FINTECH
Technology application in the Financial Product Ecosystem
Concept and history of ‘Fintech’

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Recent success in the technology sector has witnessed the transformation of start-up companies with relatively small or no seed capital into billion-dollar companies within a very short-space of time. From the advent of taxi-hailing apps (like Uber, Lyft and GrabCar) to accommodation (e.g. Airbnb), smartphone applications and web-based platforms provide the evidence of this growing phenomena. The application of technology in the financial sector has ‘disrupted’ the traditional ‘brick-and-mortar’ style distribution channels and if not embraced, would cause the current financial sector to lose a substantial portion of their businesses (estimated between 20 to 40%) to firms using ‘fintech’.

So what then, can be understood by the term ‘fintech’? Fintech or financial technology is the application of technology in the financial product ecosystem. This includes financial product administration, vetting, marketing, distribution and supervision.

A brief history of technological developments that required businesses to change their business models to survive

This translates to a 200% increase year-on-year, from 2013 to 2015. Researchers attribute the recent meteoric rise of fintech startups and the supporting equity contributions as a response to the financial crisis. They note that the 2008 Global Financial Crisis possibly acted as a catalyst to the growth of a new digital era in financial services. Researchers list that specific factors driving this trend include public perception, regulatory review, political pressure and the prevailing economic environment.

Annual Global Financing Trends to VC-Backed Fintech Companies

<table>
<thead>
<tr>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>Q2 Investment</th>
<th>Overall Investment ($B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>311</td>
<td>451</td>
<td>550</td>
<td>710</td>
<td>807</td>
<td>416</td>
<td>0.6</td>
<td>14.5</td>
</tr>
<tr>
<td>0.6</td>
<td>1.8</td>
<td>1.8</td>
<td>1.8</td>
<td>5.2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1844: Marco Polo's first telegraph cable is laid between the US and Switzerland.
1866: The transatlantic cable is laid between Baltimore, Maryland and Liverpool.
1915: Credit Card is invented.
1920: The first ATM is invented.
1950-58: A typographic can is said to have been used for the first time in the US and Europe.
1966: The first ATM is introduced in the USA.
1968-70: The first ATM is introduced in the USA.
1973: The first ATM is introduced in the USA.
1979: The Inter-Card system is introduced in the USA.
1982: The first online banking service is launched in the UK.
1994: The first online banking service is launched in the UK.
1999: The first online banking service is launched in the UK.
2009: The first online banking service is launched in the UK.
2011: The first online banking service is launched in the UK.
2015: The first online banking service is launched in the UK.

Marco Polo, the Chinese merchant, establishes the first international credit card system, enabling merchants in China to pay using face-to-face recognition by a smart phone.

PayPal, the Chinese merchant, establishes the first international credit card system, enabling merchants in China to pay using face-to-face recognition by a smart phone.
A review of the investments by continent over the 18 months from the second quarter of 2015 to the end of the second quarter of 2016, indicate that Asian appetite for fintech funding is significantly higher than Europe and trailing only to North America in investment size.

