



**Future
Fintech**

**WORLD
FINANCIAL
TECHNOLOGY
DIGEST**

2018 | JUNE



PAYMENT MARKET GIANTS TESTED THE LAUNCH OF A COM-MODITY MOBILE WALLET

NXP Semiconductors, in cooperation with Mastercard and Visa, announced the successful introduction of the MvWallet 2GO solution, which allows the goods manufacturer to integrate a payment system into any portable device. The German manufacturer of elite accessories Montblanc was the first to introduce the technology.



A STARTUP LAUNCHED A LINE OF MULTICARDS FOR SMALL AND MEDIUM-SIZED BUSINESSES

Pentax announced the release of MasterCard multicards for small and medium-sized businesses. Penta's clients will now be able to issue embossed cards for company's expenses related to corporate service accounts. For each card individual amount limits and expense items can be set up.



MASTERCARD AND VISA ANNOUNCED COOPERATION WITH ZELLE

Zelle money transfer service entered into an agreement with payment market leaders about an automatic integration of its services into payment cards. Zelle is used by 95 mln people, who can instantly transfer money via their phones and emails.

AN APP FOR JOINT PAYMENTS WAS LAUNCHED IN AUSTRALIA

Beem It app allows users to jointly pay for bills or meals using traditional debit cards and to collect money for private needs, and has a list of services for small businesses. The startup is a project of the three largest banks in Australia and provides its services for free.



BPCE SIGNED AN AGREEMENT WITH TRANSFERWISE

The second largest bank in France by capitalisation announced the start of its cooperation with TransferWise. BPCE integrates the Transferwise API into its mobile banking app. BPCE clients are now able to send funds to 60 countries around the world via the app for a fee of about 0.5%.

ANOTHER PAYMENT SYSTEM TO ENTER THE US MARKET

Paysafe, a vendor of virtual cards for individuals and payment solutions for small businesses, was launched in the US. The company provides push payments for more than four billion accounts globally.

DEALS

MICROSOFT ACQUIRED GITHUB

The deal worth \$7,5 bln is to be fully completed by the end of this year. GitHub CEO, Chris Wanstrath, will continue his career at Microsoft, working on strategic software initiatives of this IT giant. He believes that Microsoft and GitHub are equally attentive towards developers, and partnership with the IT corporation will contribute to GitHub's service development.



ADYEN'S IPO HAS COMPLETED IN EUROPE

Payment services provider Adyen sold 13,4% of its shares for €947 mln. As a result of the IPO, the company capitalisation reached €13 bln. Last year the service processed payments worth €108 bln and its profit amounted to €900 mln.

BIOMETRICS



A HUMAN EYE CORNEA WAS PRINTED

University of Newcastle announced the first ever successful 3D printing of shapes closely resembling human corneas. The growth of stem cells will further ensure the creation of a real cornea. According to the scientists, the technology allows for the unlimited creation of cornea with unique characteristics of each patient and will soon become widespread.

SECURITY SYSTEM BASED ON HEART RHYTHM BIOMETRICS HAS BEEN DEVELOPED

Irish project agency Layer announced the release of the Safe system, which identifies a user when they touch a special zone on the device. At the moment, the technology is successfully applied in another project of the agency, the Trove cryptocurrency wallet.

CRYPTOCURRENCIES

BITTREX INTRODUCED CRYPTOCURRENCY PAIRS WITH A FIAT DOLLAR

Residents of Washington, California, Montana and New York are now able to trade pairs of a fiat dollar and Bitcoin, Tether and TrueUSD on Bittrex. The exchange representatives noted the attentive work of the regulators when checking the business processes and finances of the company and assured that they will be gradually offering other new opportunities to its customers.



NEW BITCOIN CORE RELEASE

Bitcoin Core developers introduced a new software version 0.16.1. The update will not affect the existing wallets, but the current version of the software will be required for wallet creation in future versions. The 0.16.1 version allows for size adjustment of the "blockmaxweight" block instead of the controversial "blockmaxsize" size restriction option.





ETHEREUM AND BITCOIN WILL NOT GET A SECURITIES STATUS IN THE US

William Hinman, Corporate Finance Director of the Securities and Exchange Commission (SEC), said that cryptocurrency, despite the self-designation of a “coin” or “token,” has the property of a commodity, not a security, and therefore it cannot be registered with the SEC. The official presumed that cryptocurrencies such as Ethereum can be attributed to the competence of the US Commodity Futures Trading Commission (CFTC).



