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Is Robotics and Artificial Intelligence the future of Management and Economics?

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Abstract

In the coming years, robots and computers could overtake the millions of years of evolution that generated our perception and intelligence. The objective of the paper is to present the perspectives of development of robots and implication and future of Artificial Intelligence in various domains across management. The World Economic Forum in its reports for 2018 has warned that the economies around the world are still vulnerable to new shocks and are unprepared for the new/next wave/flow of automation and robortization.

Keywords: cyborg, cyborgization,, Artificial Intelligence (IA), Internet of Things (IoT), autonomous machine, robot, processing, interpreting, digitization, automation, robotization.

"AI is probably the most important thing humanity has ever worked on"

-Sundar Pichai
CEO of Google
Source: World Economic Forum

Introduction:

Oxford Dictionary defines Robot as,

a) A machine resembling a human being and able to replicate certain human movements and functions automatically.
b) A machine capable of carrying out a complex series of actions automatically, especially one programmable by a computer.
c) A person who behaves in a mechanical or unemotional manner.

The term **robot** first appeared in 1917, in a novel titled "Opilec," written by Czech Karel Capek. The term became known with the play of the same playwright, "R.U.R. (Rossum, Universal Robots), first played in Prague in 1921, then in New York in 1922. The word comes from the "robota", which means, in slaves languages, work. The piece is about an imaginary island where artificial people with metal skeletons, outer shells and internal organs are produced in cuvettes,

"nervous fiber" and "veins" being generated by huge wheels.

A **cyborg** is a human being whose features have been greatly improved by joining more technical means than the parts of the human body that help them function better or even replace them (glasses, different prostheses, various nanotechnology-based methods, etc.). "**Cyborgization**" is the operation of creating "perfected" beings with anatomical-functional characteristics far superior to normal ones.

Artificial Intelligence is one of the newest technologies in development, and major technology companies invest large amounts of money to develop and integrate into their products. Experts expect artificial intelligence robots (AIs) to operate 85% of customer interactions by 2020. Goldman Sachs, the most influential investment bank in the world, identified in a report in early September 2017 four key areas that need to be developed by a state to create value in the field of IT: talents, data, infrastructure and processing capacity. The investment bank has shown in its report why China is considered the first country in the world to have the talents, data and infrastructure to fully embrace AI.

Through the **Internet of Things (IoT),** the objects are connected to the Internet and used to gather data. There is so much data that no man can ever process, and Artificial Intelligence (AI) becomes the only real alternative, but AI does not always know what we are looking for. Here comes the learning process by which AI analyzes the data so as to "learn" to interpret it. Thus, AI's use will largely come in the form of new ways of **processing and interpreting data** that have not been available so far in areas such as health, marketing, operations, transport and finance.

Augmented reality, virtual reality, natural language question answering, machine learning, autonomous vehicles – artificial intelligence powers most of the innovations that dominate today's conversations about the industries of tomorrow.(Source:World Economic Forum)

Human cyborgization (Cyborgization)

Tom Gruber, one of the inventors of the Siri Voice Interface, used in the iPhone device system and the macOS operating system, believes that Artificial Intelligence (AI) can be used to increase human memory.

At a conference held in 2017, Tom Gruber launched the following rhetorical questions and concluded: "What if you could remember any person you ever met? How do they pronounce their names? Their family details? Their favorite sports? The last conversation you had with them? That's why using AI to catalog our experiences and to enhance our memory is not just an idea, it's inevitable. "

At Facebook's annual development conference, Mark Zuckerberg has shared a project that proposes building non-invasive sensors that will read brain activity. Sensors are designed to read the part of the brain that translates thoughts into speech to allow thought transcription.

Elon Musk, CEO of Tesla and SpaceX, has set up a new company called Neuralink to build a wireless technology for the brain-computer interface.