**The largest global fintech companies in 2015, by valuation and capital raising are presented by Citi GPS:**

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Business Area</th>
<th>Target Customer</th>
<th>Category</th>
<th>Country of Domicile</th>
<th>Type</th>
<th>Raised</th>
<th>Valuation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ant Financial</td>
<td>Payment</td>
<td>Personal &amp; SME</td>
<td>Online payment</td>
<td>China</td>
<td>Private</td>
<td>$450m</td>
<td>$2b</td>
</tr>
<tr>
<td>Lufax</td>
<td>Lending</td>
<td>Personal &amp; SME</td>
<td>Peer-to-peer loan</td>
<td>China</td>
<td>Private</td>
<td>$1.7bn</td>
<td>$1.9bn</td>
</tr>
<tr>
<td>Stripe</td>
<td>Payment</td>
<td>Personal &amp; SME</td>
<td>Online payment</td>
<td>US</td>
<td>Private</td>
<td>$280m</td>
<td>$5.0bn</td>
</tr>
<tr>
<td>Zelle</td>
<td>Institutional Tools</td>
<td>SME</td>
<td>FinTech</td>
<td>US</td>
<td>Private</td>
<td>$583.3m</td>
<td>$4.5bn</td>
</tr>
<tr>
<td>Credit Karma</td>
<td>Lending</td>
<td>Personal</td>
<td>Credit scoring</td>
<td>US</td>
<td>Private</td>
<td>$360m</td>
<td>$3.5bn</td>
</tr>
<tr>
<td>Adyen</td>
<td>Payment</td>
<td>Personal</td>
<td>Online payment</td>
<td>Netherlands</td>
<td>Private</td>
<td>$246m</td>
<td>$2.3bn</td>
</tr>
<tr>
<td>Klarna</td>
<td>Payment</td>
<td>Personal</td>
<td>Online payment</td>
<td>Sweden</td>
<td>Private</td>
<td>$291m</td>
<td>$2.2bn</td>
</tr>
<tr>
<td>Dinero</td>
<td>Payment</td>
<td>Personal</td>
<td>Online payment</td>
<td>India</td>
<td>Private</td>
<td>$186m</td>
<td>$2.0bn</td>
</tr>
<tr>
<td>Prosper</td>
<td>Lending</td>
<td>Personal</td>
<td>Peer-to-peer loan</td>
<td>US</td>
<td>Private</td>
<td>$356.9m</td>
<td>$1.9bn</td>
</tr>
<tr>
<td>Oscar Health</td>
<td>Insurance</td>
<td>Personal</td>
<td>Online healthcare</td>
<td>US</td>
<td>Private</td>
<td>$727.5m</td>
<td>$1.75bn</td>
</tr>
</tbody>
</table>

Source: Citi GPS Report

Although the majority of the largest fintech start-ups are in the US, the two largest companies, Ant Financial and Lufax, are based in China. Ant Financial is a payment gateway and finance provider for small to micro enterprises and belongs to the largest b2b (business-to-business) online marketplace: Alibaba. Ant Financial includes Alipay (online payment gateway similar to PayPal), Alipay Wallet (a digital wallet that enables online P2P payments), Yu e Bai (largest money market fund in China), Zhao Cai Bai (digital investment and lending platform to SMEs), Ant Micro Loan (b2b and p2b lending) and Sesame Credit (credit-ratings provider). This financial ecosystem provides the necessary credit analysis and verification and digital disbursement reducing the need for traditional bank involvement in the process. The revenue shifting from transactional and non-intermediary costs is significant as fintech portals can partner with varying service providers to deliver complete financial products.

Lufax began in 2011 as a P2P lender and now offers a broad range of financial services including a digital wallet, wealth management solutions and fund distribution channels. The wealth management industry has now ventured into the post-crisis digital revolution, with robo-advisors and lower transactional costs, challenging physical advisory functions and effectively disrupting the traditional investment distribution channels. Firms that embrace the technology as a solution rather than competition, are expected to be successful in riding the fintech wave and surviving in the digital era.
The Fintech Ecosystem

A more traditional view of the fintech ecosystem could be categorized into five key areas:

- Finance and Investment
- Payments and Infrastructure
- Data Security
- Operations and Risk Management
- Customer Interface

However, the most recent drive towards technologically-powered financial services has affected change in another five broad segments.

01 Banking and Lending

Traditional banking requires strategic adaptation to deal with fintech developments. Two specific issues impact traditional banking activity when considering fintech disruptors: an alternate banking strategy and peer-to-peer (P2P) lending.

a. Adapting banking strategy to deal with disruption

Traditional banking is quickly transforming into online distribution channels as banks are gearing up to challenge new fintech start-ups. It is estimated that between 30 and 80% of branch utilization will be reduced in the coming decade. This will decrease more expensive over-the-counter transactions and shift even more transactions to virtual digital platforms. As King (2014) states:

“The shift is that banking is no longer about the place or the space, it is all about the utility. The more you think about the brand as enabling financial utility, the more you come to terms with the fact that the branch generally no longer offers significant advantage.”

