



**Future
Fintech**

**WORLD
FINANCIAL
TECHNOLOGY
DIGEST**

2018 | MAY



PAYPAL BUYS IZETTL

PayPal payment service acquired iZettle, a Swedish developer of mPOS terminals, for \$2,2 bln. PayPal managers are confident that the deal will help promote the service in the SME segment and boost the number of transactions performed by individuals.



REVOLUT OFFERS TRANSFERS WITHOUT SHARING INFORMATION

Revolut mobile bank launched a service called Near Me. It allows users to transfer funds without adding a person to their contacts. All they need is to turn on the scanner that will automatically detect other Revolut customers nearby and allow selection of a desired user to complete the transfer.

CIRCLE RAISED \$110 MLN IN INVESTMENTS

Circle cryptostartup raised \$110 mln during their investment round. Major participants of the round were IDG Capital, Breyer Capital, General Catalyst, Accel, Digital Currency Group and Pantera. Goldman Sachs invested in the company in the previous round.



MONZO ENABLED APPLE PAY

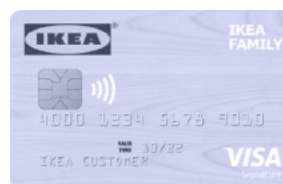
British bank startup Monzo finally added Apple Pay to its mobile app. Despite stating that they would enable Apple Pay earlier, the bank managers postponed it until now.

INSTAGRAM LAUNCHED A SERVICE FOR ELECTRONIC PAYMENTS

Instagram added direct payments to their app features. Users can save their card details and buy products right in the app. The new feature is currently being tested in the US.

MASTERCARD TO MONITOR THE CONDITION OF CARS

U.S. Bank began testing a new Mastercard software solution for cars. The new service features include automatic data collection about car condition along with all costs related to its operation. Managers of corporate car parks are expected to use the service.



IKEA ISSUED A CREDIT CARD IN PARTNERSHIP WITH VISA

IKEA group of companies launched a new financial product: IKEA Visa Credit Card. Its users will get a 5% cashback for using the card in IKEA stores. 3% cashback is provided for the purchase of other goods. Card issuance comes as part of a project to provide financial products to IKEA customers.

PAYPAL TO BE ADDED TO GOOGLE SERVICES

Cooperation between Google and PayPal is moving to the next level. The payment service will now be used as a payment method in Google Play, Google Store and YouTube apps.



BIOCOIN AND TALKBACK ISSUED PAYMENT CARDS

BioCoin cryptostartup and TalkBack banking services startup issued a cryptocurrency card that allows users to pay for any goods and services both in roubles and in BioCoin tokens. BioCoin also created a bonus loyalty system for the card. The card became the first legal instrument for exchanging cryptotokens in Russia.

CAMBRIDGE BLOCKCHAIN RECEIVED INVESTMENT FROM FOXCONN

Investors in the venture division of Foxconn, Partech Ventures and Digital Currency Group invested \$7 mln in the blockchain startup called Cambridge Blockchain. The startup develops solutions for identity verification for large enterprises.

BLOCKCHAIN

MTS FLOATED ITS BONDS USING SMART CONTRACTS

MTS, the Russian mobile services provider, floated its bonds worth 750 mln rubles using smart contracts. This is the first full-cycle deal in Russia that includes cash settlements on a “delivery vs payment” basis using a distributed ledger technology.



WALMART OBTAINED A PATENT FOR BLOCKCHAIN MARKETPLACE TECHNOLOGY

Walmart patented a marketplace technology based on blockchain solutions. It is expected that the service will allow customers to resell their goods after use.

IEXEC AND INTEL ANNOUNCED A PARTNERSHIP

iExec, a decentralized cloud computing platform, will now partner with Intel to develop confidential off-chain computing. The decentralised platform created using Intel SGX technology provides high security for transmitted data and simultaneously processes financial information.



FIRST BLOCKCHAIN-BASED SWEEPSTAKES CREATED A GAME WITH SPECIAL TOKENS FOR THE WORLD CUP 2018

CryptoCup, the first blockchain-based betting terminal, launched a game dedicated to the World Cup 2018. World Cup tokens will be released only in the course of the competitions, and lucky token holders will receive their winnings after the event.

