

AI and Leadership

Part 1

Summary

The fourth industrial revolution (4IR) is a term used to describe the explosion of digital transformation in organizations intentionally leveraging the rapid evolution of information technology in the 21st Century. A prominent theme of the 4IR has been the growing significance of the "algorithmic revolution". Algorithms are now ubiquitous in business, as evident in consumer recommendation systems (e.g., Netflix), personalized advertising, fraud detection (e.g., credit card alerts), predictive analytics (e.g., Amazon), and even automation of traditional consumer practices in brick-and-mortar businesses such as checking out (Scan and Go). Business processes that were once specialized areas left best to the "geeks" in the business intelligence department are now easily accessible to any interested person. This has become possible through the rapid evolution of Artificial Intelligence (AI), an outcome of the algorithmic revolution, and is quickly leading to even more change in how businesses operate today and in the future. Individuals are becoming more comfortable interacting with technology and society will continue to embrace the power and utilization of AI. For leaders, this evolving use of AI has had many benefits with increased efficiency and accuracy in decision-making, increased efficiencies in business processing, and in some cases the consumerization of innovative products and services such as "Hey Google", Alexa, Siri, movie/book recommendations, and personalized buying prompts. However, even with these many benefits, the algorithmic revolution is challenging privacy, personality, and identity theft. The impact of algorithms, specifically AI, on social, economic, and political systems is a subject of ongoing debate and exploration, as it influences the way information is accessed, decisions are made, and information becomes more powerful in individuals' daily lives. Leaders will need to respond by balancing this increasing use of systems and information with the need for meaning and purpose of the people who are feeling devalued and replaced with this booming technology trend. Leading in the algorithmic world will



be different and will evolve rapidly, forcing leaders to be intuitive, discerning, innovative, and sensitive to the people they are called to lead.

Introduction

In 2016, Tieto, a Nordic publicly listed technology company named an AI bot, Alicia T., to their management team. <u>Alicia T</u>., is designed and expected to participate in team meetings and vote on business decisions. In Japan, advertising agency McCann named <u>AI-CD</u>, a logic-based system/bot, as creative director. It gave AI-CD actual client accounts and campaigns to lead and was preferred in most cases by the clients to human content creators. The Hong Kong life sciences fund, <u>Deep Knowledge</u> <u>Ventures</u>, appointed a computer algorithm to its board of directors, giving the program a vote on which start-ups to invest in. What is intriguing is that these events occurred in 2019, 2014, and 2016 respectively – 4 to 7 years ago. The more recent popularity and availability of open source ChatGPT (November 2022) and like products highlights the ease and growing popularity of AI globally in society and the workplace. It is estimated that ChatGPT hit 100 million monthly active users in January 2023 (60 days), making it the fastest-growing software application in history. To put this into perspective, TikTok took nine months to reach 100 million users, and Instagram took 2.5 years. The age of the algorithmic revolution is here, the impact of artificial intelligence in the global economy is exploding, and the workforce is still recovering from a global pandemic. So what should leaders be considering as they lead and adapt to this uncharted future?

The Algorithmic Revolution

The algorithmic revolution generally refers to the transformative impact of algorithms on various aspects of society, particularly in the realm of technology and data-driven decision-making or digital transformation. The concept describes the rapid advancement and adoption of algorithms, commonly defined as step-by-step procedures or sets of rules, for solving problems or accomplishing tasks. The impact of this revolution is experienced daily in email with retail solicitation or direct messaging that almost seems to know consumers personally or is able to "read our minds." Although algorithm



technology has been available for the last 70 years, the revolution has been accelerated in the last decade through exponential advancements in the speed of computing power, a seemingly unlimited amount of data being stored, and this data being manipulated through complex and sophisticated computations, data analysis, and pattern recognition, with data processing costs that now make this economically viable.

What is AI?

AI might be regarded as the beginning of the consumerization of algorithms. Historically there are two competing approaches in the evolution of AI. The popular approach in the development of AI for almost 60 years, has been the logic-based approach (think College Algebra). This approach is generally referred to as 'good old-fashioned artificial intelligence' or "GOFAI". The second approach was driven by 'artificial neural networks' loosely inspired by how our brains work or human biology (neural pathways). In the late 20th century, GOFAI, the more successful approach, enjoyed large research projects and significant government funding, but resulted in little impact or pragmatic applications for business, the government, or military. Artificial neural networks also struggled, and by the early 21st century, AI research had mostly disappeared from public, government, and industrial interest/funding.

In November 2022 everything changed when ChatGPT, an open-source AI chatbot, became accessible to the general public enabling the average person to create conversational dialogue with a bot, simulating human interaction with technology. This surge of interest and development resulted from the increasing power of deep learning, a type of biologically-inspired neural network, that is starting to optimize the huge "lakes" of data now available, complemented by the massive computational power and speed of today's computer technology.

