THE IMPACT OF FINANCIAL TECHNOLOGIES ON DIGITAL TRANSFORMATION OF ACCOUNTING, AUDIT AND FINANCIAL REPORTING

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ABSTRACT

FinTech is a combination of Finance and Technology which involves use of modern smart technology like big data analytics, cloud computing, artificial intelligence, machine learning, and robotics, for doing finance. Financial technology development has influenced nearly all financial services industry, from granting to insurance, from accounting to consultancy, from consumer finance to investment banking. As a result of digital transformation**,** preparation of XBRL-based structured digital Financial Reports, block-chain trading, accounting of new digital assets, cryptocurrency has assigned more strategic functions to accountants, while simultaneously supported the auditing to reduce the risk at the minimum level.

In order to obtain or retain competitive advantage it is essential

to invest money, time into implementing in innovations. A cloud system is part of the basic infrastructure now. When the entire business model changes so do change the ways of accounting, auditing and financial reporting that are inevitable components of business. The integration of modern digital technologies into finances, has enabled finance professionals to achieve greater efficiency, work speed, and financial transparency.

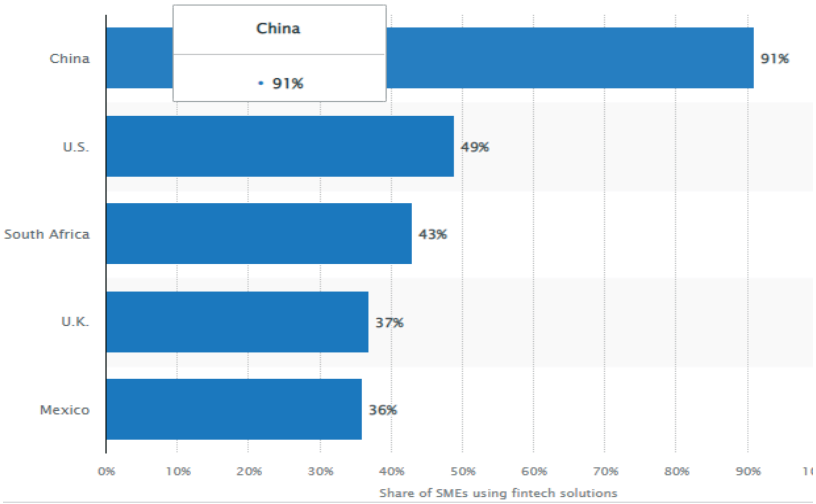
Keywords: Financial technologies; Digital Accounting and IFRS; Cryptocurrency**;** Blockchain; XBRL-standard; Audit; Financial Reporting;

MAIN TEXT

Fintech is a term used to describe the companies operating in the financial technology sector. It relates mainly to small start-up companies, which develop innovative technological solutions in such areas as online and mobile payments, big data, alternative finance and financial management. Fintech is an example of the positive impact of competition and technology, it accelerates to gain a competitive advantage or just to expand the scale of business, starting from start-ups finishing with big scale companies F. ex. **PayPal** is one of the most well-known fintech companies, with a transaction volume of $333.8 billion in 2019. (Paypal, 2020)[1]. As it seems from the table, fintech adoption rates in financial management sector per countries, the highest rate of 91 % and 49 % belongs to China and the USA. They are the initiators to integrate regularly new smart technologies in Finances.

1 **https://financesonline.com/fintech-statistics/**

Figure 1
Fintech adoption rates in Financial management sector in selected countries worldwide in 2019[1]



DIGITAL PAYMENTS [2]

According to the Global Findex Database, Report 2017 "Measuring Financial Inclusion and the Fintech Revolution"[3] - globally, 52 % of adults—or 76 % of account owners—reported having made or received at least one digital payment using their account in the past year. In high-income economies the share was 91 % of adults (97 % of account owners), in developing economies 44 % of adults (70 % of account owners). The use of digital payments is increasing intensively. The share of adults around the world making or receiving

1 https://www.statista.com/statistics/942354/fintech-adoption-rates-in-financial-planning-by-country/

2 https://openknowledge.worldbank.org/bitstream/handle/10986/29510/211259ov.pdf

3 https://openknowledge.worldbank.org/bitstream/handle/10986/29510/211259ov.pdf

digital payments increased by 11 % points between 2014 and 2017 (Figure 2). In developing economies, the share of adults using digital payments rose by 12 % points, to 44 %.

