FINTECH: EMBRACING THE FUTURE OF THE FINANCIAL INDUSTRY

OVERVIEW

We live in an era of rapid technological growth, with every aspect of life becoming just that little bit more accessible and convenient than they have ever been before. Examples of our modern technological paradigm can be seen all around us, from face-to-face telecommunications to transportation services which don’t actually own a single vehicle just a simple click away. Indeed, these rapid technological advances now encompass almost every area of the global economy, including the financial sector. The intersection between these two worlds, namely technology and the financial sector, is commonly termed “Fintech”.

The Fintech industry has already demonstrated tremendous market potential. Indeed, based on the results of research undertaken by well-known information-technology consultant Accenture, global investment in the Fintech industry exploded from USD 9.6 billion in 2015 to USD 22.3 billion in 2016, which represents a 130% percent increase.

In Indonesia, the Fintech market generated up to USD 14.5 billion in transactional value during the course of 2016, a figure which is equivalent to 0.6% of the total worldwide transaction value of USD 2.355.9 billion for this year. Indonesia’s Fintech market is thus looking highly attractive and, according to Bank Indonesia Governor, Agus Martowardijo, the transaction value of Indonesia’s Fintech market looks set to grow steadily as global digitization marches unstoppably onwards. Expressing a similar view, Mulya Effendi Siregar, Deputy Banking Monitoring Commissioner at the Financial Services Authority (Otoritas Jasa

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1 See: “Ekosistem Fintech di Indonesia”.
2 See: “PwC: Pengalaman Pelanggan Penting Didalam Industri Digital”.
3 See: “Potensi Transaksi Fintech di Indonesia Rp 188,5 Triliun”.

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Keuangan - “OJK”), is also optimistic regarding the future growth of Fintech in Indonesia, due to the country’s enormous population and correspondingly huge number of technology users.\(^4\)

In a bid to shed a little more light upon the fascinating topic of Fintech, this week’s edition of Indonesian Law Digest (ILD) will analyze and address several of the key issues which relate to this promising field, specifically:

1. Understanding Fintech from a Global Perspective
   a. What is Fintech?
   b. Who are the Main Fintech Players?
   c. Scope of Fintech Activities?
   d. Fintech: Threat or Opportunity?

2. Fintech in Indonesia
   a. OJK Perspective; and
   b. BI Perspective.

UNDERSTANDING FINTECH FROM A GLOBAL PERSPECTIVE

What is Fintech?

A recent coinage, the term Fintech was actually used for the first time back in the 1990s and was the original name for a project called the “Financial Service Technology Consortium” which was initiated by Citicorp, a part of one of world’s largest banks: Citigroup Inc. This project marked a change in stance and was the point when banks started to collaborate with non-bank institutions, which back then were known as “outsiders”.\(^5\)

However, research undertaken by Douglas W. Arner, Janos Barberis and Ross P. Buckley, which was eventually published as “The Evolution of Fintech: A New Post-Crisis Paradigm?” showed that, in fact, the technology and financial sectors have actually been intertwined for many decades already.\(^6\)

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\(^4\) See: “Pasar Fintech di Indonesia Terbuka Lebar”.
\(^5\) See: “Fintech (the Word, That Is) Evolves”.
If Fintech is broadly defined as the application of technology to the financial sector, then Fintech does indeed represent nothing new under the sun and for the following reasons:⁷

1. The introduction of the telegraph way back in 1838, as well as the laying of the first successful transatlantic cable in 1866, provided the fundamental infrastructure necessary for the first major period of financial globalization in the late 19th century. Moreover, the introduction a century later of the first Automatic Teller Machine (ATM) by Barclays Bank in 1967 arguably marked the beginning of the modern evolution of today’s Fintech; and

2. The financial-services industry has long been one of the prime purchasers of information-technology (IT) products and services globally, and this is not a recent trend but dates back to the mid-1990s, when the financial-services industry became the globe’s single largest purchaser of IT, a position that it retains to this day. Thus, for at least twenty years, traditional financial services have been a driving force within the IT industry.