With enormous data sets now being captured and more accessible, modern AI neural networks can often exceed human performance in many tasks previously very difficult for AI. In addition, unlike GOFAI, today's AI systems are "learning" from experience, and are at the beginnings of reasoning heuristically^[1] - something that humans do naturally (learning from a single experience). However, this advancement in AI has received a mixed welcome by the global community. In April 2023, Italy temporarily banned



ChatGPT and has been joined by other lawmakers and governments in debating laws, with a long horizon to how these may be enforced. This is an interesting response when considering that facial recognition, an AI-driven technology, is now being used by millions on smartphones and for <u>travel</u>.

It is common to read of AI's impact on society, how work is being changed, in both the corporate and nonprofit sectors. As an example, in a daily business news update on June 26, 2023, the following statistics were reported:

- Big Tech leaders mentioned "AI" 168 times in recent earnings calls.
- The techy Nasdaq's gains were above 30% this year, significantly outperforming the S&P 500.
- Al-associated corporations such as Nvidia, Symbiotic, and C3.ai have soared.
- One in four new unicorns this year are AI startups

Al will be a significant influence and consideration in how organizations are managed and led in the future and cannot be ignored

What AI can do for organizations

The benefits for organizational leaders to understand this meteoric rise in the awareness and utilization of AI is critical for leaders as they lead their organizations into the future. There are many benefits (and some challenges), but the following benefits are noteworthy:

1. Data-driven Decision Making: Algorithms are able to analyze vast amounts of data to derive insights that should enhance decision-making processes. They help identify patterns, trends, and correlations that decision-makers may overlook especially when considering the speed of technology against that of the human brain. With the abundance of data now available, and the growing power of algorithms to analyze and extract insights from it, leaders who utilize algorithmic tools such as AI are gaining new capabilities to make more informed and data-driven decisions. In the continuum of **data**, data plus interpretation or **information**, information plus experience or **knowledge**, and lastly knowledge applied for change or **wisdom**, AI is quickly becoming a leader's preferred solution for accessing fast and accurate information. When leaders add their human experience, AI assists them in making wise and



knowledge-driven decisions. Although a very good tool, AI is still not heuristic (or not yet), so human insight, emotional intelligence, context, and discernment are still needed.

2. Personalization: Algorithms are rules and processes used to customize, and even personalize experiences and services based on an individual's preferences and behavior. This enables tailored recommendations which we experience through recommended viewing in streaming options such as Netflix, targeted advertising through bespoke recommendations and suggestions by retail stores such as Amazon, and "customized" dashboards from financial institutions intended to enhance user satisfaction and engagement (and retention). As an example, Zalando, a German fashion retail company, was founded as an online shoe store in 2008. Today, Zalando is Europe's biggest wholesaler, delivering 1.4 million products to 23 countries and 49 million customers, from more than 5,800 brands. Zalando combines fashion and technology by employing AI to optimize logistics and fraud detection, and increased customer-related use, such as size recommendation, and personalized shopping experience. Zalando employs over 100 researchers that work specifically on machine learning, with some focusing on customer needs and how to make their experience better using AI. In 2018 Zalando launched Algorithmic Fashion Companion (AFC), a machine learning algorithm that identifies different items of clothing and makes suggestions for an outfit based on previous purchases by the customer. Zalando then "trains" AFC from the thousands of orders its customers make each day, as well as through the 200,000 outfits created specifically by stylists from the company's own personal styling service called 'Zalon'.

3. Optimization: Algorithms are often utilized to optimize business processes, efficiently allocate resources, and maximize performance. They are currently being used to identify the most efficient solutions to complex problems, such as route optimization, inventory management, and supply chain logistics, resulting in increased efficiency and productivity. Leveraging these technologies can automate repetitive tasks, be used to delegate routine responsibilities to machines, and allocate resources more accurately, timely, and effectively. As an example, Zalando uses AI (not humans) to ensure that its logistical issues are solved as efficiently as possible, to avoid fraud, and to adjust accurately to seasonal demand. In addition, AI is an integral part of warehouse logistics, including sorting, packing and delivery. Robots at fulfillment centers assist humans by identifying and picking up items and delivering them to specific packing stations, while smart algorithms have allowed for better understanding of how and when the parcel will be delivered to the customer, depending on the type of delivery method that was



chosen. Optimization of processes such as these enable people to be reassigned to roles of creativity and innovation, rather than being replaced by automation. Displacement of work is an important principle and communication for leaders to their workforce as AI is introduced to their organizations.

4. Predictive Capabilities: By analyzing historical data, algorithms can be used to make predictions and forecasts about future events, or at minimum the most likely future outcomes. Al has enhanced predictive analytics in fields like finance, healthcare, weather forecasting, and inventory demand forecasting. The most visible use of analytics to most organizational leaders is observed in marketing, however significant predictive analytics are being used in supply chain management, risk management, fraud detection, cybersecurity, healthcare, and equipment maintenance. Fedex, as an example, utilizes predictive analytics for delivery optimization and robotic delivery navigation using machine learning capabilities that enable its same-day delivery robot to detect and adjust for real-time obstacles enroute. Another case study is that of Celebal Technologies (CT), in Jaipur, India. CT uses system-failure prediction of computers, work stations, servers, and the network in research organizations, healthcare organizations to predict accurately when their systems may fail. Knowing this allows CT to mitigate the adverse effects of computer equipment beforehand.