Figure N2

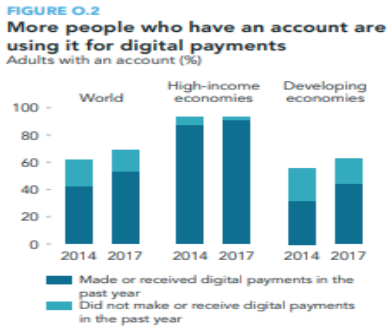


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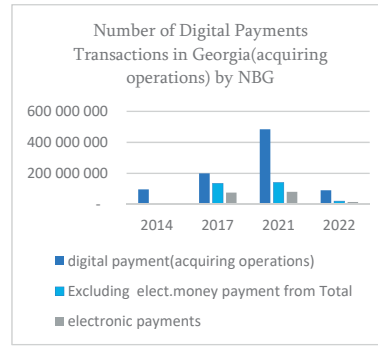
Figure N3



VS [1]

If we compare Global Findex Database (Fig. 2) to Georgian data (Figure 3) by NBG, it revealed that the share of payments with electronic money in Georgia was increased by 106 % between 2014 (96,854,523 transactions) to 2017(199,988,327 transaction a year) yy., and by 142% between 2017 and 2021 yy., whereas in the developing economies generally the growth rate was just 12%; Moreover, in Georgia, in 2017-2021 yy. the difference between the number of electronic and non-electronic payment are decreasing and getting closer.

FINTECH ADOPTION RATES PER SECTOR

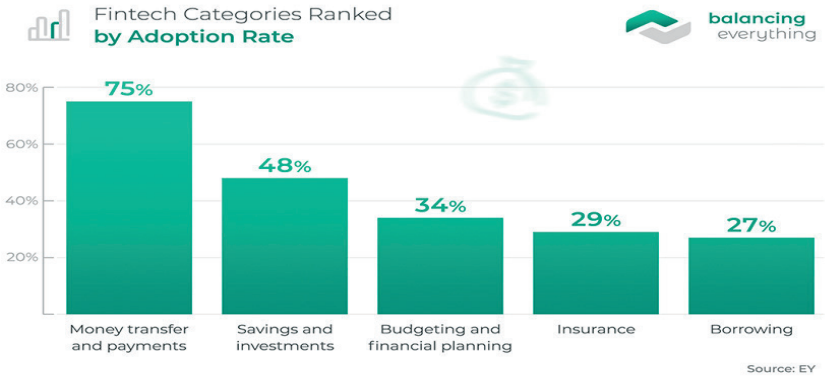
Among fintech services, in 2019, money transfer and digital payments had the highest **adoption rate**[2] 75%, much higher than the 27% adoption rate of borrowing. The EY financial statistics show that budgeting and financial planning had only of 34%(figure 4). In-

1 **https://nbg.gov.ge/statistics/statistics-data?title=%E1%83%92%E1%83%90%E1%83%93%E1%83%90%E1%83%AE%E1%83%93&code=**

2 **https://balancingeverything.com/fintech-statistics/**

surance is currently the least popular among the fintech products, with an adoption rate of 29%.

Figure 4



21th Century is the century of accelerated digital transformation. Every field needs some changes. Starting from the changes in management especially in the Industry 4.0 era[1] and finishing by encouraging organizations to the sustainable development, to the establishment of more sustainable ecosystem.

