



**TRƯỜNG ĐẠI HỌC KINH TẾ TP. HỒ CHÍ MINH**  
**KHOA NGÂN HÀNG**

**KỶ YẾU HỘI THẢO KHOA HỌC**  
**TƯƠNG LAI CỦA FINTECH VÀ NGÂN HÀNG:**  
**PHÁT TRIỂN VÀ ĐỔI MỚI**  
**THE FUTURE OF FINTECH AND BANKING: EVOLUTION AND REVOLUTION**



**NHÀ XUẤT BẢN KINH TẾ TP. HỒ CHÍ MINH**

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## **HỘI THẢO KHOA HỌC**

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# LỜI MỞ ĐẦU

Ngày nay công nghệ đổi mới, trí tuệ nhân tạo đang dần thay đổi và định hình các dịch vụ tài chính, tạo ra nhiều cơ hội cũng như thách thức cho người tiêu dùng, người cung cấp dịch vụ và những nhà chính sách<sup>1</sup>. Những công nghệ này có thể gia tăng hiệu quả đáng kể trong lĩnh vực tài chính, bao gồm thanh toán, tài chính, đầu tư, quản lý tài sản và bảo hiểm. Tuy nhiên, IMF cũng đặt ra vấn đề rủi ro đối với sự ổn định và tính toàn vẹn của hệ thống tài chính, đặc biệt là khi công nghệ tài chính hoạt động ngoài tầm kiểm soát quá trình giám sát tài chính<sup>1</sup>.

Tại Việt Nam, trước bối cảnh cuộc công nghiệp 4.0 và sự bùng nổ công nghệ, lĩnh vực Tài chính – Ngân hàng trong nước cũng đang chuyển mình theo dòng chảy của thời đại nhằm nắm bắt cơ hội phát triển nhưng cũng đối mặt với nhiều thách thức. Đây là vấn đề cần được nghiên cứu, thảo luận không những từ góc độ lý luận, chính sách mà còn từ góc độ thực tiễn qua ý kiến của những chuyên gia đang kinh doanh và phát triển trong lĩnh vực công nghệ tài chính.

Đó là lý do khoa Ngân hàng, trường Đại học Kinh tế TP.HCM tổ chức Hội thảo khoa học “Tương lai của Fintech và Ngân hàng: Phát triển và đổi mới” vào ngày 22/11/2018. Với 20 bài tham luận khoa học đến từ Ngân hàng Nhà Nước Việt Nam, giảng viên của các trường đại học, chuyên gia nghiên cứu, Ban Tổ chức tin rằng Hội thảo sẽ mang lại những giá trị hữu ích từ góc độ nghiên cứu và thực tiễn trước bối cảnh sự phát triển của Fintech tại Việt Nam.

Nội dung chủ yếu kỹ yếu hội thảo phân tích sự ra đời, kinh nghiệm và xu hướng phát triển fintech trong lĩnh vực Ngân hàng trên thế giới và Việt Nam; cơ hội và thách thức của Fintech. Làn sóng fintech tạo ra kỹ nguyên mới trong đa dạng hóa dịch vụ ngân hàng góp phần gia tăng giá trị các sản phẩm dịch vụ ngân hàng, cũng như đề xuất giải pháp và các hàm ý chính sách cho quá trình phát triển, hợp tác fintech - ngân hàng trước xu thế đổi mới của thời đại công nghệ 4.0 tại Việt Nam trong tương lai không xa.

Ban Tổ Chức xin chân thành cảm ơn các Chuyên gia nước ngoài đến từ các trường đại học thuộc dự án Erasmus +, TS. Nguyễn Thị Hiền, Phó Viện Trưởng Viện Chiến lược Ngân hàng – NHNN Việt Nam, Ông Nguyễn Hoàng Minh – Phó Giám đốc NHNN Việt Nam chi nhánh TP Hồ Chí Minh, Ông Lương Hoàng Phan, Quyền Giám đốc Sáng tạo NHTMCP Quốc tế Việt Nam cùng toàn thể các diễn giả, khách mời đến từ Đại học Mở TP Hồ Chí Minh, Đại học Tài Chính Marketing, Đại học Công Nghiệp TP Hồ Chí Minh, Ngân hàng Nhà nước, Ủy ban Chứng khoán Nhà nước, Ngân hàng thương mại, Công ty chứng khoán và các Công ty Fintech đã tham dự và có ý kiến quý báu góp phần tạo nên thành công của hội thảo.

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<sup>1</sup> IMF (2018). Fintech and IMF. <https://www.imf.org/en/About/Key-Issues/Fintech>

Cuối cùng, chúng tôi xin gửi lời cảm ơn sâu sắc đến Ban Giám Hiệu Trường Đại học Kinh tế TP.HCM đã quan tâm và tạo mọi điều kiện thuận lợi trong quá trình tổ chức hội thảo. Xin chân thành cảm ơn Phòng Quản lý Khoa học và Hợp tác Quốc tế cùng toàn thể giảng viên – viên chức Khoa Ngân hàng luôn đồng hành và hỗ trợ hội thảo.