ENTERPRISE ETHEREUM ALLIANCE RELEASED A CORPORATE BLOCKCHAIN PLATFORM

The non-commercial alliance Enterprise Ethereum launched a cross-platform open-source blockchain system called Enterprise Ethereum Client Specification. The platform is expected to create a reliable environment for the introduction of smart contracts. Client Specification allows users to create their own blockchain systems.



AMERICAN EXPRESS INTRODUCED A BLOCKCHAIN-BASED LOYALTY PROGRAM

The American Express Corporation together with Boxed fintech company revealed plans to transfer their loyalty program on to blockchain. The Hyperledger blockchain platform will be used to create special loyalty programs for American Express cardholders.

CRYPTOCURRENCIES

FIRST INTERNATIONAL BITCOIN LENDING SERVICE LAUNCHED

Bitbond, a German P2P lending platform, offered its users an opportunity to take loans in BTC. In this case, bitcoin can act as an intermediary currency for lending to users from various countries.



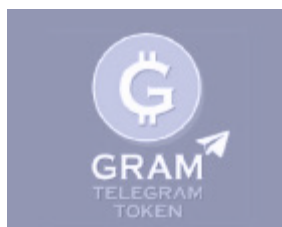
KRAKEN DONATED \$1 MLN TO COIN CENTER

Coin Center, a US organisation for the promotion and protection of cryptocommunity interests, received a donation worth \$1 mln from the Kraken exchange. This is their largest single receipt of funds so far.



BITFINEX ASKED ITS CUSTOMERS TO DISCLOSE TAX RESIDENCY DATA

Bitfinex cryptocurrency exchange has sent letters to some of its users asking them to provide data on their tax residency.



TELEGRAM SUES AN AMERICAN STARTUP FOR GRAM

Telegram is suing the Lantah LLC startup for their issue of a cryptocurrency called Gram. Telegram representatives believe that the startup violates their rights to the GRAM trademark.

BANK OF SOUTH AFRICA ABANDONED THE WORD “CRYPTOCURRENCY”

Deputy Governor of the Central Bank of South Africa Francois Groepe claimed that the regulator has abandoned the term “cryptocurrency.” The bank representative believes that since “cryptocurrencies do not meet the requirements for money,” they must be called “cybertokens.”



BITCOIN BANK NOTES ARE NOW AVAILABLE FOR PURCHASE

Singapore store Megafash Suntec City offered a new service. BTC 0.01 and BTC 0.05 paper bank notes are now available.

ETHEREUM RANKED THE BEST AMONG ALL OTHER CRYPTOCURRENCIES ACCORDING TO CHINESE REGULATORS

The Center for the Development of the Information Technology Industry of China compiled its first rating of 28 cryptocurrencies. Ethereum holds the 1st place. Bitcoin comes the 13th.



POLAND TEMPORARILY EXEMPTED CRYPTOCURRENCIES FROM TAXES

The Polish Ministry of Finance claimed that it was going to carefully analyze the cryptocurrency industry and structure an optimal tax policy for it. For that to happen, the regulator announced a temporary tax relief for cryptocurrency investors. Prior to that, tax on cryptocurrency transactions in Poland ranged from 18% to 32%.

REGULATION



SEC LAUNCHED ITS OWN SCAM PROJECT

US Securities and Exchange Commission (SEC) decided to show investors what a fraudulent ICO looks like and created a website for a fictional HoweyCoin crowdsale. The Commission officials hope that their project will help educate investors and prevent unreasonable investments.



LEDGERX OBTAINED A LICENSE TO TRADE BITCOIN OPTIONS

LedgerX exchange, which specialises in crypto derivatives, obtained a license from the US Commodity Futures Trading Commission to launch a new deposit-based product nominated in bitcoins. Juthica Chou, LedgerX CEO, noted that the new product would allow users to profit by holding bitcoins.

DELOITTE: BLOCKCHAIN AND CYBERSECURITY¹

Experts of the Deloitte consulting company Eric Piscini (US), David Dalton (Ireland) and Lory Kehoe (Ireland) shared their observations on cybersecurity and blockchain.