MOBILE VERSION OF THE NEW BITCOIN WALLET FOR IOS RELEASED

An open-source wallet was developed by a team of the Rawtx startup developers.

An app with a user interface generates QR codes and invoices, supports lightning payments in the test network, and provides statistics.

PILOT TRANSACTION OF IMMEDIATE WITHDRAWAL OF CRYPTOCURRENCY TO A FIAT BANK ACCOUNT PERFORMED

ORCA fintech startup withdrew

Ethereum from Bittrex on to a EUR account. The startup team emphasises the importance of integrating such solutions for the mass user.

CRYPTOCURRENCY INDEX FUND WAS LAUNCHED IN THE US

US accredited investors are now able to participate in the cryptocurrency index fund created by Coinbase. Coinbase, the largest cryptocurrency player in the US, granted its investors access to all assets represented on its trading platform, weighted by the volume of their capitalization.

BLOCKCHAIN

MASTERCARD PATENT APPLICATION FOR A BLOCK-CHAIN-BASED SYSTEM FOR THE TOURISM INDUSTRY APPROVED IN THE US

Tour operators will send their clients’ requests and the tourists will be able to choose the most suitable terms of service using blockchain. The application to the US Patent and Trademark Office (USPTO) underlines the impact of the product on optimising overall industry costs due to lower marketing and advertising costs.

BLOCKCHAIN WILL ENSURE US STATE SECURITY

The Factom startup received funding from the US Department of Homeland Security (DHS) to develop a blockchain-based solution for integrating data from cameras and sensors. The solution is designed to work in various climates and weather conditions. The data is supplied by the US Border Service.



WALMART PATENT APPLICATION FOR A BLOCKCHAIN-BASED POWER GRID APPROVED IN THE US

All transactions within one grid will be recorded on a distributed ledger, thus the network owners will be able to track the amount of electricity consumed by a particular device. Each device will get a certain amount of cryptoassets to purchase power for the present or future settlement period.



BREWING GIANT ANNOUNCED THE LAUNCH OF A BLOCKCHAIN BASED ADVERTISING CAMPAIGN

AB Inbev (Budweiser, Bud trademarks) uses the Kiip blockchain-based solution for its advertising campaigns. The app reduces time for tracking the prices, audience engagement, clicks, and other metrics. The company claims that blockchain helped them fight fraud and increased the transparency of advertising costs.



FUJITSU DEVELOPS A DECENTRALISED DATA STORAGE SYSTEM

Following successful tests on the transfer and storage of digital assets, the Japanese IT giant announced the development of a blockchain-based system of tokenised assets for a real economy sector. The company noted that it would manage to reduce the load on data centers, as customer transactions information will be stored in a decentralised database.

KOREA TO DEVELOP BLOCKCHAIN

The Ministry of Science and Information Communication Technologies of the Republic of Korea presented a strategy for the blockchain development through to 2022. The document proposes training for 10,000+ specialists and creation of 100+ new companies.



TAIWANESE BANK INTRODUCED AN ETHEREUM-BASED PAYMENT FEATURE

Taipei Fubon Commercial Bank provided the restaurants and shops of Taipei with an Ethereum-based acquiring solution as part of its trial programmer. After the launch of the new feature, the number of transactions increased by 4 times, and the time required to complete a transaction was reduced to 1 second.



ANT FINANCIAL LAUNCHED CROSS-BORDER BLOCKCHAIN PAYMENTS

Ant Financial, Alibaba's processing unit, launched a blockchain-based cross-border settlement service. The first transactions were made with AliPayHK and the GCash app. Transactions get processed by the system in 3 seconds.



ETHEREUM CO-FOUNDER TO CREATE A BLOCKCHAIN-BASED NEWSPAPER

Joseph Lubin used his company ConsenSys to invest in a startup called Colorado Sun, which is engaged in the creation of an electronic blockchain-based newspaper. Each publication will be recorded in a secure digital ledger and form a new block. Along with this it was announced that a token was created the owners of which will be granted voting rights in the project.

REGULATION



POLAND CONFIRMED THE LEGITIMACY OF CRYPTOCURRENCIES ACROSS THE COUNTRY

Following the enforcement of the law on combating financing of terrorism and legalising unjust enrichment, the Financial and Budgetary Supervision Service of Poland (KNF) reported that the circulation of cryptocurrency in Poland is absolutely legal. Nevertheless, Polish cryptocurrency exchanges report new legislation associated problems when working with local banks.



