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APPLICATION OF ARTIFICIAL INTELLIGENCE IN INDUSTRY

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Artificial intelligence (AI) refers to computer systems that can perform problem-solving and make decision tasks normally associated with human intelligence. These can include:

- Recognizing images and speech
- Making decisions
- Translating languages
- Providing recommendations
- And more...

AI applications range from consumer-oriented solutions (such as chatbots) to highly complex industrial use cases, like predicting the need for manufacturing equipment maintenance.

Artificial intelligence studies ways that machines can process information and make decisions without human intervention. There is popular opinion that the goal of AI is to mimic the way that humans think, but this isn't necessarily the case. On other hand, humans are much more efficient at performing certain tasks, AI aren't perfect. The best kind of AI is the kind that can think and make decisions rationally and accurately.

Probably the best example of this is that humans are not well prepared to process data that appear within large datasets. However, an AI can easily sort through sensor data of a manufacturing machine and pick out outliers in the data that clearly indicate that the machine will require maintenance in the next several weeks. AI can do this in a shortest time that a human would spend analyzing the data.

Integration AI into manufacturing

First, you must first identify which technologies execute specific types of activities, as well as their strengths and limits, before engaging with an AI program. For instance, some examples of artificial intelligence in business are, Robotic process automation, Natural Language Processing (NLP) and rule-based

expert systems, which are both clear in how they work, but neither is capable of learning and evolving.

Deep learning, on the other hand, excels at extracting knowledge from enormous amounts of data, but it's nearly impossible to understand how it does it. This can be troublesome in highly regulated areas like financial services, where regulators demand to know why such choices are taken.

Second, understand your business requirements, review your business, and decide which strategic pain points can be addressed using AI-based solutions. The first step is to figure out which parts of the company could gain the most from AI applications. AI in business can deliver predictive information. It can assist you in automating processes. You can find out the goals of your company by examining them. They are usually part of the firm where knowledge (information gained from data analysis or a collection of texts) is in high demand but unavailable for some reason.

Then, with the help and knowledge of an artificial intelligence development company (such as Appinventiv, Mindtitan or IBM) you can put your AI business ideas to work and produce long-term profit using AI's challenging area.

Examples of using AI and consequences

The impact of AI in manufacturing is game-changing. French food manufacturer Danone Group uses machine learning to improve its demand forecast accuracy. This has led to a:

- 20% decrease in forecasting errors
- 30% decrease in lost sales
- 50% reduction in demand planners' workload

The BMW Group uses automated image recognition for quality checks, inspections, and to eliminate pseudo-defects (deviations from target despite no actual faults). As a result, they've achieved high levels of precision in manufacturing.

Meanwhile, Fanuc, a Japanese automation company, uses robotic workers to operate its factories round-the-clock. The robots can produce essential components for engines and motors, operate all production floor machinery non-stop, and facilitate continuous monitoring of all operations.

Another company that's benefited from AI in manufacturing is Porsche. They use autonomous guided vehicles (AGVs) to automate significant portions of automotive manufacturing. The AGVs take vehicle body parts from one processing station to the next, eliminating the need for human intervention and making the facility resilient to disruptions like pandemics.

Thus, even in the face of ongoing change, AI can significantly help keep your manufacturing business running. It offers predictive analytics that can assist manufacturers in making better choices. Artificial intelligence has many advantages, from product design to customer management. These include improving process quality, streamlined supply chain, adaptability, etc.

However, there are several drawbacks to AI technology. Including high costs and susceptibility to cyberattacks. But AI's benefits outweigh these drawbacks.

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MODERN ACHIEVEMENTS OF DESALINATION

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Desalination is the process of removing salt and other minerals from seawater or brackish water to make it suitable for human consumption or industrial use. The need for desalination has increased in recent years due to several factors (Giwa et al. 2016), including:

- **Water scarcity:** Many regions around the world are facing severe water scarcity due to droughts, climate change, and overuse of existing water sources. Desalination provides an alternative source of fresh water that is not dependent on rainfall or surface water.
- **Population growth:** The world's population is growing rapidly, and with it, the demand for water is increasing. Desalination can help meet this growing demand for water.
- **Industrial demand:** Many industries, such as power generation, oil and gas, and mining, require large amounts of water for their operations. Desalination can provide a reliable and consistent source of water for these industries.
- **Coastal communities:** Many coastal communities around the world rely on desalination for their drinking water supply. This is particularly important in areas where freshwater sources are limited or contaminated.
- **Despite its benefits, desalination also has some drawbacks, including high energy requirements, high capital costs, and potential environmental impacts. However, as the need for fresh water continues to grow, desalination is likely to play an increasingly important role in meeting this demand.**

There are many studies on desalination plants aimed at increasing efficiency and energy conservation of the facilities.