CURRENT LEVEL OF SECURITY

According to the authors, no blockchain platform can be regarded as 100% secure. What is deemed safe today can fall victim to scammers tomorrow. The CIA triad model is mainly used for defense at the moment: confidentiality, integrity, availability. Each of the three components is reviewed in the report.

CONFIDENTIALITY

Prohibiting access to information for unauthorized persons is one of the major problems for those who use blockchain. The paradox is that blockchain was originally created without specific access controls (due to its public nature), and the weakness of this approach was revealed quite quickly. Once an attacker gains access to the network, they can access the data. Cyber risks in large organizations with a branched structure are associated with the fact that blockchain is accessed from a large number of devices: this threatens the loss of control over secret keys.

Deloitte experts see a future in:

- 1) using special repositories with Hardware Security Modules technology;
- 2) creating cryptographic algorithms using quantum computations. The National Institute of Standards and Technology (NIST) is already developing quantum cryptographic standards.

So far, there have been blockchain-based solutions that address data confidentiality and access control challenges by providing out-of-the-box, full-block data encryption and AAA capabilities (authentication, authorization, audit). Full encryption of blockchain data ensures data will not be accessible by unauthorized parties.

INTEGRITY

Integrity means guarding against improper information modification or destruction. Maintaining data consistency and guaranteeing integrity for the entire life cycle is crucial for information systems. Data encryption, hash comparison (data digesting), and the use of digital signing are some examples of how blockchain owners can assure the integrity of the data.

Blockchain is originally more integral: the combination of sequential hashing and cryptography along with its decentralized structure makes it very challenging for any party to tamper with it, in contrast to a standard database. It is also important to use consistent standard protocols for the purposes of integrity.

AVAILABILITY

Ensuring timely and reliable access and use of information is a vulnerable pin for cyberattacks, especially DDoS. According to the authors, there are some solutions:

- 1) decentralization and peer-to-peer technologies: they are more difficult to destroy than blockchains of conventional architecture;
- 2) no single point of failure: several nodes in the network;
- 3) operational resilience, i.e. the combination of the peer-to-peer nature and the number of nodes within the network, operating in a distributed and 24/7 manner.





Deloitte cyber professionals across the globe suggest following the Secure, Vigilant & Resilient (SVR) cyber approach (Figure).

TEST “DOES YOUR BUSINESS NEED BLOCKCHAIN?”²

How can you understand whether your company needs blockchain or not? Will it be a suitable and useful instrument for solving your business tasks? Blockchain is just a technology, and it makes no sense to adopt it just to follow fashion. Blockchain in any organization must be an instrument designed to achieve specific goals. Analysts offer a test to understand whether you specifically need it or not.

The test is based on an analysis of using blockchain in various fields of business. It was developed by the Imperial College of London and used at the Annual Meeting of World Economic Forum 2018 in Davos, Switzerland. However, before proceeding to the test, the authors suggest to learn about various types of blockchains or DLT (distributed ledger technologies).

Types of distributed ledgers

1) Non-authorized, publicly available distributed systems allow anyone to join the network to conduct and read transactions. They have no owners – each network member has an identical copy of the “ledger”. This type of blockchain is designed in a completely open environment without any points of centralized trust. Bitcoin and Ethereum are the most famous examples.

2) Authorized, publicly available distributed systems are of a hybrid nature. Such a system includes situations where so-called “white list access” is required, but at the same time all transactions are publicly available. Example – government apps: only certain persons can add information to the ledger, but all transactions can be publicly checked.