Generally, the financial technologies may have a big impact on the accounting and financial reporting system. The Companies need to accelerate the implementation process of digital transformation. Especially after the pandemic, it became clear that changing the traditional business model into new *Remote working adaptative Model* is compulsory, even not by 100 %, but minimum at the **Hybrid Business Model**. This is essential to survive of each business. They need to adapt to the new environment in order to make good financial decisions, forecasts that may be the basement for future financial and economic decisions, investment appraisal or just for good operational management.

1 "Changes in management during transformation of power industry"- A Rzepka, R Borowiecki, R Miskiewicz, Z Olesinski - 2021

Moreover, modern Smart Financial and other Technologies have a great impact on each business field. There should be discussed the following effects:

1) Preparation of XBRL-based Structured Digital Financial Reports;

2) Blockchain Technology usefulness;

3) The Benefits of using Cryptocurrencies for payment of Financial Services;

Per Audit company Deloitte "More than 2,300 US businesses accept bitcoin, according to one estimate from late 2020, and that doesn't include bitcoin ATMs. An increasing number of companies worldwide are using bitcoin and other digital assets for a host of investment, operational, and transactional purposes"[1]. Moreover, Crypto provides a new avenue for enhancing a host of more traditional Treasury activities, such as:

• Enabling easy and secure money transfers;

• Strong and easy access control over the capital of the company;

• Managing the risks and opportunities of engaging in digital investments;

• **Stock exchange vs Crypto Exchange**

PwC also has received its financial services fee in cryptocurrencies for the performed audit services;

4) The Supporting Tool for Anti-money Laundering (AML) procedures;

5) Sustainability Enhancement and ecological effect; Due to modern office software systems usage, it is no more necessary to print out many accounting and auditing documents, instead it is possible to keep it safe electronically. Financial technology is enabling smart data input techniques. For example, the document can be scanned and the accounting entry is done with the help of identifying key information like date of transaction, amount, number of items, commodity type, tax paid, supplier name, nature of expense

1 https://www2.deloitte.com/us/en/pages/audit/articles/corporates-using-crypto.html

from the document automatically by the system. **No more paperwork is necessary, just scanning all the accounting document and finish it by electronic signature**.[1]

6) Big Data Analysis-more financial services offered quickly and more analyzed, detailed decisions made;

7) ERP System Development and More Integrated Functions;

8) Quick Communication between different functional Business Directions;

9) Artificial Intelligence Integration into Business processes;

10) Cloud-computing-saving the place for keeping financial data securely;

11) New Audit Software for Auditing of cryptocurrency transactions-as **PwC Audit** company mentions they have already invented the new software "**Our new Halo tool** builds on our suite of **technology auditing solutions to provide audit and other assurance services to clients holding or transacting in cryptocurrency**. In this complex world of blockchain and cryptocurrency, we can also help companies to seize the opportunities and address the challenges - helping them to implement the processes and controls they will need to obtain assurance reports from their auditors"[2]. Their innovative audit Tool supports clients transacting in many cryptocurrencies, such as **Bitcoin**, Bitcoin Cash, Bitcoin Gold, Litecoin, Ethereum, Filecoin, Ripple, Tezos and etc. Additionally, Cryptocurrencies' are so developed and intentified, that PwC even dedicated the **Global Crypto Tax report**[3].

12)Financial Data Consolidation-Smart Financial Technologies help to consolidate financial data of group member companies easily and quickly;

1 https://caknowledge.com/impact-of-financial-technology-on-accounting-auditing/

2 https://www.pwc.com/gx/en/services/audit-assurance/publications/halo-solution-for-cryptocurrency.html

3 PwC-2021 Global Crypto Tax Report-2022 January. https://www.pwc.com/us/en/services/tax/library/releases-its-2021-global-crypto-tax-report.html

13) Digital Assets Existence;

As a result of **Financial digitalization**, due to occurrence of many digital assets transactions, there became necessary to pay much attention to accounting of the modern type virtual assets; As PwC reports, "Crypto may serve as an effective alternative or **balancing asset to cash**, **which may depreciate over time due to inflation**. Crypto is an investable asset, and some, such as bitcoin, have performed successfully over the past five years". According to PwC report 2019[1], there should some accounting considerations under IFRS for cryptographic assets and related operations.

