanthropic efforts to improving the business community. His advice to the leaders of tomorrow? "Choose a field you love, and where you feel a sense of purpose."

Chief Jim Boucher

As a long-standing and influential Indigenous leader, Jim Boucher has served as Chief of Alberta's Fort McKay First Nation for nearly 30 years. Boucher says the basis for much of his success comes from "the combination of perseverance and having the right attitude." His success is also due to his clear vision, consistent direction, loyalty, and mentorship abilities. Recognizing the environmental and cultural significance of his community, he leveraged opportunities to enhance social and economic conditions through partnerships with industry, other First Nations and government. Under his guidance as chairman of its board, Fort McKay Group of Companies has grown into one of the most successful First Nation-owned business ventures in Canada. He also arranged for the allocation of substantial resources through his SageRoots Foundation to a range of educational opportunities, creating a positive learning environment for students and offering full support toward their pursuit of postsecondary education.

Madeleine Paquin

Madeleine Paquin, president and CEO of Montreal-based Logistec Corp., a leading North American marine and environmental services provider, has always put her company's success before her own. "For me, it was never about being the president or having a big title," says the Quebec native. "If the company succeeds, success will come naturally to you, too." It's a formula that has served Paquin well. In 2017, she was appointed a Member of the Order of Canada for her role in leading innovation in supply chain practices and environmental protection – two major drivers of change in the Canadian economy. Among her many accolades: Canada's top 100 most powerful women from 2003-2006, CEO of the Year in 2014 and Entrepreneur of the Year in 2021. Paquin has built a powerful network of partnerships with directorships in Air Canada, CargoM and the Logistics and Transportation Metropolitan Cluster of Montreal. She is also a member of the Marine Industry Forum and the Marine Transportation Advisory Council.

Ed Sonshine

Ed Sonshine attributes his success in business to a combination of curiosity, likability and hard work. "There's no substitute for putting in the hours," says the founder and chairman of Toronto-based RioCan, one of Canada's largest real estate investment trusts (REIT) and retail landlords. The son of Holocaust survivors, Sonshine was born in a displaced persons camp in Germany in 1947. His family moved to Canada, where he overcame the challenges of growing up as an immigrant in Toronto to pursue a career in law. After graduating from Osgoode Hall Law School, he practised at Fogler, Rubinoff for 15 years. He ventured into real estate and founded RioCan in early 1994, which he grew to a $14-billion company with a portfolio of more than 200 shopping centres. In 2011, he was awarded the Order of Ontario. He heads up and has served on numerous boards, including the Royal Bank of Canada and the Mount Sinai Hospital. Sonshine transitioned from CEO of RioCan to chairman in 2021.

Equipping the next generation with skills for success

SOFIA LOPEZ SAYS SHE'S COME A LONG WAY from the directionless student she used to be, thanks to participating in the JA Company Program at KPMG in Grade 12, where she and 10 other high-school students were tasked with creating a tangible business in a matter of months.

The intense experience sparked her passion for marketing, which she is currently studying at the British Columbia Institute of Technology, while taking a year off from her Bachelor of Arts studies at UBC.

One of the greatest benefits of participating in JA programs, she says, is being able to build a significant network. "I am grateful for the opportunity to meet and be mentored by entrepreneurs, philanthropists, founders of capital management firms and people from different walks of life."

In addition to developing entrepreneurial, corporate social responsibility and public-speaking skills, Lopez, who is based in Richmond, B.C., passes on what she's learned to students at summer startup camps.

Along with her plans to open a wellness company, Lopez is busy playing an active role on JA Canada's Youth Advisory Council, an organization she describes as "life changing."

Jennifer James, JA Canada's vice-president of programs, says much of JA's success can be attributed to corporate and community partnerships.

"JA's curriculum enables students to develop the mindsets and skill sets [young people] need to prepare for the future and build thriving communities," she says.

Thanks to a recent investment from Zurich Canada, JA will also help students develop stronger mental well-being and resiliency, in addition to career readiness, financial literacy, effective communication and problem-solving – transferable skills that can be leveraged long term.

"In a rapidly changing work environment, these skills are fundamental to a young person's success through various life stages," says James.

With local offices in communities across all provinces, JA continues to remove barriers to access and ensure programs meet the needs of Canada's diverse population.

Indigenous youth empowerment programming offered by JA Northern Alberta and NWT encourages youth to nurture their entrepreneurial spirit, identify career paths and learn from mentors.

"It's important to have Indigenous mentors," says Nicole Baker, a JA volunteer based in Edmonton. "It allows youth to believe in themselves and the possibility of a brighter future."

Baker, who is Cree and works as a senior advisor of community and Indigenous engagement at Enbridge, taught workshops to Indigenous youth, aged 14 to 21, from three communities last summer.

"I asked them to think about their gifts and talents and how they can be applied in the workforce. We also learned skills like budgeting in fun and interactive ways," says Baker, adding that, as a result, many resolved to start saving money and looking for careers that will bring Indigenous knowledge and skills to the forefront.

"JA programs encourage them that their voices are powerful and needed across society and the business world," she says.

IF WE HAVE ANY CHANCE OF AVOIDING THE WORST EFFECTS OF CLIMATE CHANGE, WE NEED TO TAKE DRASTIC MEASURES TO EMBRACE CLEAN ENERGY NOW. BUT RATHER THAN SEEING IT AS A BURDEN, CONSIDER IT A MASSIVE OPPORTUNITY

BY JEFFREY JONES

NET ZERO HOUR

We asked 13 experts, entrepreneurs and activists how to hit our net zero targets before it's too late

Interviews by Jeffrey Jones and Susan Nerberg

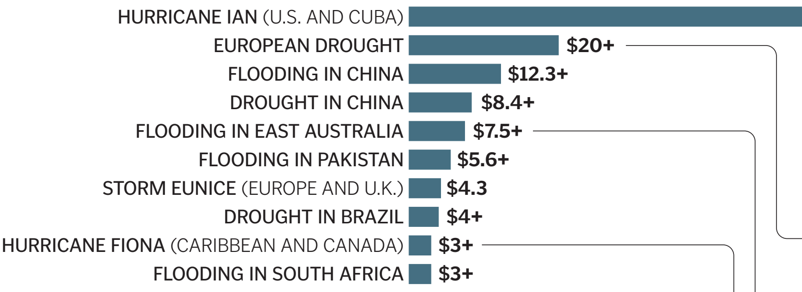
It's getting increasingly difficult to keep track of the catastrophic weather events that have hit Canada over the past couple of years. In 2021, there was the heat dome in British Columbia, which killed well over 600 people and sparked a wildfire that destroyed the town of Lytton; the so-called atmospheric river that unleashed mass flooding in the province's interior; and a freak hailstorm in Calgary. Last May, a wall of heavy rain and high winds—an event known as a derecho—ravaged large swaths of Ontario and Quebec, generating four tornados and killing at least 11 people. Four months later, Hurricane Fiona slammed into Atlantic Canada, knocking out power to hundreds of thousands of customers and leaving more than 30 dead. Countrywide, total insured weather-related losses for both years totalled more than $5 billion.

And that's just in Canada. In 2022, damage from extreme weather events cost the United States US$165 billion—and that doesn't take into account the human toll. By 2100, the UN's Intergovernmental Panel on Climate Change (IPCC) estimates damage related to climate warming of 1.5°C above pre-industrial levels—the goal we're all supposedly aiming for—will hit US$54 trillion. If we reach 2°C in warming, the cost rises to US$69 trillion. Again, that doesn't account for the inevitable loss of human and animal life due to intense storms, fires, flooding and famine.

PHOTOGRAPH CRAIG CUTLER/TRUNKARCHIVE.COM


ALGERIA

Costliest climate-related disasters globally in 2022 (US$ billions)



Yet Canada—and, it must be said, the vast majority of developed nations—have spent much of the past three decades spinning their wheels in the global race to slash carbon emissions. According to Canada's Sustainable Finance Action Council, or SFAC—a group of finance professionals appointed by Ottawa—we need to spend $115 billion more a year than we are today to have any hope of hitting net zero by 2050.

And even that goal now seems naive.

In March, the IPCC released its most recent assessment of the climate crisis and what must be done to slow the impact. The report is scathing. The world, it says, is on track to blow past the 1.5°C goal sometime in the mid-2030s, which means the next decade is critical. "We are at the tip of a tipping point," UN Secretary-General António Guterres told the IPCC when it released the report. But he also said it's not too late to act, and he urged developed countries like Canada to move faster, aiming to hit net zero by 2040, not 2050.

We all know what the fixes are: shift away from fossil fuels, invest heavily in renewable energy, electrify the economy, construct buildings using the most efficient technology, and protect and build back ecosystems. But the job is made harder when long-term solutions are undercut by short-term crises. Russia's invasion of Ukraine showed how reliant the world still is on fossil fuels. Europeans struggled to heat their homes and run their factories when President Vladimir Putin shut off the gas to the continent. The rest of us suffered through energy price spikes.

Even so, climate change remains a problem to be solved collectively. The fight will be costly and force changes to lifestyles and livelihoods, not least in an economy like Canada's, which is highly reliant on natural resource extraction and exports of high-carbon commodities, including oil and gas. Those industries have provided decades of prosperity, and that makes a shift away from them hard for some of us to contemplate.

Legions of engineers and entrepreneurs, however, see it as the largest economic opportunity since the computing revolution. Canadians are working to position the country as a leader in carbon capture, utilization and storage; critical-mineral extraction for electrification; renewable energy and power storage; alternative fuels; and all the software and artificial intelligence needed to run those systems.

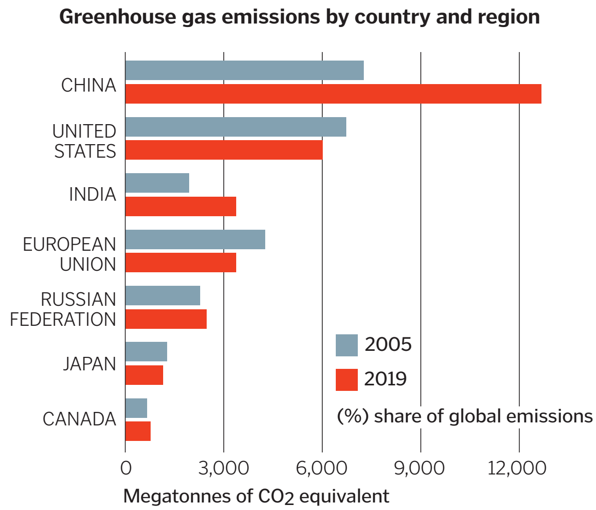
Along with investors both inside and outside Canada, they're looking to fill that $115-billion gap in annual spending needed for us to achieve our stated climate ambitions. SFAC, the group of finance professionals who calculated the shortfall, has authored the country's green taxonomy—a catalogue of green investments and technologies that fit within the energy transition category. It's meant to be a made-in-Canada approach for giving investors comfort that any money they direct at solving climate-related problems will be spent effectively, and not squandered on greenwashing schemes or projects that will lock them into years of carbon emissions.

If the blueprint works, it would go a long way toward making up for Canada's long and sorry record dealing with the carbon conundrum.

Ah, the memories. In 1992, then prime minister Brian Mulroney's Progressive Conservatives set a goal to stabilize CO_2 emissions at 1990 levels by 2000. They rose. Jean Chrétien's Liberals signed the Kyoto Protocol in 1997, and Parliament ratified it five years later, showing how serious the country was this time about helping solve a growing problem. Under Kyoto, Ottawa committed to cutting emissions by 6% from 1990 levels between 2008 and 2012. There was back-patting galore.

What the program lacked was any real action plan. Over that period, the Alberta oil sands underwent an unprecedented development boom, and Canadian emissions increased by 30%. Before the deadline arrived, then prime minister Stephen Harper pulled us out of the agreement in 2011. The Harper government had set a new bar: Under the 2009 Copenhagen Accord, the country pledged to reduce emissions by 17% from 2005 levels by 2020. But that, too, soon proved overly ambitious.

PHOTOGRAPHS (TOP TO BOTTOM) MARTIN MEISSNER/AP; JENNY EVANS/GETTY; FRANK GUNN/CP; SOURCE (LEFT) WORLD ECONOMIC FORUM; (RIGHT) GOVERNMENT OF CANADA



Again, it was reset time. Call it "Canada Gets Serious About Climate Change 4.0." Prime Minister Justin Trudeau signed onto the Paris Agreement in 2015, along with 194 other countries. That accord commits us to hitting the net zero finish line in 2050. For good measure, Trudeau set an interim target to reduce emissions by 40% to 45% below 2005 levels by 2030.

But Canada is off to a late, and slow, start. From 2015, the year the Trudeau Liberals took office, emissions were down 4% in 2021, according to the EU Emissions Database for Global Atmospheric Research. But they rose 2.7% from 2020 as the economy began to recover from the pandemic.

A 2021 report by federal environment commissioner Jerry DeMarco lamented Canada's poor record on emissions reduction, noting it was the worst in the Group of Seven. That club, of course, includes the U.S., and former President Donald Trump bid adieu to the Paris Agreement. Under current commander-in-chief Joe Biden, America is not only back in the fight, but Biden has kicked it up several notches with his Inflation Reduction Act. That legislation is Washington's largest-ever climate change–fighting campaign, committing US$369 billion over 10 years to renewable energy, electric vehicles, carbon capture and other green tech. Canadian cleantech executives also see it as a clear competitive threat.

It doesn't spell hopelessness for Canada, though. Critics who deride any action on climate often quote our smallish 1.5% contribution to global emissions. They say it's really up to major economies like China and the U.S. to make major reductions. But that argument is defeatist. After all, on a per-capita basis, we're the highest emitters in the world, according to the federal government. Herein lies another big opportunity: Technology invented here to improve that record can be exported, giving Canada an outsized impact on reducing emissions worldwide.

SFAC's taxonomy is among the developments that bode well for Canada's efforts to retool for net zero. So is carbon pricing. Although late to the game, Canada's system aims to send the pricing signals necessary for companies and investors to direct capital to emissions-cutting projects. Under the schedule, the price is slated to rise to $170 per tonne by 2030 from $65 today. (Alberta was actually a leader on pricing, establishing a carbon tax on large emitters a decade and a half ago.)