Car robots

Artificial Intelligence (AI) is also used to build autonomous driving systems. Google's smart car has driven 1.8 million miles and has been involved in 13 accidents - all caused by other cars. Publishing Inc. writes that autonomous cars are so safe that manual driving can become illegal in the future, which is bad news for professional drivers, but good news for us, the followers of the 1.3 million people who die in road accidents every year. There has already been a lot of information on unmanned cars, and big companies, including Apple, have announced joining automotive developers. In Asia, Nissan and Toyota have already created autonomous vehicles that have been launched on public roads in Japan since 2013, and in Singapore the tests started in October 2015. Germany, Sweden and the United Kingdom are the only countries that have reviewed their legislation and have allowed testing cars without a driver. At the CES 2016 Technology Festival, BMW introduced its concept of autonomous car, called "iVision Future Interaction", but the company's representatives said its cars would not be "very automated" by 2020. (Source:BMW) Electric cars and those driving alone will master the future due to technological change, consumers think, according to a Roland Berger specialist. According to the analysis, up to 46% of global consumers would not buy a car if they had access to self-directed taxis, also known as robots.

Also, 37% of consumers already consider the next car to be electric. The study shows that digitization makes services such as car sharing and ride sharing more and more accessible, but also opens up new sales channels. At the same time, electric vehicles are becoming more and more present on the market. Last but not least, the introduction of driving assistance facilities and the success of the autonomous technology implemented so far predict a rapid penetration of the market by autonomous cars. The Roland Berger studies shows that the consumer attitudes have changed, especially influenced by the sharing of the economy. Thus, new business models are in an ascending trend. As robot-taxi will become a viable economic alternative to having a car, their share will increase significantly in the coming years.

According to the analysis, consumers in countries with a high population density such as the Netherlands (59%), Japan (56%) and Singapore (51%) can imagine the use of robot-taxi at the expense of their personal car. Germany is not far away, with almost 47%. On the other hand, customers in large countries such as the USA (35%), India (33%) and China (27%) are less open to this idea. Roland Berger's Marcus Berret said: "Autonomous electric vehicles are expected to be ready for trade until 2021. All major manufacturers work intensively with suppliers and nonautomotive players, such as IT firms, to become competitive in this area. Globally, about 40,000 employees work on new mobility and autonomous management services.

Bank robots

Many aspects of bank operations are transferred by start-ups, such as payment applications, robot-consultants, and the digitization of the credit process where people are no longer involved in the decision-making process. Most banks bet on Artificial Intelligence (AI) to act as a personal digital assistant to customers, helping automate money-making

decisions, according to executive executives in the sector. AI also threatens the existence of bank branches, defending a multitude of non-physical banks, which also pose a threat to traditional institutions.

In our bank people work like robots. Tomorrow we will have robots with human behavior, "said CEO Deutsche Bank. Head of Deustche Bank also said that automation could lead to an improvement in working conditions. "Let's take the example of a bank accountant. Much of its work is to produce figures. It takes them three to four weeks to create an account. Would not it be great if the robots could group those figures in just a few hours? Then the accountants could analyze them, form valid opinions. "Andy Haldane, CEO of the Central Bank of England, has also warned that robots will be able to take over more than 15 million UK workers threatened.

Financial robots

An early version of Artificial Intelligence (AI) is already being used to detect credit card fraud and to combat fraud in the financial industry. In the same way that AI is used in marketing to buy and sell advertising space, the financial industry can apply to make decisions on data-based investments. Artificial Intelligence (AI) could even find its place in new emerging technologies such as digital coins, and can also automate much of the manual work that slows down financial industry activity and makes employees less productive.

Banks are being attacked on several fronts and face a potential "Kodak moment" by falling into irrelevance, according to former Barclays CEO Antony Jenkins, who now runs his own financial affair - "10X". Jenkins, who predicted 2015 that banks could shut down half of their branches and

could lay off 50% of their workforce in 10 years, said that this is happening faster than expected. Ashok Vaswani, CEO of Barclays, said in turn: "It's about automating all routine transactions so time spent with customers is used for operations that matter."

Robots in marketing

The marketing industry is increasingly relying on tools and automation to deliver results, enabling them to deliver customized messages to customers, improving their experience and selling more products at a time.

Over the next ten years, these tools may increasingly rely on artificial intelligence technologies as they are developing more and more personalized ads. In the same way that the recommendations from Netflix or YouTube are based on what other people with similar tastes have watched, the next generation of marketing tools will use Artificial Intelligence (AI), learning user behavior and helping target potential customers.