QUEBEC SUSPENDED REGISTRATION OF MINING FIRMS

The authorities of the city known for low electricity tariffs due to its advanced hydropower industry will not register new mining companies before the introduction of the new regulations in the industry that are under development. It is expected that electricity tariffs will grow and power consumption allowance will be limited for miners. Companies that are already registered will continue their operation in the city as is.

THAILAND LEGALISED SEVEN CRYPTOCURRENCIES

The Securities and Exchange Commission of Thailand approved a list of currencies tradable on cryptocurrency exchanges that can be used for ICOs. These are Bitcoin, Bitcoin Cash, Ethereum, Ethereum Classic, Litecoin, Ripple and Stellar. The regulator justified its choice by a reliable investment reputation and high liquidity of these cryptocurrencies.

DELOITTE: WHAT IS REGTECH?¹

Deloitte experts tell how companies can use RegTech's capabilities in their business processes. The report is based on research and interviews conducted in several European countries.

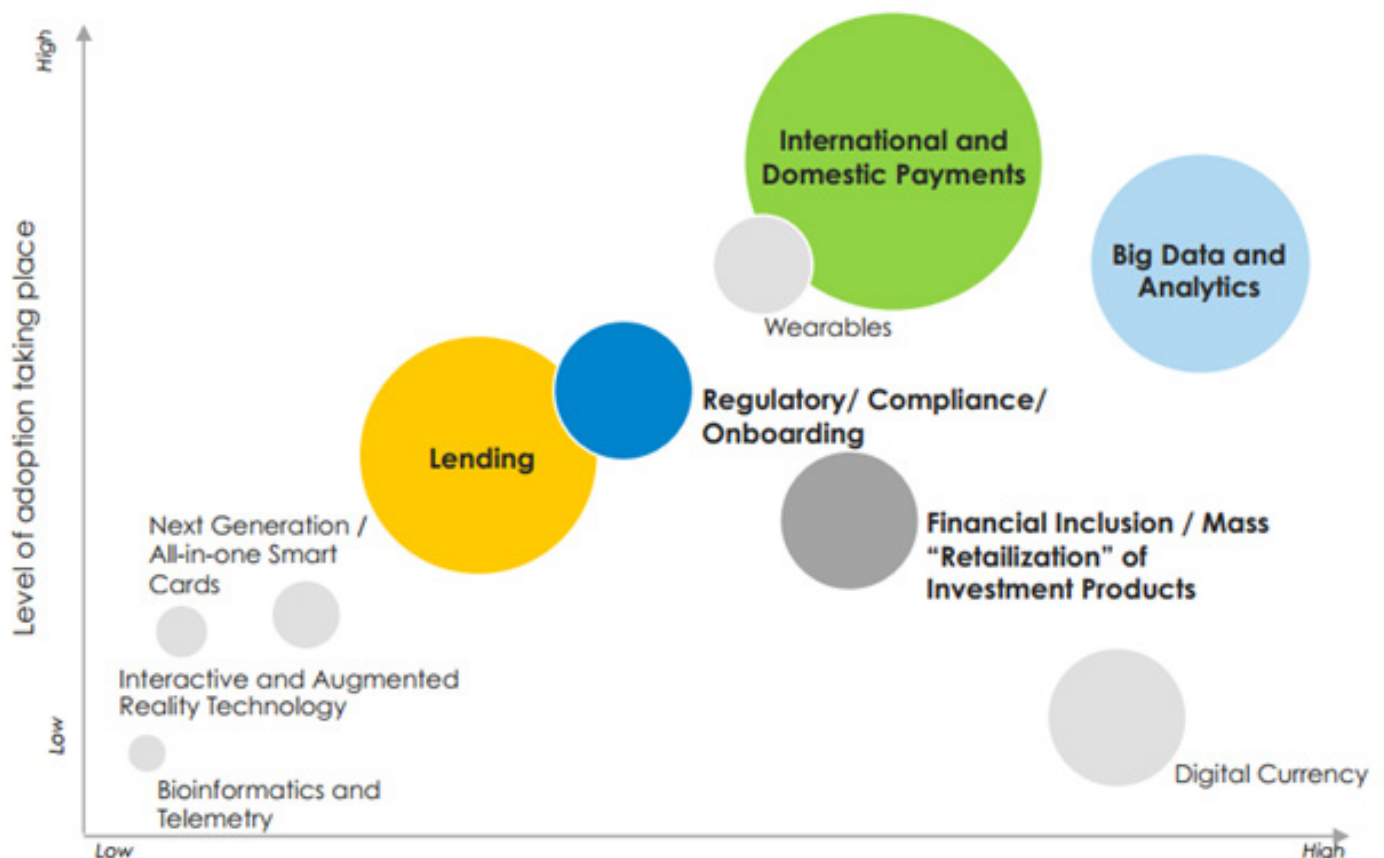
RegTech is an industry of regulation that is rapidly developing with information technologies. Technologies have been used in regulation for a while now, but RegTech has emerged as an independent industry only recently.