Would-be investors want assurances that future governments won't enact policies that threaten carbon price certainty for their projects, especially carbon capture initiatives, a technology seen by some as a bridge to a low-carbon economy. In the 2023 federal budget, the government announced such guarantees.

Another step in the right direction is the move to regulatory requirements for companies to disclose their emissions, now being designed by such bodies as the International Sustainability Standards Board, which will inform Canadian policies, and the Office of the Superintendent of Financial Institutions. With the latter, Canada's banks and insurers will have to start disclosing all three scopes of emissions starting in 2024, and provide details of how they're accounting for climate risk. (Scope 1 emissions are those from their own operations, Scope 2 are from the energy they purchase, and Scope 3 are from companies and projects they finance, and from end use of the goods produced.)

What the rules don't require are specific targets for phasing out investments and lending to high-carbon sectors, and that's to the chagrin of environmental activists. They say financial institutions can't be serious about the energy transition while still financing the fossil fuel sector to the tune of tens of billions of dollars. The Big Five Canadian banks are among the top 20 financiers to the global oil and gas industry, according to the Rainforest Action Network. The banks contend they serve a better purpose by keeping energy companies as clients and helping them in their decarbonization efforts. The jury is out on that contention.

Perhaps the biggest dislocation caused by any shift to net zero will be in the labour force, and that's something all governments have to grapple with. According to the Canadian Climate Institute, as many as 800,000 jobs in sectors such as oil and gas, mining, heavy industry and auto manufacturing will be vulnerable to disruption if Canada can't attract the capital needed to transform its industries. Those sectors account for almost 70% of exports, and generate more than $300 billion in export revenue and investment annually.

The institute conducted that research before Biden's Inflation Reduction Act. Canadian cleantech execs and investors worry the range of incentives in that legislation could divert capital to the U.S. Canada must pick its strengths and develop policies to show how we'll thrive as energy and industrial systems evolve.

The Trudeau Liberals' March budget took a shot at battling the competitive threat, with $20.9 billion in tax credits aimed at clean electricity, hydrogen and cleantech manufacturing. It also expanded eligibility for tax credits for cleantech adoption and carbon capture.

Ottawa isn't short on advice on what to do. It has formed many panels of experts—including executives, academics and environmentalists—to provide recommendations on industrial strategy, cleantech competitiveness and net zero policy. The trick now is putting the advice into action, while keeping the peace with the provinces and high-emitting sectors that are demanding taxpayers foot much of the bill for carbon capture and other technologies. The Pathways Alliance, the coalition of major oil sands producers that has pledged to get to net zero with their Scope 1 and 2 emissions, is among the most vocal calling for public funding, saying it will support a workforce needed to mobilize to build a massive carbon network. The industry says Canada's barrels should be the last ones on the market in a decarbonizing world, but its critics argue that's a refusal to envision a wind-down of the fossil fuel era.

Meanwhile, despite frequent demands from investors and regulators to improve disclosure, Canadian companies have the worst record on disclosing targets among G7 countries when it comes to emissions reductions (according to CDP, formerly the Carbon Disclosure Project). Those countries collectively are on a path for a global temperature rise of 2.7°C, based on targets disclosed by their companies. Taken alone, Canada's corporations are on a trajectory to a rise of 3.1°C, CDP said.

Still, there's reason for optimism. It's clear Canada has done more to wrench the economy to at least point itself in the direction of net zero than it did in past failed attempts. Alberta, for instance, is undergoing a multibillion-dollar boom in wind and solar power development, funded almost entirely by corporate and private investors. Mining and manufacturing companies are laying the groundwork for a Canadian EV supply chain, including battery components and auto parts. But there are still numerous tough choices to make on how to get to net zero without sending the economy into a tailspin, and not wasting time and money on ineffective projects and policies, or leaving Indigenous communities out of the equation.

The risk with the energy transition is that it gets bogged down by the belief it can be all things to all people. Activists see the shift as a necessity that must be accomplished in under a decade. Pro-oil types would prefer the shift be open-ended, with a way to maintain production of fossil fuels.

What's needed now is a combination of expertise, political will and buy-in from players in the game—scientists, companies, various levels of government and the public. Each now has a different idea of how to get to net zero, so there's plenty of debate to come. But it took Canada 31 years to get to a starting point. Now it has even less time to reach the destination.

Electrify everything

MARK CARNEY
UN Special Envoy for Climate Action and Finance, and co-chair, Glasgow Financial Alliance for Net Zero

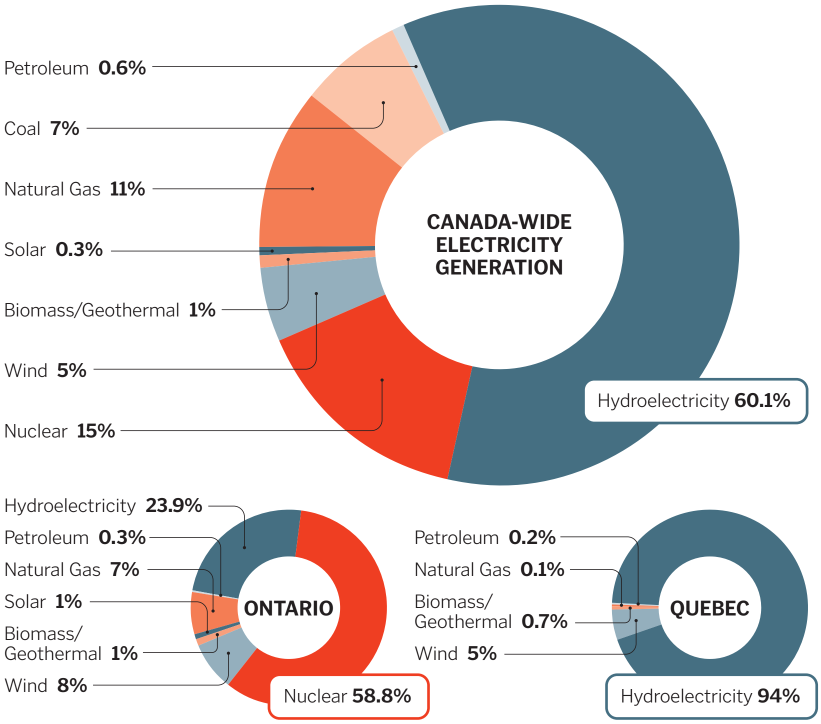
As the past year demonstrates, the current global energy system is unreliable, unaffordable and unsustainable. Russia is using energy as a weapon in a horrific war. Families face crippling energy bills. In developing countries, the grind of energy poverty worsens. And to avoid the most catastrophic impacts of climate change, the world must keep three-quarters of fossil fuels in the ground. We need a new clean-energy system.

How we get there matters. We can't just flip a green switch. To keep our lights on, heat our homes and create good jobs for our kids means ramping up clean sources of energy—wind, solar, hydro, nuclear and hydrogen—and producing the right fossil fuels during the transition. In both respects, Canada can lead.

The fossil fuels the world uses should be the lowest risk, lowest cost and lowest carbon. Canada is a beacon of reliability. Thanks to the dedication of our workers and the ingenuity of our engineers, our costs of production have become very competitive, and we can eliminate the net emissions from the production of our energy. That will take enormous investment and focus. But it will be worth it to create a new clean system that works for all.

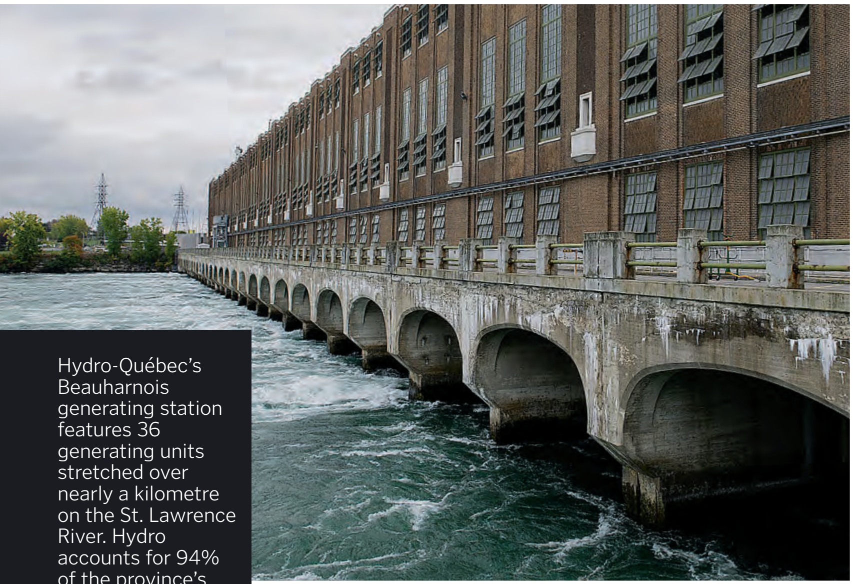
Getting to net zero requires a transformation of our economy on the scale of the Industrial Revolution at the pace of the digital transformation. We need to deploy the energy technologies that are already competitive at huge scale and, in parallel, drive down the costs of solutions for "hard-to-abate" sectors such as steel and transportation. To finance it, we need a financial system that takes climate change into account. All are in prospect.

Three-quarters of emissions come from the final direct demand for energy. To get on the right path, the world needs to electrify as much as possible, and convert electricity generation to clean energy by tripling clean-energy investment. Canada has a head start as more than 80% of our electricity generation is zero-emission. Over the next decade, we must close the gap and grow our grid by 15%. If we do, Canadians will get cleaner, more reliable power, our businesses will become more competitive, and Canada will be a destination for investment.



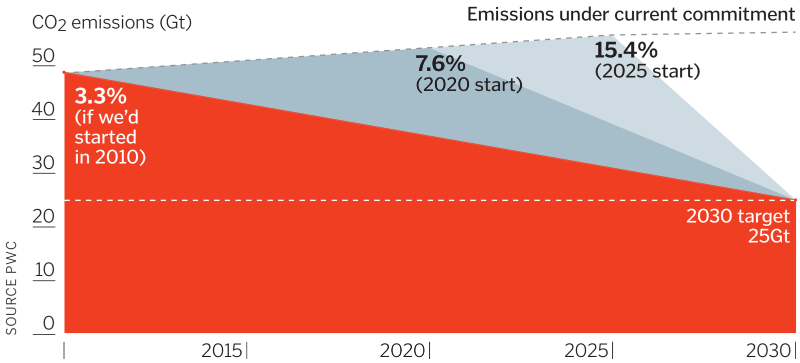
SOURCE ENERGYRATES.CA

ILLUSTRATIONS MURAT YUKSELIR; PHOTOGRAPH GRAHAM HUGHES/GETTY



Hydro-Québec's Beauharnois generating station features 36 generating units stretched over nearly a kilometre on the St. Lawrence River. Hydro accounts for 94% of the province's electricity

Annual emission cuts needed to hit net zero target



Accelerate everything everywhere all at once

TOM RAND
Managing partner, ArcTern Ventures

Sure, we could keep all fossil fuels in the ground, but we won't. Perhaps it's physically possible, but it's certainly not socially, economically or politically possible. A better question is, how *much* can we leave in the ground? The answer had better be: most of it.

Getting to net zero by 2050 is the hardest thing humanity's ever tried to do. Ever. It's more complex than the Manhattan Project, more challenging than the moon landing, more daunting than the Cold War. It's certainly possible: The tech is largely invented, the capital sits in pension funds and money market accounts, and even the political side has flexed its muscle—watch the world respond to the U.S. Inflation Reduction Act. But it's really hard because we waited so long. The emissions drop-off is crazy steep. Like USSR-collapsing steep. So how do we get there? Accelerate everything everywhere all at once. Take risks. Try like your kids want you to. And don't stop.

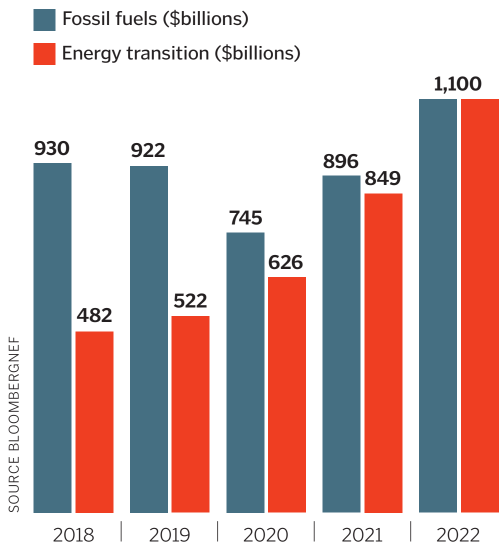
Quadruple cleantech spending

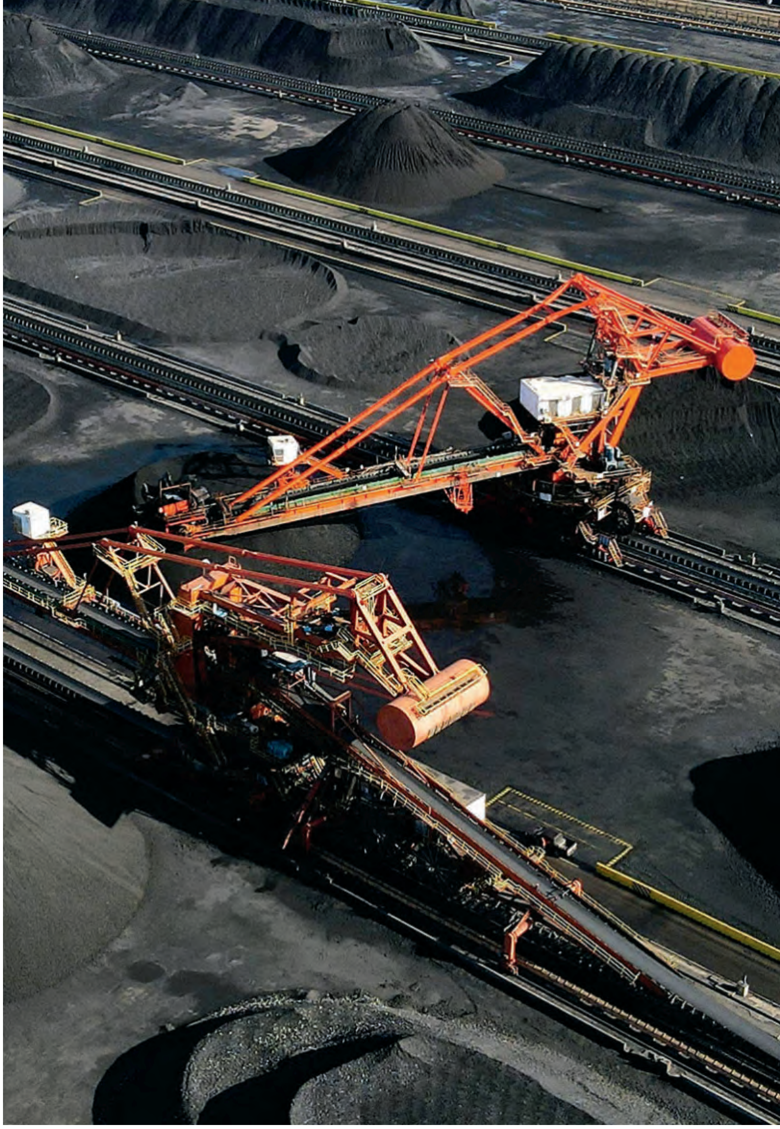
CATHERINE McKENNA
Chair of the UN's High-Level Expert Group on the Net-Zero Emissions Commitments of Non-State Entities, and former Canadian minister of environment and climate change

The science says we can't just talk about 2050. We need to reduce emissions by half by 2030. And the International Energy Agency has been clear that means no new fossil fuel infrastructure. That doesn't mean you stop everything now. But you can't just say you're committed to net zero and only be reducing your emissions intensity versus your overall emissions.