An Initial Coin Offering ('**ICO**') is a form of fundraising that harnesses the power of cryptographic assets and blockchain-based trading. Similar to a crowdfunding campaign, an **ICO allocates tokens instead of shares to investors/subscribers**. These ICO tokens are not directly related with an ownership interest in the entity, however they often provide access to a specific platform and can often be traded on **a crypto exchange**. The population of ICO tokens in an ICO is generally set at a fixed amount.[2] (see table 1)

Another important Financial reporting issue should be discussed regarding the **Fair value accounting of cryptographic** assets under IFRS 13. Per PwC report the Fair value might be needed in a variety of situations, including (see table 2):

Under IFRS 13 special disclosures must be made in financial statements for Fair values. If the specific disclosures required by the standard are insufficient, IFRS 13 requires additional information to be disclosed to meet that objective. In this case, many **cryptographic assets show a high volatility of prices, and markets might remain open 24/7.** So the time at which a reporting entity values the cryptographic asset might be important. For example, is the valua-

1 https://www.pwc.com/gx/en/audit-services/ifrs/publications/ifrs-16/cryptographic-assets-related-transactions-accounting-considerations-ifrs-pwc-in-depth.pdf

2 https://www.pwc.com/gx/en/audit-services/ifrs/publications/ifrs-16/cryptographic-assets-related-transactions-accounting-considerations-ifrs-pwc-in-depth.pdf

tion time 11:59 PM at the end of the reporting period, or the close of business on that day? **How is the valuation time determined in groups with subsidiaries in different time zones?** This might represent a significant accounting policy, in which case it would also have to be disclosed in the notes to the financial statements.

Table 1[1]

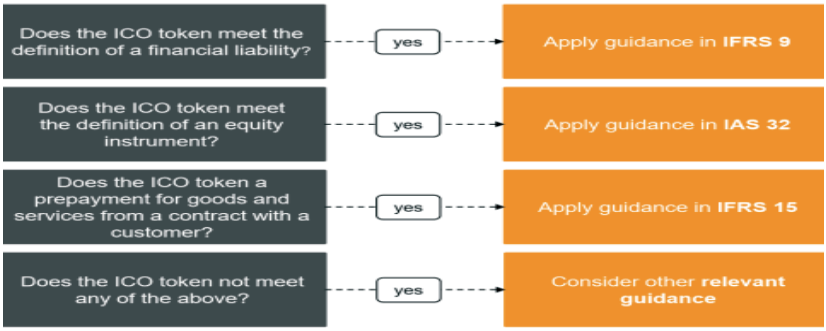


Table 2[2]

inventory held by a broker-trader applying fair value less costs to sell accounting	expense for third party services paid for in cryptographic assets
cryptographic assets classified as intangible assets in cases where the revaluation model is used	expense for employee services paid for in cryptographic assets
revenue from the perspective of an ICO issuer	cryptographic assets acquired in a business combination
disclosing the fair value for cryptographic assets held on behalf of others	cryptographic assets held by an investment fund (either measured at fair value or for which fair value is disclosed)

Source : PwC Cryptocurrency report 2019-05y.

1 PwC Report-" Cryptographic assets and related transactions: accounting considerations under IFRS"-2019-05.

2 PwC Report-" Cryptographic assets and related transactions: accounting considerations under IFRS"-2019-05.

DIGITAL ACCOUNTING IMPACT
ON SALES REVENUE VIRTUAL TRANSACTIONS

Financial technologies, especially selling new financial virtual products, makes it more difficult to account or to audit. The issuing entity should consider whether the ICO token issued is, in substance, a contract with a customer that should be accounted for under IFRS 15. IFRS 15 would apply if (1) the recipient of the ICO token is a customer, (2) there is a 'contract' for accounting purposes, and (3) the performance obligations. To determine whether a contract with a customer exists, an entity should consider whether **the whitepaper, purchase agreement and/or other accompanying documents create 'enforceable rights or obligations**. [IFRS 15 App A]. This assessment might be challenging where the documentation provided by the issuer is not well defined. As there is discussed in the PwC cryptographic report, 2019, **the whitepaper** is a concept paper authored by the developers of a platform for prospective investors. So, the **w**hitepapers are not the same as a standard legal contract or other offering documents.[1]