The common definition of Fintech describes the application of technology to the financial industry, and under this definition, Fintech can be divided up into three categories, based upon its evolutionary timeframe, specifically:⁸

1. Fintech 1.0 (from 1866 to 1987), when the linkage between technology and the financial industry was largely pre-digital in nature;

2. Fintech 2.0 (from 1987 to 2008), when the development of digital technologies for the purposes of communications and the processing of transactions increasingly began to transform the world of finance from an analogue to a digital industry. At this point, Fintech was primarily dominated by traditional regulated financial-service industries, which utilized said digital technologies in order to provide financial products and services; and

3. Fintech 3.0 (from 2008 to the present day), during this final period, new start-ups and technology companies also began to deliver financial products and services directly to businesses and to the general public.

An appreciation of the above three periods reveals that the recently popularized term “Fintech” does not necessarily refer to any specific technology as such, but instead more to the various parties which utilize technological advances in order to offer financial products and services.⁹

This perception is also reflected in a number of other definitions of “Fintech”, as set out by various parties:

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⁷ Pages 4 and 5, The Evolution of Fintech
⁸ Page 6, The Evolution of Fintech.
⁹ Idem.
1. Investopedia - the world’s leading financial-education website - states that the term Fintech originally referred to computer technologies which were applied within the back offices of banks or trading firms, but which now describe a broad variety of technological interventions into personal and commercial finance;\(^{10}\)

2. The World Economic Forum defines Fintech as a broad category which refers to the innovative use of technology within the design and delivery of financial services and products;\(^{11}\) and

3. PricewaterhouseCoopers (PWC) defines Fintech as a dynamic segment which lies at the intersection of the financial-services and technology sectors, an area where technology-focused start-ups and new market entrants innovate the products and services currently provided by the traditional financial-service industry.\(^{12}\)

**Who are the Main Fintech Players?**

In terms of the various parties who are currently working in this emerging area, in which the financial and technological sectors have become so closely intertwined, PwC lists four main Fintech-ecosystem players, namely:\(^{13}\)

1. Financial-service institutions which are already supervised and regulated by the relevant authorities (e.g. the Financial Services Authority in Indonesia), such as banks, insurance companies and so forth (“Regulated Entities”);

2. Companies which are involved in the provision of infrastructure or technology in order to facilitate financial-service transactions (e.g. Mastercard, First Data);

3. Big technology companies which are active within the realm of financial services but not exclusively so, such as Apple (i.e. Apple Pay) and Google (i.e. Google Wallet); and

4. Fast-moving, newly established companies, often called “Startups”, which are focused upon a particular innovative technology or process (e.g. HaloMoney, Bareksa)

**Scope of Fintech Activities**

Through a process of technological innovation, Fintech companies offer financial services to their consumers across a wide range of areas. As with the definition of Fintech itself, there

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\(^{11}\) See: “5 Things You Need to Know about Fintech”

\(^{12}\) PWC, *Q&A What is Fintech?*, 2016, Page 2

\(^{13}\) *Idem.*
are also a number of points of view regarding the various areas that Fintech encompasses. According to KPMG, Fintech addresses five main areas, specifically:\textsuperscript{14}

1. Personal finance, which refers to tools that can help individuals with the management of their wealth, including personal budgets and taxes;

2. Big data and analytics, which refers to applications which deal with big data, as well as advanced algorithmic techniques which deal with risk management, fraud detection, credit scoring, the calculation of insurance premiums, etc.;

3. Payments, which refers to various technologies and tools which are used in order to facilitate transactions involving virtual currencies and mobile payments, so as to eliminate processing costs;

4. Front office, which refers to various tools and platforms which are aimed at achieving higher levels of efficiency within the realms of traditional banking operations and practices, such as loan origination, fundraising and sales;

5. Capital-market technology, which refers to various tools and platforms that enable the buying and selling of securities, such as foreign exchange.