We can't even talk about 2050 without talking about what we're doing right now, because we will blow through the goal that the world, the people who signed up voluntarily for these targets, agreed to—limiting warming to 1.5°C. So you just need to scale the investment to clean. There needs to be $4 for every $1 going to fossil fuels, with no new investments in fossil fuel infrastructure. That's just the math and the science and the facts that I want everyone to focus on. In the Canadian context, I don't know that we're clear enough about what's required, because people are saying they're doing something, but they're not. I don't want to be Debbie Downer—the flip side is, we want good jobs, we want our economy to grow. We want to have cleaner air and cleaner water. And so I think it's about winning.

Global investment in energy transition vs. fossil fuels





Stop innovating, start implementing

JULIE SEGAL
Senior manager, climate finance, Environmental Defence

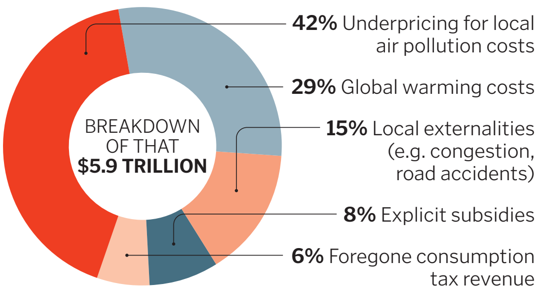
One thing is obvious: Canada's economy still uses a lot of hydrocarbons. We can transition from A to B very quickly, though, by scaling up renewable energies and investing for energy efficiency. Trying to ignore the growth capacity in renewables and storage would be a short on human ingenuity that's already been demonstrated in those green sectors. We won't turn off the taps overnight, but whether you're guided by morals, science or looking at long-term investment stability, your guideline is still the same. Oil sands production must phase out under a managed transition within one single decade, and production cannot be increased. The future is green, and Canada can move beyond an anachronistic economy if we choose to.

Leading scientists have confirmed the technology exists for low-emission energy systems, and liquid capital is available to redirect from old to new. We just need to get at it. The sectors with the opportunity and the need to reduce emissions are transportation, buildings and energy—they represent more than 60% of Canada's emissions. The key to climate action at this point is implementation, not innovation.

Canada has targets and plans for all other economic sectors, but we need rules to help the financial sector align with the goal of limiting warming to 1.5°C. Most financial institutions still put more money into emission-intensive industries like oil and gas than into climate solutions. Climate finance from the private sector has increased by over 60% and still, three to six more times investment is needed in both mitigation and adaptation.

6.8%
Portion of global GDP that went to direct and indirect fossil fuel subsidies in 2020, according to the International Monetary Fund. That's **US$5.9 trillion**

7.4%
The IMF's estimate for fossil fuel subsidies in 2025



SOURCE IMF

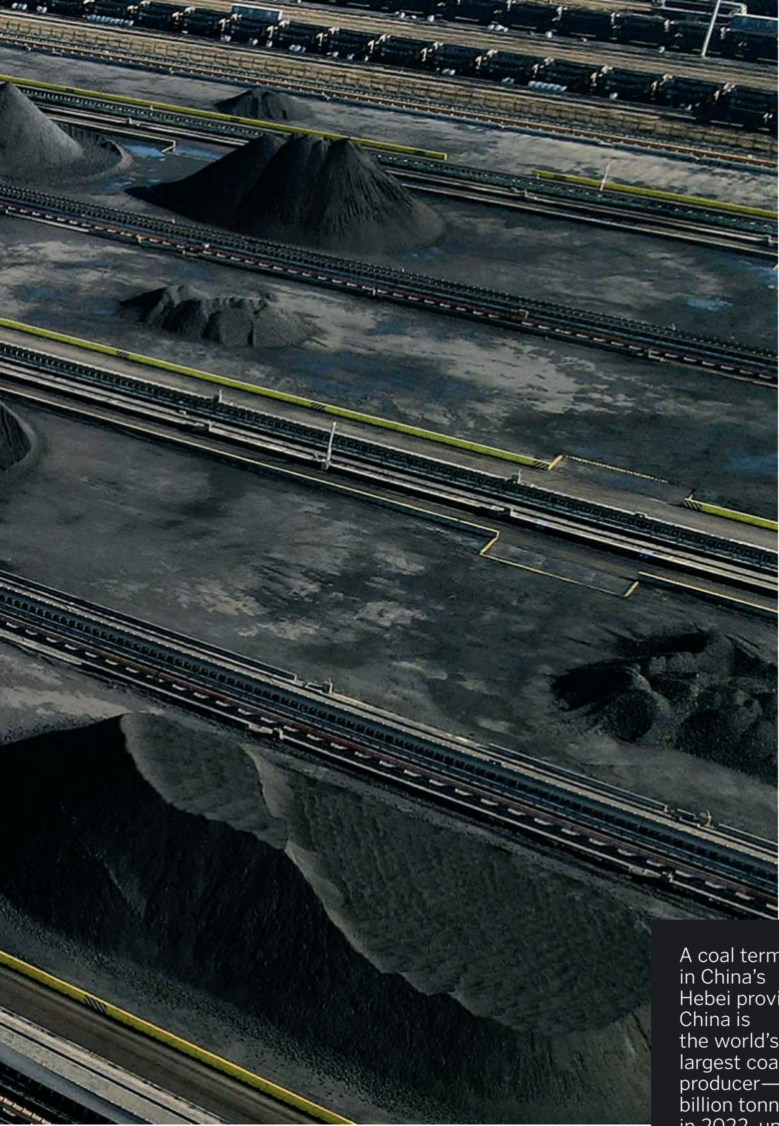
Swap coal with natural gas

CRAIG GOLINOWSKI
President, Carbon Infrastructure Partners

In the last century, the human population grew from 1.8 billion people to eight billion. How we got all those people is because of additional energy derived from fossil fuels, and that drives our food system. A loaf of bread is essentially natural gas and diesel. It's a delusion to think some new software or green hydrogen is changing a relationship that's existed for a century. Renewables on their own do not have the necessary energy density. The population would have to shrink.

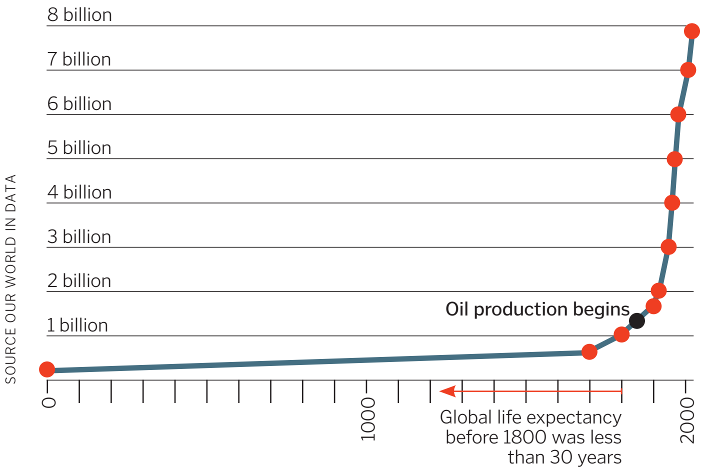
Coal is roughly 40% to 45% of the problem. So how do you get rid of coal? Well, the biggest example of any nation reducing its emissions is the U.S., and it did that by moving coal out of the electricity mix in favour of natural gas. The good thing is, the Earth has an incredible quantity of natural gas, so we don't have a resource problem. Then you have to abate the natural gas use through carbon capture. You don't have to

PHOTOGRAPH REUTERS



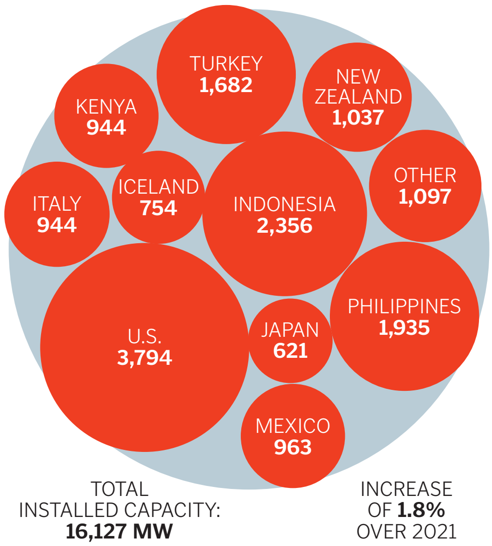
A coal terminal in China's Hebei province. China is the world's largest coal producer—4.5 billion tonnes in 2022, up 9% from 2021

Global population growth



sequester it all. You could turn it into different chemicals and products and fuels. But directionally speaking, a significant increase in natural gas with carbon capture and storage and carbon management, alongside vast expansions in renewables and nuclear, is how you could meet growing energy demand and get to net zero.

Installed geothermal capacity by country
(megawatts)



SOURCE THINKGEOENERGY RESEARCH

Go deep (literally)

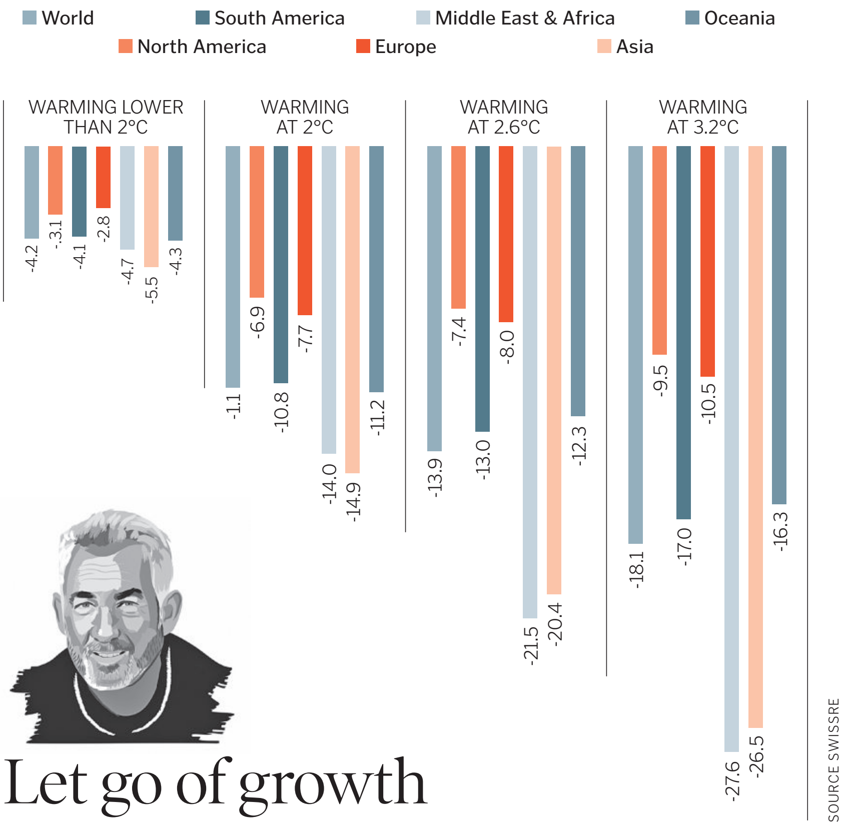
TYLER HAMILTON
Senior director, cleantech climate programs, MaRS

We're going to need clean electricity—no more coal, no more reliance on natural gas. Some provinces, like Ontario, are putting big bets on nuclear. But in other regions, particularly out West, there's a lot of untapped potential for geothermal power generation, where you're taking existing skills in the oil and gas sector and shifting them to drilling holes in the ground to tap into the Earth's heat. Canada is one of the only nations on the Pacific Ring of Fire that has not commercialized geothermal. There's a bit of upfront risk and costs, but it provides baseload power that generates electricity 24 hours a day. So we need policies to support that early kind of exploration.

We could also do a better job of leveraging offshore wind, which would allow us to electrify things and to generate clean hydrogen, which can be used to reduce our reliance on natural gas for heating, diesel fuels for heavy transportation and jet fuel for airplanes. Hydrogen is going to be key, but it has to come from clean electricity.

