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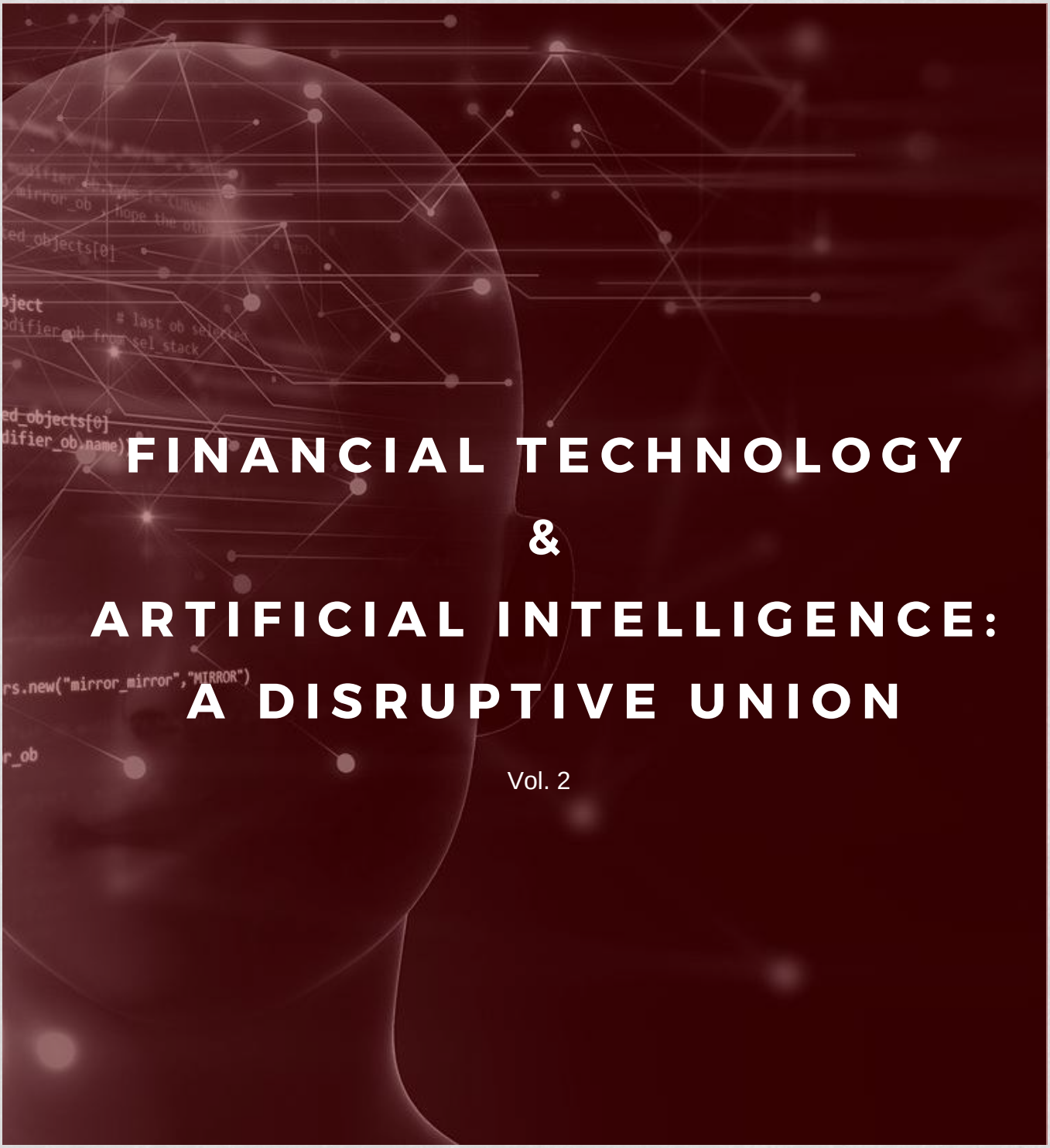

# FINANCIAL TECHNOLOGY & ARTIFICIAL INTELLIGENCE: A DISRUPTIVE UNION

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Artificial intelligence (AI) technology continues to disrupt every aspect of our lives. Fueled by increased connectedness, availability of abundant data, and advanced computational power, AI has been described as the foundation upon which the fourth industrial revolution will be built.[1] Just as AI is forcing nations and governments to rethink their approach towards the future, another technology that continues to have a profound effect on the way we live is financial technology (FinTech). The combination of these technologies is opening up a new world of possibilities and as AI-related inventions rise, the future of FinTech is set to beat our wildest imaginations.

