

## **DOING BUSINESS WITH ARTIFICIAL INTELLIGENCE**

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### **Abstract**

*The article considers the features and significance of Artificial Intelligence usage for creating or enhancement of business. Influence of Artificial Intelligence on methods and techniques of doing business is more complex than previously thought. Advantages of using Artificial Intelligence in business are presented in contrast with the traditional way.*

### **Keywords**

Artificial Intelligence; AI; machine learning; business; methods of enhancement.

Artificial intelligence (AI) – is intelligence demonstrated by machines, in contrast to the natural intelligence (NI) displayed by humans and other animals. In computer science AI research is defined as the study of "intelligent agents": any device that perceives its environment and takes actions that maximize its chance of successfully achieving its goals. Colloquially, the term "artificial intelligence" is applied when a machine mimics "cognitive" functions that humans associate with other human minds, such as "learning" and "problem solving" [1].

Artificial intelligence by itself is a broad term that describes various technologies used to mimic or exceed human intelligence. Machine learning is a narrow term that is used to describe specific software techniques that allow computers to learn from the previous experiences and data. Deep learning, scientifically named deep neural networks, is a method of machine learning that is powered by learning to represent the world as a nested hierarchy of concepts, with each concept defined in relation to simpler concepts [2].

The traditional problems (or goals) of AI research include reasoning, knowledge, planning, learning, natural language processing, perception and the ability to move and manipulate objects. Capabilities generally classified as AI as of 2017 include successfully understanding human speech, competing at the highest level in strategic game systems (such as chess and Go), autonomous cars, intelligent routing in content delivery networks, military simulations, and interpreting complex data, including images and videos [3, 4].

How AI is connected to finances and business? Financial institutions have long used artificial neural network systems to detect charges or claims outside of the norm, flagging these for human investigation. The use of AI in banking can be traced back to 1987 when Security Pacific National Bank in USA set-up a Fraud Prevention Task force to counter the unauthorised use of debit cards. Programs like Kasisto and Moneystream are using AI in financial services.

Banks use artificial intelligence systems today to organize operations, maintain book-keeping, invest in stocks, and manage properties. AI can react to changes overnight or when business is not taking place. In August 2001, robots beat humans in a simulated financial trading competition. AI has also reduced fraud and financial crimes by monitoring behavioral patterns of users for any abnormal changes or anomalies [5].

“Just as about 100 years ago electrification changed every single major industry, we’re in the phase where AI will now do the same. Almost anything that a typical person can do with less than one second of mental thought we can either now or in the very near future automate with AI.”

– Andrew Ng, Google Brain founder. and co-founder of education startup Coursera

Recent advances in AI, or machine learning, play an increasing role in our everyday life. As a result, its potential effect on the workplace has become a major focus of research and public concern.

Inexpensive computing and never-before-seen infrastructures create opportunities for anyone willing to take part. A huge pool of talent from university researchers to early stage startups are driving more and more accomplishments in the field. The number of AI and Machine Learning degrees being obtained worldwide is higher than ever before. More than 170 universities currently offer programs, and more are available online. Companies such as Udacity and Coursera provide training in machine learning, deep learning, data science, and self-driving specializations that cover all the needed information to get hired by the top companies within the industry. Udacity, for example, has built hiring partnerships with companies like Mercedes-Benz, Nvidia, BMW, McLaren, Bosch, Amazon, and Intel. Udacity's program is a new funnel for a highly-specialized talent trained through so-called nanodegrees based on a truncated field of study that spans months, rather than years, and allows students to direct the pace of their own learning.

In the past couple of years, AI has become truly capable of satisfying the needs we force it to, such as speech recognition interfaces, ordering products from Amazon via Alexa, and searching for all the dog photos on your iPhone in one second. Algorithms are now capable of detecting breast cancer. Self-driving cars can pick you up from a restaurant, or park in your driveway.

Using Machine Learning and AI in business provides many benefits. Machines achieve high and consistent levels of production without needing breaks or time off like humans. Machines are scalable and more accurate than humans. In many industries, the removal of human error and the introduction of laser-like precision at faster rates greatly increases profits. Using the right combination of AI and related technologies provides the advantages of reliability and cost-effectiveness while addressing uncertainty and speed.

Businesses are keen for disruptive technologies to become more competitive in a globalized economy that creates a great divide between winners and losers. Technological capabilities dictate cutting-edge business strategies that formulate the ability to win across a highly competitive landscape. The firms that grasp that concept are the ones that will rewrite the business rules for years to come.

One of the most important boosters of innovation is competition. It's easy to lag on a trend and not implement the latest technology. But this is not the case with AI. AI is much more than one technology. When talking about business, it is a combination of technologies that allow companies more predictability and accuracy without extra spending on a scale.

That's why no company can stand still and ignore the innovation and technology absorption. Doing that would cause an immediate failure or slow death. The speed of adaptation is also a huge factor. Competitive success predominantly favors those who can quickly coordinate and apply technological developments.

A perfect example of using competitive advantage is the Japanese insurance firm Fuku Mutual Life which is making 34 employees redundant and replacing them with IBM's Watson Explorer AI that can calculate payouts to policyholders. The intelligence behind this AI is capable of reading information about thousands of medical certificates, length of hospital stays, medical histories and any surgical procedures to improve the process of calculating payouts. Though the time needed to formulate the appropriate calculations of payouts is drastically reduced.

There is so much data that we as a customer or a prospect leave everywhere in our digital footprint. All this data is impossible to analyze by human workers, but machine learning enables businesses to look at that data on a scale. A good example is how MOZ used AI to predict customer churn. They've designed a recurrent neural network to analyze user actions as a timeline and predict the future actions. Since actions customers are about to perform within the system are caused by a vast variety of factors from the past, it

makes it possible to mine some valuable business insights and decrease churn of existing customers which has an enormous effect on overall company growth. There are different factors that influence user behavior such as external factors (rules and regulations, changing economic circumstances, market demand), internal factors (change in income, urgent needs) as well as product related factors (previous experience with the product, the functionality required, the quality of the support). The ability to analyze all these factors with the respective historical timeline makes it possible to predict when the user will become a paying subscriber or will churn away from your business.

AI is a foundational technology that will power that change. It is important to emphasize that education must occur across industries to adopt this technology in ways that will be beneficial to society. For many organizations, the required level of change invokes fear and pessimism. It's not only technology that has to be adopted, but a whole new way of thinking through the prism of machine intelligence. From properly inspecting your customer needs to collecting relevant data, the theory behind the successful implementation is still very new and subject to many changes, as the fast pacing nature of this technology is.

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