HOW IS REGTECH USEFUL?

1. Flexibility – cumbersome and intertwined arrays of data can be unraveled and rearranged. ETL (Extract, Transfer, Load) technology is used to do so.
2. Speed – reports are quickly generated and launched.
3. Integration – any problem is split into short time intervals.
4. Analytics – RegTech deeply studies large data and regroups information for each specific task.

According to Kent Mackenzie (director of Deloitte-Edinburgh), the use of cognitive technologies and advanced analytics in RegTech makes it very interesting for services related to interpretation of requirements, compliance control and automation reporting.

FINTECH TO REGTECH



¹ <https://www2.deloitte.com/ie/en/pages/financial-services/articles/RegTech-is-the-new-FinTech.html>

WHERE IS REGTECH APPLIED?

RegTech enables top managers to improve business efficiency by updating obsolete systems. However, like any technology, RegTech is not a panacea for all the problems associated with compliance requirements. At the moment, RegTech tools are efficient in the following areas:

- gap analysis in legislation/regulation
- departmental control
- administrative management of information
- transaction reporting
- document management
- regulatory reporting
- enterprise management
- personnel management
- storages of data risks

The potential of these tools and RegTech in general has not been sufficiently understood by business yet. However, the authors of the report believe that the technology has a great future. In the short term, RegTech will help companies automate routine tasks and reduce operational risks associated with compliance reporting. In the long term, it is a global provision of regulatory compliance with risk management in this field.

OLIVER WAYMAN: SCALABILITY OF CRYPTOCURRENCIES: YES OR NO?²

According to the authors of the report, the scalability of cryptocurrencies is no less important than their security. Can the most common cryptocurrency, Bitcoin, reach millions of consumers around the world? Only an affirmative answer to this question will allow the creation of a viable and dynamic digital market.

The scalability of cryptocurrencies consists of two aspects:

- 1) scalability of the transaction numbers;
- 2) scalability of the infrastructure.

The first aspect is important for users if we are talking about making cryptocurrencies a means of daily consumer payments; the second is essential for the structure of the entire industry, in order to make cryptocurrencies a generally accepted “equivalent of exchange.”

From the everyday user’s standpoint, Bitcoin seems to be scalable right now. But the problem is that the dynamics of the industry development favors large players. This hinders the healthy growth of the crypto industry, causes problems with confidence, and undermines the general consumer appeal for the blockchain network.

² <https://www2.deloitte.com/ie/en/pages/financial-services/articles/RegTech-is-the-new-FinTech.html>



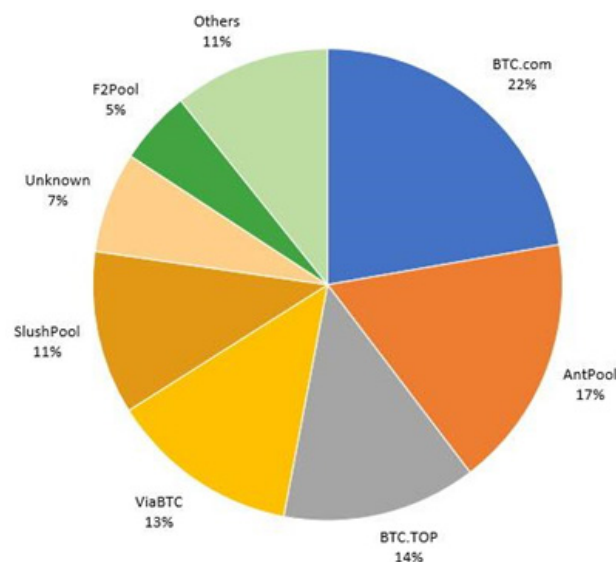
PARADOXES OF GROWTH

To date, Bitcoin partially solves the problem of trust between the parties involved in the transaction, regardless of their number. However, according to the rules of blockchain operation, it is up to the one who controls more than 50% of the computing power of the network to decide. The best solution for trust and stability within the growing network is a large number of small miners (low concentration level). However, the pace of the industry development drags the network in the opposite direction: high costs and continuous investment in new equipment lead to the fact that small players do not keep up with growth rates. As a result, we have a high concentration of mining capacities in the hands of two or three mining monopolists.

