



Artificial Intelligence to Drive Future of Innovation

Executive Summary

Aggressive automation is spurring new advances within artificial intelligence (AI) and robotics. Advances such as DeepMind from Google that was introduced in 2016 along with the possibility of robots that can teach each other are creating new opportunities to generate business value. While several industries are already testing pilot AI projects, some are unaware of how AI can drive business value. This paper explores AI innovations and tools that will open new avenues for businesses within the industries of retail, healthcare, banking, and insurance.

Introduction

In 2015, several industries witnessed the increasing adoption of automation solutions to streamline processes, enhance operations, enable continuous application delivery, and improve service levels and product quality. Today, the evolution of automation into artificial intelligence (AI) and robotics is creating viable opportunities for business growth. Research indicates that by 2020 the market for artificial intelligence is expected to reach over US \$5 billion¹.

Machine learning or AI helps organizations make sense of big data by executing complex analyses and computations at a speed that is impossible for humans, thereby generating faster insights². A suitable example of the power of AI and Big Data is the stock market where AI is used to conduct quick trading within nanoseconds³. Further, Cloud-based technologies can accelerate progress by enabling robots to learn tasks and share this knowledge with other robots, thereby eliminating the need to program each robot individually.

While AI and AI-enabled technologies have the ability to transform businesses, many industries are unaware of the scope of AI solutions or how to leverage them. Let us consider four key industries – retail, healthcare, banking, and insurance – to explore the influence and value of AI.

Retail

Retailers can leverage AI solutions to get real-time insights, predict customer behavior and take relevant actions. To illustrate this, let us consider the example of the prolonged summer in North America that had a surprising effect on the retail industry. While warm climate led to lower sales of winter clothing⁴, customers chose to spend more time outdoors leading to higher in-store rather than online shopping. Retailers that were privy to insights about how weather would influence customer buying decisions were able to take immediate action, update their inventory to meet demand and create new in-store offers to drive sales.

In retail, AI has the potential to assess

which products sell faster and which don't based on buying information and purchasing patterns. It can track reviews, comments and trends on social media to identify upcoming trends, thereby giving retailers a sharper competitive edge. Applications for virtual shopping assistants such as Mezi already leverage AI to help users shop online⁵.

Healthcare

There are tremendous opportunities for AI to streamline the healthcare industry. AI gadgets can be used at home to track patient vital signs on request and generate reports, which can be sent to clinicians for diagnosis. Online appointments with medical professionals will enable patients to receive their diagnosis and medical prescriptions within minutes while the AI technology maps the closest pharmacy for instant billing and prescription pick-up. Driven by AI, the healthcare industry can ensure precise medical intervention, accurate diagnoses and a convenient customer experience.





Banking

A recent report stated that 12.7 million US citizens were victims of identity fraud in 2014⁶. While banking institutions struggle to safeguard customer information and transactions, AI-enabled technology has the ability to make banking safer across front-end and back-office operations.

- **Back-office operations** – Banks can leverage AI to create intelligent transaction machines (ITMs) to replace automated teller machines (ATMs). These ITMs will be able to track usage patterns, predict failures and outages and suggest preventive actions thereby ensuring uninterrupted availability. Further, mobile-enabled software can leverage AI and psychology using big data analytics and the customer's location to combat multi-channel fraud⁷.

- **Front-end operations** – Robotic wealth advisors will engage with customers, identify their risk appetite, assess their investment portfolios and suggest investment plans based on careful analysis³. A leading Japanese bank has launched a pilot program to test the performance of a humanoid robot called Nao as a customer service agent. Nao is able to communicate in 19 languages, greet customers and enquire what services each customer requires⁸.

Insurance

The insurance sector can leverage AI using intelligent automation, self-learning and analyzing patterns to recognize and discourage fraudulent claims. It can also design an omni-channel experience for all stakeholders involved in the claims process from the contact center staff to the claims agent. AI can also drive value in:

- **Sales** – AI software can help insurance companies discover qualified sales opportunities.
- **Underwriting** – Profitable underwriting and intelligent pricing of insurance products is critical for competitive differentiation. There are a variety of initiatives that combine relevant data with pricing and optimization engines.
- **Compliance** – There is significant potential for AI solutions to manage compliance and cost structures as well as improve process efficiencies.
- **Customer service** – The US insurance agent sales force is aging with about 25% of the workforce in the insurance industry expected to retire by 2018⁹. Thus, AI will play a key role in driving acquisition and retention for next generation customers that prefer to shop online.

Conclusion

The capability of artificial intelligence (AI) to leverage complex algorithms for deep learning from data means that AI applications will continue to become smarter. For instance, 12.1 billion queries from Google's 1.2 billion users can continuously tutor deep-learning AI. This, coupled with steady improvements to AI algorithms, an ever-growing dataset and powerful computing resources, will allow Google to create an unrivaled AI platform. Technologies enabled by AI are inspiring new innovations within businesses by processing big data faster to glean accurate insights. Industries such as retail, healthcare, insurance, and banking can leverage these technologies to predict future trends, track customer behavior, improve business resilience, and generate greater profits.

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