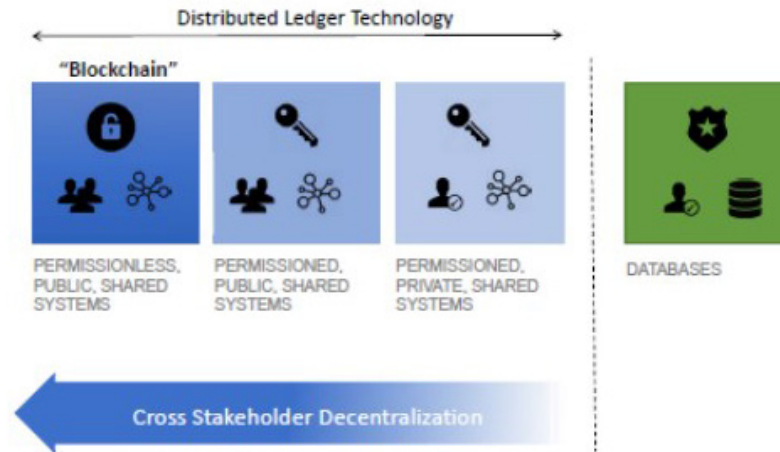
3) Authorized, private distributed systems – only people with special rights can add information and view them. A sole owner or a consortium for property management may manage such systems.

Each of these three blockchain types has its strengths and weaknesses, each is useful for achieving certain goals and meeting various requirements. The general rule is: as decentralization increases, transaction speed falls; therefore, the first type is the fastest.

¹ https://www2.deloitte.com/ie/en/pages/technology/articles/Blockchain_Cybersecurity.html

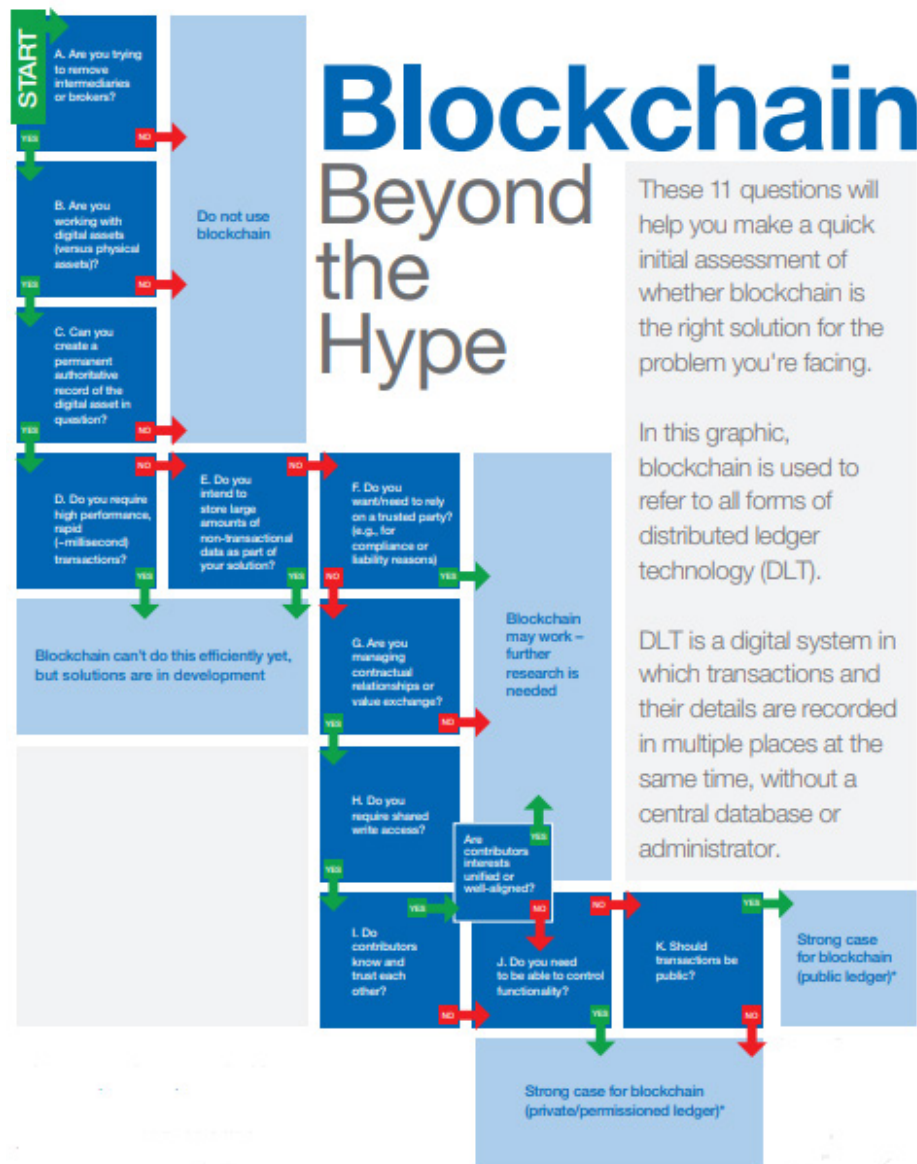
² http://www3.weforum.org/docs/48423_Whether_Blockchain_WP.pdf