Kính chúc quý khách sức khỏe và thành công.

Trân trọng kính chào

**BAN TỔ CHỨC**

*(Nội dung bài viết hội thảo Quý khách truy cập tại trang web: <http://sob.ueh.edu.vn>)*

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# NURTURING THE VIETNAMESE FINTECH ECOSYSTEM: WHAT NEEDS TO BE IMPROVED?

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## ABSTRACT

Fintech is an undeniable trend globally and in particularly Vietnam. However, the reaction of the Vietnamese players are prudent in lacking of co-operation between fintech companies and banks, in less regulations adopted and the least is customers, having rare chances to exploit the benefits of fintech in Vietnam, recently.

The paper aims to provide an overview of the recent development of Fintech all over the world, making some comparison with the current status quo of the Vietnamese fintech ecosystem, trying to points out some threats but opportunities in developing the new industry, which may change completely the whole Vietnamese financial system toward efficiency and sustainability.

**Keyword:** *Fintech in Vietnam, Fintech startup, Fintech Ecosystem, Financial inclusion.*

## INTRODUCTION

Financial technology is not a new term in the financial industry. It was defined by Bettinger in 1972 as the technology which combines bank expertise with modern management science techniques and the computer. Traditionally, commercial banks have been applying financial technologies in providing customers with electronic services such as e-banking, mobile banking and online payment for decades. However, the phrase “Fintech”, which is the combination of “finance” and “technology”, has just been soaring in the financial industry and academic research recently. It was not until early in 2015 that financial world witnessed the bloom of fintech startups. Today, fintech is stated as a high profile emerging field and the most influential innovation in the financial industry. This innovation shapes the modern financial industry by introducing various solutions to reduce costs, increase convenience in using financial services and create a diverse competitive environment (The Fintech Revolution, 2015). The growth of the fintech industry has been

phenomenal. In a report by Deloitte (2017), investment in this industry from 2008 to 2017 reached the peak of about \$26.9 billion in 2016. Accumulatively, until the third quarter of 2017, about \$22.5 billion worth of funding for this industry was reported.

Along with the development of fintech startup movement, more and more definitions are proposed. There are different definitions of “fintech” in terms of activities, industry, technology, and so on. Industrially speaking, P.Schueffel (2016) suggested the definition of fintech as follows: “Fintech is a new financial industry that applies technology to improve financial activities”. On the other hand, as far as business is concerned, fintech is defined as the ecosystem of small startups offering technologically financial services to marketplace or financial institutions (Deloitte, 2017). Whatever the definition of Fintech, Fintech is becoming more and more popular, filling the gaps of traditional financial institutions in the economy.

In recent years, Fintech service providers in Vietnam have gain a significant attention of financial customers. Yet, to what extent has Vietnamese Fintech population developed and how will it spread in the future? Answering these questions, this paper aims to provide an introduction to the Fintech ecosystem worldwide and a systematic description in detail of that in Vietnam. The content is organized into three main parts. First, Fintech ecosystem around the world is introduces. Second, the paper would present the framework of a Fintech ecosystem theoretically. Finally, by gathering and analyzing statistics of elements that flourish Fintech ecosystem, in Vietnam, the paper will state opportunities and challenges in developing Vietnamese Fintech ecosystem.

## **GLOBAL FINTECH LANSCAPE**

### **The world map of Fintech industry**

Being a very young industry, Fintech has spread over the world with a meteoric rise. Although, it is believed that the foundation for Fintech developments has been established since 1866 with the launch of transatlantic transmission cables, which is the very first technological infrastructure for the financial industry, Fintech has just emerged since 2009, after the global financial crisis (Arner, Barberis, & Buckley, 2015). Within a decade, following the wave of start-ups, Fintech companies have had their appearance in many regions, from developed to developing countries. Some regions have become Fintech hubs, specifically, the UK, the USA, Hongkong/China and Singapore are known as the largest Fintech hubs in the world due to their leading companies, volume of investment in Fintech, and facilitated environment for Fintech developments (Alois, 2018), (T. Ankenbrand, 2018). Figure 1 provides the ten highest rated Fintech hubs around the world, from the ranking according to the “Global Fintech Hub Index” (GFHI), conducted by Zhejiang University to capture the landscape of global Fintech.