Meanwhile, Chris Brummer and Daniel Gorfine from the Milken Institute have described four types of financial sector which may ultimately be affected by Fintech, specifically: \textsuperscript{15}

1. Payment and transfers, including:
   a. E-Commerce payments (e.g. PayPal);
   b. Mobile transactions, including: (i) mobile banking, which allows customers of a given financial institution to use a mobile device in order to undertake financial transactions (e.g. payment of bills, transfers); or (ii) mobile wallets, which are the digital equivalent of physical wallets and which function as repositories of valuable digital information (e.g. personal identification numbers) and which can also be used to transfer funds (for payments or other purposes);\textsuperscript{16}
   c. Digital currencies, which refer to any electronic currencies which use encryption techniques in order to regulate and decentralize the creation of units of currency and verify the transfers of funds (e.g. Bitcoin);\textsuperscript{17}

\textsuperscript{15} Page 5 of \textit{Fintech: Building a 21\textsuperscript{st}-Century Regulator’s Toolkit} by Chris Brummer and Daniel Gorfine from the Milken Institute, 2014 (“\textit{Milken Institute}”).
\textsuperscript{16} Page 7, Milken Institute.
\textsuperscript{17} Page 10, Milken Institute.
d. Peer-to-peer (P2P) transactions, which refer to transactions through which users can transfer money from their bank accounts or via their credit cards to the accounts of others, whether in the form of payments or money transfers via online systems;\textsuperscript{18}

e. Faster transaction processing;

f. Cross-border transactions.

2. Personal finance, including:

a. Robo advisor, an automated financial and investment tool that uses algorithms in order to manage customer investments. Robo advisors may remove the need for investors to interact with human advisors (e.g. Betterment, Wealthfront);\textsuperscript{19}

b. Mobile trading or online brokers (e.g. TD Ameritrade);

c. Personal financial management, which refers to personal accounting software and mobile apps which enable consumers to better handle their personal finances, including stock portfolios, budgets and taxes.\textsuperscript{20}

3. Alternative financing

a. Crowd funding, which refers to online platforms which allow people to raise funds or capital publicly from a large number of individuals (e.g. Kitabisa, Kickstarter);\textsuperscript{21}

b. Alternative lending, including: (i) online balance-sheet lending; (ii) P2P lending; and (iii) lender-agnostic marketplaces;\textsuperscript{22}

c. Invoices (i.e. e-invoices) and supply-chain finance

4. Insurance, including the automated, mobile and peer-to-peer models.

\textsuperscript{18} Page 9, Milken Institute.
\textsuperscript{19} Page 15, Milken Institute.
\textsuperscript{20} Page 17, Milken Institute.
\textsuperscript{21} Page 18, Milken Institute.
\textsuperscript{22} Online balance-sheet lending is a type of online platform offered by non-bank balance-sheet lenders. These platforms offer short-term loans to businesses. P2P lenders provide platforms which connect individuals and businesses with institutional investors. There are two types of P2P lending, namely (1) debt-based transactions, through which multiple individual investors contribute to a single business loan, and (2) consumer lending, through which individual borrowers use an online platform in order to obtain a loan from multiple individual lenders. Meanwhile, lender-agnostic marketplaces are platforms through which small businesses can shop and compare a wide range of products from a variety of lenders, including banks, the online community and others. (Pages 20-21, Milken Institute)
Fintech: Threat or Opportunity?

In the space of less than a decade, technological advances within the financial sector have altered the very nature of how customers engage in various financial transactions, for example:

1. People now prefer to pay via online payment platforms (e.g. PayPal) for their online shopping activities, although card payments are still an option; or

2. Businesses no longer have to rely on banks in order to obtain loans, as they can now borrow through peer-to-peer (P2P) platforms.

These changes may, of course, eventually prove to be a serious threat to some, whilst offering major opportunities for others. Business wise, global investment within the Fintech industry has shown huge and sustained growth in recent years, as mentioned earlier. Nevertheless, Fintech has become a major threat to various regulated entities, who may find themselves in deep trouble if they are unable to grasp the rapid technological changes which are currently occurring throughout the financial industry.²³

FINTECH IN INDONESIA

In spite of the low Fintech transaction value mentioned at the beginning of this ILD, Indonesia is still a promising country as regards the growth of the Fintech industry owing to its extremely large market. In fact, the Indonesian marketplace is so promising that it has already attracted over 120 Fintech companies to the country. According to the Indonesian Fintech Association (Asosiasi Fintech Indonesia), 78% of these companies have only been established for a period of two years or less, while the remainder were established between 2006 and 2013.²⁴ Most importantly, the combined assets of the Indonesian Fintech industry currently amount to some IDR 100 billion, which is approximately twice last year’s figure.²⁵