How do we get Canada to net zero? A good start is to just stop subsidizing the oil and gas industry. When an industry that's making record profits is telling the government it can't move forward on carbon capture projects without subsidies, we need to say no. And yes, those sectors create a lot of jobs. But if we put a lot of effort into geothermal and all these other areas, that creates jobs, as well. There's going to be a transition, and it's going to be painful for some people. But we gotta start putting a plan in place, rather than having to abruptly do it when there's no choice.

Impact of global warming on GDP relative to zero change in temperatures
(% difference in GDP by 2050)



Let go of growth

TIM JACKSON
Professor of sustainable development at University of Surrey, U.K, and author of *Post Growth: Life After Capitalism*

Net zero, on its own, is a bit of a distraction, because the way climate change works is about the burden of carbon in the atmosphere. How much more can we put into the atmosphere before we reach these tipping points—1.5°C, 2°C, 2.5°C and so on? We've got about seven or eight years' worth of carbon to burn, or about 400 billion tonnes a year. At that rate, we would run out of carbon to burn by 2030. That tells you how long we've got to make the changes. This requires a major shift in our production and supply chains, and in our lifestyles. We need to decarbonize our electricity completely. It's an enormous structural challenge to our economy.

There are two problems. One is that we can't create technologies we hope will one day offset all the carbon emissions coming from our growth fast enough at the rate the economy is growing. So we may have to slow down the economy for the technology to catch up, particularly over the short term. The other is, we can't necessarily do it all through technology. But we could do it through structural shifts to sectors that are essential for our well-being, like health care and education. You could call it the care economy—a shift toward a less materialistic, less energy-intensive, more employment-intensive economy. That economy doesn't deliver the same kind of growth the production-based, extractivist one does.

We have to remove the blinkers about the importance of the so-called free market, which has never been free and has never been a proper open market. We have to be thinking in the same terms as during the pandemic, which was an experiment in a post-growth, non-capitalist economy. And that saved us from much worse mortality rates. There are aspects of the capitalist system that have benefited only a minority of people, while damaging relationships with workers and decimating the planet. Ultimately, capitalism is incapable of responding to the scale of the crisis. It fails to deliver a decent vision of what it means to be human.

Look in the mirror

ELI ENNS
Co-founder and CEO, Iisak Olam Foundation

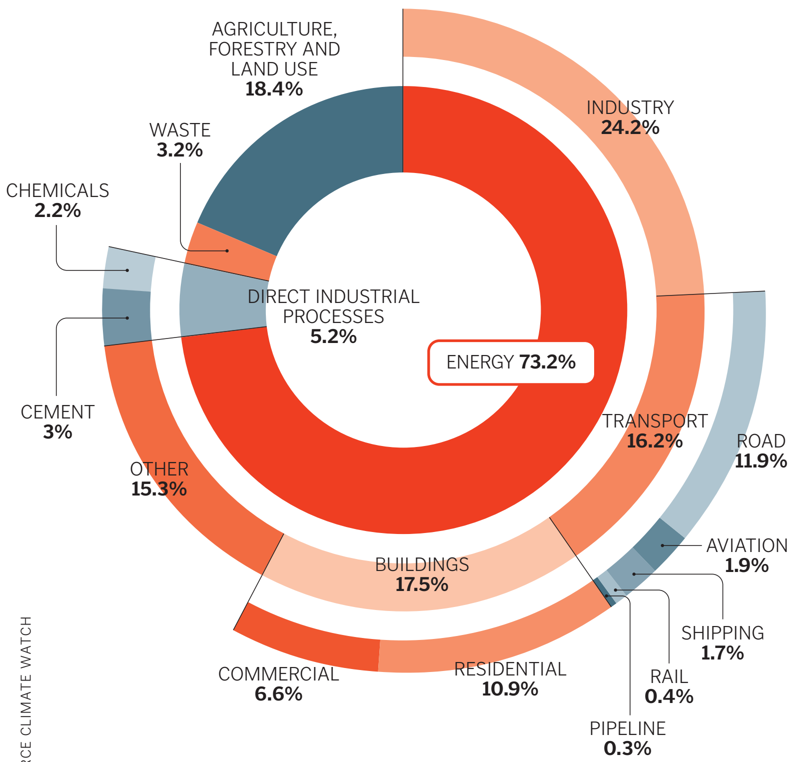
Confucius said, to put the world in order, you must first put the country in order; to put the country in order, you must first put the family in order; to put the family in order, you must first cultivate your personal lives. And to cultivate our personal lives, we must first set our heart straight. There's a direct connection between our inner world, the values and beliefs that manifest through our thoughts, words and actions, to creating the world that our children and grandchildren will inherit from us. So fundamentally, climate change at a global scale can be routed back to a way of seeing the world—a dangerous paradigm that sees the world in disconnected pieces. In my Nuu-cha-nulth language, *Hishak Ishtsawak* means "everything is one, and everything is interconnected." And it's through that paradigm that we look at solving problems.

There's no simple solution to the climate crisis. Certainly electric cars aren't going to be the solution, because it's going to lead to different types of environmental problems. The solution is in the way we form and develop our communities and our society—our values. And when you have different values driving your thinking and behaviour, it's not just about how much money you can make in the next quarter; it's about what's going to happen 500 years from now. You come up with fundamentally different decision making. That is going to be the determining factor.

PHOTOGRAPH OLE BERG-RUSTEN/GETTY

As Russia's war against Ukraine continues, natural gas producers are reaping big profits. That includes Norway's Equinor and its LNG facility in Melkoeya

Global emissions by sector



SOURCE CLIMATE WATCH

Form a united front

PRITI SHOKEEN
Head of ESG research, TD Asset Management

We're still quite dependent on fossil fuels and related products, so if we just left it in the ground, it would be very chaotic in the short to medium term. Think about transportation, the import and export of groceries and food, the basic needs. With any economic rationale, when you have insufficient supply or availability of one particular commodity, the price is going to go up. So we can see significant inflationary effects. We can see, essentially, a grinding halt to a lot of the economic activity as we know it.

We need political will to be able to provide a regulatory and policy framework for all players to be on board. And we certainly need all actors, including industry, government and civil society, organized around net zero pathways. It is going to take a couple of decades at least. The companies we engage with are working on solutions, while trying to balance the pressures they're facing from an economic and shareholder-return perspective. But to get to net zero, I think everybody needs to be aligned and not politicize climate change.

Involve Indigenous peoples

SHARLEEN GALE
Chief, Fort Nelson First Nation, and chair, Deh Tai LP and First Nations Major Projects Coalition

Our nation of roughly 800 members has the three biggest gas basins in the northern part. We've seen the impacts of climate change and of industrial extraction, from which our people have never benefited. In my community, $12.6 billion has left our territory with minimal amounts coming to our nation. So for all of us to be successful in terms of net zero, we're going to have to involve Indigenous peoples at the forefront. As a country, we've prospered on oil and gas production. So I think there needs to be a balance between nuclear, other projects, and oil and gas, because some Indigenous communities have little choice in terms of their economic opportunities. We have this important goal of supporting economic reconciliation, so you can't just have the government say, "We're not going to invest in oil and gas anymore."

Fort Nelson First Nation is really doing our part. We've found a partner to develop a plant that will provide wood pellets to Europe to help get them off coal. And right now, we're developing one of the first-of-its-kind geothermal facilities in Canada. We're already talking about financing, and we're negotiating energy purchasing with the province, because we want to power the whole Fort Nelson area. That will take us off the gas-fired electricity grid. So this is a good opportunity to generate clean power that we could also trade. And it's done 100% with our people.

These pods are part of a pilot at the Hellisheidi geothermal plant in Iceland. They contain tech that allows CO_2 to be removed from the air and stored underground

Take a holistic approach

PAT CARLSON
CEO, Kiwetinohk Energy

In Canada, we produce 17 billion cubic feet of natural gas a day, and if that were converted into electricity, it could produce enough for 10 Alberta power grids. That's just natural gas. Everybody likes renewables, but the problem is that they're not dispatchable, and they can't be reliable.

At the individual level, we can improve the efficiency of the things we do—we can switch to smaller vehicles or ride bicycles. At the corporate level, we do the same thing. We need to reconfigure our plants so they are more efficient. We change out our gas-fired pumps and fuel generators to electrification. That's the easy stuff. When we get through that, we can convert from coal to natural gas, which has largely been done in Alberta. We can go from natural gas generating equipment that's 30 and 40 years old and not very efficient to plants that are much more efficient and still provide energy with a much smaller footprint. People talk about switching coal in China to LNG from Canada. That's another important thing we can do. Those kinds of things make a big difference. It's a global problem, and every CO_2 molecule has the same impact regardless of whether it's emitted here or in any other country.

PHOTOGRAPH ARNALDUR HALLDORSSON/GETTY

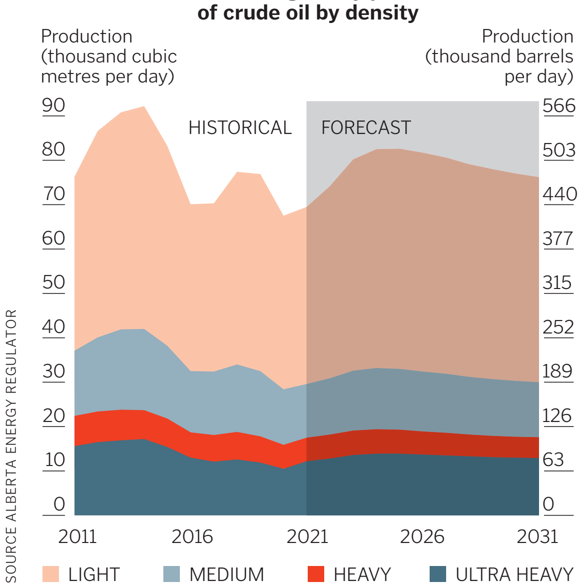
Capture the carbon

ALEX POURBAIX
Executive chairman, Cenovus Energy

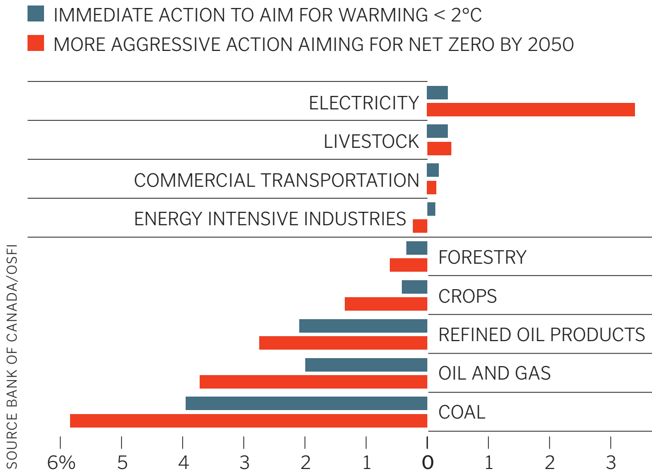
When you think about it, we have been growing the renewables business for three or four decades, and it's only reduced the percentage of energy delivered by oil and gas by about 1% over that time. This transition goal I hear people talking about is going to take a very, very long time. At the Pathways Alliance [the oil sands industry coalition], recognizing that we're going to need oil for decades, we really had a view that the right thing was to focus on decarbonizing our barrels. It really doesn't matter if the world is consuming 50 million barrels a day or 100 million barrels a day; I would make the argument that the preferred barrel should be the decarbonized Canadian barrel.

Our goal is to reduce emissions from our industry by 22 megatonnes by 2030, and a large share of that is going to be from carbon capture. It is a technology that we feel is largely perfected. It has been in service around the world and in Canada. We think the challenges we're left with are easily manageable, and it's something we can deploy in very short order. Then there are some other projects in the next 10 years—things like fuel switching, at Suncor, for example, replacing their petroleum coke as a fuel in their facilities with cleaner-burning fuel. As we move into the '30s and '40s, we think we're going to start seeing the perfection and implementation of the next series of emission reduction technologies, like small nuclear reactors, greater use of hydrogen and direct air capture. But all of those are technologies that need time.

Alberta's average daily production of crude oil by density



Global economic impact by energy source



Capitalize on cleantech

STUART BERGMAN
Chief economist, Export Development Canada

Climate change is not a distant what-if scenario; it's here. The consequence is that in less than 30 years, if the world fails to prevent this unprecedented warming, global GDP could fall by as much as 18%. So we're paying for it one way or the other. And the window to act is closing quickly.

Accelerating the action to get to net zero could have positive benefits for the economy, and that's something that gets lost. The implied investment here is in the $1-trillion to $3-trillion range every year. My shop looks a lot at country risk, and access to clean and affordable power is an increasingly important strategic consideration, both at the commercial and residential level. This is an area where Canada's cleantech sector could find considerable trade and investment opportunities.

Still, it's important to be clear that the energy transition is not about completely transitioning away from hydrocarbons. Currently, there's no single renewable energy source or combination of sources that can replace hydrocarbons. In Canada, renewable energy currently provides less than 20% of total primary energy supplies. Given the increasing demand for natural gas, where imported gas could displace more carbon-intensive coal and oil, and given that Canada is the world's fifth-largest producer and sixth-largest exporter of natural gas, I think we're very well positioned to play a leading role in supporting this transition. I understand that is a little contentious, because it's not completely clean. But from an environmental perspective, CO_2 emissions per unit of energy produced from gas are about 40% lower than coal and around 20% lower than oil.

Canada has 13 of the top 100 most innovative cleantech firms in the world. Our companies are well-placed to capitalize on many of these new opportunities, given global demand for innovative solutions. There's always more that can be done to encourage access to capital for small to medium-size innovative companies, and to help protect startup IP. Because you can't commercialize or capitalize on what you don't own.

FULL CIRCLE

BY CHRISTINA FRANGOU

PHOTOGRAPHS BY LEAH HENNEL

CANADA'S BEST 20 23 EXECUTIVES

CHRISTINE GILLIES escaped from the 87th floor of the World Trade Center on Sept. 11, 2001. Now she's a top executive at a company whose mission is to bring workers home safely

THE SOUND OF A FIRE alarm burst into the conference room. Christine Gillies, chief marketing officer at Calgary's Blackline Safety, spun into action. She slammed her laptop shut and hustled from the room, beating pretty much everyone to the parking lot. Under the smoky skies of an Alberta summer, she watched her colleagues meander out of the Blackline building. Several were still carrying on their discussion from the board room. Gillies wondered what they thought of her, the new executive two months into the job who'd just run from a meeting.

