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Exploring artificial intelligence, advanced analytics and machine learning

Andy

Andy Schmidt, Vice President, Global Banking Industry Lead, has nearly thirty years of financial services experience as a banker, consultant, and research analyst guiding banks, providers, and start-ups in making key business and technology decisions. His primary expertise spans current and emerging payment types, anti-money laundering (AML), Know Your Customer (KYC), and customer onboarding. Additional expertise includes developing product and market strategies and messaging, streamlining innovation efforts, leveraging data to make smarter business decisions, and translating complex technologies into straightforward business opportunities. Andy also chairs CGI's Advanced Analytics Working Group, and previously served on the Federal Reserve's Faster Payments Task Force.

Tomasz

Tomasz Chodakowski, Director, Data Science, UK, has over 15 years' experience defining, designing and running analytics-driven solutions and programmes working within, primarily, investment banks, hedge funds but also government information-intensive organizations and Silicon Valley unicorns.

He helps his clients define and deliver business-led, data-driven outcomes leveraging latest AI-based technologies in a transparent and compliant fashion. Tomasz has joined CGI recently with focus on building Data Science practice for the CGI UK financial services sector.

Sean

Sean Devaney, Vice President, Head of Banking Strategy in the UK. Sean has been working in the payment industry for the last 25 years, specialising in interbank payment processing and regulatory change. He has been working on the UK's Open Banking standards since the initial design workshops looking at exposing basic bank product information via Open Banking and continues to work with the Open Banking implementation body and our UK banking clients helping them to achieve positive business outcomes.

Ron

Ron Brandt, Vice President Consulting, Germany, is a strategist and change agent with a track record of 25+ years driving growth through ground-breaking innovation. He is a multicultural executive who has streamlined highly complex global business operations and led major IT overhauls on 6 continents. He is an effective leader and strategic partner with a talent for building exceptional teams and forming profitable alliances across departments, businesses, and institutions. He has been responsible for the development of digitization, digital transformation, AI and analytic strategies. His special focus is on AI, Analytics, Semantics, Robotics, and Robot Process Automation.

Manoj

Manoj Mishra is Vice President of Consulting Services at CGI. Based out of Pittsburgh, Pennsylvania, Manoj is a client engagement executive and a leader with deep banking and finance experience and a proven record of helping clients navigate the evolving digital space. He is a senior innovation and strategy leader with P&L management experience and expertise to transform and build businesses targeting growth and sustainability. Manoj specializes in the financial services domain with expertise around corporate and institutional banking, treasury management, payments, enterprise functions, innovation, lean startup, digital transformation, customer experience, APIs, blockchain and business application of emerging technologies.

Jan

Jan Macek, Vice President, has 18 years of experience in the IT consulting sector, with 11 years of experience in senior management positions. For the past nine years, he has built up his expertise in the financial industry, specializing in the field of anti-financial crime.

Jan's CGI responsibilities include leading a team that delivers services and solutions in the Czech Republic, Slovakia and Eastern Europe, globally leading CGI's anti-crime consulting services and overseeing CGI HotScan360, which helps clients effectively fight financial crime.

As a member of the CGI Global Banking Cabinet, Jan contributes to the development and evolution of CGI's strategy in the banking industry.

Exploring artificial intelligence, advanced analytics and machine learning

As part of the CGI Banking.Transformed. roundtable series, this roundtable explores the broad topic of artificial intelligence (AI) and the related technologies of advanced analytics and machine learning, and how they apply to banking. Our roundtable panel include CGI banking experts Andy Schmidt, Sean Devaney, Manoj Mishra, Tomasz Chodakowski, Jan Macek, and Ronald Brandt.

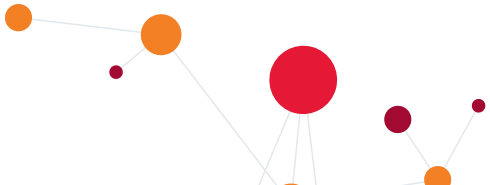
We hear a lot about artificial intelligence, or AI, in the press. What does this term mean when applied to banking?

