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Review Article

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FINTECH-A CONCEPTUAL REVIEW

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ABSTRACT

Purpose: Purpose of this study is to span the gap in understanding that exists in the current literature with respect to FinTech. The gap is addressed specifically from the point of view of the modern management executive working in any field connected to FinTech. **Design / Methodology/ Approach:** In this paper, after applying relevant combinations of key words (viz. 'FinTech', 'Fintech', 'FINTECH', 'benefits', 'challenges', 'definition', 'drivers', 'concept', etc.) relevant & applicable research papers from peer reviewed journals, which were published in the time period from 2010 to 2021, were selected and reviewed to study the following aspects of FinTech;

- Need, origins & Development of Fintech
- Definitions of FinTech
- Driving Forces behind Fintech
- Challenges & benefits with respect to Fintech

Implications: This paper is an attempt to collate & present the relevant aspects of available literature on the topic in a comprehensive manner. This paper will contribute positively to the understanding of various aspects of FinTech. It is also expected that this paper will be found useful by students, academicians, and professionals, whether connected to the field or not.

Keywords: FinTech, Financial Innovation, Driving Forces, Challenges, Opportunities, Concept.

INTRODUCTION

For a very long time, the world of Financial Services enjoyed a unique position of being averse to temporal changes. For many decades, business in the financial services industry was conducted in much the same way. Things began to shake up, albeit very slowly at first. In the early 1990's after the introduction & then, the inevitable popularisation of the internet & the resultant E-business model, FinTech was now an idea whose time had come (Arner, Barberis, & Buckley, The Evolution of FinTech: A New Post-Crisis Paradigm, 2015). Today, one can recognise the influence of FinTech in the various rapid advances in digital technology (like artificial intelligence, cryptography, etc.) that are affecting the way in which consumers (of financial services) pay, remit, receive, borrow, lend & invest their money (Hochstein, 2015). One must also consider the fact that Crypto currencies are an offshoot of FinTech, not FinTech itself. In simple words, FinTech is so much more than just crypto currencies & its underlying technology, the block chain. Today, FinTech is said to include the following items, viz.;

> Peer to peer lending (P2P lending), equity crowd funding, robo-advice, distributed ledger technology (blockchain), artificial intelligence (AI), machine learning (ML) & their financial implications (Schindler, 2017).

Of course, the above list is far from exhaustive. The FinTech phenomenon has been recognised as a very important & pervasive phenomenon of our times (Schueffel, 2016). Today's managers, academicians, students, regulators & policy makers cannot afford to neglect the meaning & implications of the term. Only after a minimum common understanding with respect to FinTech is reached, can we expect a constructive dialogue to commence on the subject. FinTech has a lot of expectations riding on its shoulders. Many have even touted it to be the answer to global poverty itself, however, for FinTech to achieve its full potential, it must first be recognised & classified for what it is.

FINTECH- THE REVIEW

Need

The Financial Services industry is being effectively reshaped by the FinTech organizations, some of which are still in the startup stage. They are posing a serious challenge to the traditional, well established financial services providers by offering fast & customised, customer-centric services. They draw upon the strength of cutting edge communications technology & advances in internet to provide these services. Due to their cutting-edge viable business models, these new FinTech companies are available to provide these customised services at costs which are very affordable to the end consumers. These FinTech companies are leveraging these advanced technologies & viable business models to not just serve the conventional consumers of Financial Services, but also the hitherto neglected niche customer segments like the Rural & urban Poor as well as the financially excluded. The need for FinTech arose in part due to the financial crisis of 2008, which bought to the fore, the need of financial services consumers to engage more deeply with the financial services (Arner, Barberis, & Buckley, The Evolution of FinTech: A New Post-Crisis Paradigm, 2015). However, changing consumer demands & preferences fuelled by advancements in internet & mobile technology provided the necessary impetus for its speedy growth & adoption over the years (Lee Kuo Chien & G.S. Teo, Dec 2015). This was further helped by increasing support by global giants like Google & Apple who started adding more & more mobile payment avenues like Google Pay & Apple Pay. In the east too,

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companies like Alibaba & Tencent have risen to provide banking services of the branchless variety via Ant Financial & We Bank. They were able to provide good quality & affordable banking services not just to the financially included population, but also their hitherto financially excluded counterparts (Lee Kuo Chien & G.S. Teo, Dec 2015). The need to provide financial services to hitherto financially excluded population is at the same time, an important raison d'etre, as well as a major driving force too.

