

The CGI logo is rendered in a bold, red, sans-serif font. It is positioned in the upper right corner of the page, above the tagline. The background behind the logo is a white rectangular area that is part of a larger red and orange gradient at the top of the page.

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A network diagram consisting of several interconnected nodes of varying sizes and colors (red, orange, and dark red) connected by thin grey lines. It is located in the upper left quadrant of the page.

Artificial Intelligence for Banking and Financial Services



1

Introduction: What do we mean by artificial intelligence?

Artificial intelligence (AI) is a technology affecting all levels of business across industries. We have only just begun to understand the possibilities of AI and the tremendous results it can deliver.

What makes AI special, and why is it so relevant today? In this overview, we look at the basic building blocks of AI, explore key issues to consider in harnessing its power, and discuss specific applications for AI in the banking and financial services industry.

AI is different from other technologies in that it has cognition—the ability to understand the world around it and assess huge quantities of data, just as humans do. AI can learn as it studies more and deeper data; however, as we will discuss later, the quality of the data is hugely important. Once an AI-driven system has learned from the data, it can then increase efficiency by automating decisions and processes. It can build correlations by finding patterns (or a lack thereof) across huge amounts of data and across many different dimensions. Finally, it can support the rapid building of conclusions, helping us to understand the past, analyze the present and predict the future. We can think of this as sensing, thinking and acting.

Several different technologies fall under the overall umbrella of AI. These include machine learning, advanced analytics, intelligent automation, predicative analytics, prescriptive analytics and detection.

While we have been using these technologies for some time, more advanced machine learning algorithms make it possible to analyze very large data sets far more quickly. In addition, predictive analytics can now work even more proactively, no longer looking at just historical data, but also real-time data.

The use of AI is a promise to double the growth potential in the economy when it is widely used, compared to when it is not.

- Vinnova AI Report 2018

Challenges in working with AI

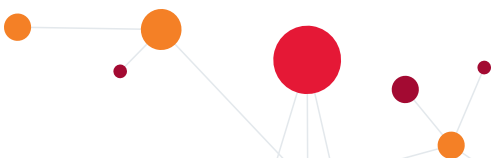
Data and data governance

Organizations have built data repositories for many years. At one time, gathering all the data into one place was necessary to support the execution of reports and queries without affecting the underlying business systems. The next stage of development was big data. Big data involved pulling structured data from across the organization into a single place.

With AI and machine learning, it is not necessary to collate all of the data into structured or rigid formats, and this is leading to the latest data store—the data lake. Data lakes are a single repository for very large sets of unstructured data. These often are the best data sources for AI projects.

There is an increasing trend in the area of artificial intelligence to look at additional data sources external to the business to generate better, richer results. For example, in the lending world, layering on economic indicators regarding industry, location and so on can better enable banks to understand how the market is acting. This, in turn, can drive better decisions when it comes to entering, leaving or remaining in markets, or highlight changes to make in response to current conditions.

Another major issue with data is that it also must be compliant. Today, there are more regulations controlling what data can be stored, as well as how it can be stored and used. Under the European Union's GDPR and PSD2 regulations, as well as other country-specific rules such as the UK's open banking regulations, data usage is tightly controlled.



These regulations lead to an increasing need for data governance, which banks often view as a cost to the business, but is actually hugely important to the success of AI projects. However, data governance creates staffing challenges for organizations, requiring new roles such as data officers to manage and control data, and many banks have instituted such roles.

Data often contains more value than banks are realizing. In the area of payments, for example, as newcomers attack the value chain and the potential price per payment decreases through the introduction of instant payment schemes and the like, banks are under pressure to create new revenue streams. Making money from data is an excellent source of revenue. The challenge is how to release that value.

Knowing what value data can create

This sounds simple, but often major organizations will make a decision to use AI more widely without addressing the what, why, how, when and where questions. They jump into AI without defining and testing use cases.

If a bank does not clearly define and test the use case together with a supporting business case, then its AI project will likely not succeed. The project will not have proper direction or metrics by which to measure success. We recommend developing use cases that can generate an immediate P&L impact to demonstrate quickly the value of AI to the organization.

Once there is a defined use case and access to the necessary compliant data, then the project design can start, including selection of the most appropriate tools and techniques to build the AI solution. This effort also may require additional talent acquisition, so clearly understanding the needs of the project—as well as the potential benefits—is of paramount importance.

How can CGI help?

CGI has a seven-factor framework to help guide banks and other institutions through the maze of building an AI-driven organization.

- **Use case development and impact analysis:** Workshops to help clients develop the best AI use cases
- **Top-down leadership:** By setting a data-driven agenda combined with a client/business problem solving approach
- **Tolerance for failure:** Supporting innovation, while ensuring proper governance and controlled innovation cycles
- **Decentralized responsibilities:** With centralized coordination, control, reporting, standard setting and knowledge sharing
- **Comprehensive data strategy:** Includes gradual build-up of data analysis, along with and ahead of use case development
- **Talent acquisition:** Via a dedicated talent value proposition and the hiring of teams from Big Tech and FinTech organizations
- **Commercialization:** Of both technological and AI capabilities and the development of new business models and strategies

Following a structured process helps to ensure the clear definition of client business objectives and complete stakeholder buy-in. Only by having a top-down approach can an organization achieve success in AI programs. AI programs affect the business differently than other IT initiatives. Successful AI programs can deliver such dramatic increases in efficiency that can lead to significant end-to-end business transformations.

**Intelligent and
Digital the two
top technology**

**trends - Gartner Top 10
Strategic Technology Trends
for 2019**



Where to apply AI in banking and financial services

CGI has helped a large number of institutions develop and deliver their AI strategies. We have developed AI-driven robo-advisors, smart assistants, financial crime solutions, virtual personal finance advisors, and more. All of these solutions involved the development of a clear roadmap with set outcomes for the present, the next 24 months, and the next 2-5 years.

CGI also uses AI for our own IP, such as CGI HotScan360, which uses sophisticated algorithms to help spot fraudulent transactions during real-time processing and identify new types of fraud before they occur. As fraudsters continually work to develop new attacks on financial institutions, it is through AI and machine learning that banks can stay one step ahead of them.

**“The AI is one of the most important things mankind is working on.
It’s deeper than electricity or fire.”**

- Sundar Pichai, CEO Google

ABOUT CGI

Founded in 1976, CGI is among the largest IT and business consulting services firms in the world. Operating in hundreds of locations across the globe, CGI delivers an end-to-end portfolio of capabilities, from IT and business consulting to systems integration, outsourcing services and intellectual property solutions.

CGI works with clients through a local relationship model complemented by a global delivery network to help clients achieve their goals, including becoming customer-centric digital enterprises.

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