**Figure 1: The ranking of Global Fintech Hubs - 2018**

Region	GFHI		Fintech Industry		Fintech Consumer Experience		Fintech Eco-system	
	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Yangtze River Delta	1	81.2	2	84.7	1	79.5	2	77.2
Silicon Valley	2	79.7	1	93.2	6	39.8	5	74.9
Greater Beijing	3	76.8	3	80.0	2	67.9	4	75.4
Greater London	4	73.9	4	76.1	5	50.8	1	78.3
Guangdong HK-Macau Region	5	72.9	6	73.2	3	66.9	6	74.3
Greater New York	6	71.6	5	75.8	7	39.1	3	76.2
Greater Sydney	7	58.7	7	59.6	9	35.9	10	64.6
Singapore	8	53.9	8	54.1	14	22.3	11	63.4
Greater Boston	9	52.7	12	44.7	11	34.0	8	68.4
Benelux	10	50.7	13	41.6	15	17.1	7	72.3

*Source: Crowdfund Inside*

As indicated by this ranking report, among regions where Fintech developments are most dynamic, Yangtze River Delta has the highest GFHI score, followed by the Silicon Valley. Yangtze River Delta also earns the highest Fintech customer experience score, which measures the proportion of Fintech acceptance within the population. However, Silicon Valley is ranked as the No.1 for the most developed Fintech industry, considering the number of leading companies, volume of investment and geographical scale of operation. Greater London, being the Global Financial Centre, with its mature infrastructure of technologies and regulations, is in the top of ten best global Fintech ecosystems, and promises to be the leader for future Fintech developments. In fact, British Fintech startups are taking advantages of the UK entrepreneurial focused economy and government support (Alois, 2018).

Further comprehensive research produced by The Institute for Financial Services Zug (IFZ) of the Lucerne University of Applied Sciences also identified the regions which have the most potent Fintech ecosystems, which are attractive to locate Fintech businesses. This study concentrated its evaluations on four dimensions that are considered important to

Fintech entrepreneurship and innovation, including political (eg. visa restriction, corporate tax rate and other eight factors), economic (eg. domestic market scale, entrepreneurship index, Fintech adoption and other 15 criteria), social (e.g. expenditure on education, human capital, logistic performance and other 26 aspects) and technological factors (e.g. expenditure on R&D, researchers, online e-participation, and so on). The announced result (as in **Figure 2**) proposed that Singapore has the best Fintech ecosystem for entrepreneurs in terms of all dimensions. While Fintech is more sensitive to political and technological aspects than any other industries, the outstanding features of Singapore Fintech ecosystem, which are the country’s legal environment and technological advancement, are the features make it perfectly fit (T. Ankenbrand, 2018). Zurich, Geneva and London are ranked respectively in the subsequent positions. Similar to **Figure 1**, The US cities and Hong Kong are still in the top ten of this ranking.

**Figure 2: Global Fintech rankings by IFZ - 2018**



Source: Thomson Reuters Labs

It seems to be clear from the two ranking reports that European, American and Asian are the leading regions in Fintech movement, in which, Asia, specifically China is quite aggressive in fostering its Fintech ecosystem.

### Fintech companies

Fintech hubs in different regions around the world, until 2017, have developed a population of over 5,000 companies, operating in four main fields: banking and capital market (2001), investment management (410), real estate (1358) and insurance (1274) (Deloitte, 2017).

The banking and capital market segment gathers companies that could be classified into five groups. Those are companies that provide banking technological infrastructure to facilitate financial institution operations, e.g. application program interface (API) integration (e.g. Eurobits Technologies, Yodlee, Plaid and Kntomatik), AI and financial software developments (AdviceRobo) or big-data analytics (Amazon, Google, IBM, Oracle, SAP and Bud). The next group provides customers, both individuals and

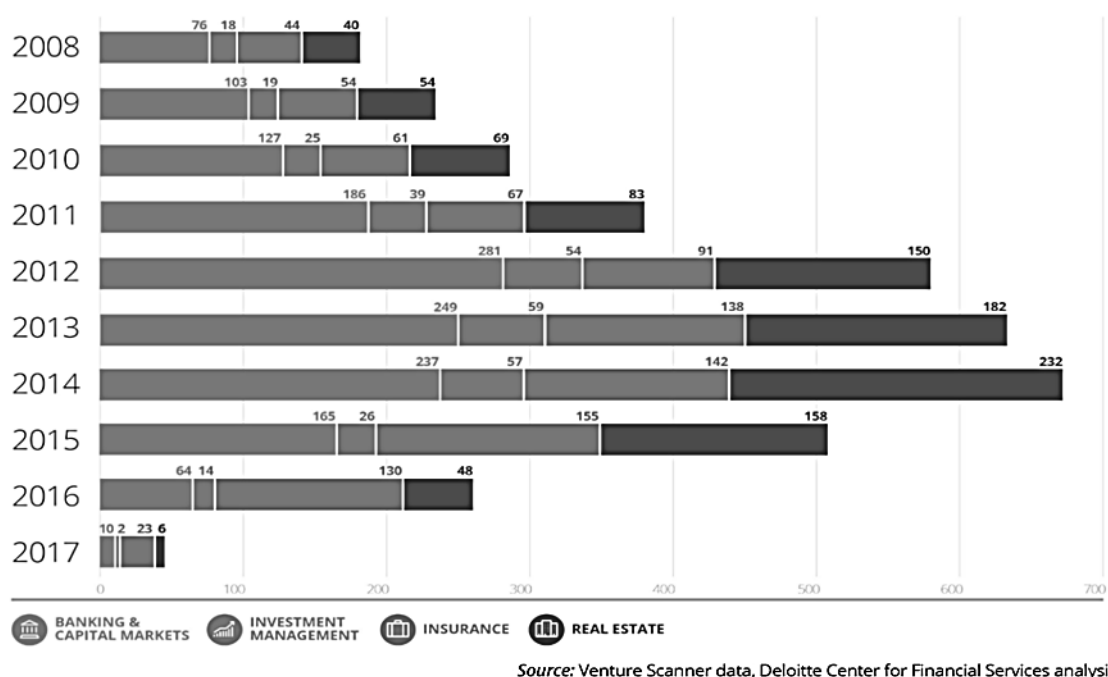
businesses, with basic banking services as deposits and lending (Qudian, Avant, Kreditech, FE Credit). The other group, which is called capital raising, offers customer new methodologies such as crowd-funding (with different types such as crowd-funding, crowd-lending, donation-based crowd-funding, and reward-based crowd-funding) or in-private market equity financing to raise funding (e.g. Ourcrowd, Lufax). Financial management services including personal financial management and management tools for medium enterprises are also the business of companies (Xero, Wave, Ant Financial, JD Finance) in the segment of banking and capital market. Finally, a vast majority of companies in this segment are those that provide services relating to payments such as developing technologies and services that make consumer payments, international money transfers and financial transactions easier, safer and more efficient (Ant Financial, Klarnain, MoMo, Square). Fintech payment companies also include not only crypto currencies companies such as ANX, Bitcoin.com, and Bittrex but also blockchain companies such as Digital Asset Holdings, R3 or Blockstream.

