

➤ **Based on** three-year revenue growth, the October 2019 issue of *The Globe and Mail* reports on Canada's top 400 growing companies [pp. 37–77; www.theglobeandmail.com]. Leaders include FleetOptics Inc., Exzell Pharma Inc., and MissFresh Inc. Profiles from a selection of these 400 bold-est Canadian businesses are provided. The April 2019 issue of *Financial Post Magazine* [pp. 10–19; www.financialpost.com] highlights the most innovative companies in Canada as part of its continuing “Innovation Nation” series. The 20th annual edition of “Canada’s Top 100 Employers,” copublished by *The Globe and Mail* and Mediacorp, provides many useful insights on Canadian businesses that have built exceptional organizations through best practices coupled with progressive and innovative programs that push the boundaries to make the workplace better for their employees. Reader-friendly profiles of each of the winners describe the critical factors that contributed to their success. The Summer 2019 issue of *Corporate Knights* [www.corporateknights.com] discusses the best 50 Canadian organizations that are exemplars of clean capitalism. Clean capitalism refers to an economic system in which prices incorporate social, economic, and ecological benefits and costs. Leaders include The Co-operators, Hydro-Québec, Algonquin Power & Utilities, and Teck Resources.

➤ **A diversification** strategy is critical for success in our rapidly changing business environment. Linamar Corporation [www.linamar.com], Canada’s second-largest auto parts supplier, earns the majority of its revenue by selling components for the global vehicle market but understands the value of continually diversifying itself into complementary business sectors that provide sustainable growth. This Guelph, Ontario, auto parts maker will start manufactur-



What’s New in the Literature?

by Terrance Malkinson



ing robotic medical devices in its new innovation hub as part of its diversification strategy. Recently, it announced a \$5 million investment in Synaptive Medical Inc. [www.synaptivemedical.com] and will manufacture two of the Toronto-based medical technologies company’s patented surgical and imaging devices.

➤ **As reported** in an article in the 11 November 2019 issue of *The Globe and Mail* [p. A-11], Toronto surgeons have performed their first robot-assisted brain surgery by testing a system that they believe will allow them, in the near future, to operate remotely on stroke and aneurysm patients. The surgical team at the University Health Network [www.uhn.ca] successfully placed a stent and

14 coils deep inside the brain of a 64-year-old woman to treat an aneurysm. This proved the viability of the system to precisely repair the delicate vessels of the brain and opens the door to remote procedures (possibly within a year) in communities where they do not have the personnel to perform these complex procedures. The Bank of Montreal is investing \$5 million in a new artificial intelligence (AI) laboratory at the University of Toronto. Billed as a first-of-its-kind multidisciplinary hub, it will bring people together to study how AI can augment human creativity.

➤ **Recently, the** Royal Swedish Academy of Sciences in Stockholm named Princeton University pro-

fessor Dr. James Peebles from St. Boniface, Manitoba, as a recipient of the Nobel Prize in Physics for his many contributions to our understanding of the universe. Dr. Peebles’ interest in science led him to the University of Manitoba, where his mentor steered him toward graduate studies at Princeton. Although based in the United States, fortunately, he maintains many ties with Canada, including the Perimeter Institute for Theoretical Physics [www.perimeterinstitute.ca], an independent research center in foundational theoretical physics located in Waterloo, Ontario.

➤ **In Calgary,** a village of 15, 280-ft² homes arranged around the Canadian flag was recently opened and is now home to military veterans who have had difficulty adapting to civilian life. The 908 ATCO village [www.atco.com/en-ca/projects/homes-for-heroes.html] is spearheaded by the Homes for Heroes Foundation [www.homesforheroesfoundation.ca]. The foundation hopes to build similar villages across Canada, as the need is great: it is conservatively estimated that there are 3,500 homeless Canadian veterans. The goal of these transition housing projects is to bring an end to veterans’ homelessness.

➤ **The cover** story of the 18 November 2019 issue of *Bloomberg Businessweek* [“The Ultimate Backup Drive,” pp. 48–53; www.bloomberg.com/businessweek] describes a cave deep beneath the surface of a Norwegian archipelago in the Arctic where some of the world’s most important open source software code is archived on superdurable film, protecting it from destruction in the event of an apocalypse.

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➤ **Canadian colleges** are increasingly diversifying themselves to meet the needs of today's workplace. Many are focusing on fundamental applied research, turning knowledge into innovative solutions of considerable value to their industry partners. Government is responding by investing heavily in collegiate advanced technology research in Canada. A group of graduates from Red Deer College, Alberta, through its ASET-awarded capstone project, has created a prototype for a Wi-Fi drone that will provide connectivity for workers in remote areas or search and rescue teams. Hamilton's Mohawk College is currently engaged in 15 drone applied technology research projects.

➤ **Today, open** offices and collaborative technologies are the norm. In the November-December 2019 *Harvard Business Review* article "The truth about open offices" [97(6):82–91; www.hbr.com], Ethan Vernstein and Ben Waber discuss the open office and provide evidence suggesting they are producing fewer meaningful interactions, not more, as predicted. The authors then discuss the strategies organizations can use that will help them equip employees with the spaces and technologies that best support their needs.

