



OPPORTUNITIES OF DIGITAL FINANCIAL ADVICE PLATFORMS FOR PRIVATE INVESTORS: A QUALITATIVE CASE STUDY OF AMERICAN AND EUROPEAN COMPANIES' PRACTICES

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ABSTRACT

Background: Technological innovations are already affecting financial markets and increasingly influence the terms of financial intermediation offers, including stock exchange instruments. The authors argue that analysis of the practice of digital financial advice platforms will improve the use of this innovation by many market participants. **Objective:** The article is devoted to one of the newest types of fintech – digital financial advice platforms (the so-called robo-advisors). The study aims to determine the functions, specifics of operation, and significance of digital financial advice platforms in the modern financial market through an examination of the practices of European and American companies. **Methods:** The authors performed a qualitative case study analyzing the practices of American and European companies. Eighteen digital financial advice platforms are selected and characterized based on information from their websites. **Results:** The differences are primarily found in the offer of investment plans, minimum investment amounts, and fees for advisory services. **Conclusion:** On the one hand, since the purpose of digital financial advice platforms is the management of clients' investment portfolios, the development of robo-advisors offers excellent support to investors in the realization of their visions. On the other hand, these programs are not devoid of the mechanisms of working with the knowledge of investing and investor psychology, thereby forming the investor's risk profile. Based on the risk profile of the investor, the program offers individual investment strategies.

Keywords: Fintech model; Robo-advisors; Virtual investment consulting.



OPORTUNIDADES DE PLATAFORMAS DE ACONSELHAMENTO FINANCEIRO DIGITAL PARA INVESTIDORES PRIVADOS: UM ESTUDO DE CASO QUALITATIVO DAS PRÁTICAS DAS EMPRESAS AMERICANAS E EUROPEIAS

RESUMO

Antecedentes: As inovações tecnológicas já estão afetando os mercados financeiros e influenciam cada vez mais os termos das ofertas de intermediação financeira, incluindo instrumentos de bolsa. Os autores argumentam que a análise da prática das plataformas digitais de assessoria financeira melhorará o uso dessa inovação por muitos participantes do mercado. **Objetivo:** O artigo é dedicado a um dos mais novos tipos de fintech – plataformas de assessoria financeira digital (os chamados robo-advisors). O estudo visa determinar as funções, especificidades de operação e importância das plataformas de consultoria financeira digital no mercado financeiro moderno por meio de um exame das práticas de empresas europeias e americanas. **Métodos:** Os autores realizaram um estudo de caso qualitativo analisando as práticas de empresas americanas e europeias. Dezoito plataformas digitais de assessoria financeira são selecionadas e caracterizadas com base em informações de seus sites. **Resultados:** As diferenças estão principalmente na oferta de planos de investimento, valores mínimos de investimento e honorários de assessoria. **Conclusão:** Por um lado, uma vez que as plataformas de aconselhamento financeiro digital têm como finalidade a gestão das carteiras de investimento dos clientes, o desenvolvimento de robo-advisors oferece um excelente apoio aos investidores na concretização das suas visões. Por outro lado, esses programas não são desprovidos de mecanismos de trabalho com o conhecimento do investimento e da psicologia do investidor, formando assim o perfil de risco do investidor. Com base no perfil de risco do investidor, o programa oferece estratégias de investimento individuais.

Palavras-chave: Modelo Fintech; Robo-consultores; Consultoria de investimento virtual.

1 INTRODUCTION

1.1 Background

Today's fintech model (meeting customers' financial needs by creating new services or ways to distribute them (Christian & Lars, 2019; Das, 2019) includes, among other things, digital virtual financial consulting (robo-advisors, RAs), which represents a certain group of companies or online platforms offering independent or web-based investment portfolio management software with the minimal active involvement of a human advisor (Gai et al., 2018). These companies also offer investment advice to non-professional investors (retail clients) (Jung et al., 2018a). The provision of these investment advice services utilizes parametric and non-parametric statistical methods of data analysis (Beketov et al., 2018).

Active development of virtual investment consulting began after the financial crisis of 2008-2009 (Gomber et al., 2017). The possibility of client access to an online

account made it possible to independently – without the participation or support of a broker, consultant, or investment broker – make decisions about the structure of the portfolio (Kirillova et al., 2019). The choices were limited to a few predefined investment models, based primarily on ETF fund packages (Blaschke & Kriebel, 2021). This service was much cheaper than mediation by a financial consultant. Software and simple services provided online by new companies were quickly winning over customers. Demand for such programs gave rise to a wider offer of technical solutions for investors allowing them to optimize an investment portfolio on their own.