In order to remain competitive, banks have adopted new product solutions that utilize virtual channels and mobile or online delivery. ‘Digital readiness’ or IT capacity for adopting new technological platforms become crucial to traditional bank survival in the near future. As software becomes more open-source, programming units have opportunity to mold them to suit specific sector needs. For example, SaaS (software-as-a-service) solutions that are coupled with APIs (application program interfaces) can be integrated with existing banking solutions to provide interactive digital platform banking. Overall developmental costs are also reduced since SaaS and API are constantly releasing updates based on efficacy and customer needs.

Leading banking strategists, Bain & Company, suggest that traditional banks need to consider the following paradigm shift to survive the fintech disruption:

i. Integration of distribution channels and network redesign

Banks are required to provide a seamless customer experience that is based on customer preference of how they would want to interact with the bank. In this way, it is the customer that experiences the process that he/she most prefers. Bain & Company cites the example of Finansbank in Turkey that allows customers to check their approved credit limit via secure messaging, prior to entering into a major purchase transaction. However, successful integration of distribution channels should be comprehensive, always accessible at the place and time of the customer’s choice. This requires a redesign of existing network architecture and a paradigm shift from reliance on physical branches during office hours.

ii. Adopting a digital mindset

Strategic direction from the senior executive level is required to motivate and espouse a digital mindset. This requires enhanced levels of transparency and disclosure, as response to poor service becomes instantaneous and viral. Social media impact can be disastrous to non-conforming banks as bank switching is easy and convenient on digital platforms. Hence, banks will have to execute transactions with increasing speed and delays in finance approvals may lead to loss of group business: individuals are more connected than ever before. Therefore, the focus on the customer becomes priority. Traditional banking attitude of being apathetic to customer needs over rigid compliance with central bank regulation, writing policy and setting procedures needs a new outlook.

New fintech service providers operate with the objective of delivery and customer satisfaction rather than elaborate operational and regulatory procedure that tend to delay response times. In addition, data collection of customer online habits will enable a predictable and more targeted response for new digital offerings.
b. P2P Lending

Peer-to-Peer (P2P) lending can be understood as any online transaction in which one or more individuals lend money to others. P2P financing can be traced back to two companies: Zopa (UK-based) that launched in 2005 and Prosper (US-based) launched in 2006. The process of P2P lending allows interested parties to lend to each other on mutually agreed terms over an online platform. By 2016, Prosper claimed that their total lending was at approximately USD6 billion whilst Zopa reported a total loan base of GBP1.4 billion. In the US, additional regulation in the aftermath of the crisis attempted to reform the finance market by providing further safeguards to the consumer. The Dodd–Frank Wall Street Reform and Consumer Protection Act of 2010 effectively tightened credit availability even further, supporting the emergence of P2P platforms that had less stringent controls on lending.

A key component of traditional banking revenue is credit provision. The process of application, approval and administration throughout the period of the credit facility attracts significant costs that are all passed to the borrower. Since the financial crisis, banks globally have become more critical of the quality of credit applications. Besides the more cautious approach to lending, the regulatory environment has also released more stringent capital requirements: Basel III. With the objective of improving market stability and enhancing resilience against future shocks, banks now have further challenges of capital adequacy, to ensure safer lending practices.

The US market response to the credit shortage resulted in a variety of non-traditional banking offerings, even through legislation. An example of this is the JOBS Act 2012 (Jump Start Our Business) that promotes entrepreneurship and job creation. The JOBS Act aided initiatives in bypassing the stringent credit requirements of traditional banks by allowing start-ups to raise financing directly from interested parties on P2P platforms.

The rapid growth of P2P lending extends beyond the innovative use of technology. Fintech platforms provide customers with a seamless experience that is focused on an objective evaluation through an easily accessible interface. Milne and Parbooteh (2016) list four categories of advantages that P2P lending offers over traditional bank lending:

- Higher returns than bank deposits for lenders, with low fees
- Easier access to financing for borrowers that have difficulty or are unable to access bank lending
- The ethical and social contribution of P2P lending is perceived to be higher than traditional banking
- Technological innovation is rapid, making online platforms quicker and accessible on a variety of devices with no time limitations.