Fintech investment management companies are those that provide new instruments or information services that facilitate investors to make better investment decisions, as well as support portfolios managing activities. Some popular companies in this segment are 2iQ Research, Addepar, Kensho, IEX, and trueEX.

Fintech real-estate companies can either provide tools or platforms for real-estate transactions (for example, real-estate search engines for customers to search for commercial, rental or leasing real-estates) or property management (tenant management, home services and security, indoor 3D illustration, building maintenance, and so on). Some well-known names are Zillow Group Inc., which provide both updated information on housing available and communication channel for sellers and buyers. SS&C Technologies Holdings Inc. serves customers who want to search for rental properties, as well as provides property management). Fair Issac Corp. (FICO) makes personal credit scores more accessible, which speeds up real-estate transactions, especially when the buyers need to get a mortgage. The company also offer lenders assistance software such as decision management or debt management (Johnston, 2017).

Insurance is also a dynamic sector in Fintech industry. This sector includes companies which use big data and online platform to provide individual and business customers with life and non-life insurance products in both forms of traditional insurance and p2p model (peer-to-peer or social insurance). Some popular Fintech insurance companies are Clover Health, Kabbage, or ZhongAn. Some companies (e.g. Oscar, League) play the intermediate role, serving as marketplaces for people to search for insurance companies and make comparison among them, offering application that enable people to manage their insurance and make their claims immediately.

**Figure 3: Fintech companies established, from 2008-2017**



**Figure 3** illustrates the development of the global Fintech population by the number of newly established Fintech companies in each segment mentioned above. The number of startups in the industry increased steadily from 2008 to 2011 and then exploded from 2012 to 2014. In fact, nowadays, there are many well-known Fintech companies, founded in the period of 2012 to 2014. In the list 100 “leading global Fintech innovators”, 58% of those innovators were born in these years (KPMG & H2 Ventures, 2018). It is clear that most Fintech companies belong to the category of banking and capital markets, in which a vast number of companies offer products and services relating to payment activities, account for a proportion of 32% in this category (Deloitte, 2017).

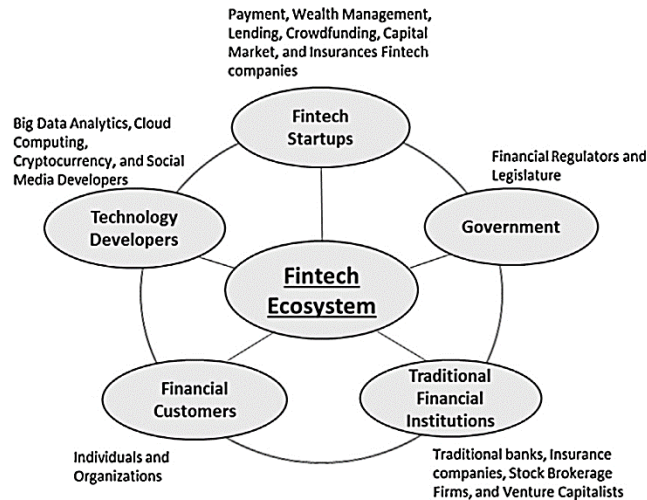
## FINTECH ECOSYSTEM DEVELOPMENT

With the rapid development of Fintech companies as well as the demand for Fintech services of its clients, a well-designed Fintech ecosystem is essential to help the market and financial system operate effectively, maximizing benefit to the customers (Diemers, Lamaa, Salamat, & Steffens, 2015).