During the “Indonesia Fintech Festival and Conference 2016” which was held by the Financial Services Authority (Otoritas Jasa Keungan - “OJK”) and the Indonesian Chamber of Commerce (KADIN), the Governor of Bank Indonesia (BI) pointed out that the Fintech companies currently working in Indonesia are active in at least four major areas, as follows:²⁶

a. Deposits, lending and the raising of capital, including crowd funding and p2p lending;

b. Payments, clearing and settlements, including mobile payments and payments made through the Internet;

²⁴ See: “Mayoritas Perusahaan ‘Fintech’ di Indonesia Baru Berusia 2 Tahun”.
²⁵ See: “Booming Fintech Kerek Nilai Aset Industri Dua Kali Lipat”.
²⁶ Page 3 of the Official Speech made by the Governor of BI during the *Indonesia Fintech Festival and Conference 2016*. 
c. Market provisioning in the form of e-Aggregators;\textsuperscript{27}

d. Investment and risk management, covering robo advisors, as well as e-trading and e-insurance platforms.

Currently, both the OJK and BI, as the two central authorities working in the financial sector, are attempting to formulate a set of proper regulations and measures in order to regulate this newly emerging industry. It should be noted however that the use of technology within the financial sector is already being supervised and regulated in Indonesia but only in terms of the aforementioned Regulated Entities. This situation ultimately leaves non-regulated Fintech companies in legal limbo. With this in mind, the following section will seek to address the various measures that either have been or will be taken by BI and the OJK as regards the Fintech industry in Indonesia.

BI Perspective

As Indonesia’s central bank, BI is required to maintain the stability of the rupiah by undertaking the following tasks: \textsuperscript{28}

a. Determining and implementing monetary policy;

b. Regulating and maintaining continuity within the payment system.

Prior to the existence of the OJK, BI was also responsible for the monitoring of banks. However, this responsibility has now been shifted onto the OJK’s shoulders, including responsibility for the micro-prudential conditions of banks, as mandated under Article 69 (1) of Law No. 21 of 2011 on the Financial Services Authority ("OJK Law").

Nonetheless, BI is still required to keep specific track of the Fintech industry in order to maintain monetary stability. With this goal in mind, BI recently introduced two measures in a bid of to comply with its responsibilities as regards the Fintech industry, specifically:

a. The establishment of an official BI Fintech Office ("BI-FTO")

   Launched on 14 November 2016, the BI-FTO has main four functions, as follows: \textsuperscript{29}

   1. To act as a catalyst and facilitator as regards the exchange of innovative ideas intended to develop Fintech within Indonesia;

   2. To act as a business-intelligence agency, whereby the BI-FTO will provide frequent updates which will disseminate assessment results, and to also hold meetings with

\textsuperscript{27} E-Aggregators are online platforms which provide services which relate to the transparent collection and analysis of financial information from multiple sources. One well-known Indonesian example is cekaja.com. (See: "E-Aggregation: The Present and Future of Online Financial Services in Asia-Pacific").

\textsuperscript{28} Articles 7 (2) and 8 of Law No. 23 of 1999 on BI, as amended by Law No. 3 of 2004 ("BI Law").

\textsuperscript{29} Governor of BI speech entitled, Inauguration of the BI Fintech Office, 14 November 2016.
relevant stakeholders, including ministries, international organizations and other related authorities;

3. To fulfill an assessment function, whereby the BI-FTO will monitor and map out the various opportunities and threats to the industry, and how they relate to innovation in regard to Fintech business models and products;

4. To fulfill a coordination and communication function in order to offer understanding as regards the overall legal framework and efforts to harmonize regulations with related authorities.

b. The issuance of BI Regulation No. 18/40/2016 on the Organization of Payment Transaction Processing (“Regulation 18/2016”)  