➤ **Two special** editions of *Time* [www.time.com] discuss issues important to all members of the IEEE. The first of these, "The Science of Creativity," provides authoritative discussions on key factors related to the nature of human creativity. Reader-friendly information is provided in four categories: The Creative Animal, The Creative Mind, Creativity in Action, and Creativity at Any Age. Practical tips on how to unleash creativity in yourself, your children, and in the workplace are provided. The second special issue is "The Science of Stress: How to Manage It, Avoid It, and Put It to Use." The chapters include "Defining Stress," "Handling Stress," and "Stress in Society." It is clear that we are all vulnerable to stress and the serious illnesses that result from it. Information provided in the 20 easy-to-read articles contributes to our ability to be successful in a world filled with stressors.

➤ **In collaboration** with the World Economic Forum [www.weforum.org], the December 2019 issue of *Scientific American* [321(6):26–37. www.ScientificAmerican.com] provides a special report on their selection of the top ten emerging technologies of 2019. The following are included: bioplastics for a circular economy; social robots; tiny lenses for miniature devices; disordered proteins as drug targets; smarter fertilizers that can reduce environmental contamination; collaborative telepresence; advanced food tracking and packaging; safer nuclear reactors; DNA data storage; and the utility-scale storage of renewable energy. A one-page profile of each of these technologies is provided. Further, the 2 December 2019 issue of *Time* [194(24–25):66–100; www.time.com/bestinventions2019] provides their selection of the 100 best inventions of 2019.

➤ **Harvard Business Review** [97(6):46–54; www.hbr.org] profiles its "2019 Best Performing CEOs in the World" in its November-December 2019 issue. The leaders of this global list include Jensen Huang of Nvidia Corporation, Marc Benioff of Salesforce.com, Inc., Francois-Henri Pinault of Kering and Richard Templeton of Texas Instruments. The prevalence of information technology industry executives on this list is particularly noteworthy.

➤ **Recently, the** World Economic Forum's (WEF's) Global Competitive Index was published and reveals that Canada has slipped two positions from the previous year's index, as was the case with the previous year [www.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf]. This is but one of many well-informed reports on the decline of creativity, innovation, and Canadian holistic competitiveness. There are many reasons for

this, including the WEF's recommendation for improving the adoption of information and communication technology if Canada is to emerge as a technological leader. Economies are increasingly going digital, and Canada must make the transition from a natural resource-based economy that served us well in the past but will not sustain us in the future. Other solutions discussed by Pierre Lortie in his 28 September *The Globe and Mail* Opinion and

Analysis article, "A Five-Step Plan to Increase Global Competitiveness in Canadian Businesses," include changing the tax regime that discriminates and penalizes innovation and high-growth companies, increasing the depth of Canada's public and private equity markets, making the acquisition and commercialization of

intellectual property more attractive to Canadian companies, allowing Canadians the opportunity to personally benefit from their creativity and innovation, and fostering creative and innovative Canadian human talent.

➤ **The Canadian** business community and governments at all levels must understand that we are on the cusp of another Industrial Revolution. Indeed, one of the most striking examples of this is in the automotive industry where a tectonic shift in vehicle technology is occurring globally, and indications, as described by Christopher Rauwald and David Welch and reported in the *Calgary Herald* on 9 December 2019, are that more than 80,000 positions will be eliminated as most, if not all, manufacturers are transitioning to the era of vehicular electrification. Recently, this was certainly evident when, after more than a century and 20 million automobiles built, the General Motors (GM) Co. plant in Oshawa, Ontario, manufactured its last vehicle Wednesday, 18 December, when a final pickup truck rolled off its assembly line. GM has been producing vehicles at the plant since 1918, making it the company's

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oldest existing assembly plant. The shutdown of the Oshawa plant is part of a reorganization by GM to trim excess production as industry sales soften and resources shift toward electric and autonomous vehicles. The overall workforce reduction is 11,000 workers company wide.

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The October 2019 special issue of *Bloomberg Businessweek* [www.bloomberg.com/businessweek] provides forecasts in its “The Year Ahead” column. Although focused on the United States, the numerous authoritative articles provide valuable insights into the future of Canada’s

industries. A more global perspective is provided in its November issue and categorizes the governance, trade, climate urbanization, finance, inclusion, and technology issues related to the shifting in wealth and power of the rising economies of Asia, the Middle East, Africa, and Latin America. As stated previously, the World Bank projects that, in 2020, emerging economies will grow at an average of 4.6% compared to just 1.5% for developed economies. ■

About the Author

Terrance Malkinson, the author of more than 500 peer- and editorial-reviewed publications, is now retired. However, in retirement, he vigorously continues research and journalism with an extensive portfolio of basic and applied research projects, journalism, philanthropy, and mentorship. His diverse career path includes 26 years in medical research as a founding member of the Faculty of Medicine at the University of Calgary, a three-year appointment as a manager with the General Electric Company, followed by a one-year applied research appointment with SAIT Polytechnic.

During his long career, he has advanced both basic and applied medical, health and wellness, scientific, and engineering knowledge. He has trained and mentored undergraduate, graduate, and postdoctoral students as well as staff in the business sector and government. He is a 45-year, long-term Member of the IEEE and, over the years, served in many IEEE governance and publication roles. His current research interest in health and wellness extends to being an accomplished multi-sports triathlete, including, among other achievements, the completion of 11 long-distance Ironman Triathlons.

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