Andy: AI, advanced analytics and machine learning mean many different things to different people. Some of these technologies involve simple rule automation, which is running a set of rules to check data. Others involve sophisticated methods that use flexible learning-type approaches to understand information flows, analyze data and predict potential outcomes. One possible use of these more complex technologies would be to recommend a particular product or service to a customer. The idea is that, by understanding your customer's present behaviour and the behaviours you might expect in the future, you can match these behaviours with a particular need or offering. Beyond this, the same techniques can predict what services and products you should build for the future.

Tomasz: I would just like to add one thing. While we often see AI used as a marketing term, it covers a number of different techniques that feed into a much broader definition of AI—one that encompasses machine learning, advanced analytics, intelligent automation, predictive or prescriptive analytics and detection, which can be deployed for different requirements.

Sean: In my perspective, AI in banking and financial services is more about machine learning, and how we can apply these techniques to much larger data sets to achieve more proactive data measurement and response. Then, we use advanced analytics to spot trends in that data to predict future behaviours and manage resources, whatever they may be. While this has been going on for a long time, we now have much more advanced machine learning algorithms that can analyze very large data sets. With these algorithms, we can now do analytics on a more responsive basis, no longer just looking at historical data, but changing the results constantly based on real-time data.

Recently, CGI worked with Payments Canada on a paper looking at how AI—in this case, machine learning—can resolve some of the key issues facing central banks. These issues include liquidity allocation and gridlock resolution, where a payment is stuck but could be resolved, if other payments in the chain were made by other participants. While these issues are very specific to central banks, there are examples from other industries like surge pricing, where companies such as Uber and Lyft use variable pricing based on demand at any specific point in time. Banks can use these same techniques to price payments at peak times by, for example, persuading participants to send payments or perhaps send only critical payments at a time when demand is high.



What trends are we seeing in banking and financial services specifically related to AI and machine learning?

Andy: Issues around data availability and quality are key trends. Do I have data that I can actually use? How can I access my data? Many firms focus on building "data lakes," "data farms," and "data repositories," putting all their data in a single place and then hoping that a miracle occurs. Instead, the focus should be on the questions you are looking to answer. Once you have identified these, find the relevant data in the systems that "own" it. You have to know what you want to achieve before you know what data you need. Start with the right questions and then proceed, rather than first building a massive data store and hoping for the best.

Sean: Another market trend is using tools and techniques to look at large quantities of data you already have rather than looking outside of your organization. If you look at banks specifically, the volume and richness of data available is immense. However, up until fairly recently, the ability to analyze that data in a useful way and in real time has not been available. Because of this, I think we are seeing a trend now, not away from big data, but toward evaluating the richness of information within an organization to monetize and realize value from the data they already have.

Andy: Sean, you raise a good point about looking outside the organization. The use of external data, such as economic indicators, has definitely increased, especially in the lending world, to give banks a much better understanding of how the market is acting and how the market might act in the future, thus helping to drive outcomes in terms of what they should do.

What are the biggest enablers for success with these types of projects?

Tomasz: First, success requires ensuring useable and compliant data is in the right place and in line with ever-growing regulatory requirements. This leads to data governance, which many banks consider a cost, but in fact is key to successful projects. This is changing, however, in many other financial institutions, which are turning data into a first-class asset to identify, control and govern. This has a big impact on the organization and requires new roles such as data provision officers and data quality officers. Getting clean relevant data in real time is a challenge. You need to know the questions you want to answer, as well as how the answers will create value for the organization.

Andy: There also is the issue that the machine learns based on the data and information you provide it. For example, if you are not mindful of the biases built into your credit-decisioning model, you might teach your solution to become a redlining machine. The result is that you will find that your approval rate is improving dramatically when, in fact, you are leaving certain parts of the market out of the equation, effectively automating poor processes to the detriment of the community.

Sean: In the UK, we see many FinTechs looking at the way in which people interact with data in a traditional model. For example, bank operators review forms sent in, clean the data and then enter it into a system. FinTechs offer a service that uses machine learning and advanced algorithms to automate that process by mimicking the actions of the operator. The challenge is that sometimes you can find yourself repeating an old pattern, even with the newer technology. In my view, it is important to have clear goals for what you want a system and processes to achieve, so that you are driving your business in the correct way, not just repeating the same operation but in a quicker and lower cost fashion, and often repeating manual mistakes.

How have regulations such as PSD2 affected how banks are looking at data?