5. Scalability: A major value-add of algorithms is that they can easily be scaled to compute large amounts of data by economically processing and analyzing massive datasets, aiding the solution of complex problems. As an example, an expanding customer base is a positive indicator for a growing business, but might be seasonal and so demands accurate scaling based on previous and predicted data. Al can enhance the accuracy of changing production needs to resource seasonal sales. Customer service is often an issue in "scaling" employees to accommodate the flexible consumer base and the growing culture of instant gratification. For consumers, <u>chatbots</u> are becoming the standard Al interface to manage, triage, and provide real-time customer service in many organizations. <u>Tidio</u> (Wordpress), <u>Meena</u> (Google) or <u>Blenderbot</u> (Facebook) are three examples of major organizations utilizing chatbots for 24/7 customer service. In an increasingly demanding, impatient, and "no contact" world, chatbots (in most cases) have led to increased customer satisfaction.

6. Continuous Learning: Machine learning algorithms have the ability to learn from data and improve their performance over time. Al can adapt to changing circumstances, refine their models, and make better predictions or decisions through continuous learning in a rapid and sometimes unobtrusive



manner. With continuous learning, practical AI solutions may adapt and learn from natural drifts and variations in data environments and potentially discover better machine learning models, often unobserved by humans. Continuous learning AI is a subset of AI solutions designed to update and improve themselves (learning feedback loops) as their data, environments, and targets change. AI models interact continuously within their data environments, making them more deeply integrated in improving decisions, optimizing business processes, and gaining deeper understanding of the detailed characteristics of the consumer, patient, student, or worker. As an example, AI continuous learning is a strategy often utilized in radiology, where imaging protocols, devices, policies, and workflows change frequently. Scenarios can be developed where data, decision making, and patient profiles vary significantly among different facilities, and so as the algorithm "learns" more from the data and human diagnoses, this updates the algorithm, making it more effective the next time. It is expected that continuous learning AI may soon predict evolving abnormalities, pathologies, and treatments that require co-evolving tools to discover new markers, diseases, and phenotypes.

What does this mean for the future of work?

The challenge to the leader is the growing concerns that a workforce may not be ready, or even not willing, to adapt to the growing influence of AI. How does one lead well amidst concerns that work will be replaced by robots and automation, eliminating experience, skills, and jobs, especially with a skittish workforce still recovering from a pandemic, rumors of an economic recession, and a historically high level of inflation? The immediate response may be for leaders to develop/enhance a different set of soft skills and competencies to navigate effectively the complex interplay between algorithms, employees, and organizational goals. By understanding and embracing AI, leaders can adapt and leverage its huge potential to drive innovation, enhance decision-making processes, and foster a culture of agility and adaptability within their organizations. Understanding of the potential benefits and challenges to AI and its impact to the organization is an important foundation to leading this change in the future of work.



Conclusion

The impact of artificial intelligence on organizations today and into the future cannot be overstated. As leaders, it is crucial to recognize the transformative power of AI and embrace its potential to drive innovation, efficiency, and growth in order to thrive. By utilizing AI technologies responsibly and ethically, organizations can unlock new opportunities, streamline operations, enhance decision-making, and create a competitive edge in an increasingly digital ecosystem. However, it is as important to prioritize human-centric values, invest in reskilling and upskilling the workforce, and foster a culture of collaboration between humans and machines. By striking the right balance, leaders can lead their organizations into a future where AI serves as a powerful tool for progress, benefiting both the organization and society as a whole.



About the author:



John C. Reynolds, PhD

Chief Executive Officer – Leading2Grow leading2grow.com

John currently (soon to be retired) provides leadership as President/CEO of Los Angeles Pacific University, a private online university located in Southern California. Reynolds earned his undergraduate and graduate degrees in computer science and information systems in South Africa, and later a PhD at Azusa Pacific University. In addition to his over 20

years of experience in higher education, which includes the founding of Los Angeles Pacific University and Pacific Educational Resources LLC, Reynolds has worked as a strategy executive in the mining industry and as global Chief Information Officer (CIO) for World Vision International, a large private international relief organization. Reynolds is the author of several books/chapters and is a regular writer of posts and blogs on social media focusing particularly in the areas of leadership and strategy. He speaks frequently at national and international conferences and is a sought-after strategic thought partner to CEOs. Reynolds serves on several governance boards, including BDI Inc. (USA), LCC International University (Lithuania), API Educational Foundation (South Africa), and Tabor Institute of Higher Education (Australia). Further professional information available at http://linkedin.com/in/jcreynolds-usa