Although there is as yet no clear definition of Fintech, or of the characteristics of certain payment transactions which may be classified as Fintech payment transactions, Regulation 18/2016 was issued in order to deal with the development of the Fintech industry within payment sector. This regulation consequently sets out a series of guidelines to be followed by businesses (both Regulated Entities and non-Regulated Entities), which are engaged in or which are seeking to engage in the organization of pre-existing payment systems. Such payment systems include card-based payment instruments and electronic money, as well as new payment systems which are associated with technological advances. With these factors in mind, the regulation essentially addresses of the following matters:

a. Organizers of payment-transaction processing;

b. Licensing and approval;

c. Organization of payment systems;

d. Mandatory reporting; and

e. Supervision, prohibitions and sanctions.

Briefly, Regulation 18/2016 stipulates that payment-transaction processing comprises of the following areas: pre-transaction, authorization, clearing, transaction settlement and post-transaction. These areas are to be organized by the following parties:  

1. Payment-system service providers, specifically banks or non-bank institutions which are engaged in the payment-system service business (“Service Providers”); and

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30 For further information, see ILB No. 3010.

31 Arts. 1 (3-4) and 2 (1), Regulation 18/2016.
2. Providers of payment-transaction supporting services, which specifically means any parties which are involved in the provision of supporting services to Service Providers during the organization of payment-service systems ("Supporting Providers").

Furthermore, Regulation 18/2016 specifies that Service Providers comprise of banks and non-banks which are functioning as:  

1. Principals, issuers, acquirers, clearing organizers and final-settlement organizers, in accordance with regulations issued by BI which relate to card-based payment instruments (i.e. BI Regulation No. 11/11/PBI/2009 on the Organization of Payment Instruments Through the Use of Cards, as amended by BI Regulation No. 14/2/PBI/2012) and electronic money (i.e. BI Regulation No. 11/12/PBI/2009 on Electronic Money, which was most recently amended by BI Regulation No. 18/17/PBI/2016);  

2. Organizers of switching (i.e. infrastructure that functions as a center and/or connector in order to forward payment-transaction data via networks for card-based payment instruments, electronic money and/or fund transfers);  

3. Organizers of payment gateways (i.e. electronic services which enable traders to process payment transactions through the use of proprietary channels, card-based payment instruments and/or electronic money);  

4. Fund-transfer organizers, in accordance with the relevant BI regulations on fund transfers (e.g. BI Regulation No. 17/9/PBI/2015 on the Organization of Fund Transfers and Scheduled Clearing by BI, as amended by BI Regulation No. 18/5/PBI/2016);  

5. Organizers of electronic wallets (i.e. electronic services which store data relating to payment instruments, including card-based payment instruments and/or electronic money, and which may also collect funds for the settlement of payments); and  

6. Other payment-system service providers which have been approved by BI and which are engaged in the authorization of payment transactions, clearing and/or final settlements.

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32 Art. 3 (1), Regulation 18/2016.  
33 Art. 1 (12-16), Regulation 18/2016.  
34 Art. 1 (5) and (9), Regulation 18/2016.  
35 “Proprietary channels” refer to payment channels which are exclusively owned and developed by a bank for its customers and which utilize the following technologies: short message service (SMS), mobile, web, subscriber identity module tool kits, and/or unstructured supplementary service data. [Art. 1 (8), Regulation 18/2016].  
36 Art. 1 (6) and (10), Regulation 18/2016.  
37 Art. 1 (17), Regulation 18/2016.  
38 Art. 1 (7) and (11), Regulation 18/2016.
Meanwhile, Supporting Providers refer to any businesses which are engaged in the following activities:40

1. Card printing;
2. Payment personalization; and/or
3. The provision of: (i) data centers and/or disaster-recovery centers; (ii) terminals; (iii) security features for payment instruments and/or transactions; (iv) supporting technologies for contactless transactions; and/or (v) the routing of supporting data which relates to the processing of payment transactions.

Regulation 18/2016 then states that any parties which are functioning as Service Providers are required to first secure licenses from BI, while any parties which are intending to organize electronic-wallet services are only required to secure this license if the service that they offer has at least 300,000 users. After a license has been secured, a Service Provider is still required to obtain BI approval with regard to the following areas:41

a. Development: (i) payment-system services; and/or (ii) products and activities which relate to payment-system services; and/or
b. Cooperation with other parties.