Origin & development

In the 1990's, the term referred to 'The Financial Services Technology Consortium", initiated by Citigroup with a view to facilitate technological cooperation efforts. (Hochstein, 2015). The term itself, i.e. FinTech, started enjoying increased attention since 2014 (Arner, Barberis, & Buckley, The Evolution of FinTech: A New Post-Crisis Paradigm, 2015). Today, the term means much more than just a meeting of Finance & Technology. Despite its novelty, it is not an entirely new concept. Many believe that the concept began with, first, the introduction of the telegraph in 1838 (Barbiroli, 1997), & then establishment of the first trans-Atlantic cable in 1866 (Hills, 2002). Another important event was also the introduction of the Automated Teller Machine (ATM) in 1967 by Barclays Bank (Lerner, 2013). Obviously, the concept of FinTech has passed through many phases to reach its current level of development. The evolution of FinTech can be categorised into various distinct eras, 3 of which are already over and we are currently experiencing the 4th. As per Arner et al., they are as follows (Arner, Barberis, & Buckley, The Evolution of FinTech: A New Post-Crisis Paradigm, 2015);

- FinTech 1.0 FinTech 2.0 FinTech 3.0

FinTech 1.0 characterised the time period from 1866 to 1987, a time when the financial services industry, despite its heavy interlinking with technology, was characterised by its analogue nature. FinTech 2.0 refers to the period from 1987 to 2008, where the Financial Services industry shed its analogue nature & became increasingly more digital. We also find growth of mobile & internet technologies during this time. FinTech 3.0 is not so distinct in nature as its other 2 counterparts, however, one may argue that it represents a time period from 2008 till roughly 2015, after which we see a great proliferation of interest in the concept of FinTech via its linkages with emerging markets, cryptocurrency & Financial Inclusion (Arner, Barberis, & Buckley, The Evolution of FinTech: A New Post-Crisis Paradigm, 2015).

Definition of FinTech

It is well noted that FinTech has had a great & potentially disruptive impact on the global Financial Services Scenario (Ferreira, Mention, & Torkkeli, 2015), (Heap & Pollari, 2015). However, not a lot of academic attention has been given to this area (Shim & Shin, 2016), at least until a couple of years ago. Still, there are many useful definitions of FinTech that we can consider here. One of the earliest definitions that we have for FinTech comes from Abraham Leon Bettinger, Vice President- Manufacturers Hanover Trust Company, in 1972, where he says that, "FINTECH is an acronym which stands for Financial Technology, combining bank expertise with modern management science techniques and the computer (Bettinger, 1972). Let's consider the following table 1;

Sr. No	Definition	Source	Authors
1	"FINTECH is an acronym which stands for Financial Technology, combining bank expertise with modern management science techniques and the computer"	'FINTECH: A series of 40 time shared Models Used at manufacturers Hanover trust Company', Interfaces, 2(4), 62-63.	Bettinger, A 1972
2	"FinTech refers to the application of technology within the Financial Industry. The sector covers a wide range of activities, from payments (ex. contactless) to financial data & analysis (ex. Credit Scoring), financial software (ex. risk management), digitised processes (ex. Authentication) and perhaps most well-known to the wider public, payment platforms (ex. P2P lending)"	"The rise of finTech: Getting Hong Kong to lead the digital financial transition in APAC", Fintech Report. Fintech HK.13(4), 2014, pp.	Barberis J. 2014
3.	"Financial Technology, also known as FinTech, is a new sector in the finance industry that incorporates the whole plethora of technology that is used in finance to facilitate trades, corporate business or interaction and services provided to the retail consumer."	Financial Technology (FinTech) and its implementation on the Romanian Non- banking Capital Market. SEA- Practical Application of Science (11), 379-384	Micu, I & Micu A 2016
4	"FinTech refers to innovative financial services or products, delivered via technology"	'Emergence of FinTech and the LASIC principles' Journal of Financial Perspectives, 3(3), 1-26	Lee, David Kuo Chen Ernie, G. S. 2015
5	"FinTech refers to technology enabled financial solutions"	The Evolution of Fintech: A New Post-Crisis Paradigm? (October 1, 2015). University of Hong Kong Faculty of Law Research Paper No. 2015/047, UNSW Law Research Paper No. 2016-62, Available at SSRN: https://ssrn.com/abstract=2676553 or http://dx.doi.org/10.2139/ssrn.2676553	Arner, Douglas W.; Barberis, Janos; Buckley, Ross P. 2015
6	"FinTech is an emerging Financial Services sector that includes third-party payment, MMF, insurance products, risk management, authentication & peer-to-peer (P2P) lending."	'Analysing China's Financial Industry from the Perspective of Actor-Network Theory' Telecommunications Policy, 40(2-3), 168-181	Shim, Y & Shin, D-H 2016
7	"FinTech is an economic industry composed of companies that use technology to make financial services more efficient."	'FieldsRank: The Network Value of the Firm' . International Advances in Economic Research, 1-3.	Čižinská, R., Krabec, T., & Venegas, P. 2016