Robots in space

On September 12, 2013, NASA's Space NASA announced that Voyager 1 became the first spacecraft created by a man who was reach outside the Solar System.

Medical robots

The main purpose of Artificial Intelligence (AI) applications in health is to analyze the relationships between prevention and treatment techniques and patient analyzes. AI programs have been developed and applied in practices such as diagnostic processes, treatment protocol development, drug development, personalized medicine, patient monitoring and care.

Dr. Emmanuel Fombu, author of The Future of Healthcare, said: "Artificial intelligence is certainly the biggest disrupter for the medical industry. This will release doctors' time, taking care of minimal tasks, help in discovering new drugs and treatments, and help deliver personalized health care to every patient in the system.

"Technology companies, such as Google, IBM, Microsoft, Intel, and many startups, work with medical institutions and universities to develop AI technology. The Google DeepMind platform is used by the National Health Service (NHS) in the UK to detect certain health risks through data collected through a mobile app. A second NHS project involves analyzing medical images collected from patients to develop cancer detection algorithms by the computer.

The Hanover project at Microsoft, in partnership with the Oregon Health & Science University Cancer Institute, is analyzing medical research to predict the most effective treatment options for cancer patients. Other projects include the medical image analysis of tumor progression and the development of programmable cells. Intel has recently invested in launching "Lumiata", which uses AI to identify patients at risk of developing illness and develop their care options. Medical care is the most important investment area in AI.

Military robots

In mid-August 2013, over 100 researchers, experts and company leaders have asked, in an open letter, for the UN to ban robots endowed with artificial intelligence in war (http://www.go4it.ro/). They have warned on this occasion that military robots will trigger the third revolution in armed

conflicts, after those generated by gunpowder and nuclear weapons. The letter refers to robotic military systems with a high degree of autonomy, including drones, missiles or machine guns. "These can be weapons of terror, weapons that you despise and terrorists can use against innocent

populations and weapons that can be compromised by computer attacks to be used in unwanted ways," the letter said".

Robots in China

China has the resources and plans to create an artificial intelligence economy in the coming years, reveals a report by Goldman Sachs. In the report, the world's most influential investment bank shows that the world's second largest economy has become a major global rival in using Artificial

Intelligence (AI) as the engine of economic progress. According to Goldman Sachs, the government and Chinese companies have identified artificial intelligence as the next major innovation area. "We believe artificial intelligence will become a priority on the government's agenda and we expect new national / regional policies and funding support," the Goldman Sachs report said. While the US is generally considered to be the leader in the field, other countries are coming up strong. (Source: Goldman Sachs)

In July 2017, the State Council of China issued the principles of development of the field of artificial intelligence and set the goal of transforming China into a major global innovation center by 2030. The State Council of China expects that the total value of artificial intelligence industries' production will exceed 1.000 billion Yuan (about $ 148 billion) in 2-3 years.

A Chinese company invested in the US to build a unit equipped with robots able to stitch a shirt in less than 30 seconds The 20 million euro investment has generated 400 jobs, but it is likely to overwhelm the US textile market. Chinese clothing maker Suzhou Tianyuan Garments Company will opened the factory in Arkansas in 2018 to produce around 23 million t-shirts per year on the 21 production lines!

Conclusions

In a few decades now, robots and computers could surpass the millions of years of evolution that generated our perception and intelligence. Economies around the world are still vulnerable to new shocks and are unprepared for the next wave of "automation and robotization," warned the World Economic Forum (WEF) in its latest report for 2018. The 2017 Competitiveness Index of the organization WEF, based in Switzerland, takes into account the various factors underlying the productivity and prosperity of countries, and it has revealed major differences between the world's economies. According to the report, Switzerland remains the world's most competitive economy, followed closely by the US and Singapore. In turn, the UNICRI warned that robots could destabilize the world: from the risk of mass unemployment to the use of autonomous robots by

organizations or criminal states, research centers in robotics aim to identify possible threats. Irakli Beridze, strategic adviser at the United Nations Interregional Crime and Justice Research Institute, said a team from the Netherlands will try to come up with ideas on how progress in this area could be used to reach UN targets. He said there are considerable risks associated with the use of robots in society to be taken into account.

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