Types of Distributed Ledgers



DECISION TREE

The test to make a decision on introducing blockchain into your business is called “Decision tree”. A simple algorithm allows to quickly analyze whether you need a blockchain at all, and if you do then which of the three types of distributed registry is best suited for solving your business tasks. The “decision tree” is shown in Figure .



ACTIONS REQUIRED AT EACH STAGE

A. First, assess your business context: do you seek to eliminate third parties?

B. Operating digital assets is another requirement for the expediency of introducing blockchain. If an asset has a physical form that can be transformed in the process, this asset is difficult to efficiently manage in blockchain. A simple example: a company producing wheat needs to track its product throughout the supply chain, where it becomes flour and then bread in the process. It will be difficult to do this using blockchain.

C. Can a permanent registry be created for your digital asset? This is an important question, since blockchain should be a source of trust. If there are several sources of trust for the state of the object, then the object cannot be efficiently stored in blockchain. If a permanent registry is created, it is important that all parties responsible for the state of a digital asset interact within asset management in blockchain at all stages of the chain passage. Decide whether you need a permanent registry. If it is important for you to manage the information “manually”, then blockchain will not be a suitable solution.

D. At this stage, the speed required for the business process under study should be estimated. If transactions require millisecond performance, the blockchain system cannot cope with this yet. As of April 2018, various DLT forms process transactions at 2-10-minute rate. You should use existing technologies and wait for blockchain to accelerate.

E. It is not recommended to store data unrelated to transactions in blockchain. Blockchain can be applied if the issue of trust is related to transaction recording rather than to databases themselves. Any confidential data that conflicts with local and international data protection rules (for example, GDPR) should not be stored in blockchain.

F. If an industry has specific requirements to third parties or trusted partners, it may be difficult to use blockchain, even if other advantages of its use are obvious. For example, this concerns compliance with antimonopoly legislation, competition law, environmental laws, etc. This issue needs a separate solution in many regards. If your business industry is limited to strict requirements from several regulatory bodies, it will be difficult for you to implement blockchain.

G. Blockchain is unnecessary if the business problem is not related to managing contractual relations and the exchange of values; other technologies can be applied here. Blockchain will be really useful if the business is associated with managing transactions involving digital assets.

H. Is the ability to record transaction in blockchain required for several participants in your business process? Blockchain will not be the best solution if multiple parties do not require access to the common registry.

I. There is no need for blockchain if business entities already know and trust each other. If they do not know each other and do not trust each other, this can be a good reason to use blockchain.



J. Choose a private distributed system that requires authorization if you need to change the blockchain functionality for your business purposes (for example, nodes distribution, access rights, participation rules, etc.) and you do not need to provide open-source code at large forums.

K. If transactions must be confidential, then use a publicly available distributed system that requires authorization. If not, you can use a distributed system that does not require authorization.

FUTURE OF INSURANCE: HOW TECHNOLOGY WILL CHANGE THE MARKET BY 2030³

Artificial intelligence (AI) is increasingly integrating into the insurance industry. McKinsey experts – Ramnath Balasubramanian, Ari Libarikian, and Doug McElhaney – explain how all parties involved in the insurance chain should respond.

According to the authors of the report, the pace of digital technologies introduction assumes that everyone – both consumers and those who provide them with insurance services: insurers, brokers, financial intermediaries – will be experts in their use by 2030. The very structure of the insurance market might change beyond recognition. To avoid being put out of commission, insurance company executives must quickly respond to the changing business landscape. Experts name four technology trends that will change the market in the next decade.