### Critical participants in the Fintech ecosystem

Diemers et.al (2015) proposed five key participants in the Fintech ecosystem, including three actors in the core. Every subject needs to understand their roles and functions as well as work together to maintain the ecosystem as well as achieve its own benefits. Figure 4 illustrates the role and relationship between these five participants in the formation and maintenance of the Fintech ecosystem (Lee & Shin, 2018).

**Figure 4: Participants in the Fintech ecosystem**



Source: Lee and Shin (2018)

Three key stakeholders in a Fintech ecosystem are government, credit institutions and Fintech startups. In particular, the government acts as regulator, issuing legal documents and creating the regulatory environment that promotes the development of the Fintech ecosystem. This development includes an increase in the number of companies in the Fintech sector, thereby increase competition in the industry, leading to improve service quality, by promoting diversification. Financial institutions act as professionals in the financial sector and provide financing to Fintech in the form of direct, self-innovated or indirect investments by investing in or cooperate with Fintech startups. Finally, Fintech startup companies, the central entity in the ecosystem, offer innovative solutions or new technologies to deliver financial products. In addition to these three core subjects, two other entities are referred to as Fintech customers and technology developers, are also contribute to the development of the ecosystem. The acceptance of Fintech by customers is also the driving force and basis for the development of Fintech enterprises. Finally, technology developers make the operating environment of Fintech companies more convenient. With modern technologies such as intelligent mobile devices, cloud computing, big data, artificial intelligence, etc., the introduction of a new Fintech service to the market becomes simpler and faster.

### **The design of Fintech ecosystem**

Diemers et.al (2015), argued four essential designing elements to support the Fintech ecosystem developments.

Firstly, business environment should provide the Fintech community with quality facilities such as well-equipped infrastructure, available and affordable utilities. This condition helps to flourish the Fintech ecosystem’s operation by giving it an overall cost advantage. The ecosystem, in turn, will offer customers cheaper financial services. It is better for the business environment to have players who integrate and synergize with each

other. By making connections among players, a community is formed and widened, making it more attractive to employees, investors and finally, customers.

Secondly, the influence of the government to the ecosystem should be appropriate to its extent of development. In regions such as the U.K or the U.S, the Fintech ecosystem is relatively mature because of the development of financial industry and technological advancement. Most services are provided by the private sector. Therefore, the role of the government is setting and implementing regulations, ensuring the ecosystem to be able to operate smoothly. In contrast, for developing regions, with less-mature Fintech environments, the government should play a greater role across the entire ecosystem.

Thirdly, capital is just like food for the ecosystem to grow up. Main sources typically fund FinTech ecosystems are government aids; private equity, especially VC; Incubators and accelerators. In which, Government's financial aids should be seed funds to attract private capital to the ecosystem. Fundings from the government could also be used to support and encourage private sector to invest into the ecosystem. Incubators and accelerators are quite important to the development of the ecosystem, because they offer entrepreneurs high quality training and necessary funding to start their business up. Having good mentors also allows the startups to tap into funding from later investors like VCs better.

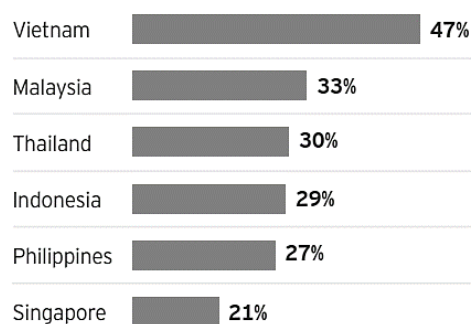
Finally, broad financial expertise and high quality financial as well as technological work force are indispensable for the ecosystem to develop. The experts will have their influence on both national and local regulations and policies as well as the success of Fintech startups by providing coaching, mentorship, and connections to entrepreneurs; counseling to traditional financial services suppliers and government. The high quality workforce will help to ease the startup progress from the stage of idea generation to commercialization and until the maturity.

## **VIETNAMESE FINTECH ECOSYSTEM DEVELOPMENT – OPPORTUNITIES AND CHALLENGES**

### **Players in Vietnamese Fintech ecosystem.**

Since 2017, 48 Fintech companies in Vietnam have operated in nine different areas, most of those companies (47%) provide payment services (Onepay, 123 Pay, VinaPay, MoMo). There are also a variety of other services such as alternative funding, including crowd-funding, crowd-lending, and so on (FundStart, Comicola, Betado or Firststep), Loan (LoanVi, Tima, Trust Circle), money transfer (Nodestr, Matchmove, Cash2vn, Remittance Hub), personal finance (Moneylover, Mobivi, Kiu), blockchain, data management (CircleBi, Trusting Social), POS management (iBox, Moca) and information comparison (BankGo, GoBear) (Hà et.al, 2018). By the beginning of 2018, the number of Fintech companies increased to 78 with 72% of them provide payment services (Phuong Anh, 2018). With this ratio, Vietnam is leading the ASEAN region with the density of Fintech companies providing payment services.