EXAMPLE:

The GHash.io pool reached 51% of the processing power in 2014. Then the Chinese miners set up a committee to monitor concentration in the blockchain network – no more than 40% per pool. But this did not help: due to the block reward decrease, along with changes in the mining mechanisms, small players withdrew from the process, and 55% of the country's processing facilities in China were controlled by only three pools by January 2018: BTC.com, AntPool and BTC.TOP (see Figure 1). Such a high concentration makes giant miners an easy prey for cyberattacks.

BITCOIN NETWORK COMPUTING DISTRIBUTION (JANUARY 2018)



HOW SCALABILITY CAN BE IMPROVED

The best solution for improving scalability is being developed in several directions at once. There are three main technical capabilities available today for scalability improvement:

- 1) increase in the block size
- 2) implementation of another mechanism for block verification
- 3) adding new layers to the basic protocol



INCREASE IN THE BLOCK SIZE

This increases the number of transactions in the block. This automatically shortens the transaction queue, verification time, and transaction fees. This solution is already implemented in Bitcoin Cash.

Shortcomings:

- 1) increase in the block size leads to the growth of the cryptocurrency volume, and the blocks again become too small at some point; a new agreement between the players to increase the block will be required, which is not easy, since all players will have to simultaneously change the software;
- 2) increase in size has a negative effect on the reliability and integrity of the network. Big blocks need more time to reach all nodes, simplify synchronization, and recognize threats;
- 3) miners will need more powerful equipment and a stronger broadband connection; this will reduce the number of nodes in the network and, as a result, Bitcoin will get concentrated in the hands of large players, which will make it less open and inaccessible.

IMPLEMENTATION OF ANOTHER MECHANISM FOR BLOCK VERIFICATION

This approach is based on the logic of the cryptocurrency function. Changing this logic can drastically affect the entire crypto industry. The Bitcoin logic can be called “proof-of-work”: the only new valid block is the first block from those translating the efficient cryptographic solution to the complicated task into the network. The miner is proving that they are able to cope with the work. Following this logic, miners gain computational power, move to the territory of low power prices, and spend a huge amount of power in competition for the “reward for the block” there. The alternative to the “proof-of-work” is the “proof-of-stake”. The mechanism is as follows: new blocks are created depending on the user’s “stake” in the network; it does not require large computing powers and energy, because the mining pace is slowing down. As the result, the fees for the transaction are lower, and transaction clearance is much more efficient.

Shortcomings:

The proof-of-stake urges participants to use cryptocurrency and get a reward; this leads to the formation of “cryptocurrency millionaires”, i.e. ultimately to centralization. And then the problem of scalability arises again. It is a kind of a vicious circle, so cryptocurrencies still prefer the “proof-of-work” logic.

ADDING NEW LAYERS TO THE BASIC PROTOCOL

Lightning Network is the third approach to the problem of scalability in the field of cryptocurrencies. Lightning Network creates new layers in the Bitcoin protocol: channels of bidirectional exchange between nodes. This speeds up the transaction verification, reduces fees and multiplies the number of transactions per second. The mechanism: channels are opened between the participants in the transaction, the funds in them are “put on hold” until all transactions passing through the channels are settled.



Shortcomings:

- 1) amount put on hold in the cell can be much larger than the transaction that the user tries to execute;
- 2) transaction routing requires high node power and therefore centralizes traffic on a limited number of large hubs. Again, we bounce back to the problem of scalability.

The Bitcoin community still considers the third solution one of the best, despite its shortcomings. In general, analysts emphasize that while each of the proposed measures has the potential for increasing scalability from the standpoint of users, altogether they will generate a cascading effect, which again centralizes the network. The cryptocurrency community will need at least one year to test these options, but with a high degree of probability it can be said that until an optimal solution is found, Bitcoin cannot be considered as a reliable alternative to existing means of payment, and cryptocurrencies cannot be considered scalable while large miners retain all capacities.