1) Personalization of data

Everything that literally or figuratively relates to a customer will become a source of the most detailed information about them. Not only a car, a smartphone, fitness trackers, medical devices and smart watches, but also household appliances, glasses, clothes and shoes will broadcast detailed customer preferences to service providers and accumulate in a personal database. As data accumulates, not only the customer behavior, but also the individual risk factors will be possible to predict.

2) Household robotics

Robots won't be science fiction characters anymore as they will find a place in the routine processes of an average human, at home and at work. Unmanned vehicles and aircrafts, autonomous agricultural equipment; skyscrapers built using a 3D printer; robotic surgeons – all this will force insurers to revise their ideas about risks and threats.

3) Open databases and source code

The advent of Internet protocols with open source will ensure data sharing in all sectors; cross-sectoral databases for multi-purpose use will be created on blockchain platforms. This will make cybersecurity one of the most attractive areas for insurance.

4) Cognitive technologies

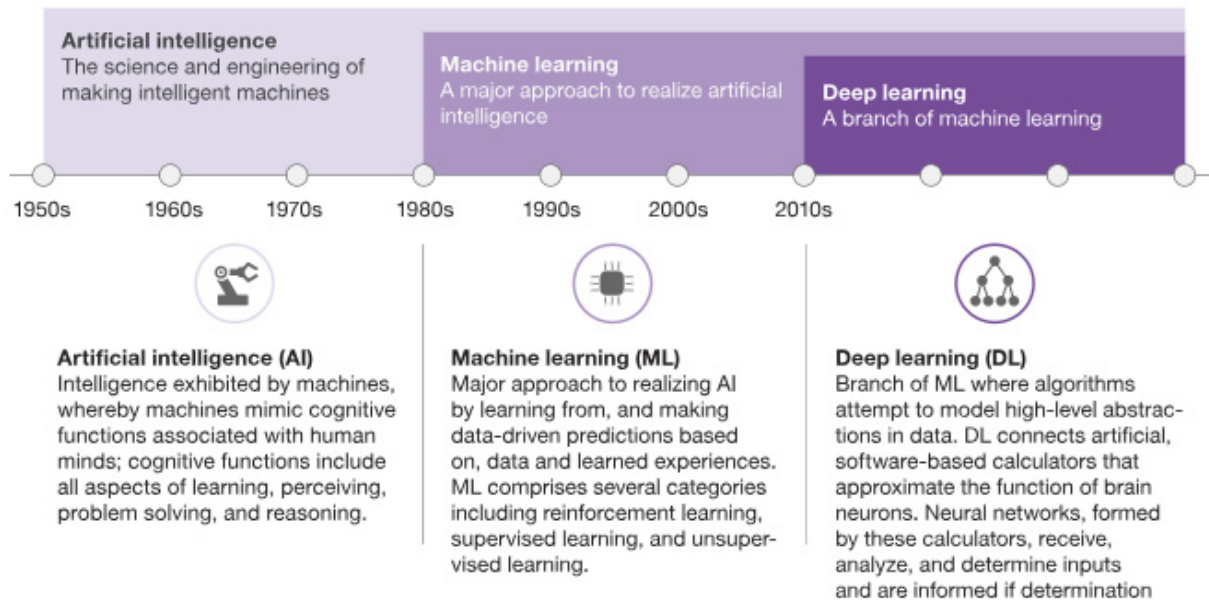
In-depth training technologies that are being applied very narrowly will reach the mass market. Insurers will gain access to applications that are constantly learning and adapting to the surrounding world. This will allow the use of customer behavior analysis in real time and speed up the response rate to several minutes.

³ <http://www.oliverwyman.com/our-expertise/insights/2018/feb/cryptocurrency-unmasked-part-1.html>



WHAT INSURANCE WILL BE LIKE IN 2030

Fixed-term contracts placed in blockchain instantly make payments from the customer's financial account. Contract processing and payment verification are simplified or completely absent. Insurance packages flexibly adapt to the customer's unique behavior. Insurance shifts from the "purchase and annual renewal" model to a continuous cycle. The role of insurance agents will change, and their number will be significantly reduced: "smart assistants" will take over most of the functions.



There are four core elements in defining a successful artificial-intelligence strategy.