The market for digital investment services operating in the world is currently valued at around 100 billion USD. This share is not that substantial, given that the assets remaining in the traditional management of investment companies (wealth management) are worth much more – 17 trillion USD (Hildebrand & Bergner, 2021). The total sum of assets under management globally is 69 trillion USD, of which 15% remain under passive management and are managed through ETF instruments (10 trillion USD) (Uhl & Rohner, 2018). The growth rate of portfolios managed by RA platforms is progressing rapidly (in 2017, the amount invested doubled every few months), so the results of the study present estimates pointing to \$0.5-8.1 trillion USD being managed by digital platforms by 2025 (Belanche et al., 2019; Uhl & Rohner, 2018). This may suggest that already by 2025, around 10% of world assets will be managed by digital investment consulting platforms.

For researchers, the analysis of the operation of RAs is complicated due to the inaccessibility of information and the difficulty of collecting the required characteristics of software operation. Furthermore, there is no software available publicly by subscription (purchase) like MS Office or smartphone apps. Each RA platform develops its own software based on economic and mathematical models such as Sharpe's (Jana et al., 2015) and Markowitz's (Marling & Emanuelsson, 2012). Notably, the Markowitz portfolio selection model laid the foundation for modern portfolio theory, from which more useful models using approximation have been developed. The first of these was the Sharpe model, which does not require an assessment of the pairwise correlation between assets, but only an assessment of how the asset depends on market behavior. The Sharpe model led Markowitz and Sharpe to receive the 1990 Sveriges Riksbank Prize in Economic Sciences in memory of Alfred Nobel (Marling & Emanuelsson, 2012).

In light of the above, RA software is expensive intellectual property, which is not



freely (commercially) distributed and constitutes a commercial secret. For this reason, we proceeded from the opportunity to compare the key characteristics and unique differences offered to users by RA platforms.

1.2 Business model and software

As a rule, the business model of investment brokerage services (Jung et al., 2018b) (the RA model being no exception) begins with the research and understanding of the client's needs. Based on the existing knowledge about the client (let us call it "investor's profile"), the client is offered a model or specialized investment strategy (Safronov & Sazonov, 2021). In the next stage, investments (portfolios) are controlled, managed (optimized), and periodically balanced until a profit (income) is made. The capital and financial surplus can be further invested, which opens the next investment cycle, beginning with the establishment of the investor client's subsequent preferences and goals (Vasyukov et al., 2021).

Analysis of research literature concerning the currently offered RA software indicates that this software is advanced and helpful only at several stages of the investment advisory process (Au et al., 2021). Firstly, interactive online surveys in the form of automated interviews and network positioning of the client collect information about the client's specific features, needs, and attitudes to risk (Britton & Atkinson, 2017), as well as their existing investments and behavior (Puschmann, 2017). After that, the RA software helps the user to create an investment plan, including through the shared use of a registry of financial instruments offered by the platform (Au et al., 2021).

RA modules for investment purposes allow opening accounts and provide assistance in managing all of the client's activities in maintaining the account. These modules also simplify the transfer of assets to the client's portfolios from client servicing banks/intermediaries. Functions of automatic investing and acceptance of transactions are not yet available in the modules (Strzelczyk, 2017) offered to retail customers, although such access has been provided for many years by specialized professional services, such as Forex (Faloon & Scherer, 2017).

RA platforms currently have well-developed functions for monitoring the results of investment (Park et al., 2016) on a monthly, quarterly, or annual basis, using the dashboard with an automatic notification system for visualization. One drawback consists in the fact that it is only to a limited extent that today's RAs allow creating more



advanced models of clients' investment portfolios and automatically generate investment proposals (Park et al., 2016). These tasks still require human investment advisors, which is a distinguishing feature of the so-called hybrid model of a virtual financial advisor (Boreiko & Massarotti, 2020).

Despite the short development time of RA platforms and their use of relatively simple and few investment tools, simplified strategies, and imperfect modules that define the risk-taking profile and client goals, the results achieved in this sphere of investment can at times be better (Kozhamzharova et al., 2022; Markova et al., 2021) than those of the investors who resort to typical investment consulting. The results of traditional consulting are often lower (Din, 2016) compared to passive management (indexing) because non-professional investors incur high costs, especially those associated with the time spent to understand the situation and make a decision. Investment decisions often come too late (Tammam-Hastings, 2017) because of the complex chain of interaction "market situation – consultant-investor". The effects of investment with the involvement of RAs may be better thanks to the algorithmic adaptation of the portfolio to the purpose of investment, global diversification of the investment portfolio, and low costs of finance management (Au et al., 2021).