Although AI is still a novel concept to many and complex issues like those of trust, privacy, and regulations continue to confound us, the winters[2] are over and AI is fast becoming the new electricity. Even now that many consider the whole discourse surrounding AI overhyped and overly futuristic, the truth is, AI research and development are growing at an unhindered and unanticipated pace. According to a report published by the World Intellectual Property Organization, since the emergence of AI in the 1950s, innovators and researchers have filed [patent] applications for nearly 340,000 AI-related inventions and published over 1.6 million scientific publications[3]

The above statistics are impressive and the boom in AI-related inventions and shift from theory to commercial application could not have come at a better time. Also, as the global financial services industry rethinks and remoulds its future, AI is fast becoming the go-to technology as it has the ability to collate and intelligently sort data, "provide exciting new opportunities, both in the front office, where data is the key to improving and personalising the customer experience, and in the back and middle offices, where it offers potential for process improvement and efficiency"[4]. It is being massively deployed to enhance FinTech's fraud detection, customer analytics, and anti-money laundering capabilities.

It is worthy to note that the AI technique that is really set to boost FinTech capabilities is machine learning which, incidentally, is also the most dominant and fastest growing part of AI right now. For the sake of clarity, machine learning and its more intelligent and intuitive subset, deep learning are AI techniques that make it possible for computer programs to understand and learn from data, make informed decisions, and make accurate and intuitive predictions. "It is how Netflix knows what show you'll want to watch next or how Facebook knows whose face is in a photo."[5]

[1] https://www.information-age.com/artificial-intelligence-fourth-industrial-revolution-123475170/
[2] The winters represent the periods between 1974-1980 and 1987-1993 when AI limited capabilities brought negative perceptions that, in turn, led to reduced interest and funding from government and investors.
[3] WIPO 2019, WIPO Technology Trends 2019 'Artificial Intelligence' Available from: https://www.wipo.int/publications/en/details.jsp?id=4386 Accessed on 16 February 2019
[4]Andreas Splittberger, 'Tech control: How fintech M&A is shaping the financial future' (2018), pg 15, Available from: https://www.paymentscardsandmobile.com/wp-content/uploads/2018/11/Fintech-2018-MA-Report_FINAL_LR.pdf Accessed on 19 February 2019
[5] For a better understanding of the terms "machine learning" and "deep learning", please see: Brett Grossfeld's 'A Simple Way to Understand Machine Learning vs Deep Learning', (July 18, 2017) Available from: https://www.zendesk.com/blog/machine-learning-and-deep-learning Accessed on 16 February 2019

With machine learning, FinTechs will adapt and provide unbiased, data-driven, and unmatched investment, savings, and retirement solutions; improve customer service; and help deter fraud and money laundering. Machine learning also makes it possible for FinTechs to analyse customers' opinions, sentiments, and attitudes towards particular products or services, personalise their services by using chatbots that can intelligently address customers' concerns and greatly save time by using AI-powered platforms that can identify market changes and trends through predictive analysis.

As the financial services sector is one of the areas that will be most impacted by AI in the coming years,[6] banks are doubling down fast. They are starting to collaborate with and acquire FinTech startups that deploy AI in their operations, and if the current trend is anything to judge by, they "are tipped to remain active as they continue to seek out opportunities to expand into adjacent markets, streamline back-office operations, improve the digital customer experience and cut costs."[7]

The above prediction is already playing out. For instance, the biggest bank in the world, Industrial and Commercial Bank of China, is pouring billions of dollars into FinTech initiatives such as AI-assisted customer service, robo-advisor and the multi-language social data analytics platform. Industry leaders like HSBC Holdings Plc, Goldman Sachs, and JP Morgan are also raising the standards by investing heavily and creating in-residence programs for FinTech start-ups that promises to evolve and advance the global financial landscape, the goal always being to invent capabilities to operate faster, safer, and at lower costs.[8]

This new attitude towards embracing FinTech is beginning to spread quickly across board. Ambitious financial institutions all over the world are beginning to see the FinTech's disruption, adoption, and use as an inevitable fate that should be embraced, rather than feared. As Herb Kozlov eloquently puts it, "[t]here isn't a significant financial services institution that isn't already either a consumer or developer of FinTech.  I think it's on the radar of every major institution because they're at a competitive disadvantage if they're not as well positioned as their competitors."[9]