P2P lending in the Asian region is at a nascent stage, although the typical rate of fintech growth makes P2P lending a formidable force within the sector. Lufax and Jimubox in China, Funding Circle in the UK and SoFi in the US have all achieved in excess of USD1 billion in valuations during their short tenure. Debt-financing has often been preferred in corporate fund-raising due to relatively cheaper financing costs. Although P2P lending is expected to reduce these costs even further, large fund-raising rounds for start-up companies without credit histories require the more expensive equity financing route. Even here, fintech providers are capturing market share by offering crowdfunding platforms to entrepreneurs with ideas that have potential. But more on this under the investment and wealth management discussion.

Recent capital-raising activity for P2P lending sites:

<table>
<thead>
<tr>
<th>Month</th>
<th>Platform</th>
<th>Capitalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 2014</td>
<td>Lending Club</td>
<td>USD15 billion</td>
</tr>
<tr>
<td>December 2014</td>
<td>OnDeck</td>
<td>USD1.8 billion</td>
</tr>
<tr>
<td>April 2015</td>
<td>Prosper</td>
<td>USD165 million</td>
</tr>
<tr>
<td>April 2015</td>
<td>Funding Circle</td>
<td>USD150 million</td>
</tr>
<tr>
<td>September 2015</td>
<td>Avant</td>
<td>USD325 million</td>
</tr>
<tr>
<td>September 2015</td>
<td>SoFi</td>
<td>USD1 billion</td>
</tr>
<tr>
<td>October 2015</td>
<td>Kabbage</td>
<td>USD135 million</td>
</tr>
<tr>
<td>January 2016</td>
<td>LendUp</td>
<td>USD150 million</td>
</tr>
</tbody>
</table>

MARKET CAPITALIZATION

A PwC report in 2015 estimates that by 2025, P2P lending would potentially capture 10% of revolving consumer debt and 4% of non-revolving debt in the US alone. This prediction is supported by Moldow (2015) but research conducted by Morgan Stanley indicates that P2P lending would possibly capture 10% of US lending by as early as 2020.

This can be attributed to P2P diversification from consumer lending to business, real estate finance and invoice trade financing. A recent article reports that institutional investment accounted for approximately a third of P2P financing for the various P2P lending products in the UK for 2015 at 32%.

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02 Payment and Fund transfer

E-commerce start-ups were initially focused on creating online marketing platforms for the retail of goods across markets (aka Amazon and eBay). Their success in capturing significant market share within a short period, presented new digital challenges that demanded urgent solutions. Transactions taking place online, required payments that were instantaneous and secure. Online payments therefore, introduced a new set of threats to economic safety and stability. For instance, how would customers make payments for goods securely? Banking details could easily be intercepted and used for fraudulent online purchases using phishing scams, packet sniffling or other forms of hacking. In 2011 in Australia alone, one million fraudulent payment transactions were recorded and 71% of losses from credit card fraud occurred on online or telephonic purchases. The introduction of secure payment gateways like PayPal, Stripe and Authorize.net reduced the threat of identity theft and other fraudulent activities, whilst unwittingly introducing a new competitive business threat to the role of banks in traditional payment transactions.

Accessibility to mobile and smart phones have driven change in the payment and fund transfer sector, by enabling vendor payment gateways to recognize them through free downloadable applications. Using concepts like digital wallets where online details to accounts are stored, or simply transferring airtime to a vendor as an instant payment reduces the role of traditional banks even further. These services and apps have brought along new risks in security, although customer demand for convenience and accessibility has forced providers to enhance security protection whilst improving the overall customer experience.
Crowdfunding

Digital crowdfunding platforms can be traced back to informal micro-finance ventures that attract small equity contributions for an entrepreneurial activity. In 2009, the launch of an online platform (Kickstarter) provided an opportunity for many small investors with ambitions of owning equity in the next ‘Microsoft’ or ‘Google’ venture to participate in potentially the ‘next big thing’. Entrepreneurs that could not or did not want to access traditional bank funding, now had an alternative capital-raising method.