**Figure 5: Percentage of Fintech companies for payment in ASEAN countries**



Source: Tracxn, accessed on 9 December 2017

However, the number of Fintech companies in Vietnam compared to the ASEAN region is quite low. Singapore, one of the world's Fintech Hub, leads the ASEAN region, in term of the size of Fintech ecosystem, with 490 companies, followed by Indonesia with 262 companies. Malaysia is ranked as the third with 196 companies. The next is Thailand, 128 companies. The Philippines also has a much larger number of Fintech companies than Vietnam, with 115 companies (Ernst&Young, 2018).

Vietnamese commercial banks now tend to cooperate with Fintech companies to provide banking products. For example, VietUnion Online Services Joint Stock Company, the founder of Payoo payment gateway, now accepts bills via bank accounts such as Eximbank, HDBank, TienPhongBank, VPBank, LienVietPostBank, SCB, DongAbank and Navibank. Online Mobile Service Joint Stock Company, the operator of MoMo ewallet, is in cooperation with Vietcombank, VPBank, OCB, Sacombank, Eximbank and TPBank. By linking with Fintech services, electronic payment service of banks became more popular and more widely used in both urban and rural areas. In addition to payment services (Ipay, 123 pay, Payoo, Senpay), the combination of Bank-Fintech services are also active in the lending sector (Laonvi), investment funds (Fundstart, Comicola), personal finance Moneylover, Timo, Mobivi) or Point of Sale - POS (Hottab, Ibox).

### **Business environment**

The business environment includes both economic and social environment for Fintech ecosystem to develop. Economically speaking, Vietnam has been seen a strong growth in recent years and this flourishes the development of technologies in all industrial sectors, including finance and banking industry. Vietnam's GDP growth was 6.81% in 2017, increased from 6.21% in 2016 and exceeded 7% in the first half of 2018. During the period of the last 20 years, GDP growth of Vietnam has averaged more than 7%. Service sector is now developing gradually. In 2017, services accounts for approximately 41% of GDP, which is the largest proportion among the contribution to GDP of all industrial sectors (Deloitte, 2018). Within the Asia Pacific region, Vietnam is ranked at the No.3 among nations which has highest GDP growth rate, following China and the Philippines. Economic growth, led by the service sector, is a favorable condition for the development of Fintech startups. However, based on the value of GDP, in the Economic Health ranking

in the Asia Pacific, Vietnam is only ranked at 11th with the GDP worth \$216 billions (Rowan, 2017).

**Figure 6: Economic health of nations in Asia-Pacific**

Rank	Country	Total GDP(Billions)	GDP Growth	Unemployment Rate	% of Adults with a Bank Account	GDP per capita	Composite Score
1	China	\$11,439	6.8%	3.9%	97.1%	\$8,123	4.0
2	Japan	\$4,884	1.70%	2.4%	96.6%	\$38,901	4.6
3	Singapore	\$306	3.5%	2.1%	96.5%	\$52,962	5.2
4	Hong Kong	\$334	3.7%	2.9%	83.6%	\$43,741	5.6
5	South Korea	\$1,530	3.1%	3.3%	95.7%	\$27,539	5.65
6	Thailand	\$438	3.7%	1.0%	82.3%	\$5,910	6.0
7	Malaysia	\$310	5.8%	3.3%	84.1%	\$9,508	6.4
8	India	\$2,439	7.2%	6.1%	58.6%	\$1,710	7.2
9	Taiwan	\$571	2.8%	3.7%	Unknown	\$25,893	7.5
10	Indonesia	\$1,011	5.1%	5.5%	45.3%	\$3,570	8.0
11	Vietnam	\$216	6.5%	2.3%	39.5%	\$2,171	8.0
12	Philippines	\$321	6.7%	5.0%	37.1%	\$2,951	8.6

Source: FintechSingapore

In terms of operating costs, startups in Vietnam have a huge advantage over ones in the same region, since Vietnam was ranked at fourth among the countries with lowest operating costs in Asia Pacific. According to the ranking, Vietnam requires lowest wages and salaries as well as offers the most affordable living expense. However, in terms of borrowing costs, Vietnam is at ninth over 12 nations.

**Figure 7: Cost of doing business among Asia-Pacific nations**

Rank	Country	10-Year Government Bond Rates	Cost of Living Rank	Salary Expectation Rank	Composite Score
1	Taiwan	1.1%	6	Unknown	3.7
2	India	7.7%	1	Unknown	4.7
3	Indonesia	6.4%	4	3	5.0
4	Vietnam	4.4%	5	1	5.8
5	Malaysia	4.0%	2	4	6.0
6	Thailand	2.5%	7	5	6.3
7	Singapore	2.3%	12	8	6.5
8	China	3.7%	8	6	6.8
9	Hong Kong	2.1%	11	7	6.8
10	Philippines	6.5%	3	2	7.0
11	South Korea	2.8%	9	10	7.5
12	Japan	0.04%	10	9	7.8

Source: FintechSingapore



On the social side, according to statistics in 2018, Vietnam's population is now more than 95 million people, with young people in working age accounting for more than 50% (Deloitte, 2018). In particular, internet and mobile devices usage accounts for nearly 50% of the population. The number of banks per capita now stands at 3.8 per 100,000 people (Rowan, 2017).