Then came the all-clear signal. A wave of relief. Someone said to Gillies, "Boy, you sure bolted." Her heart still pounding, she replied, "You better believe it."

Gillies had been mum about her past when she joined Blackline, a 19-year-old company that makes first-of-its-kind wireless, wearable sensors for people who work in industrial or remote locations. The devices are used by people like landfill workers who need to detect the presence of methane gas, by electricity-meter readers in case they fall or become unresponsive, and by volunteers in the backcountry who groom trails in areas without cell service.

When no one brought it up during the hiring process, Gillies realized that the story she'd carried for two decades—the reason people used to ask her at parties, "Hey, aren't you *that girl*?"—had finally faded into the background.

If anyone had bothered to look, though, her story was easy to find—newspapers across North America had written about her in the wake of the Sept. 11, 2001, terrorist attack, when an airliner struck six floors above Gillies's office as she was getting ready to start her workday. She'd escaped with thousands of others by dashing down 87 flights of stairs. Few survivors were closer to the impact than she was.

In the years after the World Trade Center attack, Gillies made her name on Calgary's tech startup scene, where she was known as someone who believed in putting marketing at the forefront of a company's strategy, and whose unique combination of enthusiasm and curiosity helped companies grow. She spent years telling startup stories, while mostly avoiding her own. She wanted to escape the burden of being *that girl*. She wasn't even comfortable with the label *survivor*—she'd just been in a better place that day than many others. It felt selfish to dwell on it. So, she went quiet about 9/11.

And then she found herself in a role where her job was to tell the stories of a company whose motto is, "We make sure your people come home at night." And she decided it was time to speak up.

BLACKLINE SAFETY has its headquarters in Calgary's Ramsay neighbourhood, just outside downtown. The century-old brick building used to house the Dominion Bridge Co., a famed Canadian construction giant that provided steel for the Lions Gate Bridge and Calgary Tower. The space does double duty as Blackline's main manufacturing plant and operational centre. On the manufacturing floor, workers produce more than 500 devices a day. On the walls, digital screens display maps covered in thousands of little blue dots, each indicating a sensor tracking someone at work in one of 70 countries. At any given time, there are a dozen or so red dots interspersed among the blue, highlighted with exclamation marks. These indicate someone who needs to be checked on. This past winter, the operational centre dealt with 4,000 alerts. Blackline says that 99.5% of response times are less than one minute.

The company produces almost a dozen different products, including wearables and monitors. Blackline's devices are "intrinsically safe," meaning they don't trigger combustion or fires around gases or fuels. Most cellphones don't meet the same standard, which means Blackline's products can go places phones can't. One of the company's chief challenges has been convincing organizations that this new technology makes a measurable difference to worker safety. It's about creating a market, not finding space in an existing one, says Cody Slater, Blackline's CEO. "The marketing is far more complex and nuanced," he says. "You're dealing with a bigger challenge in learning how to tell a story, versus trying to fit your story in with the rest of the market. And Christine's done that exceptionally well."

Gillies was recruited in June 2021. Since then, Blackline's revenue has increased from $38 million to $73 million, and its customer base has expanded by 50% to 1,500 companies, including Suncor, Shell, FedEx and the Calgary Zoo—growth Slater credits in part to Gillies's ability to reach new customers through a combination of traditional media, advertising, social media and trade shows. She's even involved with early-stage product development, which is why she's now chief product and marketing officer, overseeing two worlds she'd always thought were too siloed in many industries.

Gillies was born in Calgary—an "oil-and-gas brat" whose father worked in the industry. She had zero interest in joining the energy business. Instead, she set her heart on becoming an anthropologist, like her hero Jane Goodall. After high school, she joined the program of her dreams at the University of Calgary, loading up on anthropology, chemistry and science classes—always noticing the lack of women in the room. One summer, she joined anthropology professor Mary Pavelka on a field trip to Texas to study Japanese snow

For Gillies, the move to Blackline made sense: Her new role there would be a promotion, and the company was growing fast. More important, its mission—making sure workers get home safely—meshed with her own

monkeys. The experience was life-changing, but not in the way Gillies expected: She learned that she intensely craved human interaction and wanted to spend her days with people rather than chimps.

She turned to Calgary's burgeoning tech sector. Tech was just beginning to gain a foothold in Alberta, bringing in $7 billion a year to the province. Gillies sent her resumé to Smart technologies, an early darling on the local scene (it was acquired by Taiwanese tech-manufacturing company Foxconn Technology Group in 2016 for US$200 million). Smart made interactive whiteboards; a woman, Nancy Knowlton, was executive vice-president. Gillies interviewed for a job in marketing but heard nothing back. She called Knowlton to follow up, hellbent on the job. Knowlton told her she needed an executive assistant who could start immediately. Could Gillies be there by noon?

Gillies's first year at Smart, 1998, was one of remarkable growth. In the first 10 months, Smart brought in $18 million in revenue—$5 million more than in all of 1997. Knowlton was promoted to president, a rarity at a time when fewer than 5% of senior managers in the world were women. Gillies moved up, too. After three months as Knowlton's EA, she was promoted to a position in marketing. "It became immediately apparent that she was too good to be my assistant," says Knowlton, now CEO at Nureva Inc. "She's very, very quick to understand things. She recognizes opportunity."

But soon Gillies set her sights on New York, home of the man who would become her husband, Craig DiLouie (they've since separated). In 2000, the 26-year-old took a job as marketing director with Thor Technologies, a small startup that made software for corporations to secure access to computer systems. Thor's CEO, Brian Young, had just opened a glamorous office on the 87th floor of Tower One of the WTC. Young liked to wow clients with the view, pointing out traffic snarls in the distance so people could plan their route home. For a company with 42 employees, the space gave them instant credibility.

For Gillies, the job was trial by fire. Donald Trump's *Apprentice* was still four years away, but the show would later remind her of her time in New York, trying to convince Wall Street investment bankers—most of them men—of the viability of Thor's software. It was a high-pressure job, and Gillies was always in the office early. On Sept. 11, 2001, she was at her desk before 8:30 a.m., drinking Starbucks and going through expense reports. The sun was shining through the windows when she heard a buzzing and then a deafening bang. She didn't know it, but that was the sound of American Airlines Flight 11 slamming into the building, six floors above. Fire broke out on the ceiling. Gillies saw a co-worker wobbling like he was drunk, trying to keep his balance as the building swayed. Clear liquid ran down the windows—water, she thought at the time; jet fuel, she thought later. She and three colleagues scrambled under their desks, where they coughed from the thickening smoke. Someone called 9-1-1. They could hear sirens. Gillies tried to call her husband, but the phones were dead.

As the fire took on a new ferocity, the foursome decided they needed to escape. They covered their faces with wet napkins and made their way to a stairwell. They began the long journey down, which became even longer when they hit a dead end, and had to climb back up to the 83rd floor and walk through fire to transfer to a different stairwell. While the world outside watched in horror, no one inside knew what was happening; cellphones were still a rarity, and very few were working in the chaos. On the stairs, some people made jokes to lighten the mood. Several men carried a disabled woman in an office chair. When they reached the 30th floor, Gillies stood aside to let firemen pass as they made their way up.

As she reached the ground level, Gillies saw the "Welcome to the World Trade Center" sign hanging askew in the dark and dust. Just then, Tower Two collapsed. Gillies fell to the ground and covered her head as debris rained down. She doesn't know how long she stayed there, lying in pools of cold water from the overhead sprinklers. When she sat up, she could see nothing. She crawled out as part of a human chain, following the voice of a firefighter. When she emerged, she found an unrecognizable city, painted in dust, and packed with police cars and firefighters. People shouted at her to keep moving north. She kicked off her shoes so she could run. Paramedics gave her water to wash out her eyes and urged her on. She just kept going, even as the North Tower, whose stairwells she'd exited 10 minutes prior, collapsed in a cloud behind her. Finally, she reached her building in Midtown, a few kilometres away. She didn't have her keys, so she rang the doorbell. A frantic DiLouie found her standing there, shoeless and disguised under a layer of white powder.

In the months after the attack, Gillies sought out a therapist. She was on guard all the time—fearful of noises and charged with adrenaline. The therapist asked what she wanted to accomplish with counselling. Gillies told her she wanted someone to tell her what she needed to do to be okay. "The therapist gave me a formula for positive mental health," recalls Gillies. It was simple: community, purpose, exercise, sleep and self-care. "That just made sense to me." It comforted Gillies to believe that if she could feed herself, exercise, go to work and volunteer her time to help New York City recover, she could be confident that she was doing all right. Gillies arranged for the counsellor to come to Thor Technologies' new office on Park Avenue for a couple of lunchtime sessions with her co-workers, but it didn't last. She remembers executives saying counselling wasn't necessary. "Now in the corporate world, especially post-pandemic, we see mental health supports as an embedded and critical part of the employee experience and how corporations treat their people," she says. "But it was different then."

In that first year, Gillies threw her energy into rebuilding the company and her community. It was almost by luck that Thor could keep going. In 2001, no cloud back-up system for software existed. By chance, employees who'd been at conferences out of state had a version on their laptops that allowed the company to restart. On weekends, Gillies volunteered at the Red Cross to process cheques that had been sent in from all over the world. She gave interviews to media in Canada and the United States, describing again and again the events of that day, and her deep appreciation for the fragility of life.

Gillies heard a buzzing and then a deafening bang. She didn't know it, but it was the sound of American Airlines Flight 11 slamming into the building, six floors above

New York never felt the same after that. In 2004, she and DiLouie moved to Calgary and wrote a personal essay in *The Globe and Mail* about their experience. Later, people would sometimes recognize her as the woman who'd survived the unimaginable. People approached her at house parties, a friend's wedding, work conferences, even her parents' house. One even called her "that 9/11 girl." "I hated that," says Gillies. She didn't want to be affiliated with a horrific mass murder, and she cringed when anyone called her a survivor. "I felt it was too dramatic, as if I hadn't really earned it." She stopped talking about it and largely excised the story from her professional life. She stuck carefully to the protocol her therapist had laid out for her: community, purpose, exercise, sleep and self-care. Repeat.

In 2005, Gillies did her MBA at the University of Calgary's Haskayne School of Business and found solace in a weeklong wilderness training program. She began to recognize that she felt a burden to do something enormous with her life. Maybe, she realized, she could just live her life how she wanted and that would be enough. She competed in the MBA world championships, a tournament between elite business schools to resolve simulations of real-world corporate dilemmas. Her five-person team won, ending a 10-year drought for the university. Gillies's skills were on full display, remembers Robert Schulz, one of her professors. "She has a unique combination of analytical skills, people skills, an ability to get things done and being visionary all at the same time," he says. He didn't know until recently that she'd been in the World Trade Center on 9/11, but said she's always come across as resilient. "She's built a career on taking things from one level in a company to move it to another level. In order to do that at the level she's at, you've got to have a lot of inner strength."

Gillies threw herself back into tech, attracted to the fast pace of change. "I think this is where the anthropologist in me comes in," she says. "Because there's a lot of listening to humans and watching for market trends, and then solving problems and responding." At industry meetings and on podcasts, Gillies spoke out about the need for marketing to be integral to any company's strategic plan. There's a tendency to think about marketing as an add-on, dumping it into what Gillies calls "the make-it-pretty department." But that misses out on the power of marketing, she believes.

In 2005, she returned to Smart technologies, where she worked on product strategy for six years. She had two children. She moved on to Mitacs, a federally funded non-profit that pairs young scientists with industry support. She became a vocal advocate for science and for women, particularly those in science. "I experienced firsthand how tough it was to find my way in STEM as a woman," she says. She knew that even women who graduated with science degrees rarely went on to the C-suite.

She became vice-president of marketing at Mitacs and then moved to Aware360, a tech company focused on safety in the connected workspace. She was barely there a year when an opportunity at Benevity Inc., the new leading light in Calgary tech, came up. Benevity's draw was two-fold: it was a fast-growing company—in 2019, it expanded from about 400 to 650 employees—but also did social good. Benevity produces software for companies to co-ordinate workplace giving programs, fulfilling the "purpose" requirement set out by her post-9/11 counsellor. In 2020, Gillies was part of the team that helped the Calgary firm land unicorn status with a rare US$1.1-billion deal with a U.K. private equity firm.

Gillies had no plans to leave Benevity. But in 2021, a recruiter called her on behalf of Blackline. In her first meeting with the company, Gillies didn't bring up 9/11, and no one asked. Slater, the CEO, says he had no idea she'd been in the World Trade Center that terrible day. It only came up when one of the directors performed a Google search on her as they prepared to offer her a job. For Gillies, the move made sense. Blackline was a publicly traded company growing at lightspeed, with a 428% revenue growth rate in the previous five years and new products in the pipeline. The job meant a promotion, but with the added bonus that the company's mission still aligned with her purpose. "My own experience on 9/11 was there were 3,000 people who just went to work that day, and they never came home," she says. "So to come full circle and find a company that's essentially working to avoid that horrific scenario I lived through? It just felt right."

As part of her role, she likes to talk about one of Blackline's services that's especially important for her: When an alert is triggered by a device and help is called, someone can speak to the employee to tell them to move or stay put, assuring them help is on the way.

No one could tell her that on 9/11. She guessed help wasn't coming and she needed to move. She guessed right.

Gillies knows a powerful story when she hears one, and she recognizes hers is just that. But she no longer feels shame in telling it. She almost died at work on a day when thousands never made it, and she's comfortable speaking about it as a foundational event in her life—a chapter, but not the end.

CANADA'S 20 BEST 23 EXECUTIVES

SPACE PRODIGY

HOLLY JOHNSON grew up with her eyes on the stars in a family full of engineers. She also happened to be down the street from MDA's headquarters, where she now runs the space and robotics program developing the AI-enabled Canadarm3

BY JASON KIRBY

PHOTOGRAPHS BY SAHAR RANA

TO UNDERSTAND HOLLY JOHNSON'S rocket-like rise to the senior ranks of space tech company MDA, where she oversees one of Canada's greatest feats of engineering wizardry—the Canadarm program—there may be no better place to start than the cold, forbidding reaches of...Minnetonka, Minn.