For example, FORM1 (a group of MIT Media Lab researchers) received crowdfunding by intending to provide an affordable 3D printer for public use. Although they intended to raise USD100,000, they received USD3 million in funding, rapidly shortening the time to market. Another popular crowdfunding initiative, the Pebble smartwatch, raised USD1 million in 28 hours on Kickstarter and USD10 million in total. Oculus Rift is probably the most significant of the Kickstarter projects, raising ten times the USD250,000 goal in 2012. The company sold out two years later for USD2 billion, one thousand times its initial capitalization. A variety of crowdfunding initiatives are currently offered. Faire Capital Advisors (2013) provide some examples:

### Box 1: Types of Crowd Funding

<table>
<thead>
<tr>
<th>MODEL</th>
<th>EXAMPLES</th>
<th>FEATURES</th>
<th>PROS</th>
<th>CONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DONATION</td>
<td>Just Giving</td>
<td>Funders donate without expecting monetary compensation</td>
<td>No risk</td>
<td>Donors do not acquire securities</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Entrepreneurs have difficulty raising substantial capital</td>
</tr>
<tr>
<td>REWARDS</td>
<td>Kickstarter</td>
<td>Funders receive a token gift of appreciation or pre-purchase of a service or product</td>
<td>Low risk</td>
<td>Potential return is small</td>
</tr>
<tr>
<td></td>
<td>Indiegogo</td>
<td></td>
<td></td>
<td>No security is acquired, and there is no accountability mechanism</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Most entrepreneurs may have difficulty raising substantial capital without a product with mass appeal to sell</td>
</tr>
<tr>
<td>LENDING</td>
<td>Kiva</td>
<td>Funders offer to lend a portion of a loan in exchange for a specified interest rate, Business repays the loan over time.</td>
<td>Provides capital formation opportunity for cash flow positive businesses</td>
<td>Loan maybe unpaid/loss of investment</td>
</tr>
<tr>
<td></td>
<td>Funding Circle</td>
<td></td>
<td></td>
<td>Banking regulation maybe unclear on individul to business lending</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>May be less popular with Muslim users due to the interest element</td>
</tr>
<tr>
<td>INVESTING</td>
<td>CrowdCube</td>
<td>Funders receive equity instruments or profit sharing arrangements</td>
<td>Potential to share in the profitability of the venture</td>
<td>Potential loss of investment</td>
</tr>
<tr>
<td></td>
<td>Gate Impact</td>
<td></td>
<td>Significant potential for financial gain</td>
<td>Equity holders are subordinate to creditors in the event of bankruptcy</td>
</tr>
<tr>
<td></td>
<td>OfferBoard</td>
<td></td>
<td>May attract relatively large number of investors</td>
<td>Securities laws related to crowdfunding investing may be complex</td>
</tr>
<tr>
<td></td>
<td>SeedInvest</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Faire Capital Advisors (2013)
Robo-Advisors and Wealth Management

Investors have always sought the advice of professional financial advisors for the placement of their funds, portfolio construction and protection of their wealth based on upon individual risk profiles and appetites. Whilst the investor objective of minimizing risk for maximum return has not changed, the delivery of financial advice is being revolutionized through a digital platform. The traditional advisory service is quickly evolving into either a fully automated “robo-advisor” or a technology-assisted advisory service.

The use of neural network programming (NNP) and artificial intelligence (AI) form the core technology for fintech start-ups in this sector. They aim to offer a unique client experience: through a series of questions, the program (robo-advisor) determines an investor risk profile and recommends a portfolio based on the type of securities expected. For example, some fintech investment advisors provide ETF (exchange-traded-funds) solutions whilst others select from stocks in specific categories in the domestic general equity sector.

More accurate quantifying of risk is achieved by superior back office data analytics in order to balance investor risk-return expectations. The significant difference between traditional wealth management is that the digital exercise is accomplished faster and at much lower costs. This implies that future wealth management solutions will be more sophisticated and more cost-efficient than traditional methods.

Data analytics provide additional advantages in wealth management. More sophisticated technology provides for more detailed reporting and disclosure. This in turn increases the data available for analysis which reduces information asymmetry between institutions and investors. Ultimately, system-driven portfolio selection will provide more reliable forecasting models and more predictable returns.