According to The Asean Post, the strong economic growth, coupled with the wave of startups, young population, and high internet penetration and mobile devices usage rates, Vietnam may become a hub for Fintech startups in Southeast Asia. However, the economy and society in Vietnam still have limitations on the development of this ecosystem. In spite of the young population and the high tech usage rate, the level of acceptance and use of financial services and e-banking remains low. Most bank transactions are made at the counter. One of the reasons is the fear of financial and property security. Hundreds of financial crimes relating to banking accounts and cards have been officially reported each year since 2010, resulting to almost 1,000 people have been arrested. For example, in 2016, a report of \$25,000 lost from her bank account at VCB during night time due to a security loophole regarding the One Time Pass (OTP) model. The bank returned \$15,000, but \$10,000 was withdrawn in Malaysia by criminals and the bank could not intervene. Another case, a Vietnamese hacker has withdrawn almost \$2 million from different bank accounts by stealing and reselling personal data. The hacker was, then, caught in Guam, in the U.S.

### ***Government and regulatory support***

Vietnam is the 25th priority among countries that are chosen by World Bank to implement financial inclusion projects with the goal of having 2 billion people, in the global scale, who do not currently have access to banking and financial services participating in the formal financial system (Fintechnews VN, 2018). Therefore, Vietnamese government is very committed to build a sustainable startup ecosystem, in general, and Fintech startup one in particular. In 2013, Ministry of Science and Technology accepted to run the project named ‘Vietnam Silicon Valley’. This project aims to facilitate Vietnamese entrepreneurs by providing them with knowledge, skills, and networks to start up their business. The Ministry has launched National Agency for Technology, Entrepreneurship, and Commercialization Development (NATECD), a national platform that allows entrepreneurs to access training programs, mentorship, and financial aids. National Technology Innovation Fund (NATIF) is also an agency under The Ministry of Science and Technology, providing grants and preferential loans for projects relating to R&D, innovation, and technology transfer. In addition to self-developing programs, the government actively seeks for partnership and cooperation with foreign institutions. For example, Vietnam – Finland Innovation Partnership Program, acting as a joint fund by both governments, focuses on innovative companies aiming to growth internationally. The fund is currently in the end of its second phase through 2014-2018 with a budget of EUR 11 million, which has been spending on 18 innovative enterprises and 5 potential startups.

Local governments also pay attention to fostering the local startup ecosystem. In Ho

Chi Minh City, Saigon Silicon City Center, which is a complex area of 52 hectare, is specially constituted to support technological startups and firms that aim to international expansion. Investments in this Center are estimated to reach US\$ 1.5 billion by 2020. Mobile Applications Laboratory (mLab) East Asia was also launched by Ho Chi Minh City government to offer an incubation program that focuses on mentoring, technical training, access to equipment, and financing for mobile developers. In terms of finance, HCMC also offer several aids for startup projects. For example, SpeedUP is a VND 11.75 billion (about more than US\$ 500,000) fund, initiated by Ho Chi Minh City's Department of Science and Technology. There have been 14 startups received investments from the fund, ranging from US\$ 15,500 to more than US\$ 50,000. Moreover, HCMC is planning to launch a fund worth US\$45 million, helping thousands of startup projects sustain until the trial phase of their products. In Hanoi, The People Committee has also founded Startupcity.vn, an online platform for investors and startups, with details information of both partners (Dezan Shira at.el., 2018).

In spite of many favours from the government for the startup community in general and Fintech startups in particular, in terms of regulation, there are few official directives relating to Fintech activities, mostly relate to payment services and there is not any laws for Fintech. On 16/03/2017, SBV issued Decision No. 328/ QD-NHNN, establishing The Steering Committee and the assisting team in the field of Fintech. In addition, The Government of Vietnam is to implement projects in order to apply and develop technologies that will enable Fintech companies to develop. Some projects such as The National E-commerce Development Program in the period of 2014-2020 (Decision No. 689/ QD-TTg dated 11/5/2014), the project to support The National Innovative Startup Ecosystem until 2025 by the State Bank of Vietnam (Decision No. 844/ QD-TTg of May 18, 2016), the project on enhancing access to banking services for the economy (Decision No. 1726/ QĐ-TTg dated 05/5/2016) 9/2016), the project on development of non-cash payment in Vietnam in the period of 2016 - 2020 (Decision No.2545/ QD-TTg dated 30 December 2016), the application of science and technology for the manufacturing and trading industry until 2025, with a vision to 2030 (Decision No. 754/ QD-TTg dated 31/05/2017), establishing the Steering Committee on Financial technology (Decision No. 328/ QD-NHNN dated 16/03/2017), the revised project on the legal framework for the management and handling of virtual assets, electronic money, virtual money (Decision No. 1255/ QD-TTg dated 08/21/2017) (Hà at.el, 2018). In fact, Vietnamese Fintech ecosystem is still a newcomer among other regional and global Fintech communities.