The goal of the present study is to determine the functions, specifics of operation, and significance of digital financial advice platforms in today's financial market by examining the practices of American and European companies.

The research objectives are as follows:

1. to collect information about the functions and specifics of operation of digital financial advice platforms via qualitative methods based on the practices of American and European companies;
2. to conduct a comparative analysis of American and European companies' practices to identify the specifics of the development of financial advice platforms;
3. to determine the development potential and possible limitations of digital financial advice platforms for private investors.

2 METHODS

Given that RAs are a relatively new sphere heavily influenced by innovation and that reliable quantitative methods to assess the promise of RA platforms are lacking, qualitative research gives an opportunity to collect various information (Fisch et al., 2019) in the presence of a large number of RAs. We classify our study as a thematic



one (Hildebrand et al., 2020). The study of the opportunities of digital financial advice platforms for private investors was conducted from February to May of 2022 in four stages.

At the first stage of the study, the method of analysis of scientific literature (Kzykeyeva, 2022) on the problem of using digital financial advice platforms was deployed.

The source base of the study was composed of academic studies on various aspects of digital financial advice platforms: the RA business model, the available functions, the specifics of the offer, the cost of services (the amount of fees for advisory services), and the minimum amount of investment through RAs.

For clarity of understanding of the key terms, in this study, we will refer to the specifics of the investment plans offered and the related structure of the investment portfolio by the specifics of the offer. The minimal investment will be used to signify the amount of funds invested (account balance) before entering the system. The amount of fees for consulting services means either a fixed payment (annual fee) or a percentage of the amount of investment (assets on the account).

The source base of the study is comprised of articles from journals cited by Scopus and Web of Science. The source base was compiled in accordance with the time of the publication, including articles published in 2015 and later, and limited by the requirement of free access to the necessary materials. The search resulted in about 100 scientific articles being found.

Minding the existing limitations (Monti et al., 2014) of the document analysis method (the amount of sources selected, their completeness, and the subjective positions of the authors), in order to improve the reliability of research results, we conducted an analysis of the reliability of the source base by means of an e-mail survey of 15 experts in the field of financial advice (third stage). The experts were simultaneously sent identical emails with a survey including close-ended questions asking them to assess the reliability, validity, relevance, truthfulness, and accuracy of the information presented in the sources according to the Harrington scale (the answer options presented: very high (0.8-1.0); high (0.63-0.8); average (0.37-0.63); low (0.2-0.37); very low (0-0.2)) (Harrington, 1965). The experts were given a limited amount of time to respond, which ensured equal conditions for each respondent. In the response letter, according to the questions posed, the experts assessed the reliability, validity, relevance, truthfulness, and accuracy of the information presented in the sources. The



results of the expert survey limited the source base to 40 articles and ensured its high average reliability on the Harrington scale (Harrington, 1965) (0.73 points – a high value).

At the third stage of the study, using the analytical method (Palmatier et al., 2013), we compared the key characteristics of the selected RA platform offers (Table 1). The object of comparison was the characteristics (specifics of the offer, minimum investment, and consulting service fees (annual fee for using the program)) of 18 digital financial advice platforms, which were identified based on information from their websites.

The study was conducted on the financial markets of the USA (9) and European countries (EU and UK) (9). Each of the considered applications allows forming a conditional portfolio of the client from the securities of investment funds investing in various proportions in the shares and/or bonds of companies traded on stock exchanges.

At the fourth stage of the study, the collected information was processed, which included classifying the information by level of significance, creating tables, and interpreting the obtained results via the method of theoretical triangulation (Hammersley, 2008), which is based on combining the position of the researchers with the data obtained from the websites of the studied RAs.