OJK Perspective

As stipulated clearly under the OJK Law, the OJK was established in order to realize an effective, fair, transparent and accountable financial industry. With this end in mind, the OJK has to engage in the integrated regulation and monitoring of all aspects of the financial sector, including:42

a. The banking sector;
b. The capital-market sector; and
c. Other parts of the financial sector, including insurance, pension funds, financing institutions and other financial institutions.

The OJK has already formed a team for development and innovation within the digital economy and financial sector, which will undertake research into the Fintech industry before

39 Elucidation of Art. 3 (1), Part (j), Regulation 18/2016.
40 Art. 3 (3), Regulation 18/2016.
41 Arts. 4 and 8, Regulation 18/2016.
42 Arts. 5 and 6, OJK Law.
formulating a set of regulations and strategies. Currently, the OJK has already prepared several plans which will be implemented in order to support the Fintech industry, namely: 43

a. The launching of the Fintech Innovation Hub which will facilitate local Fintech companies as they attempt to communicate and cooperate with other institutions which may be able to offer support to the digital-financial ecosystem;

b. Following up on any cooperation with the Ministry of Communication and Information in order to establish a certificate authority (CA) within the financial sector. The CA will act as an issuer of certificates which guarantee the digital signatures of businesses working within the financial sector. Such certificates will ensure that any transactions which are digitally signed are ultimately legally binding;

c. The issuance of a sandbox regulatory framework44 for Fintech. This framework will regulate various provisions which will be aimed at pushing investment, efficiency, consumer protection and sustainable growth within the Indonesian Fintech industry.

d. Research into the implementation of information and data-security standards within the Fintech industry and also into the need for a reporting centre for any incidents which relate to information security within the financial sector.

e. Research into centralized-vulnerability assessment within the financial sector in order to ensure the relevance and propriety of any countermeasures which relate to information security. Research into ensuring that information security is always well maintained in order to mitigate any potential risks and threats to information within the financial sector.

The OJK is also in the process of drafting a number of regulations which will deal specifically with the Fintech industry. The drafts of these regulations will address six important matters at the least, including: 1) Fintech organizers; 2) Organization of Fintech; 3) Scope of business; 4) Supervision; 5) Mandatory reporting; and 6) Capital requirements. Not only will the coming regulations address Fintech companies directly but the OJK is also in the process of formulating regulations which will specifically address the issue of consumer protection within the Fintech industry.45

44 Back in 2015, the UK Financial Conduct Authority announced its intention to develop a so-called “Regulatory Sandbox” for the testing of innovative financial products. This concept, which was developed at the request of the British Government, allows businesses to test innovative products, services and business models under a “light” supervisory regime. The aim of the Sandbox is to shorten the time that it takes new ideas to come to market and therefore to encourage innovation. At the same time, restrictions which relate to the market scope of experimental services are imposed in order to contain the risk in the event of any failure. De Nederlandsche Bank, Technological innovation and the Dutch Financial Sector, Page 27.
45 NNP, Hukumonline, 7 Isu Pelindungan Konsumen Ini akan Diatur dalam POJK Fintech, 2016.
Conclusion

The above discussions show that the Fintech industry is hardly a new development in terms of the application of technology within the financial industry. However, Fintech seems to have become a renewed area of focus in recent years due to new players such as start-ups and technology companies entering the industry, and these new players may ultimately disrupt a financial-service industry which was previously dominated by Regulated Entities only.

In spite of the numerous opportunities that it may bring, Fintech may also become a threat if the relevant authorities do not take immediate measures in order to keep this rapidly growing industry in check. Therefore, plenty of regulations are currently in the pipeline and the hope is that these will be able to create greater certainty for both businesses and consumers as regards the Fintech industry. However, the relevant authorities must also ensure that their policies do not become a legal barrier which ultimately discourages Fintech companies from continuing to develop innovative new financial services which will hopefully ensure a bright future for the Indonesian financial sector as a whole.