### ***Access to capital***

In general, Fintech startup projects in Vietnam have access to a variety of investment funds. First of all is the investment from commercial banks, such as VP Bank, invested in FE Credit. This is followed by investment from local and foreign funds. Standard Chartered Private Equity Fund and Goldman Sachs Global Investment Bank invested \$28 million into M\_Service, a unit that provides MoMo e-wallet services, in 2014. Some other noticable deals are that VNG Communications Group has transfered all shares (62.25%) at VNPT

Electronic Payment Joint Stock Company (VNPT EPAY) to the Fund from UTC of Korea; Credit China Fintech (CCF), an integrated fintech provider in China, announced a \$ 12.73 million (nearly VND300 billion) purchase of 51% of the stake in Amigo Joint Stock Company. According to statistics from Tropica Founder Institute, the total value of investment deals involving Fintech startups in Vietnam in 2016 has reached \$ 129 million, representing 63% of the total investments in startups in many different areas. (Thanh, 2018). It is estimated that total investment in Fintech in Vietnam will reach \$ 8 billion by 2020 (Hynes, 2018).

**Figure 8: Number of Fintech incubators in ASEA countries**



It can be seen that within the ASEAN region, the interest of investors in Fintech startups in Vietnam is quite large. This shows the advantage for Vietnamese startups over those in other countries in the region. In addition, Fintech companies in Vietnam also have access to financial supports from other organizations within the region. For example, Mekong Business Initiative is a partnership program, established by the Asian Development Bank and the Government of Australia, focuses on non-banking financing, including venture capital, angel investments, and Fintech in Cambodia, Laos, Myanmar, and Vietnam. While there are a number of incubators, venture funds, and co-working spaces available for Vietnamese Fintech entrepreneurs, these are mostly in big city such as Ho Chi Minh City, Da Nang and Hanoi. Entrepreneurs other than those in these cities are hardly to approach these funding and cooperation opportunities.

**Financial specialists**

**Figure 9: Labor force quality among nations in Asia-Pacific**

	Country	Adults with Tertiary Education	Adults with at least Secondary Education	Local Availability of Training Rank	Composite Score
1	Singapore	42.9%	79.4%	1	1.7
2	Japan	29.9%	86.4%	4	2.7
3	Hong Kong	21.7%	78.4%	2	3.7
4	Korea	35.3%	82.9%	9	4.3
5	Philippines	26.6%	70.1%	6	5.0
6	Taiwan	Unknown	Unknown	5	5.0
7	Malaysia	16.4%	68.2%	3	5.3
8	Indonesia	9.2%	48.8%	7	8.3
9	China	8.8%	65.3%	10	9.0
10	India	9.9%	37.5%	8	9.0
11	Thailand	19.0%	44.8%	11	9.0
12	Vietnam	6.7%	65.0%	12	10.3

Source: FintechSingapore

From the above rankings, it can be seen that human resource is a weakness of Vietnamese Fintech ecosystem.

Currently, in Vietnam, there are about 248 universities, institutes, colleges (public and private) which provide degrees in finance and banking. After graduation, students can work at financial institutions like commercial banks, securities companies, non-bank credit institutions, insurance companies, funds and so on.

A survey by the Banking Training & Consultancy Institutions (BTCI) shows that the number of students enrolled in the finance and banking sector in 2012-2013 is about 29,000 to 32,000 and by 2016 the number of students could rise to 61,000. Despite the abundant human resources of banking and finance, recruiters of the banking system, especially commercial banks, still find it difficult to recruit qualified staff, especially for 3 positions of risk management, management and investment. Some banks still have to hire foreign experts to serve their business.

In fact, the State Bank lacks a team of specialists, who can forecast, develop strategies and orientations for the national banking system, inspect and supervise the financial and payment security. Financial institutions lack managerial staffs with professional qualifications, who can analyze, synthesize, understand the law to flexibly, independently handle problems. The fact is that there is a shortage of skilled staffs in modern banking management, financial analysis, inspection, internal audit, investment project analysis and appraisal, risk management, and so on.

## **CONCLUSION**

Fintech is a denial trend in the industrial revolution 4.0 where everything is connected and sharing on the cloud. Internet of Thing, Big data, Mega computing/ Cloud computing, Artificial intelligence and augmented reality will change the world by implementing new business models and re-defining the industries. The rapid changing forces the Vietnamese intuitions and regulators to think comprehensively about their core business and monitoring mechanism to adapt or to be excluded out of the main stream. The appropriate approach is to think “lean”, build-measure-and learn quickly with an open mindset. As with online banking, mobile banking, online payment system, and so on, the new technology brings always pros and cons, but the trend is irreversible. We, the Vietnamese, have to be open to adapt, but to be wise in choosing what, when and how those Fintech trends can develop out financial system effectively and sustainably.

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