Early last decade, fresh out of university, Johnson joined MDA as a junior engineer, working on a team that ensured the 17-metre-long Canadarm2 robotic arm performed its tasks as expected on the International Space Station. But at the urging of a manager and mentor, she soon took on an opportunity considerably smaller in scale, though not importance. Johnson was given the job of leading the design, development and testing of Neuroarm, a two-armed robotic system, inspired by Canadarm, capable of being guided by a surgeon to extract tumours from patients' brains while inside an MRI machine.

For Johnson, that meant pulling some midnight shifts at a hospital in Calgary, shadowing surgeons to understand their workflow and environment. It also entailed at least one frigid February trip to a medical equipment customer in Minnesota—"the coldest weather I've ever experienced," she recalls—to do integration testing shoulder to shoulder with the client.

Johnson draws a direct line between that experience and her current role as MDA's vice-president of robotics and space operations, where she sits at the vanguard of Canada's space ambitions. The opportunity "redirected" the trajectory of her career, she says, and ingrained in her the importance of keeping the end user at the centre of the engineering process: "Often as engineers, we get deep into the details and technical design that we think are good, but we have to zoom out and remind ourselves of the end user, whether that's a neurosurgeon or an astronaut."

At 37, Johnson's 14-year tenure at MDA spans a period of remarkable change for the space industry, not to mention the company. As an intern at MDA in 2008, she worked with the original Canadarm, which flew aboard space shuttle missions. That was a time when space exploration was still largely the purview of vast government agencies.

Now, commercial enterprises are reshaping the cosmos. The private space industry was valued at more than US$420 billion last year, according to market intelligence company Euroconsult, and it's estimated to grow to US$737 billion within a decade. So as Johnson leads development of the third generation of MDA's signature technology, Canadarm3, she and her team have made commercialization a priority. "It's a cultural shift to go from building something that is specific to a government procurement requirement to designing, building and selling five of the exact same thing for other customers," she says.

Since taking the helm at the robotics and space division in

As an intern, Johnson worked on MDA's original Canadarm. Now she's leading development of the AI-enabled third generation of the technology

January 2022, first in an acting capacity and then permanently in July, Johnson has ramped up MDA's robotics and space division, adding 400 new employees and nearly doubling revenue to $194 million last year.

Under her watch, MDA has signed several critical deals. The highest-profile of those was a $269-million agreement with the Canadian Space Agency to complete the design phase of Canadarm3, the highly autonomous robotic system that will be part of the NASA-led Gateway station orbiting the moon. In another deal linked to NASA's ambitious Artemis lunar program, which aims to return humans to the moon by 2025 (including Canadian astronaut Jeremy Hansen) and eventually send them to Mars, MDA joined a consortium with Lockheed Martin and General Motors to develop the next generation of robotic arm–equipped lunar rovers. The latest federal budget set aside $1.2 billion over 13 years for the CSA to put toward a lunar vehicle program.

But even before Canadarm3 makes it to the moon, technology derived from it is set to be deployed on the world's first private space station, Axiom Station, which will take over from the ISS when it's decommissioned in 2031. MDA signed two deals last year for robotic interfaces ahead of the launch of the first Axiom station modules in 2024.

Johnson was born obsessed with all things space. She grew up in Brampton, Ont., and her environmental engineer father would regularly point out the nearby headquarters of MDA—then known as Macdonald, Dettwiler and Associates—and its groundbreaking work on the first Canadarm. (During a trip to Disney World when she was around eight, her parents made a side trip to the Kennedy Space Center to catch a shuttle launch.) Her earliest memories are visits to her uncle's cottage in Algonquin Park, far from the light pollution of the big city, and him pointing out the satellites as they passed by overhead.

When she applied for an internship at MDA as an engineering student at the University of Toronto, she was emphatic that she was the right fit for the company. "I remember telling the person I interviewed with, 'I will not be the highest-ranked student in the class, but I promise I have the biggest passion for the work you do at MDA,'" she says.

That enthusiasm became Johnson's hallmark, says the manager who recommended her for the Neuroarm assignment. "When you plan for shuttle missions and space missions every day for many years, you can lose sight of how exciting this job is," says Mike Hiltz, a mission operations manager. "Holly's energy and enthusiasm were a nice reminder."

While the Neuroarm project gave Johnson a taste of leadership, she got her first exposure to MDA's executive ranks in 2017, when she was appointed to a leadership-development role as chief of staff to then president Mike Greenley. "I often say I got more than I bargained for," she says.

At the time, MDA was still owned by U.S.-based Maxar Technologies, which was under pressure from investors and quietly put MDA up for sale. Greenley made Johnson the point person on the sale process, which eventually saw a Canadian consortium led by Nova Scotia entrepreneur John Risley and BlackBerry co-founder Jim Balsillie acquire MDA for $1 billion in early 2020. A year later, when MDA went public, Greenley again turned to Johnson, then the company's head of business operations. "Holly was the interface between MDA and the buyers and bankers through the entire process, with responsibility for responding to the several thousand questions that come with that kind of process," says Greenley, who today is MDA's CEO.

> "We're not going to launch a Canadarm3 and have it be a one-off. We're going to launch it, and have multiple versions and commercial derivatives for all these emerging applications"

Greenley credits Johnson with introducing a "product-management mindset" to MDA's robotics and space division, and initiating the commercialization of Canadarm3 technologies into the private space sector.

MDA has already produced hundreds of grapple fixtures, a mechanism affixed to objects like satellites and space-station modules that allows robotic arms to latch onto them. During a tour of MDA's hangar-like lab, Johnson cocks her "engineer's ear" toward a repetitive ticking sound coming from one corner, where two engineers use a thermal vacuum chamber to test a grapple under extreme conditions. "It's not a car manufacturing plant where we produce dozens a day but it's higher-volume repeat product," she says, "and with the commercial robotic arms, we're trying to get to that point."

To that end, MDA is in the process of moving out of its cramped headquarters, with its warren of grey-brown shoulder-high cubicles, into a larger, newly constructed building, complete with an expanded lab facility and dedicated space for manufacturing, assembling and testing. The site will also feature multiple mission control centres. Whereas past robotic arms were operated by NASA or the CSA, Canadarm3 will be operated by MDA—whether the device is on the private Axiom station 400 kilometres away or 400,000 kilometres away on the moon.

There are any number of other "art of the possible" uses, too. As Johnson shows off relics from MDA's past, like the space shuttle cockpit simulator astronauts once used to train on the original Canadarm, the opportunities she sees for the company's robotics pour out: Mars missions, in-orbit manufacturing, large space-based solar arrays, lunar mining, the removal of space debris. "We're not going to launch a Canadarm3 and have it be a one-off," she says. "We're going to launch it, and have multiple versions and commercial derivatives for all these emerging applications."

In the meantime, down on Earth, Johnson sees a role for herself in mentoring other women to pursue careers in the science, technology, engineering and math fields. She credits the support of family, mentors and her colleagues at MDA for allowing her to "be as ambitious as I want to be" but acknowledges "it's not very common to see a woman step into increasing leadership positions in general, but in particular in unique fields such as space."

That's changing, she says, and as the space market explodes, opportunities will only grow, especially as Canada plays a bigger role in the sector. "This isn't something that has to be south of the border," she says. "You don't have to go to NASA to have an exciting career in space."

CANADA'S 20 BEST 23 EXECUTIVES

Welcome to our third annual Best Executive Awards, celebrating all those unsung lieutenants who toil in the CEO's shadow but deserve a shoutout for keeping their organizations moving forward—whether it's in operations, sales and marketing, finance, HR, technology or sustainability. Yet again, we received hundreds of nominations, from blue-chip companies to startups

SRI VEMURI

Senior VP, national sales manager, Capital Group Canada

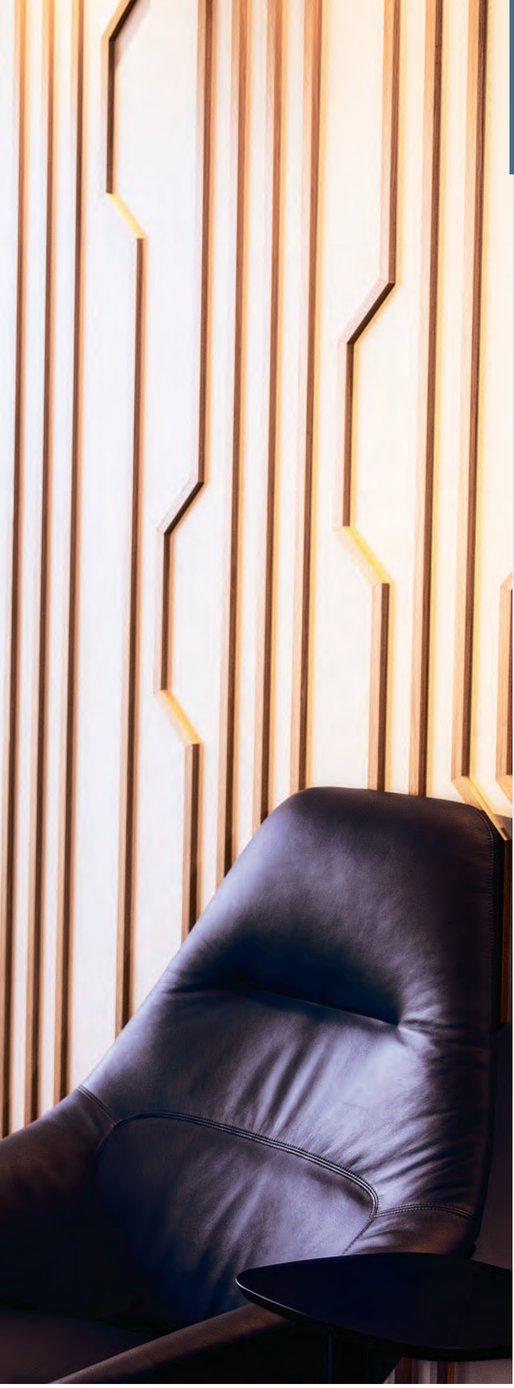
"The most important attributes are a positive attitude and constant curiosity," says Vemuri of the best career advice he ever got. Twenty-five years ago, the newbie writer was recruited to sales, where he found a knack for selling via authenticity and humility. "I learned everything from people around me," he says, clarifying that his recent successes—a 234% sales increase in the notoriously difficult years between 2019 and 2021—should be shared with his team. Passionate about safe spaces where staff can be their honest selves, Vemuri launched Capital Group's DE&I roundtable anti-racism events featuring famous faces like U.S. Olympian Allyson Felix.

ANGELA SIM

Chief technology resiliency, experience and operations officer, BMO Financial Group

Sim started her career on the proverbial bottom rung of Canada's oldest bank when she joined as a junior C++ software developer 22 years ago. Now, she leads a team of more than 1,500 across three continents, and is effectively responsible for the technological infrastructure that keeps BMO running. During COVID-19, she oversaw the bank's transition to

BY LIZA AGRBA + ROSEMARY COUNTER + ALEX MLYNEK + JAIME WEINMAN



PHOTOGRAPH (MCKENZIE) SHAUN ROBINSON

JON McKENZIE

Vice-president & COO (now CEO), Cenovus Energy

Sometimes the best time for an executive to take a risk is when they can least afford to do it. When Jon McKenzie was named the new CEO of Cenovus Energy (a role he started in April), he owed the move in part to a decision he made in early 2020, when he was still the COO and the company had barely survived the early stages of the pandemic. Now, he thought, was the time to acquire another oil company, Husky Energy. “Jon came to me with this idea of combining Cenovus and Husky,” recalls Alex Pourbaix, who was CEO at the time. “I remember saying, ‘Do you think it’s the right time to do it?’ And Jon said, ‘This might be the only time we ever get the chance.’” The merger, which closed in 2021, turned Cenovus from an oil producer to an integrated producer/refiner.

While the move was undoubtedly nervy, it was part of McKenzie’s three-prong strategy for the company: “deleveraging the balance sheet, getting our costs down and trying to get market access for our products.” McKenzie’s clarity about his goals, along with a willingness to take risks to meet them—which Pourbaix describes as “a mix of discipline and courage”—is something he learned in jobs at Suncor, Irving Oil and Husky itself. McKenzie says his bosses were “some real icons of the business community” who were all “able to motivate people to produce more than they think they can.”

As he takes on the top job at Cenovus, McKenzie thinks the integrated company is well positioned for the next few years. But he also knows that the oil business is cyclical. “Never get too high when things are going well or believe that the success of the company is entirely related to the things that you’re doing,” says McKenzie. “And when commodity prices are down, you just have to be persistent and stick with it.” As 2020 proved, even bad times can turn out well if you have a good plan. **/Jaime Weinman**

remote work, including an organization-wide rollout of Microsoft Teams—which would normally take two years—in just a few months. What’s more, she’s assembled a 100% female executive leadership team and is the bank’s technology and operations co-lead for diversity, equity and inclusion.

ATUL CHANDRA

CFO, HomeEquity Bank

When Chandra became HomeEquity Bank’s CFO in 2016, its net income was less than $12 million. He spearheaded a culture of fiscal and regulatory responsibility that’s propelled the bank to an income exceeding $77 million in 2022, paving the way for a suite of new products and customer service improvements in the process. Among his achievements is leading HEB’s first-in-Canada sale of reverse mortgages to investors in 2019, which has been a major boon for its profitability. In his spare time, Chandra raises funds for AIM for Seva, a not-for-profit that works to increase education access for children in India.

PATRICK LO

National power and utilities lead, Microsoft

With sustainability as one of his core values, Lo joined Microsoft this past October to help power and utility companies make the transition to clean energy. “To reach net zero, it has to be big and bold, and it takes innovation,” says Lo, who previously led a pilot project at Ontario’s Independent Electricity System Operator that let residential customers install rooftop solar panels to support the grid. “The part that I can play,” he says, “is to show everyone in the power and utility sector what’s possible in terms of decarbonizing.”