Furthermore, after analyzing **Digital accounting** new issues under IFRS, there should be also mentioned **how far** financial technologies influences on **financial reporting preparation and auditing process**. For example digitalization of Financial statements in USA was established quite earlier, like the usage of the **XBRL system**. Financial statements are the vital part of the economic and business life. Moreover, creating digital, unambiguous, accurate and reusable versions of financial statements is one of the core capabilities of the XBRL standard.[2]

CONCLUSION

In Summary, in the conditions of Global Digitalization, the modern market requirements are changing rapidly. More and more, com-

1 PwC Report-" Cryptographic assets and related transactions: accounting considerations under IFRS"-2019-05.

2 https://www.xbrl.org/the-standard/what/financial-statement-data/

panies try to gain and maintain competitive advantage by adapting digital financial solutions that will help them Nowadays, as the 21th century is the century of big data, also in the field of financial reporting, they need to be solved immediately in order to make proper financial decision. The primary issue in big data analysis can be regarded 3 main challenges: a) Variety of Data sources, b) Velocity (the rate at which data is being generated), and c) volume (the amount of data generated). In financial business reporting, as in other areas, taking on the **massive flow of information that comes with doing business with manual workflows is becoming difficult**, now it's time to implement more financial technologies in finances. By implementing more powerful and innovative smart digital transformation technologies such as-digital accounting, artificial intelligence, robotic process automation, and advanced data analytics, finance leaders are redefining the financial accounting and reporting, audit process to achieve efficiency, speed, accuracy, and financial transparency that create together high quality.[1]

Within the finance function, the use of these smart modern technologies may reasonably be considered *financial technology*, or *fintech*, and they establish a significant component of data-driven, value-focused business models[2].

As for Fin technology impact on **Auditing,** the demand and dependence from internal or external auditors, or regulatory auditors on new fin technologies is increasing quickly. This enables auditors to spend time more on risk identification rather than spending time on less routine procedures. Cognitive technologies, which include artificial intelligence, machine learning, speech recognition, natural language processing and robotics, help in digital analysis of big chunk of data which cannot be performed by a number of audit teams.

1 https://planergy.com/blog/how-the-use-of-technology-can-improve-financial-reporting/

2 https://planergy.com/blog/how-the-use-of-technology-can-improve-financial-reporting/

The audit conducted on the back of extensive big data churning will be able to identify more pitfalls, will be able to fix more risks and will be revealing more about the company.

The data classification also needs to be changed – One is structured and the other is unstructured. The robotics can easily analyze the structured data to filter the inconsistencies, which can then be made part of audit samples. This will enable collection of audit evidences from diverse sources and enable expression of a strong and clear audit opinion about the true and fair view of the financial numbers.

Finally, when the technological digital transformation has changed each and every industry, accounting and auditing is no exception. Robotics is being used to do the accounting free of manual intervention whereas the machine learning and artificial intelligence is helping identify patterns and generates the exception reports which leaves the auditor with specific grey areas, where an investigation is sought for, removing the necessity of sampling either randomly or by judgement[1].