Sr. No	Definition	Source	Authors
8	"Recent advances in Information & Communications Technology (ICT) have led to the rapid development and expansion of new & innovative financial services, often termed FinTech."	'Entry of FinTech Firms and Competition in the Retail Payments Market' . Asia-Pacific Journal of Financial Studies, 45(2), 159-184.	Jun, J., & Yeo, E. 2016
9	"FinTech is a service sector which uses mobile-centered IT technology to enhance the efficiency of the financial system, As a term, it is a compound of 'Finance' & 'Technology', and collectively refers to industrial changes forged from the convergence of financial services & IT"	'The Adoption of Mobile Payment Services for "Fintech"' International Journal of Applied Engineering Research, 11(2), 1058- 1061.	Kim, Y., Park, Y.-J., & Choi, J. 2016
10	"FinTech is a new financial industry that applies technology to improve financial activities"	'Taming the beast: A scientific definition of FinTech' Journal of Innovation Management JIM 4,4 32-54	Schueffel, Patrick, 2016
11	"FinTech are Financial Services delivered by technology"	'Anticipating the Economic Benefits of Blockchain' Technology Innovation Management Review 7 (10) 6-13	Swan, Melanie 2017
12	"FinTech is the use of technology to deliver Financial Solutions"	'FinTech, RegTech & the Reconceptualization of Financial Regulation' Northwestern Journal of International Law & Business 37(3) 371-413	Arner, Douglas W.; Barberis, Janos; Buckley, Ross P. 2017
13	"FinTech is technologically enabled financial innovation that could result in new business models, applications, processes, products, or services with an associated material effect on financial markets and institutions and the provision of financial services	"FinTech and Financial Innovation: Drivers and Depth," Finance and Economics Discussion Series 2017-081. Washington: Board of Governors of the Federal Reserve System, https://doi.org/10.17016/FEDS.2017.081.	Schindler, John 2017

The above-mentioned list of 13 most relevant definitions have been gathered after going through many peer reviewed journal articles & academic literature spanning almost 40 years. We can see that many definitions are mostly repeating themselves about FinTech being the application of Technology to Financial Services delivery. Based on the above, we may arrive at the common underlying theme that FinTech is about provision of Financial Services by harnessing the improved affordability, high speed, enhanced reach & last level customization made possible by the ongoing innovations in technology, so as to provide a personalised, positive, hassle-free & seamless experience to the financial services consumer, of course, for a reasonable profit.

Driving Forces behind Fintech

At its very core, FinTech is just a bunch of technological innovations facilitating delivery of financial services. It would be too simplistic to expect that there would be a linear relationship between an innovation and its driving forces. Also, it would be, again, very simplistic to expect that one factor would drive any particular FinTech innovation. In reality, it has been observed that many different factors combine in various proportions to drive any particular (or a group of) FinTech Innovations (Schindler, 2017). FinTech, i.e. teaming up of Financial Services with Technology is not a new phenomenon, as we have already seen in previous paragraphs. However, various driving forces have been pushing innovation in this field in recent times. Consider the following list of driving forces as encountered during the literature review;

Digitisation of the financial services industry: One must appreciate the fact that financial products are basically based on information. Also, the processes to harness & implement this information can be easily, efficiently and effectively managed using information technology (IT) & Information Technology Enabled Services. Thus, one notices that development in FinTech reflects this IT induced transformation (Puschmann, 2017). Large scale rapid innovations in internet & mobile technology have acted as demand side drivers of FinTech (Schindler, 2017).

Changing Roles of IT: over the recent years, IT itself has undergone a transition whereby, its various applications like social media, cloud computing, big data, Internet of Things (IoT) etc have led to financial services providers harness them to efficiencies & improve their business models & processes to add more value along the financial services value chain (Puschmann, 2017). Also, one notices a sequential chain of innovations, where each link in the innovation chain is caused by the previous innovation (Schindler, 2017). For e.g. It was not possible to have Automated Teller Machines (A.T.M.'s) until somebody prepared the magnetic strip technology to hold the necessary data. Until ATM technology was sufficiently developed & operationalised, Point Of Sale (P.O.S.) machines would not have been possible.

