

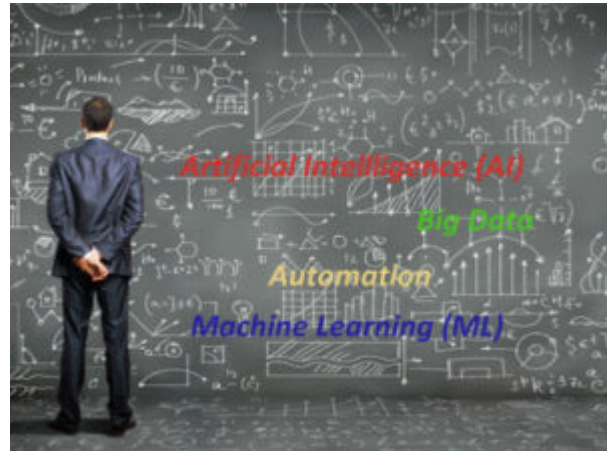
Overcoming Our AI and Automation Fears

I am an optimist; always have been. That is why I find all of the growing anxiety around the advance of technology so fascinating. No doubt, the triad of Artificial Intelligence (AI), automation and big data are driving profound changes in business (and society) given their bottom-line impacts. What I don't fully understand is the growing hysteria – often led by responsible business and scientific leaders – that suggest that AI and automation may led to WWII (Elon Musk) and / or massive and growing economic discontinuities / inequalities ([Stephen Hawking at the recent World Economic Forum](#)).

Change is Hard

Yes, automation and AI will cause major economic dislocations, and forever change the employment landscape. *Change is hard*. Yet when has business and society been static? The range of transformative technological and scientific improvements over the past 150 years has been staggering – regularly impacting markets profoundly, and often over a very short period of time (e.g., advent of electricity). The only issue today is that the *pace of change has accelerated*, and the technologies that are transforming business and society now are being

applied to cognitive problems that previously were believed to be the endeavor of humans. Frankly, in my opinion, we are only in the early stages of the economic and employment disruptions / discontinuities that are likely to occur. *And while change is hard, change is usually good.*



Earlier this month, ServiceNow (NYSE: NOW) and Oxford Economics published a terrific new 24-page report focused on the business impact of machine learning (ML) and automation entitled [Global CIO Point of View](#), based on a survey of more than 500 CIOs in 11 countries. To net it down, the report asserts that ML is at the very heart of most CIO digital transformation efforts as they reimagine the way that their enterprises work. Some of the key findings from the study include (lightly edited from the report):

- Almost three-quarters of CIOs surveyed (72%) are leading digitization efforts, and more than half (53%) say [AI and] machine learning is a [strategic] focus.

- Nearly 90% say greater automation will increase the accuracy and speed of decisions.
- Over two-thirds (69%) of CIOs say decisions made by machines will be more accurate than those made by humans.
- CIOs who are at the forefront of adopting machine learning recognize the need for process and talent changes, but many cite challenges – including the *need to redefine job descriptions to focus on work with intelligent machines*, and hire employees with new skill sets.
- Data quality (51%) and outdated processes (48%) are substantial barriers to adoption.
- Lack of skills to manage smart machines is cited by 41% of CIOs, and lack of budget for [the acquisition of the] new skills is cited as a challenge by 47% of those surveyed.
- A select group of CIOs, whom ServiceNow and Oxford Economics call “first movers,” is outpacing their peers in their use of machine learning.
- Roughly 80% have developed methods to monitor machine-made mistakes vs. 41% of others.
- Half of them say automating routine processes will be key to their business’s success compared with 33% of others; more than three-quarters have redefined job descriptions to focus on work with machines, compared with 35% of others.
- Almost 90% of first movers expect decision automation to support topline growth vs. 67% of

others.

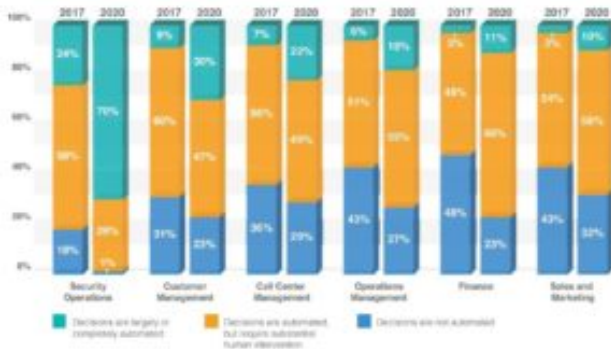
The lack of skills to manage our new machine-learning driven business environment will likely continue for some time. In a recent ISG Insights report, based on a survey of more than 300 senior IT and business professionals (Automation and AI Survey 2017 – Enterprise Plans and Operating Model Impact – [click here](#) for a summary Research Alert), former ISG colleague Stanton Jones reinforced this key challenge:

“. . . as enterprises become more willing to embrace automation and AI, their number one issue will be talent – whether sourced internally or via a provider or partner ecosystem. Our research identifies data science as the most important skill set of the future and the one companies are having the least success finding and retaining.”