Hence, by combining data sets from various sources, AI will have the ability to create an unrivalled comprehensive profile of investors and investment opportunities. This will provide effective best-fit solutions beyond what has previously been achievable.

04 Insurance

A recent PwC survey on fintech application in the insurance sector indicated that self-directed services is the most notable trend in the near future. Although most of the larger insurance companies provide online quotes and claims, the user experience is not always as efficient as the customer expects. More sophisticated digital channels with smartphone capabilities will provide more customer-centric solutions with the objectives of speed, accuracy, understanding of unique cases and post-transaction support. Whilst human intervention is not expected to cease, the existing insurance market will be significantly enhanced with the new solutions.

Additional developments in the fintech insurance industry include usage-based insurance (UBI) and more dynamic risk-based premium calculations. Premium calculation is based on actuarial analysis of the risks being exposed to, for individual customers. However, changes in the customer profiles are often not updated until annual reviews (if at all), as a result of high cost. UBI more accurately assigns risk exposure based on unique and dynamic customer profiles. For example, auto-insurance that applies UBI will charge for cover based on how often the vehicle is used. Geo-tagging for instance, will assist in assessing risk changes when motor vehicles move into higher risk zones. Existing technology provides solutions for much higher levels of accuracy in quantifying risk.
Blockchain technology

At the beginning of 2009, blockchain technology was used to create a cryptocurrency by an anonymous developer, famously known as 'Bitcoin'. By 2016, the market capitalization of approximately 600 cryptocurrencies are monitored[1], although Bitcoin remains the most dominant. For a digital currency to exist, its credibility cannot be compromised. Therefore, a decentralized or shared database of 'tokens' must be stored such that none can be replicated but rather transferred and owned. The technology that makes this possible, consists of three components[2]:

- a shared state
- a set of rules for updating the state, and
- a trust model for timestamping.

A blockchain is thus a database that controls a shared ledger that cannot be altered or fixed, ensuring secure contracting that is always traceable. Although there has been significant cynicism towards cryptocurrencies such as Bitcoin and Ethereum, they have proven their resilience against security attacks, legal argument and general skepticism.

Blockchain technology is being applied to more solutions both in the corporate and government sector. For example, in 2016, the central securities depository of the Russian Federation announced a pilot project that is considering electronic voting for bond owners using blockchain methodology[3]. The UK government as well, has recently approved a blockchain provider for public sector organizations, introducing distributed ledger technology (DLT) to everything from health services to financial regulation[4].

Challenges in Fintech implementation

A recent PwC survey[5] of the most significant challenges facing fintech companies and incumbents, revealed the following barriers to entry and/or survival:

i. IT Security

IT vulnerabilities are particularly challenging for new entrants into the field, probably due to a knowledge gap when identifying weaknesses in security. This is less of a concern for fintech companies who are specialists in the field.

ii. Regulatory Uncertainty

Both fintech companies and incumbents considered this critical to the sustainability of fintech implementation. Minimal regulation exists internationally that governs the fintech sector. Furthermore, there is a lack of clarity on which regulatory authority is responsible and whether all fintech companies would be governed by comprehensive dispensation. What is becoming clearer is that fintech solutions provide advantages for products to market, essentially enhancing the means of delivery rather than the product category itself. Hence, more suitable regulation

New entrants were particularly concerned about IT compatibility with existing infrastructure. Significantly large IT costs to introduce these new solutions make traditional financial service companies hesitant and uncertain on whether the decision to implement would be cost-efficient and beneficial in increasing shareholder value.

From the results of the survey, additional challenges that concerned stakeholders include differences that exist in business models, management & culture, operational processes and knowledge. New entrants were particularly concerned about IT compatibility with existing infrastructure. Significantly large IT costs to introduce these new solutions make traditional financial service companies hesitant and uncertain on whether the decision to implement would be cost-efficient and beneficial in increasing shareholder value. Furthermore, the required investments to enter and remain in the sector become a significant barrier to entry, especially for start-up companies that require large capital injections for development of programming infrastructure. To a large extent, this barrier might be reduced as fintech programming becomes more open source, much like smartphone apps based on Android or the Apple iOS platforms.
The Approach Of BNP Paribas To Fintech