Changing Consumer Behavior: Changing demographics have been recognised as an important & powerful driver of FinTech. The ways in which the population (i.e. consumers of financial services) is changing has a huge impact on how & which innovation will be harnessed. For e.g. If millennia's were not so comfortable with using mobile technology, probably, the huge flow of FinTech innovations harnessing that technology would have been stemmed (Schindler, 2017). Also, the new generation is more comfortable with 'not' visiting branches and getting all their bank related work done using mobile applications. This has helped many banks transfer non-critical operations to mobile applications platforms (Puschmann, 2017).

Changing Ecosystems: changes to financial or macroeconomic landscapes (whether sudden or gradual) have been known to induce the FinTech companies to innovate & provide solutions. For eg. After the 2008 Financial Crisis, when banks found themselves with a lot of residential properties, some of them innovated to securities the rental income from them (Schindler, 2017). Also, traditional banks & eco-systems, as a response to macroeconomic level changes, and to save cost, started outsourcing non-critical tasks & were willing to explore chat bots as a means to engage with customers without resorting to human interaction (Puschmann, 2017).

Changing Regulation: Regulation has been known to act as both, a supply side driving force, as well as a demand side driving force. As a supply side driving force; it creates space for new services to be provided to new customers. For e.g. After the 2008 Financial crisis, when many banks grew cautious in their lending and also reduced the deposit rates, it cleared the way for new players to fill the gap by providing technology backed financial services products that addressed the need for moderate risk bearing loans & higher interest income. On the demand side, new regulations (or scrapping of old regulations) will also lead to demand of some financial services to be delivered in a certain way (Schindler, 2017).

Challenges & benefits with respect to Fintech

We will begin with the benefits first. One of the major reasons why FinTech is experiencing such a surge in popularity & importance, is that it offers a plethora of benefits to the Financial Services Providers as well as Financial Services Consumers. It has been known to increase fairness and trustworthiness in Financial Transactions. FinTech has made it possible to provide necessary financial services to hitherto unbanked population in remote areas of many countries (i.e. Financial Inclusion). Financial Services firms have been able to tap hitherto untapped markets & customers and are able to competitively provide wide ranging FinTech offerings to all segments of customers (Madeiros & Chau, 2016). FinTech Innovations have sown the seeds of many new FinTech startups who are adding value along the financial services value chain, while also adding new finance jobs to the mix. These have led to the emergence of Digital Financial Services (DFS) which have wider market reach, deeper market penetration and lower cost of introducing new innovative products into the market. FinTech has led to increasing market efficiency coupled with enhanced public trust in Financial Services Industry. Due to FinTech innovations, small firms are able to efficiently raise capital through alternative sources (Arner, Barberis, & Buckley, FinTech, RegTech and the Reconceptualisation of Financial Regulation, 2017) Due to lower costs & higher convenience levels, FinTech firms are able to efficiently & effectively serve the low to middle level customers, which used to shy away from traditional financial services due to higher costs & complex nature of transactions (Teja, 2017) Reduction in transaction costs & improvement in service delivery emerge as recurring themes when reviewing the available literature from the point of view of Benefits of FinTech. From the above,

- reduced time-to-market, lower costs, easier access, improved customer experience, reduced entry barriers to new entrants & streamlined operations stand out as benefits when looking at it from the Operational perspective of business.
- Small & medium firms gaining access to much needed finance, addition of new finance jobs & fostering of innovation & competitive edge are the important benefits when viewed from the managerial perspective of business.
- Finally, development of new business models & new market opportunities, increased market efficiency & opportunity to develop new Digital Financial Services (DFS) emerge as noteworthy benefits when viewed from the point of view of strategic perspective of business.

Of course, the above list is by no means an exhaustive one, however, it does capture the essence of the benefits available due to FinTech. Now we will consider the challenges faced by FinTech, as highlighted by the literature review. Most of these challenges are connected to the implementation and operational aspects of FinTech. It was observed that the FinTech firms exhibited a reluctance towards agreement on standards for operating in the field. Competition also emerged as another challenge, causing a lack of coordination amongst competing firms. Also, regulation in some areas like DLT posed some challenges to the FinTech firms (Milne, 2016). On the other hand, since FinTech is connected with innovations, protection of intellectual property rights is also a major challenge along with availability of appropriate legal support for the same (Madeiros & Chau, 2016) Also, since FinTech is driven by innovations, which results in rapid technological advancements, a major challenge is the reconciliation of governments intention to keep a control over this rapidly changing field with strict regulations & compliance requirements. Another challenge is the availability of appropriate infrastructure for advancement of the field (Arner, Barberis, & Buckley, FinTech, RegTech and the Reconceptualisation of Financial Regulation, 2017) The above themes were found to be repeated (with minor variations) throughout the reviewed literature.

