

Like a Deere in the headlights...

The MacNicol Investment Team on AI and the future of work

Back in 1836, when John Deere moved to Grand De Tour, Illinois to escape imminent financial doom in Vermont he opened a 1,378 square foot shop which allowed him to act as the village repairman. Deere also sold several tools to locals such as pitchforks and shovels. But the item that Deere is perhaps *most* famous for is his self-scouring steel plough, which he developed from a Scottish steel saw blade. Prior to Deere's innovation, farmers ploughed Midwest plains with iron or wood ploughs that required frequent (time consuming) cleaning. Deere's smooth-sided plough solved this conundrum and increased not only efficiency but immigration to the American plains in the 19th and 20th centuries. Deere made farmers more productive because his plough cleaned itself automatically, or artificially as the saying goes.

Nearly 186 years later, artificial intelligence or AI for short, has promised to make businesses more efficient and customers happier. Happier customers spend more money, and this is music to the ears of company founders, investors like our firm's Emergence Fund, and to highly skilled workers. But if John Deere was reluctant to accept that his self-scouring steel plough would change the nature of farming, then he would doubtlessly let out an incredulous gasp if he saw what was coming straight for you:



[This tractor has not been left in park while the operator attended to a “biological need”, rather, it is coming right for you as evidenced by the wake of dust trailing its left rear axle. But have no fear, not only does this particular tractor know you are there, but it likely also knows the vegetables it is cultivating are good for you. Dystopian science fiction or a sign of human progress? That can be debated later. What is not at issue, however, is that the nature of work will change.]

This year, John Deere is set to release its fully autonomous tractor. A paradigm shifting technology in its own right, but frankly one of several percolating in the underbelly of the economy. As the application of AI strikes a better balance between consumer applications and broad-based industrial and commercial applications, companies such as John Deere are examples of how American ingenuity and innovation are helping domestic businesses further dominate their chosen niches. And dominate they shall. But what about *human* tractor operators and the future of work itself? When you think about the innovation, John Deere himself brought to farming in the 19th century, you might not directly link it to AI, but you should. Like the self-scouring steel plough, AI will raise productivity, create more specialized job functions, and increase the importance of subjective skills sets such as good judgement. Tomorrow's commercial farmers are likely to continue coming from “traditional” farming backgrounds, but they are also likely to be equipped with educations that would not look out of place

at an engineering firm or a biotech company, not to mention the sort of computer literacy their predecessors would be mystified by.

As laptops and smart phones replace traditional farming attributes like muscle power and the tenacity needed to wake up at the crack of dawn day-after-day, one may question what impact this may have on the farming labour force, the distribution of prosperity among farmers and the nature of farm work itself. Horace Brock, a widely regarded academic economist who consults to our firm notes maintain that technological developments have always caused people to lose their jobs. However, Dr. Brock goes on to counsel that theory and empirical evidence make clear that an equal and offsetting number of new jobs get created and often at higher wages. The technological automation of 1980 to 2020 caused millions to lose their jobs - yet the unemployment rate in 2020 was at a record low of just 3.5%. Indeed, this may be the case over long periods of time, and for the overall economy. But misery is sure to accompany those either unwilling or unable to adapt. What's more, an uneven distribution of economic prosperity is not just a moral quandary past generations would have encountered, it's something we come face-to-face with each day. Ultimately, AI will change the nature of work in certain industries such as medicine by making Doctors and Nurses more effective at treating diseases and able to connect with their patients more frequently and in real-time. Yet, it will almost surely exact a hefty toll on industries relying on standard routine such as retail bank branch staff or businesses that replace live support personnel with automated call centres. Recently, Royal Bank's flagship headquarters at 200 Bay Street was sold to Amancio Ortega, the billionaire behind the Zara clothing chain. A quick glimpse at RBC's quarterly report reveals the company certainly isn't hard up for cash. But with fewer and fewer live bankers roaming about on Bay Street, a spot in downtown Toronto's skyline was viewed more as profligacy than prestige. Today's bankers work from home or mobile offices or share use of a common corporate office than is shared. The life of a banker, much like the life of a farmer, involves a greater connection to technology than it ever has before. Computer algorithms manage the loan portfolio, or weather conditions and even forecasts things like in interest rates or soil aeration protocols.

Mechanical, industrial, and technological revolutions are of course far from new. Whether railroads and factories replaced horsepower or manpower, or computers replaced cognitive processing power, such revolutions have always occurred parallel to changes in the workplace itself. Proponents of AI and of innovation generally offer that it is inescapable progress towards a richer and more productive society replete with lower prices on goods and services, and greater employment opportunities for educated labor. A grimmer view is that AI contributes to a widening wealth gap and stratification of people according to classes. Grimmer still is the idea that if more and more cutting-edge technologies that are now only percolating through the economy make it to the mainstream, then the workers displaced by these technologies will less likely be able to transition seamlessly into new jobs that pay the same. Thus, the future of work, for those who can find it, will be very different looking than the past, and the world of agriculture offers just one example. And so, AI will change the future of work since technology and innovation in general have *always* changed work and always re-distributed the fruits of work's labour. Workers won't do much of the work being done behind the scenes because they will spend much more time analyzing and synthesizing data from algorithms much more well suited to repetitive tasks. This will require a more skilled and educated workforce, but above all a more adaptable set of employers and governments who can deal with the fallout of AI that's, dare we say, too intelligent. If you have any doubts that AI is and will continue to shape the future of work, consider this. At the John Deere website, you can quickly find the company's senior leadership team, which includes the usual assortment of public company executives that you might expect along with one you might not given John Deere is today, ostensibly a manufacturer of farming equipment and other heavy machinery, and that is a CTO or Chief Technology Officer. Not only is Mr. Jahmy Hindman one of John Deere's most senior executives, but he would appear to be a deeply qualified one at that. Mr. Hindman holds a bachelor's degree in mechanical engineering from Iowa State University, as well as, master's and Ph.D., degrees in mechanical engineering from the University of Saskatchewan. His doctorate focused on the application of artificial neural networks in heavy-equipment applications. You might not need a Ph.D., in the workplace of the future, but it will likely prevent you from feeling like a deer in headlights.

The MacNicol Investment Team

130 Bloor St. West, Suite 905, Toronto, ON M5S 1N5
Tel: 416-367-3040 Toll free: 1-866-367-3040 Fax: 1-877-215-4044
Email: david.macnicol@macnicolasset.com URL: www.macnicolasset.com