REFERENCES:

1. Harvard Business Review - How Fintech Can Help Streamline Your Company's Financial Operations February 05, 2021

2. World Bank Database;

3. https://financesonline.com/fintech-statistics/

4. https://globalfindex.worldbank.org/

5. XBRL international Digital Standard;

6. International Financial Reporting Standards (IFRS) 13, 15;

7. https://www.statista.com/statistics/942354/fintech-adoption-rates-in-financial-planning-by-country/

8. https://openknowledge.worldbank.org/bitstream/handle/10986/29510/211259ov.pdf

9. https://nbg.gov.ge/statistics/statistics-data?title=%E1%83%

1 https://caknowledge.com/impact-of-financial-technology-on-accounting-auditing/

92%E1%83%90%E1%83%93%E1%83%90%E1%83%AE%E1%83%93&code=

10. https://balancingeverything.com/fintech-statistics/

11. A Rzepka, R Borowiecki, R Miskiewicz, Z Olesinski –"Changes in management during transformation of power industry" 2021y.

12. Deloitte Report -https://www2.deloitte.com/us/en/pages/audit/articles/corporates-using-crypto.html

13. https://caknowledge.com/impact-of-financial-technology-on-accounting-auditing/

14. https://www.pwc.com/gx/en/services/audit-assurance/publications/halo-solution-for-cryptocurrency.html

15. PwC-2021 Global Crypto Tax Report-2022 January. https://www.pwc.com/us/en/services/tax/library/releases-its-2021-global-crypto-tax-report.html

16. https://www.pwc.com/gx/en/audit-services/ifrs/publications/ifrs-16/cryptographic-assets-related-transactions-accounting-considerations-ifrs-pwc-in-depth.pdf

17. PwC Report-" Cryptographic assets and related transactions: accounting considerations under IFRS"-2019-05.

18. https://planergy.com/blog/how-the-use-of-technology-can-improve-financial-reporting/

ფინანსური ტექნოლოგიების ზეგავლენა აღრიცხვის, აუდიტისა და ფინანსური ანგარიშგების ციფრულ ტრანსფორმაციაზე

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რეზიუმე

ფინტექი (FinTech) არის ფინანსებისა და ტექნოლოგიების ერთობლიობა, რომელიც მოიცავს თანამედროვე ჭკვიანი ტექნოლოგიების გამოყენებას, როგორიცაა **დიდი მოცულობის მონაცემთა ანალიზი, ღრუბლოვანი (cloud) სისტემები, ხელოვნური ინტელექტი, რობოტიკა, აღრიცხვის, აუდიტისა და ფინანსური რეპორტინგის მიმართულებით.** გლობალური ციფრულიზაციის პირობებში, კონკურენტული უპირატესობის მოსაპოვებლად ან შესანარჩუნებლად, აუცილებელია ფულის, დროის ინვესტირება ინოვაციების დანერგვაში. ფინანსური ტექნოლოგიების განვითარებამ მნიშვნელოვანი ზეგავლენა მოახდინა ფინანსური სერვისების მიწოდების თითქმის ყველა სფეროზე, დაწყებული დაზღვევით, ბუღალტრული აღრი-

ცხვით, კონსალტინგით, და საინვესტიციო ბანკინგით დამთავრებული. სტატიაში განსაკუთრებული ყურადღება ეთმობა ციფრული ტრანსფორმაციის ზეაგვლენის შეფასებას, მათ შორის **XBRL-საერთაშორისო ციფრულ სტანდარტზე** დაფუძნებული სტრუქტურირებული ციფრული ფინანსური ანგარიშების მომზადების ეფექტურობას, **ბლოკჩეინის** ზეგავლენას, ახალი „ვირტუალური, **ელექტრონული“ აქტივებისა და კრიპტოვალუტის ციფრულ აღრიცხვას,** რომლებიც უფრო მეტად სტრატეგიულ ფუნქციას ანიჭებს აღრიცხვას, ამავდროულად ეხმარება აუდიტორს ახალი „ჭკვიანი“(smart) პროგრამული ტექნოლოგიების საშუალებით აუდიტის რისკი მინიმალურ დონეზე შეამციროს.

საკვანძო სიტყვები: ფინანსური ტექნოლოგიები; ციფრული აღრიცხვა და ფასს (IFRS); კრიპტოვალუტა; ბლოკჩეინი; XBRL-სტანდარტი; აუდიტი; ფინანსური ანგარიშგება;