JUSTIN ADLER

COO, NorthOne

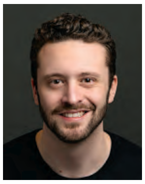
Adler’s resumé might be unexpected for the co-founder of a fintech like NorthOne, which provides small business banking services. His previous roles ranged from music producer to marketing exec for the Frank and Oak apparel brand. He’s a firm believer in the value of diverse experience and tries to stand for the idea “that no one is above any job at the company.” His teams usually meet or exceed their goals, but he continues to keep an eye out for individuals who can lead them higher still. “You need to identify your teammates who are outstanding and invest in them, break down walls for them.”

BUNMI ADEOYE

Senior VP, consumer and lifestyle, Proof Strategies

Within a year of joining communications firm Proof Strategies in 2019, Adeoye was promoted to her current role. “Being an executive during a

pandemic requires you to lead with a great deal of empathy, patience, trust and self-compassion—which is exactly the way I think we should lead all the time," she says. Adeoye's commitment to nurturing the next generation of PR professionals shows up in her collaborative approach to leadership at Proof, but she doesn't stop there. She also co-founded the Code Black Communicator Network, an organization dedicated to the support of Black communications professionals.



MIKE McNEIL

VP, Venturepark Labs

If McNeil weren't VP of Venturepark—an accelerator for food, beverage, health and wellness entrepreneurs—he'd likely be dining on pizza and burgers all the time, he jokes. The non-profit, which was founded in 2015 by *Dragons' Den*'s Arlene Dickinson, has worked with 200 brands, and its alumni's products are stocked in 30,000 stores across North America. Currently, Venturepark is supporting more than 40 entrepreneurs. "It's busy," says McNeil of the accelerator. "There's a waitlist to get into it."

ANASTASIA REGEN

Principal director, national cyber strategy and organization, Accenture

Not long ago, cybersecurity was the IT department's problem when disaster struck. Not anymore, thanks largely to business grad Regen, whose rethinking of "end-to-end" security bakes cybersecurity into businesses in advance (and for a fraction of the price). "We're the bridge between business objectives and cyber strategies," says Regen, whose savvy expertise guides the largest C-suites in the country (far) away from those aforementioned disasters. Ironically, if Regen's done her job well, the rest of us won't ever know she was there at all.

JOHN BAYLISS

Executive VP & chief transformation officer, Walmart Canada

One of Bayliss's favourite quotes from Walmart founder Sam Walton begins, "You can't just keep doing what works one time; everything around you is changing." Bayliss is known at the retail giant for projects that do unexpected things, like helping to design a grocery distribution centre that takes up half the usual space, ordering a fleet of electrified trucks from Tesla, or partnering with DLT Labs to create a blockchain invoicing program that has reduced invoice disputes by 97%. "The pandemic forced us to pivot, adapt and get creative," Bayliss says, and that's the one thing he doesn't want to change.

MARYAM SAEED

Head of risk, Visa Canada

It's Saeed's job to think of every potential worst-case scenario, specifically around how the pandemic-wrought increase in digital transactions doesn't lead to an increase in fraud. "I'm constantly thinking about new and emerging threats, and how we can stay ahead of the game to protect our network and the financial system," she says. One of the key ways she's approached this is by employing tokenization to secure e-commerce transactions, and getting partners on board. The result? A significant year-over-year increase in usage and a double-digit reduction in fraud rates.

FION LEE-MADAN

COO, Fairly AI Inc.

With more than 20 years in the enterprise software game, Lee-Madan has been working for what she calls "fair and responsible AI" long before anyone ever thought of ChatGPT. Before her leadership position at Toronto-based Fairly AI, she spent many years working internationally, and it made her "truly appreciate the diversity of humans from different backgrounds, cultures and circumstances," which in turn taught her that you need diverse perspectives to understand how technology intersects with human life. "Our success rate in recruit-

IMEN ZITOUNI

Senior VP and chief digital officer, Intact Lab

Here's an unexpected fact about Imen Zitouni, considering her job: Growing up, she was a bit of a Luddite. "In high school, I remember being asked to *type* an assignment, and I was against it because I thought it would remove our personality," she says with a laugh.

Clearly she came around. In fact, Zitouni goes so far as to say she's now "in love with innovation"—particularly when it comes to the insurance industry. "Projects are constantly evolving with technology like 5G, telematics, behavioural science and AI." That's why, in 2015, she pitched the idea of creating a digital innovation lab at Canada's largest property and casualty insurer. Under Zitouni's leadership, the Intact Lab has grown from 15 people to more than 300 professionals who help generate $885 million in revenue annually. Much of that growth comes through digital platforms, where more than half of Intact's customers interact through the mobile application.

One of the first projects Zitouni spearheaded was figuring out how to minimize the amount of time it took an online customer to get an insurance quote. "In our world, quotes can turn into sales, and we knew we had to shrink how long people were waiting," she says. In 2015, the average wait was nine to 10 minutes. Zitouni and her team got it down to three minutes. "You need to have a clear vision of how to execute an idea. Otherwise, it's just going to be a good idea on a computer screen," Zitouni says. "We really are a *do* tank rather than a *think* tank."

It's not just her technological smarts that make her indispensible, but her people skills, too. "Imen leads through connection," says Intact CEO Charles Brindamour. "She tries to learn an interesting fact about each of her team members."

Zitouni stumbled into insurance by accident. A digital marketer by trade, she once had a roommate who worked in the industry and would pump her for advice on how to shift the business in that direction. Eventually, it turned into a job.

At Intact, one idea that stands out for Zitouni is its new mobile crash assist feature, which detects accidents and contacts emergency services with one tap. "Innovation is about making better experiences for people," she says, "and really, it only matters when it ends up in the hands of the customers." **/Clare O'Hara**

ing a truly diverse set of talented individuals is the No. 1 goal that I am most proud of achieving at Fairly," says Lee-Madan, who also serves on Canada's CIO Strategy Council.

PAUL TESHIMA

Chief client experience officer, Wealthsimple

Over the past year, many young people have grappled with the first market reset of their investing career. For a new-school investment management service like Wealthsimple—which has more than three million clients in Canada and oversees more than $18 billion in assets—it's been crucial to stay laser-focused on customer satisfaction. Teshima swiftly responded to helter-skelter market conditions, designing new programs to strengthen ties between clients and advisers, introducing operations updates to improve response speed and quality, and scaling the customer experience team. As a result, Wealthsimple actually saw its number of clients and net deposits grow.

STACY KAUK

Head of sustainability, Shopify

As head of Shopify's Sustainability Fund, Kauk's job is to steer the organization and its massive network into the fight against climate change. The fund backs tech that accelerates the removal of excess carbon from the atmosphere; to that end, Kauk was the driving force behind Frontier, an advanced market commitment (in partnership with other organizations like Stripe, Alphabet and Meta) to commit $925 million toward carbon removal. Kauk also led a major renewables initiative last year; the company now counteracts emissions from all its employees' Canadian home offices by adding an equivalent amount of wind energy to the grid.

MICHELLE YEAP

Senior manager, business analytics, BMO

Yeap is a champion at multitasking. In addition to overseeing analysis that helps BMO manage its recent acquisition of Bank of the West, the data and analytics whiz also creates tangible tools for business leaders to bring wellness into work, and she helped secure funding for the bank's largest ever CRM transformation program. Plus, she owns and runs Flowtime Yoga in Vancouver. "When you have a passion for something," says Yeap, "you find ways to make time for it."

ALLISON WOLFE

CFO & global head of portfolio management, Oxford Properties Group

During her 13 years at Oxford, Wolfe has set herself apart with an unflinching commitment to finding the best possible workflows and tools—no matter how easy or convenient a suboptimal solution might be. With her team of more than 200 employees, she implemented the automation of key processes, introduced a cloud-based investment pipeline management tool (a major upgrade from Excel) and made significant enhancements to the company's management reporting, to name a few changes. An agile, passionate operator, Wolfe deeply understands the adage "work smarter, not harder."

SARAH NATHANSON

COO & general counsel, Thunderbird Entertainment

Vancouver-based Thunderbird has big plans—its stated goal is to become the next major global studio. And Nathanson is determined to help the company get there. Besides creating growth-oriented roles and infrastructure, and working to optimize its revenue models, she played a key role in Thunderbird's 2018 listing on the TSX Venture Exchange. She's implemented a thorough ESG action plan, helps oversee the funding of BIPOC internship programs, and prioritizes purpose-driven content supporting diversity and inclusion. In short, she's an effective, principled executive with a near omnipresent reach.

PHOTOGRAPH (ZITOUNI) JOCELYN MICHEL/CONSULAT

MARK SAKAMOTO

Executive VP, Think Research

Even if you've never heard of Think Research, you might know Sakamoto from his bestselling 2014 family memoir, *Forgiveness*. While a company that develops knowledge-based digital solutions for health care professionals may seem a world away from publishing, Sakamoto arguably still relies on the same skills—building trust and listening well—that allowed him to draw out his grandparents' Second World War experiences for the book. "We work very closely with health ministries, health ministers and often the premier's office," says Sakamoto, who typically leads those conversations and negotiations. "This is not a transactional kind of business; it's a longstanding, trust-laden business model."

DAVID BERKOWITS

Chief technical officer, QDoc Inc.

Before Berkowits co-founded QDoc, he built the first real-time teleradiology platform for the Yukon and Northwest Territories. Rural residents used to endure long wait times to interpret radiology results—even in emergencies—but Berkowits' innovation revolutionized their care. With QDoc, he continues to build innovative tech supporting equal access to health care. "Our platform is completely free for Canadians," he says. "We do our best to match patients with physicians in their local communities, which helps maintain continuous care if they need to be seen in person." In a challenging era for public health, we need innovators like Berkowits bolstering the system.

JEREMY AUGER

Chief strategy officer, D2L

Education is about changing yourself. But it seems the same applies to a career in education technology, given Auger's 20-year journey as part of D2L's founding team. "It's taught me the tremendous value of reinventing myself and embracing change as a catalyst for growth," he says. As D2L has gone from startup to multinational, Auger has taken on different roles as needed, including COO and CFO, while maintaining his ability to attract and

deploy talent, and his belief in what a team can do when it embraces change and long-term goals. "Together, we can push back boundaries and transform the world," he says.

TJ FLOOD

President, Canadian Tire Retail

When the word "unprecedented" suddenly starts to appear, well, an unprecedented number of times in headlines, internal memos and everything in between, companies rely on leaders who can maintain a level head. For CTR, that was Flood, who kept his cool amid supply chain chaos, inflation and shifting consumer demands. He laid the groundwork for a $1.2-billion investment in the company's store network, oversaw the launch of its newest generation of large-format retail outposts and bolstered connections with its dealer network. The upshot: CTR managed to drive short-term growth without losing sight of its broader ambitions.

ELIZABETH WOOD

Executive VP, CMI Financial Group

Canadian Mortgages Inc. has grown its employee base from less than 10 to more than 120, and Wood doesn't try to act like it isn't a high-pressure situation: "Too many people feel forced to hide their struggles in workplaces that celebrate powering through or toughing it out." Wood's CEO, Bryan Jaskolka, says she's an effective leader "because she always considers the people—and the humanity—behind it all." This human

VANESSA KANU

CFO, Telus International

Vanessa Kanu became Telus International's CFO in September 2020—smack in middle of not just a pandemic, but also an all-hands-on-deck IPO effort. The journey to going public requires heavy lifting from every corner of an organization, but it's an absolute power lift for the finance department. And yet Kanu—never having met her colleagues in person—rose to the occasion in spectacular fashion. "I credit Vanessa with much of our IPO success," says Telus International CEO Jeffrey Pruitt. "I suspect that but for her expertise, personality and work ethic, we might not have achieved nearly as good a final result." With an initial market cap of $8.5 billion, the digital solutions provider closed the largest tech IPO in TSX history in 2021.

Kanu credits her impact in part to a somewhat counterintuitive approach. "I never start with the numbers—I end with them," she says. "I've always been the sort of finance person who wants to understand the core of the business. I always want to go way beyond the financial statements to build a solid mental model." The upshot? In a crucial period, Kanu put herself on rock-solid footing when it came to communicating with potential investors. "Sometimes a question from an investor sounds like it's about the numbers, but really it's about the business's key drivers," she says. Good thing she picked up the latter in record time.

Under Kanu's leadership, the company also has closed three acquisitions: Massachusetts-based Lionbridge AI (concurrently with the IPO), Bangalore-based data labelling platform Playment and, most recently, the $1.5-billion acquisition of Willowtree, a Virginia-based customer experience innovator. "Of course, the number of companies we evaluate is significantly more than that," she says. "You can imagine how much sleep I got in my first three months of work. But I have a high threshold for this type of pressure."

Ultimately, it's Kanu's passion and leadership style that makes her such a powerhouse executive. She's detail-oriented, but not a micromanager; committed and tenacious, but empathetic. "There's understanding detail, and then there's just being in the weeds," she says. "I read every line of every report I'm sent, but I like to give people autonomy to solve challenges. That's how I like to be treated, and extending that to my team has served me well." **/Liza Agrba**

factor is one reason Wood talks freely about her lifelong struggles with severe anxiety and agoraphobia: "I'm very transparent about my own mental health journey because I want people to know that it's okay not to be okay."

GORD NELSON

CFO, Cineplex

With the movie theatre business in dire need of a steady hand, Cineplex was fortunate to have Nelson, who's been with the company since 1988 and in his current role for nearly 20 years. When the pandemic wiped out ticket sales, Nelson focused on keeping the company afloat without compromising its long-term financial health, and he had to do that while also working on its litigation against Cineworld Group, which walked away from a $2.8-billion deal to buy Cineplex in 2020 (and has since sought bankruptcy protection). In 2022, Cineplex saw a huge increase in revenue and even squeaked into the black. Now, with the company in better shape, Nelson is working on a five-year ESG plan.