I found the following chart from the ServiceNow report especially revealing, as it reconfirms in my mind the fact that automation and AI / ML are mostly supportive technologies in the decision-making process, and that except for the automation of truly low-skill repetitive tasks, *they will only enhance, not replace, most decision making and job roles.*

Title: Most decisions still require human intervention

Q: To what extent, if any, does your organization automate decisions for the following tasks? n=500



Source: ServiceNow and The Global CIO Point of View
“The New Agenda for Transformative Leadership: Reimagine Business for Machine Learning” N=500+

Fear mongering related to change is not new. I still fondly remember reading about [Thomas Malthus](#) (1766-1834) and his systematic theory of population in which he proposed:

“the principle that human populations grow exponentially (i.e., doubling with each cycle) while food production grows at an arithmetic rate (i.e., by the repeated addition of a uniform increment in each uniform interval of time). Thus, while food output was likely to increase in a series of twenty-five year intervals in the arithmetic progression 1, 2, 3, 4, 5, 6, 7, 8, 9, and so on, population was capable of increasing in the geometric progression 1, 2, 4, 8, 16, 32, 64, 128, 256, and so forth. This scenario of arithmetic food growth with simultaneous geometric human population growth predicted a future when

humans would have no resources to survive on”
(quoted from the [AAG Center for Global Geography Education](#)).

Little understood by Malthus and his contemporaries at the time were the incredible productivity gains brought about by the 2nd Agricultural Revolution of the late 18th and early 19th centuries, that paralleled the advance of capitalism and the Industrial Revolution. More recently, agricultural yields have skyrocketed based on modern biotechnology and advanced digital technologies – with governments throughout the world often paying farmers not to farm so as to manage yields and maintain pricing stability.

Creative Destruction and Remaining Optimistic

So I remain an optimist – as today we don’t even know the new innovations and markets that will be created, at the same time that some jobs will be destroyed. Capital for labor substitution isn’t new – especially when it unleashes profoundly new and better outcomes, and innovative forces. This is what Joseph Schumpeter’s (1942) model of “[creative destruction](#)” is all about. What the current trends clearly indicate, however, is the tremendous need for labor market retraining investments, especially to help those caught with yesteryear skills become more relevant in our emerging knowledge-based and service-oriented

economy.

And I am not just talking about one-off retraining programs, but a long-term commitment to continuous training. This includes structural changes to the US economy and our educational system that helps foster technical skills [up and down the job ladder] that helps create talent suitable for the 21st century. Other countries, most notably Germany and France, do a much better job in these regards. Let's learn from our long-time partners about [dual-track vocational programs](#), and other important initiatives that are working. As I regularly tell my daughters, becoming a lifetime learner is not only fun, it will be critically important to their success and happiness.

My friends over at Cognizant Technology Solutions (NASDAQ: CTSH) are likewise optimists. This past February they provided me an early copy of their newest book, [What To Do When Machines Do Everything: How to Get Ahead in a World of AI, Algorithms, Bots and Big Data](#) (Feb 2017, Wiley), co-authored by Malcolm Frank, Paul Roehrig and Ben Pring. In the preface to the book, they tackle this issue head on:

“Will the new machines displace many current workers? Yes. However, on a larger scale, new machines will also create work that is better, more productive, more satisfying than ever before. The new machines will raise living standards and usher in a new period of widely distributed economic

growth that will be far stronger than any we've seen in the Western world during the past 50 years."

Please join me in being an optimist. We live in an amazing time, and the future is ours.

If you are not already [subscribed to my blog](#), I encourage you to do so. Next week I'll provide highlights from my trip to New York City and the IBM Cloud Analyst Summit that I'll be attending. As previously noted, my plan is to publish a blog post roughly once a week, so I won't overwhelm your inbox!

Bill McNee
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