MCKINSEY: ASIAN DIGITAL BANKING MARKET: WHAT'S THE NEWS? ³

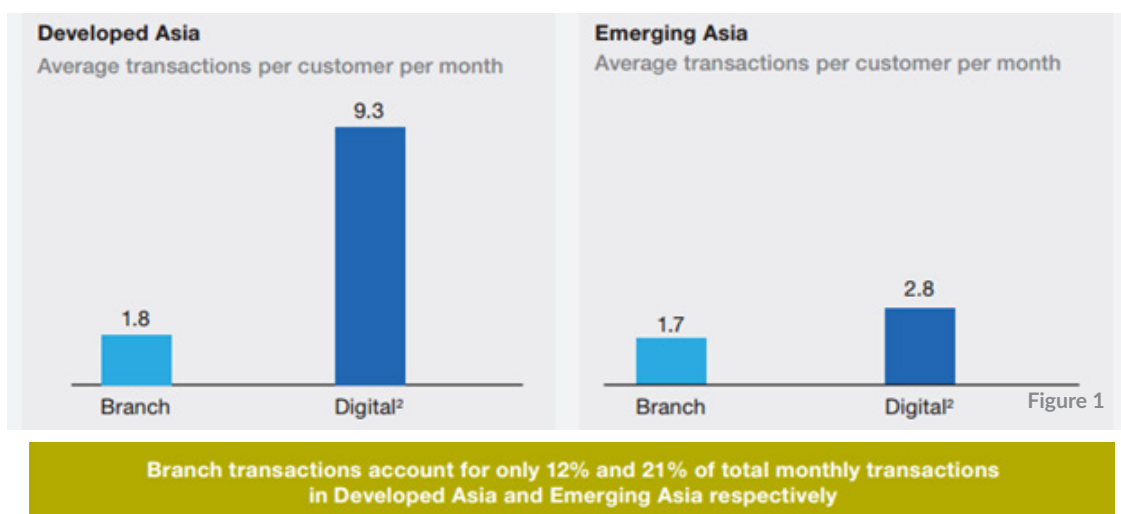
The authors of the article analyze changes in client behavior in relation to digital banking services and the use of fintech solutions for payments in the Asian region. The report of the experts of McKinsey Asian branches is based on a survey of 17,000 respondents in 15 markets of the region.

Analysts believe that there has been a clear shift towards digital channels in the past couple of years in Asia. Bank offices account for only 12-21% of monthly transactions (Figure 1).

1. Developed Asia: Australia, Hong Kong, Japan, New Zealand, Singapore, South Korea, Taiwan.
2. Emerging Asia: China, India, Indonesia, Malaysia, Myanmar, Philippines, Thailand, Vietnam.

ACROSS ASIA, DIGITAL TRANSACTIONS ARE 1.6 TO 5 TIMES AS FREQUENT AS BRANCH TRANSACTIONS

Chanel usage frequency



Note: N = Developed Asia (4,562, 2014; 4,540, 2017); Emerging Asia (10,467, 2014; 12,532, 2017).

1. Refers to monthly usage of ATMs, branch/call centers, internet banking, and smartphone banking

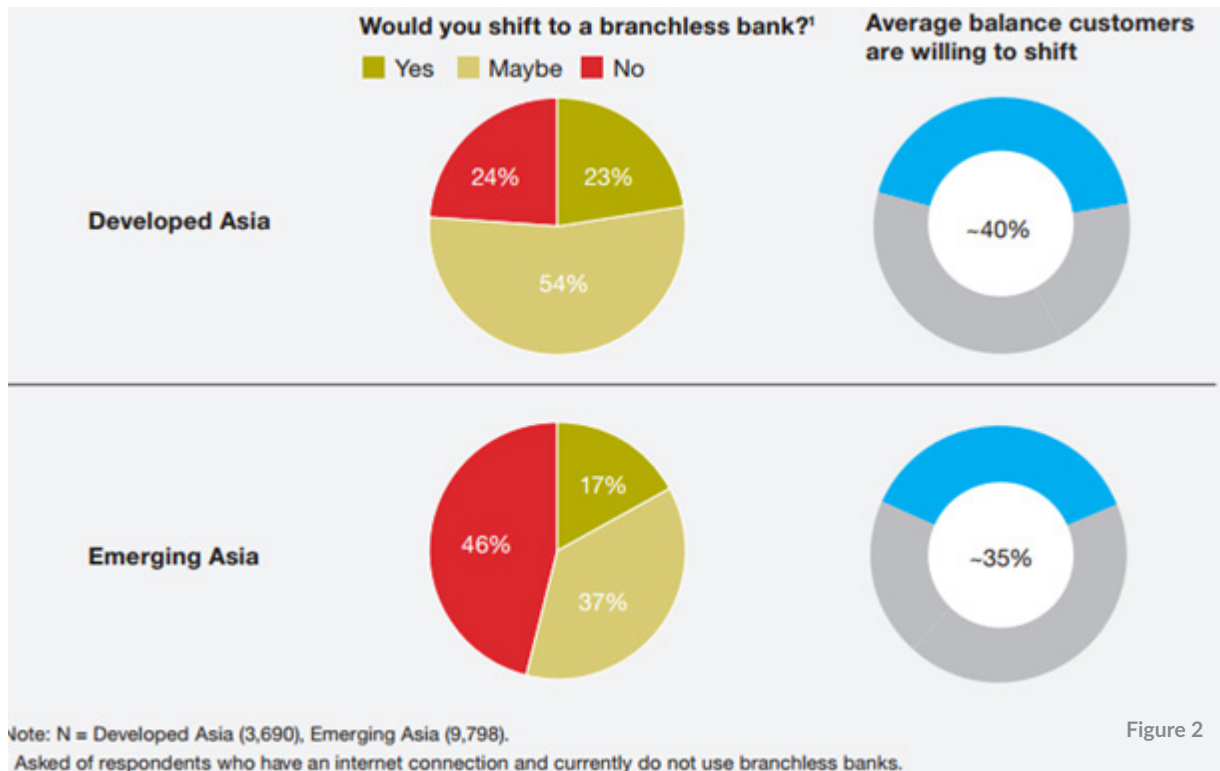
2. Includes internet and smartphone transactions