[6] PwC, 'Sizing the Price' Global Artificial Intelligence Study: Exploiting the AI Revolution' 2017 Available from: https://www.pwc.com/gx/en/issues/data-and-analytics/publications/artificial-intelligence-study.html Accessed on 16 February 2019

[7] Mike Woods, 'Why has a new urgency returned to Fintech?' (2018) Available from: https://hampletonpartners.com/fintech-report-2018 Accessed on 19 February 2019

[8] JP Morgan, 'Firm Announces In-Residence Program For Fintech Startups', (2016) Available from: https://www.jpmorgan.com/country/US/en/press/inresidence Accessed on 19 February 2019.

[9] Ibid (n 1) pg 6

This makes sense, especially now that players in the financial industry are beginning to see financial inclusion, intuitive product design, meeting consumer expectation, and remaining competitive as priorities.

The fever is now starting to engulf the financial services sector in various African countries. As the costs of not investing in AI capabilities are starting to become clear and as AI-powered FinTechs are beginning to drive financial inclusion on a scale never-before-imagined, industry players are starting to invest heavily in FinTech. It is now a common understanding among bankers that "any bank that has plans for continued relevance will invest in Artificial Intelligence, Big Data and Machine Learning. There is no room for banking as usual anymore."[10]

Even in Nigeria where technology development and adoption is comparatively slow, AI is breaking boundaries and the rate of AI deployment and use, especially in FinTech, is nothing short of amazing.

AI's exciting potential has gotten even the Nigerian government interested. Sometime last year, the Nigerian government established a new agency for robotics and AI "mandated solely on advancing our knowledge and usability of robots and AI across sectors in Nigeria".[11]

And at the beginning of the year 2019, Yobe State University was commissioned as the first centre for Robotics & Artificial Intelligence in Nigeria.

Alongside the rest of the world, start-ups and established banks in Nigeria are making significant progress in AI-Fintech development. It is now possible to open an account, transfer funds, and lodge complaints regarding any banking issues in Nigeria using AI-powered bots.

For example, Stanbic IBTC Bank PLC's Bluebots can perform anti-money laundering check, credit risk assessment, and confirm cheques. The Bluebots can also populate Microsoft Excel templates as instructed, launch web browsers, log into secure web pages with its own username and password, and scrap the web and extract data. Also, Diamond Bank's Ada learns from past interactions with customers and provide personalised services. Ada can open an instant account, transfer funds, buy airtime and pay utility bills, and check stock prices. United Bank for Africa's Leo is a personal assistant that can carry out banking transactions via social media. Leo can also open a new account, transfer funds, and initiate loan applications.

[1] Business Day, 'Robots, Artificial Intelligence, machine Learning: Game changers for future banking operations—Stanbic IBTC. Available from: https://www.pressreader.com Accessed on 23 February 2019

[1] Nwakaego Alajemba and Chinedu James, 'Nigeria to set up new agency for robotics and artificial intelligence' Available from: http://itedgenews.ng/2018/08/06/nigeria-set-new-agency-robotics-artificial-intelligence/ Accessed on 27 February 2019

# SHOULD THE DEVELOPMENT AND DEPLOYMENT OF AI AND FINANCIAL TECHNOLOGY BE REGULATED?

The issues of regulating the development and use of AI and the operation and business of FinTech have always been a subject of debate. Banks and start-ups are developing and deploying AI-powered technologies without having recourse to a standard set of rules or ethics.

It has also been discovered that some of the banks deploying these technologies neither have elaborate terms and conditions limiting their liabilities in case the technologies go rogue nor do they have insurance policies, comprehensive or otherwise.

Questions on the legal status of robots have also been raised. What happens where AI goes haywire? Who bears liability where sensitive data becomes stolen, corrupted, or transferred to third parties illegally?

These are questions that governments and regulatory authorities all over the world are having to grapple with.[12]

For now, it may be best that AI and FinTech should be largely overseen as against being heavily regulated.

While reactive laws and regulations setting the standards are desirable and generally makes everyone feel a little more comfortable, these efforts may backfire as regulations, especially those that are unfriendly, may seriously hinder innovation and growth, especially since AI and FinTech are emerging technologies which have not taken concrete shapes yet.

[1] India and Malta are already developing guidelines to regulate AI. China and US are also actively considering regulations.

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