Sean: There have been many new regulations over the last few years that affect data. For example, PSD2 introduced open banking across Europe with similar regulations in the UK from the Competition and Markets Authority. The biggest challenge here is that banks and financial institutions, along with all other businesses, now have to have a customer's consent for what customer data can be stored and how it is used. You may have consent to use my data for processing a loan application, but not for marketing purposes. In addition, because of the introduction of wide-ranging GDPR regulations, the institution or bank also must be able to forget a customer and delete all applicable data stored, if requested to do so by the customer.

Open banking also is forcing banks to open up their stored data, if requested by a customer, to enable third parties to access their data. The customer is in control of the access though. For example, if you apply for a loan or a mortgage from a third party, you can request the bank to allow that third party to access a year's worth of your financial statements, saving you the effort of providing them to the third party yourself. Because of this, banks understand that they have undervalued data in the past, and they are starting to look at ways to monetize that resource. If a bank makes data available to a third party and that third party makes money from it, why can't the bank do the same?

Manoj: From an API perspective, a key trend we see in the U.S. market is banks moving from a mobile-first model to an API-first model. Progressive banks are starting to think about integrating with FinTechs and other platforms leveraging APIs. We see APIs used more broadly than ever before, not just superficially, but as a tool to integrate platforms and bring a consolidated and comprehensive set of modern solutions to customers through a single secure interface.

How is AI helping banks to protect their customers from financial crime?

Jan: Fighting financial crime has always been a costly challenge for banks. It involves huge quantities of data, often requires results in real time, and the challenges are constantly evolving. It is a perfect opportunity for introducing AI and machine learning. Indeed, banks have been using supervised AI methods for many years, mainly for self-learning, where historical data analysis of previously identified fraud enables a system to catch similar frauds in the future and bypass previously identified false positives. Today, banks are beginning to introduce unsupervised learning using real-time machine learning techniques to detect new fraud, that is, fraud not previously detected because no rules existed. This enables new strategies be brought to market much faster, enabling the system to react in real time.

The future involves continuing to fight against new threats as they develop. Today, a key focus is on new threats coming from open banking. Not all of the partners involved in open banking are trusted third parties, and some turn out to be fraudulent.

Sean: One of the trends we see from opening up access to bank information through APIs is the idea of shared centers for know your customer and anti-money laundering activities. Interestingly, these centers will require robust processes, which, in turn, are more defensible than individual bank processes. Again, it is highly likely that these centers will need to introduce machine learning and AI to stay competitive and secure, as well as provide added value.

Jan: This is exactly where anti-financial crime efforts are going. All institutions are keen on fighting financial crime so the sharing of data is a logical next step. The technology is there and available now. It is more about the cultural and legal issues that need to be tackled to manage and control the exchange of a great deal of sensitive data among organizations, as well as the sharing of risk, which could be potentially bigger than when processing on your own.

How can banks build successful programs to ensure they deliver real value from their AI investments?

Ron: Banks have to follow a certain process to deliver AI programs successfully. You need to develop both a use case and a business case. Then, you need to pick the right methodology. AI is not a product; it is a methodology. Once you select the right methodology, be that machine learning, supervised or unsupervised learning, etc., it then is a matter of having the right data sets available to achieve the results you want and to train the algorithms. The answer often ends up as a combination of structured and unstructured data. There is so much knowledge out there. GDPR, for example, is useful for enriching processes for fraud detection and anti-money laundering.

Once your project begins, the impact will not just touch IT but all areas of the bank, including HR, business processes, etc. Therefore, it is important to have a holistic view on how to migrate and transform your business model by deploying and applying AI processes.

A partner for transformation

Since our founding in 1976, CGI has been at the heart of transformation in the banking industry. Today, we support more than 500 financial institutions worldwide, helping to deliver a broad range of digital IT and business strategies, services and solutions. Our deep understanding of the complex global challenges banks face coupled with our strong local relationships enable us to build long-term partnerships that drive success.

CGI's Digital Transformation Practice is anchored around helping clients create a more agile business, one that can continuously respond to changing market and customer needs. CGI has built its practice around providing the end-to-end capability that clients need to enable their transformation and agility. We have more than four decades of experience in helping leading organizations across the world, move forward with their innovation and transformation agendas while helping them elevate their legacy infrastructures.

If you're interested in learning how we can support you on your transformation journey, contact us today. One of our consultants would be happy to help you.

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