³ <https://www2.deloitte.com/ie/en/pages/financial-services/articles/RegTech-is-the-new-FinTech.html>



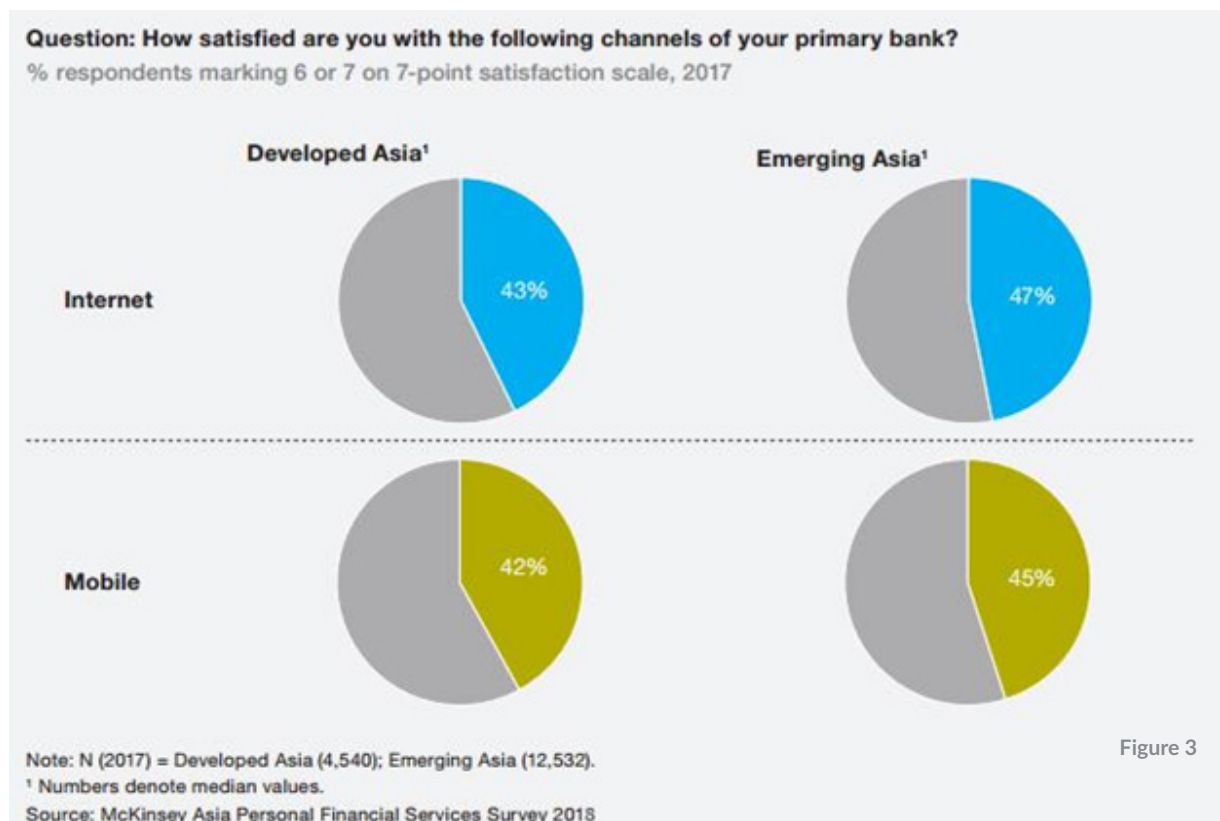
The results of the McKinsey survey indicate that 55-80% of Asian clients consider opening a remote bank account; of which 35-40% are ready to place funds in a digital wallet (Figure 2).

