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FINTECH AND AI: A DISRUPTIVE UNION (PART 1)

ADEMOLA ADEYOJU

aadeyoju@aelex.com

‘Demola is an Associate and a member of the firm’s Corporate/Commercial Practice Group

INTRODUCTION

What Does "FinTech" Really Mean?

FinTech is a portmanteau developed from the words "financial" and "technology". It is used to describe technologically enabled innovations that are rewriting the rules of financial transactions. It is also used to describe companies or businesses investing in or developing innovative technological solutions to provide financial services, alongside or in competition with established institutions.

So when you ponder on what qualifies as FinTech, think of payment, clearing, and settlement services such as mobile and web-based payment applications, deposit, lending, and capital raising services such as crowdfunding and peer-to-peer lending, and investment management services such as robo-advice and e-trading.

Riding on the back of incredible advances in technological and digital innovation, increased consumers' expectations and the global desire for financial inclusion, FinTech is rewriting the scope and roles of traditional methods and institutions, and it is — owing to the penetration of the internet and smartphones — fast becoming a way of life for the banked and the un(der)banked.

'FinTech' has become a buzzword: but while the term is new, financial technology is not. Billions of people across the world now trade and make payments online, raise funds and transfer their money digitally, and enjoy other financial conveniences, but most are unaware of the origin of the innovation that is changing the way we live and bank.

History of FinTech

The idea behind as FinTech has evolved over time and developed from such technologies as Giovanni Caselli's pantelegraphy (invented in the 1860s and used to verify signatures in banking transactions) to the invention of charge plates and charge coins in the 1800s[1]. Down the line, in 1918, the US Federal Reserve invented the Federal Reserve Wire Network (now Fedwire), a dedicated fund transfer platform featuring a Morse Code system that connected the 12 Reserve Banks, the Treasury Department, and the Board[2]. Then in 1950, the first general-purpose credit card was issued by the Diners Club, allowing such 'luxury' as the opportunity to trade on one's credit at different establishments[3].

A decade later, the first electronic system, which provided up-to-date information share prices and quotations on an electronic screen, was invented[4]. In 1966, the global telex network was put in place, allowing long-distance, near-instantaneous communication of information and financial transactions; and a year later, Barclays Bank installed the first automated teller machine (ATM), allowing users to withdraw their money at any time and setting the trend for the future.

Within the next four decades, lots of advancements were made, but it was the financial crisis of 2008 — which, retrospectively speaking, was a perfect storm for FinTech - and the near-collapse of the financial system that marked the turning point for FinTech. Massive job losses in the financial sector, global distrust in established banking institutions, new financial rules and regulations, millennials' tendency to deal more comfortably with companies offering financial solutions like Google and Alibaba, and the launch of smartphones significantly impacted the development and caused a paradigm shift of the FinTech industry.

The Role of Artificial Intelligence

Speaking of technology, artificial intelligence — generally described as intelligence displayed by machines, as against humans — is perhaps the most pervasive and disruptive influence right now. It stands in a league of its own. Every minute of every

[1] University of Oxford, Said Business School, 'The Evolution Of The Fintech Industry' Available from: <https://www.getsmarter.com/presentations/uk/oxford-said/evolution-fintech-industry> Accessed 6 February 2019
[2] Ibid.
[3] Ibid.
[4] Ibid.

day, over 2.5 quintillion bytes of data, enough to fill 10 million Blu-Ray discs, a stack measuring four times the height of the Eiffel Tower, is created.[5] And as has been pointed out by Richard Kemp, relative to a global population of 7.4 billion, there are about 6.4bn sensors connected to the internet; and there are about 4.6bn mobile users, 3.4bn internet users, and 2.3bn social medial users.[6] It is this exploding volume of data and the ability to harness them that is primarily driving artificial intelligence (AI) research and development.

As AI technology develops, a new world of infinite possibilities is being opened, and since FinTech companies and innovations rely heavily on data, AI — or more specifically, machine learning (deep, supervised, unsupervised, reinforcement and large-scale machine learning) and machine perception (computer vision, speech recognition, natural language processing, Internet of Things) — is the real sponsor of the FinTech disruption. Christine Duhaime, the founder of the Digital Financial Institute, reiterated this when she said: "People in the FinTech space like to say that FinTech will disrupt financial services beyond recognition, causing mass disruption of its delivery to consumers. On its own, FinTech won't. However, with artificial intelligence, it will. Artificial intelligence ("AI") will disrupt all financial services, indeed all of our society."[7]

As AI-related patenting grows at an impressive rate, every industry is set to be influenced. AI especially holds great promises for the FinTech industry. "AI technology such as specialised hardware, AI-based operating systems, strong and large data analytics tools for big data, machine learning algorithms for machine intelligence, payment intelligence, data intelligence and info-security intelligence are being used in

[5] Bernard Marr, 'How Much Data Do We Create Every Day? The Mind-Blowing Stats Everyone Should Read' (2018) Accessed from: https://www.forbes.com/sites/bernardmarr/2018/05/21/how-much-data-do-we-create-every-day-the-mind-blowing-stats-everyone-should-read/#3ae13c1760ba Accessed 8 January 2019

[6] Richard Kemp, 'Legal Aspects of Artificial Intelligence' (2016) Available from: http://www.kempitlaw.com/wp-content/uploads/2016/11/Legal-Aspects-of-AI-Kemp-IT-Law-v2.0-Nov-2016-.pdf Accessed 8 January 2019

[7] Christine Duhaime, 'Artificial Intelligence in Fintech' (2016) Available from: http://www.digitalfinanceinstitute.org/?p=1549 Accessed 8 January 2019

Fintech to augment tasks that people already perform."[8] From chatbots and intelligent virtual assistants — using natural language generation and processing — to customer profiling and algorithmic sorting and regulatory compliance, and fraud detection, data analysis and advanced analytics, and credit storing and lending applications, AI is driving the revolution that is quickly reshaping a sector heavily dependent on data.

Having realised the might of AI and the impacts that financial super intelligence services may offer, many FinTech companies are now deploying AI technology in their products. For instance, MeetCleo is an AI money-managing assistant that is designed to help you manage your money; "[w]allet.ai builds intelligent engines that analyse millions of pieces of data to help you make better financial decisions and Penny is a personal finance [that] sends out tailored charts and insights to help you know how you're spending in real time, within a chat interface."[9] Apart from these client-centric deployments, AI also helps FinTech and financial services providers with regulatory compliance, prevents fraud and help fight cyber-crime.

With AI capabilities, it would appear that there are simply no boundaries for FinTech.

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[8] Vinod Sharma, 'Artificial Intelligence to Amplify Fintech', (2017) Available from: https://www.datasciencecentral.com/profiles/blogs/artificial-intelligence-to-amplify-fintech Accessed 11 January 2019

[9] Neeraj Thakur, 'State of Blockchain and Artificial Intelligence (AI) in Fintech (2017) Available from: https://news.crowdvalley.com/news/state-of-blockchain-and-artificial-intelligence-ai-in-fintech Accessed 8 January 2019

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