RM Ratings, the Malaysian credit-rating provider, will provide independent ratings on ventures that will obtain a listing on the IAP. The initiative provides a secondary market for investors that can have direct, yet secure access to innovative business ventures. In a bid to attract international investors, the government regulator that provided oversight and support in the IAP formation, also placed no restrictions on foreign capital inflows. Furthermore, all profits from investment are exempt from tax for the first three years of operations. The Securities Commission (SC) of Malaysia, under an initiative known as the Alliance of FinTech Community or ‘aFiNityBSC’, has also been active in preparing regulation that will allow for fintech solutions to operate more seamlessly in the country. The initiative includes:

i. Creating awareness and catalyzing innovative fintech solutions

ii. Forming clusters to organize and nurture a wider fintech ecosystem, and

iii. Providing policy and regulatory clarity that is conducive for innovation.

The objective of the framework is to enable a variety of companies to participate and access market-based funding through a digital platform. In September 2016, the SC confirmed that selected and approved P2P entities will be announced within a few months, with six registered equity crowdfunding platforms that have already begun fundraising. The Equity Crowdfunding/P2P financing framework was issued in early 2016.

BNP Paribas have deployed strategic fintech initiatives that have contributed to their competitive edge in the financial market. Through partnerships with fintech solution providers, BNP Paribas is able to co-create and develop solutions for clients. By using these solutions internally as well, the financial services provider expects to develop new communications channels that will motivate quicker response times and a higher culture of transparency and efficiency. With more advanced communication, external customers can be assisted more efficiently in embracing digital methodology in their core business modes.

On the international stage, BNP Paribas has actively been involved in co-innovation programs with FinTechs, to design solutions for all segments of the banking industry. Application of data analytics software for example, using large existing databases, allows for more efficient fund matching and distribution at the bank that were not possible before.

Three components form the core of their digital strategy:

i. Artificial intelligence (AI)

ii. Blockchain technology

iii. Big data

Artificial intelligence (AI) is expected to enhance employee productivity by using natural language generation in the preparation of routine reports such as fund fact sheets.

Advancements in AI are constantly shifting the frontier proven from the ongoing testing in everything from driverless cars to digital personal assistants. The use of AI in portfolio fund construction for example, is based on the concept of a ‘robo-advisor’ that challenges users through questions ‘molded’ by interactions between man and machine. The result is a personalized portfolio construction based on a carefully constructed algorithmic risk profile. Placing investments are carefully calibrated to suit individual customers.

Through leading digital providers, BNP Paribas is also taking advantage of Blockchain technology in record-keeping and warrant issuance. The resilience of Blockchain methodology and digital infrastructure has quickly become the benchmark in serial-flow databases that contribute to the credibility of the records stored. Existing technology ensures that documentation is kept secure, reducing the possibilities of fraud and tampering. By making use of leading innovators in the data analytics environment, BNP Paribas is also able to discover new insights on customers and their preferences and provide more rapid and efficient decision-making.

The use of these types of cutting-edge technology solutions is expected to have a positive impact on competitiveness, ultimately improving the customer experience. Additionally, cost benefits for the bank are expected in both retail distribution of funds and their selection.
Summary

The rapid success of the fintech sector and emergence of digital platforms threatens traditional banking business. Capital investments in the sector have doubled each year since 2013. In different forms, fintech development has entered the banking and lending market, payments and gateways, investment and wealth management, insurance and currencies. Through a complete ecosystem, fintech evolution is impacting key areas in the financial services industry.

The most significant developments have taken place in P2P lending and crowdfunding. Through P2P lending, lenders and borrowers can interact over digital platforms without the need for lengthy applications and high transactional costs. In crowdfunding, businesses (not limited to businesses) can quickly raise capital for product development or project funding. The future success of these platforms and solutions relies on credible security in information technology and enabling regulation. Malaysia is well-poised to benefit from the fintech wave as it has already introduced regulation for P2P and crowdfunding. Most recent regulation ensures that product testing is conducted in a controlled environment with sufficient monitoring and supervision, before going to market. These strategic initiatives will serve to enhance customer confidence and attract more players into the Malaysian market.