A SIGNIFICANT PROPORTION OF CUSTOMERS WOULD BE WILLING TO SHIFT 35% TO 40% OF THEIR WALLET TO A DIGITAL-ONLY PROPOSITION



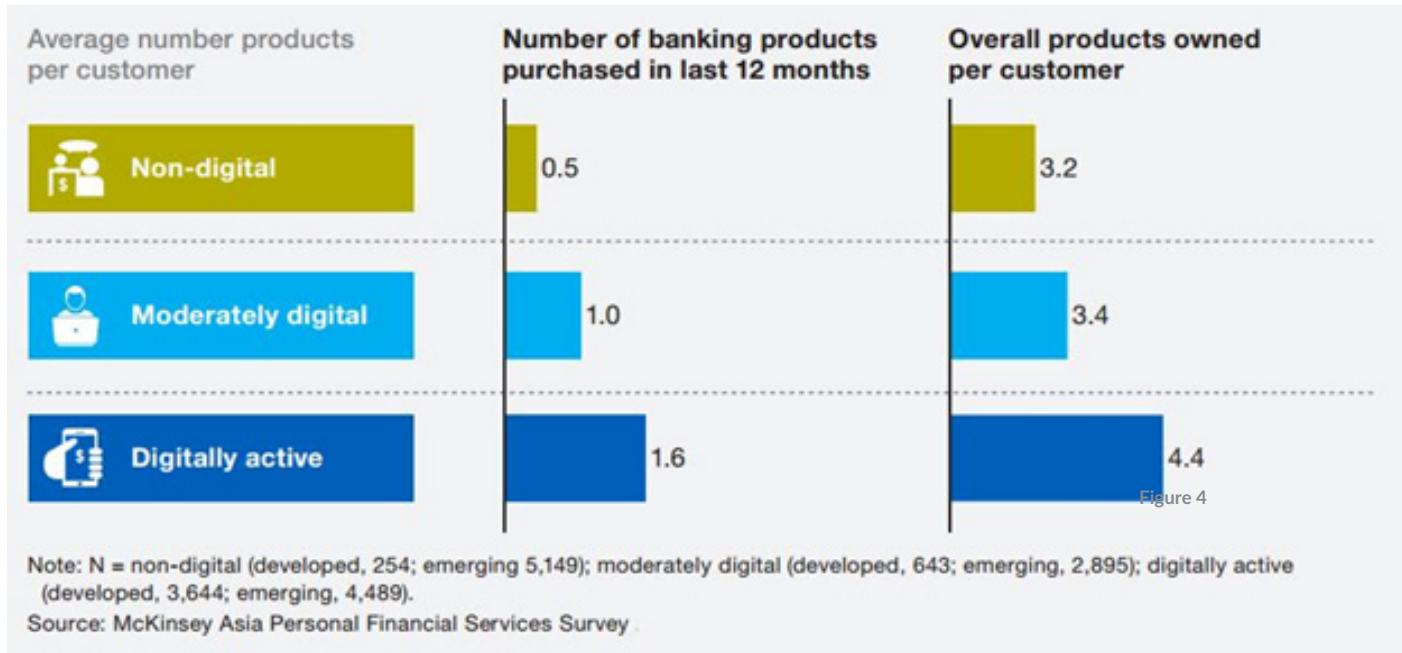
According to the analysis, satisfaction with digital services in Developed Asia is slightly ahead of the similar indicator in Emerging Asia, but even in the former it has not yet reached 50% (Figure 3).

DIGITAL CHANNEL SATISFACTION HAS A SIGNIFICANT POTENTIAL TO GROW



The research has shown that customers with high digital activity purchased an average of 1.6 banking products during the year, and the rest of the customers purchased only 0.5 products. The first category of consumers in total bought 1.5 times more bank products in comparison with the second category (Figure 4).

DIGITALLY ACTIVE CUSTOMERS BUY AND OWN SIGNIFICANTLY MORE PRODUCTS PER CUSTOMER THAN OTHER CUSTOMERS



According to the survey from late 2017, the percentage of digital consumer activity in developing countries in Asia has doubled compared to 2014. It grew by more than 20% in developed Asia over the same period. With the expansion of access to digital platforms, consumers in Asian emerging economies began to share more data with banks in exchange for customized offerings (Figure 5).