REFERENCES

Ajello, N. J. (2015). Fitting a square peg in a round hole. Brooklyn Law Review, 80(2), 435-461.

Arner, D. W., Barberis, J., & Buckley, R. P. (2015, October 1). The Evolution of FinTech: A New Post-Crisis Paradigm. doi:http://dx.doi.org/10.2139/ssrn.2676553

Arner, D. W., Barberis, J., & Buckley, R. P. (2017). FinTech, RegTech and the Reconceptualisation of Financial Regulation. Northwestern Journal of International Law & Business, 37(3), 371-413.

Barberis, J. (2014). The Rise of FinTech: Getting Hong Kong to lead the Digital Financial Transition in APAC. Hong Kong: FinTech HK.

Barbiroli, G. (1997). The Dynamic of Technology: A methodological framework for Techno-Analyse. Springer, 58.

Bettinger, A. (1972). FINTECH: A Series of 40 Time Shared Models Used at Manufacturers Hanover Trust Company. Interfaces, 2(4), 62-63.

Čižinská, R., Krabec, T., & Venegas, P. (2016). FieldsRank: The Network Value of the Firm. International Advances in Economic Research, 1-3., 1-3.

Dapp, T. F., Slomka, L., & Hoffmann, R. (2014). Fintech–The digital (r)evolution in the financial sector. Deutsche Bank Research. Retrieved May 07, 2020, from https://www.finextra.com/finextra-downloads/featuredocs/prod0000000000345837.pdf

Ferreira, J. J., Mention, A. L., & Torkkeli, M. (2015). Illumination in times of Uncertainty: Fifty Shades of Innovation for Societal Impact. Journal Of innovation Management, 3 (1), 1-4.

Heap, T., & Pollari, I. (2015). FINTECH 100- Leading Global FinTech Innovators Report 2015.

Hills, J. (2002). The Struggle for control of Global Communication: The Formative Centurey. University of Illinois Press, 35.

Hochstein, M. (2015, October 05). Fintech (the Word, That Is) Evolves. Retrieved from https://www.americanbanker.com/: https://www.americanbanker.com/opinion/fintech-the-word-that-is-evolves

Jun, J., & Yeo, E. (2016). Entry of FinTech Firms and Competition in the Retail Payments Market. Asia-Pacific Journal of Financial Studies, 45(2), 159-184.

Kim, Y., Park, Y.-J., & Choi, J. (2016). The Adoption of Mobile Payment Services for “Fintech”. International Journal of Applied Engineering Research, 11(2), 1058-1061.

Lee Kuo Chien, D., & G.S. Teo, E. (Dec 2015). Emergence of FinTech and the LASIC Principles. Journal of Financial Perspectives.

Lerner, T. (2013). Mobile Payment. Springer, 3.

Madeiros, M., & Chau, B. (2016). FinTech-stake a patent claim? Intellectual Property Journal, 28(3), 303-314.

Micu, I., & Micu, A. (2016). Financial Technology (FinTech) and its implementation on the Romanian Non-Banking Capital Market. SEA- Practical Application of Science (11), 379-384.

Milne, A. (2016). Competition Policy & the Financial Technology Revolution in Banking. Communications & Strategies (103), 145-161, 213.

Puschmann, T. (2017). Fintech. Business & Information Systems Engineering, Vol. 59 No. 1, 69–76.

Schindler, J. (2017). FinTech and Financial Innovation: Drivers and Depth. Finance and Economics Discussion Series 2017-081, Washington: Board of Governors of the Federal Reserve System. doi:https://doi.org/10.17016/FEDS.2017.081.

Schueffel, P. (2016). Taming the Beast: A Scientific Definition of FinTech. Journal of Innovation Management, 32-54.

Shim, Y., & Shin, D. H. (2016). Analysing China's FinTech Industry from the Perspective of Actor- Network Theory. Telecommunications Policy, 40 (2-3), 168-181.

Swan, M. (2017). Anticipating the Economic Benefits of Blockchain. Technology Innovation Management Review, 7(10), 6-13.

Teja, A. (2017). Indonesian FinTech Business: New Innovations or foster and collaborate in Business Ecosystems? The Asian Journal of Technology Management, 10(1), 10-18.

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