IMRAN GULAM

CFO, FYiHealth Group

"I have always kept to my core values of doing the right thing." That's Gulam's simple explanation for his success. FYiHealth is a doctor-led group of optometry clinics, and as the business expands, executives need an ethical code to match the doctors they work with. Over the past 18 months, Gulam has overseen what he describes as "extensive growth," including the merger of FYiHealth with another network of clinics and the acquisition of the optical retailer BonLook. He's satisfied he and his colleagues have held to those core ethics through it all: "I am very fortunate that my team demonstrates those same values," he says.

FREDERICK MORENCY

VP sustainability, strategic initiatives and innovation, Schneider Electric

Morency has been working at the Canadian branch of the energy-management company for more than 25 years, but with this role, he believe he's found his calling. "Sustainability is core to my purpose," he says. His team of "sustainability ambassadors" is in charge of making sure Schneider's many Canadian facilities are meeting their sustainable-energy goals. But Morency adds that he sees his job in larger terms, as a way to "help pave a path to Canada's net zero future. It takes a community to effect change." With that in mind, he has spearheaded a number of collaborations between Schneider and other organizations, such as collaborating with think tanks and labs to try and develop new ways of reducing emissions.

ALANNA BOYD

Senior VP & chief sustainability officer, Sun Life

In 2021, Boyd became Sun Life Financial's first ever CSO. Leading a team of 55 (and counting) dedicated to sustainability initiatives, Boyd has put one of Canada's largest public companies squarely on the path to net zero by 2050. Under her leadership, the company achieved carbon-neutral certification, defined a target for $20 billion in sustainable assets by 2025, and embedded diversity, equity and inclusion across its operations. Boyd walks the walk when it comes to sustainability—and is bringing her entire organization along for the ride.

ANDIE ANDREOU

CFO, SkipTheDishes

SkipTheDishes, a Winnipeg-based food delivery service, took its final steps out of startup city in 2016 when it was acquired by the British giant Just Eat Takeaway. But on the financial side, it continued to operate more or less like a startup until CPA Andreou took the reins in 2019—just before the pandemic hit. In the midst of exponential growth in never-before-seen conditions, Andreou overhauled

PHOTOGRAPH (KANU) ALEXA MAZZARELLO

the company's financial software and processes, grew her original team of 16 to 63, and somehow found time to mentor colleagues and advocate for women in leadership positions.

CAROLINE GRIMONT

VP marketing, Harvest ETFs

Financial services companies aren't known for having the most forward-thinking digital strategies. But when Grimont became Harvest's first dedicated marketing hire, she got to work changing that. She led the evolution of its website from outdated digital billboard to content-rich multimedia experience, massively increasing traffic and garnering more than a million views for its YouTube channel. Her tenacity and knack for leveraging media and influencer partnerships is pushing Harvest toward thought leadership in the investment space.

ANGEL YAU-VANDENBURG

Chief data and technology officer, Équité Association

Statistician and data scientist Yau-Vandenburg, one of a handful of female CTOs in the country, spent decades in profit-driven companies before joining the non-profit fraud detection firm Équité. "I was drawn by its purpose," she says. "I want to use data and analytics to help uncover fraud and organized criminal activities." In a first for Canada's property and casualty insurance world, she's working on a national, consortium-based, AI-driven analytics platform designed to detect insurance fraud. Yau-Vandenburg partly credits her tenacity to her powerlifting hobby; she's competed on a national level and says the sport taught her to embrace persistence and resilience.

CHRIS BIEDERMAN

CTO, Li-Cycle Holdings

Only the company co-founders have been at Li-Cycle longer than its CTO. As the battery recycling company's R&D lead, Biederman led the development of industry-first tech that recycles large batteries without discharging or dismantling, making the process much safer and more efficient. Now, he's leading the development of a $485-million commercial hub that will process old batteries and manufacturing scrap, creating the first ever North American source of recycled lithium. Biederman's tenacious leadership has changed the landscape of Canada's clean-energy industry.

ADAM HAINES

VP product and customer experience, Blue J Legal

Blue J Legal, an AI-driven legal tech firm, started life as a U of T entrepreneurial hub project. While still relatively small, its user-experience scores rival those of giants like Amazon and Netflix. Much of that is due to the influence of Haines, whose steadfast focus on empathy has been transformative for the company's users—and deeply impactful for his direct reports. Haines believes in genuinely empathizing with clients to understand their needs inside out, and he knows exactly how to translate those insights into a meaningfully user-oriented product roadmap.

SHANNON HIGGINSON

SVP, general counsel & chief compliance officer, Lululemon

These past few years haven't exactly been smooth for businesses in any category—but for brands working toward major international expansion, it's been a particularly arduous time. It's a good thing for Lululemon that Higginson has been around to help steer the ship. As the company works to grow its footprint in China, Higginson has created a detailed economic and political risk response framework to bolster its resiliency. She's also shifted the company's strategy from "react" to "prepare," making her a star exec beloved by the board and senior leadership alike.

ALY KHAN MUSANI

CFO, Symend

Symend is a software-as-a-service play that uses behavioural science to help companies communicate with customers who are late paying their bills—and it started with Khan Musani literally scribbling notes on a napkin while sitting around a table with its two co-founders. He leveraged his finance expertise from the oil and gas industry and applied it to the tech startup. Under his leadership, Symend has raised more than $200 million (including one of Canada's top financing rounds last year), grown by a factor of two to four every year since 2018, and now has some of Canada's top telecom providers on its roster of clients.

LORETTA MARCOCCIA

Executive VP & COO, global banking and markets, Scotiabank

Marcoccia's job is making Scotiabank the leading wholesale bank in the Americas, a challenge that requires operating across business functions on many of the projects she leads. But that's a big part of what she enjoys about her role. "I love the diversity of it—it's not one-dimensional," she says. Marcoccia is known as an inclusive leader who's excellent at managing transformational change, skills she developed in the early part of her career. "I started in HR, so I understand how important it is for people to feel that they belong to something and understand what value they can add." Maracoccia recently managed the restructuring of Scotia's business in Asia, among other projects. "The fact that I'm called upon to figure out how we move forward," she says, "I love that."

SARAH FACINI

VP, customer experience & marketing, Smile

Smile initially focused on designing highly customized employee loyalty programs (i.e. long sales cycles and lots of client handholding). Now, the company has been able to scale with an effective out-of-the-box solution. Facini was instrumental in that shift. She took the company's uncertain mission and disorganized team structure, and evolved it into an efficient, collaborative machine. "Our user base was growing rapidly in ways the system couldn't support," she says, "but I like a challenge."

MARILYN HORRICK

Senior VP, Ontario market, Desjardins

A 123-year-old mainstay in Quebec, Desjardins Group has a secret weapon helping the financial co-op expand outside the province: Horrick. She brings staff together from different departments across the organization to help it grow. "It's a lot to navigate to bring individual representatives from each of these divisions together and create a forum for them to collaborate," she says. Despite this challenge, she's been successful at building consensus. The result? "We're trending toward representing over a third of our revenue outside of Quebec," she says.

MÉLANIE LAVOIE

Senior VP, talent & culture, Vosker

Lavoie joined the remote monitoring tech company just a few days before the pandemic began. Aside from helping current employees shift to remote work, she also needed to hire a ton of new people, integrate them into the company and make sure its culture was solid. Within eight months, Vosker nearly doubled its staff to roughly 380 employees. Lavoie, who's also managed the people side of two major reorganizations at Vosker, credits her success to an ambitious yet people-centred approach. "I'm very business driven, but also very human," she says.

NAVAID MANSURI

CFO, Dialogue

In early 2021, Dialogue set a three-month deadline to go public; 77 days later, the virtual health and wellness care provider was trading on the TSX. "Doing an IPO in 77 days can be a very daunting task," says Mansuri, who also oversees Dialogue's corporate development, public and government relations, and its legal and compliance function. "But if you remain positive, if you stay focused on the goal, it helps you navigate those challenging times." Now, Dialogue is transitioning from a growth-at-all-costs mentality to focus on ROI and prioritizing resources. "We're well on our way to being profitable by the end of the year," he says.

NORM SABAPATHY

Executive VP, people, communications and technology, Cadillac Fairview

Managing communications, HR, PR and tech operations for a $40-billion global company across continents is a monumental task. But Sabapathy, who's been with Cadillac Fairview for more than 10 years, isn't fazed, noting the parallels between these seemingly disparate areas of the business. Data is a key component, whether he's measuring employees' sense of belonging, implementing a solid cybersecurity plan or investing in the latest smart building technology. "I love the breadth of the interaction and pulling all that together in a cohesive culture," he says.

DOROTHY ARTURI

Chief people officer, Q4 Inc.

Title aside, Arturi sees herself as a business leader first and an HR expert second. During her years at Q4—which provides capital markets communications—she's become known for making sure she's an equal partner with other executives and that the company supports "positive team dynamics" by making decisions that take into account what's best for their fast-growing workforce. Her successful strategies include a "continuous listening program" to ensure a steady flow of employee feedback.

RYAN ENDER

President & CFO, Grey Jay Sales & Distribution

While his father focused on importing and exporting, Ender's passion in the family's food distribution business is championing local Ontario brands that might otherwise never land in big chains like Loblaws, Metro and Sobeys. He's the reason, for example, that the iconic leaf-shaped Jackman's maple syrup bottle has graduated from kitschy souvenir shops to grocery stores proper—and with top real estate. "We build wooden racks and creative displays to catch consumers' eyes and boost sales," says Ender. That's an understatement: Last year, Grey Jay grew by 928%.

DOMENIC FINELLI

President, Canada Pooch Ltd.

Before Finelli sold (adorable) dog coats and gear, he ran a trendy tapas restaurant, and before that Toronto's first food truck, and before that he was...a corporate finance brain at the Canada Pension Plan. "I used to envy people with clarity about what they wanted to be, because I never had that," he says. Until he quit his day job for entrepreneurship—in a variety of industries. Pooch Canada was actually his dog walker's idea; Finelli has since turned it into a business with $35 million in revenue. In fact, all of his varied endeavours have started out as a friend's idea; his magic is turning those nuggets into viable businesses—earning him the fond nickname "Uncle Dom."

SILVIA MONTEFIORE

Canadian managing partner, business enablement and operations, KPMG Canada

Few organizations are ever prepared for a pandemic, but three decades of KPMG leadership made Montefiore the massive firm's best pick to head their pandemic response. She quickly doubled down on mental health, which she'd been championing for years. "It was the moment to live by the values we talk about," she says. "My job became to make sure 10,000 employees in 45 offices got all the support we could offer." Among the many perks on offer were paid Fridays off, free online tutors for employees' children and an innovative "home alone network" to combat loneliness.

REBECCA BEST

Senior product manager, audiobooks and gated content, Spotify

Spotify users will soon notice audiobooks on their streaming service—the passion project of Best, who took a brave step from traditional book publishing into the world of tech. "It felt like a perfect blend of my long-time love of books and storytelling with my newer love for building software," says Best, who was tasked with researching and strategizing a seamless user-friendly model to lure audiobook lovers and new listeners alike. If last fall's U.S. launch of 300,000 titles is any indication, Spotify audiobooks will be a sure Canadian success.

PHILIP REES

CTO, Tidal

Whether keen or reluctant, a company or organization migrating onto the cloud might call up software platform Tidal. There, Rees, a genetic scientist turned tech innovator, guides clients onto the cloud (and into the future) as securely, efficiently and seamlessly as possible. "The world is changing and evolving, and it's very rewarding to help people change and adapt," he says.

Turning Point

Bank shot

Keith Martell has been CEO of First Nations Bank since its creation in 1996. As he gets ready to retire, he sees a bright future for Indigenous enterprise

In the early 1990s, a treaty land entitlement in Saskatchewan gave 25 First Nations access to about $400 million to buy land that had been promised to them but never given. All of a sudden, those First Nations became an economic entity, buying farmland, buying land in the cities. And that was different—historically, First Nations weren't in business in a way that included capital. Also, people figured out that the non-Indigenous population was aging, and the Indigenous population was young. Those two things led to the creation of First Nations Bank of Canada—because we had some leverage both in the economy and in the labour market, and we needed a financial institution that operated for us, not for the landowner or the government or corporations.

We first went to the regulator in the mid-1990s and said, "We have a great idea, and we've got all this opportunity." To help us get started, we partnered with TD Bank, which allowed us to use their expertise but which would, over time, be out of the picture. Still, nobody really took us seriously. So we started slow. We got our charter in 1996. By 2009, we only had about $150 million in assets, but we began to control the bank share-wise. In 2012, we still only had $180 million, but we came off TD's back-office system and started our own. Today, we have $1.2 billion in assets, plus a trust company that manages another $1 billion, and we've had 10% compound annual growth in our loans for the past 18 years.

$1.2 BILLION

First Nations Bank's total assets

On May 1, Martell will be succeeded by Bill Lomax

There are a lot of people unserved by financial services because of the lack of internet

Part of the reason I'm retiring now is that we've got a solid base, and it's a great opportunity for somebody to drive this even higher. Today, First Nations, Inuit and Métis are involved in very large developments—and there are more Indigenous people running those businesses, which I'm really excited about. And many of their employees are Indigenous, too. That involvement from ownership to front line is a significant change that's going to continue to have an impact on Indigenous economic development going forward.

Back in 1996, electronic services were minimal at best. Today, they're a core part of our bank. We've taken a significant interest in doing business in the Far North—there are a lot of people that are completely unserved by financial services because of the lack of internet. It's a cash society. If you lived in Baker Lake and wanted to open a bank account, you had to buy an $800 plane ticket to fly to another community. That's changing. The internet is going to far-flung parts of the country in a big way. And that brings an opportunity for us to create a modern economy in remote parts of the country, where a lot of the people are Indigenous. But we have to be involved in all types of financing, from structured finance for infrastructure and resource development deals, right down to loans to small businesses.

I've been on the board of Nutrien since 2007. At one point, I looked around and counted three Indigenous people on public-company boards in Canada. There are now probably dozens of Indigenous directors on public boards, and not just on the Indigenous committee—they're on the audit committee, the HR committee. That's where real change happens, and having an Indigenous voice at the table is so important. **/Interview by Alex Mlynek**

ILLUSTRATION KYLE SCOTT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