3 RESULTS

Table 1. Comparison of the key characteristics of the selected RA platform offers

No.	Company	Country	Specifics of the offer	Minimum investment	Annual fee (percentage of assets in the account, %)
1	Betterment	USA	Full spectrum of offers, Individual Retirement Arrangements (IRAs)	0	0.15-0.35
2	Bloom	USA	Act 401(k)s* retirement plans	0	\$ 5-99 a month
3	Charles Schwab	USA	Full spectrum of offers	5,000 USD	Free
4	ETFmatic	EU	Basic (individual) investment account + ISA and Junior ISA	1,000 EUR	0.65-0.6
5	FidelityGo	USA	IRA retirement plans	10 USD	0.35 (including investment fees)
6	FutureAdvisor	USA	Act 401(k)s* retirement plans	10,000 USD (premium)	0.5 + payment for selected services
7	Ginmon	EU	Basic (individual) investment account	5,000 EUR	0.76 + 0.1 of profit
8	Indexa Capital	EU	Only predefined investment models	1,000 EUR	(0.45 to 0.1) + 0.18 + 0.25
9	Marier Quantier	EU	Basic (individual) investment account	5,000 EUR	5.0 of profit + 70.8 EUR per year
10	Nutmeg	UK	Basic (individual) investment account + ISA plan	500 GBP	0.75 to 0.25, min. 100 GBP a month
11	Personal Capital	USA	Possible access to financial advisors and tax optimization	25,000 USD	0.49-0.89
12	Scalable Capital	EU	Basic (individual) investment account	10,000 EUR	0.75 + 0.25
13	Vaamo	EU	Basic (individual) investment account + targeted investment planning	0	0.99 to 0.49 + management fee
14	Vanguard	USA	Possible access to financial advisors	50,000 USD	0.3
15	Wealthfront	USA	Full spectrum of offers and tax optimization	500 USD	0.25
16	WhiteBox	EU	Tools for achieving the investment goal	5,000 EUR	from 0.95 to 0.35
17	WiseBanyan	USA	Full spectrum of offers	0	Free
18	Yomoni	EU	Basic (individual) investment account + targeted investment planning	1,000 EUR	Maximum 1.6

Source: the authors' development.

* a popular retirement plan (funded retirement account) of the private US pension system named after an article of the US Internal Revenue Code

The obtained results (Table 1) indicate that European RAs typically offer services for managing individual investment accounts based on simple investment schemes, the so-called model investment portfolios, and investments in the stocks of companies

included in stock indexes, as well as targeted investment planning. In contrast, American RAs provide the full spectrum of offers, including diversification of the portfolio at the client's request using shares of specific issuers, the availability of specialized investment plans (retirement, education for children), automatic portfolio balancing, and the possibility of tax optimization of investments.

In the meantime, the variation of RA fees depends mainly on the chosen business strategy. For instance, WiseBanyan (USA) provides supposedly free services, yet the customers are forced to add fee-based features, such as the ability to have an individual retirement account (IRA), which other RA platforms include in the specified list of services, and the additional Tax Protection service requires a monthly payment of 0.02% of the account cost.

4 DISCUSSION

The conducted analysis of RA platforms operating in the American and European markets demonstrates that participants in these markets differ from each other (see Table 1), but also have numerous similarities. The main common function performed by them is the maintenance of the client's investment portfolio at a cost well below average. These programs allow creating portfolios optimized in terms of customer knowledge and declarations as a result of analysis using survey data.

In the USA, several leading funds can diversify the portfolio at the request of the client with the shares of specific issuers (D'Acunto et al., 2019). American RAs differentiate their offers with specialized investment plans (Table 1) mainly intended for savings for retirement purposes (IRA or 401(k)s retirement plans) or education for children that are tied to tax benefits. Similar instruments, such as ISA retirement plans, and Junior ISA funding for children's education, are also used by British RAs, as well as the former British ones, which changed jurisdiction after the UK's withdrawal from the EU to optimize taxation (ETFmatic).

RAs also provide investment advice instruments for investing in the so-called trust or taxable accounts, which are marked by the full range of investment services offered (Table 1). These investments are the most popular offerings of the largest RAs in the US (Phoon & Koh, 2018).

The overwhelming majority of European platforms use simple investment schemes, the so-called model investment portfolios, and only 15% of companies offer their clients the opportunity to change the provided standard investment portfolios.



Customized models are usually used in the USA. All the leading companies in the American market offer automatic portfolio rebalancing, and the majority (80%) provide opportunities to optimize investments on a fiscal basis (in some cases, there is a specified threshold of portfolio value from which this option is available) (Hodge et al., 2020).

The sum of investment (account balance) before entering the system (see Table 1) is most often not too high both in the USA and in Europe: the EU average is about 5 thousand EUR; in the UK, it is 1 thousand GBP, and in the USA – only 500 USD (Bianchi & Jehiel, 2020).

As demonstrated by our study (Table 1), the services of virtual advisor platforms are typically paid. F. Lu and C. Swarn indicate (Lu & Swarn, 2020) that consulting costs are relatively low and do not go beyond 1% of the investment (starting from 0.15% of assets). The providers of digital investment advice state (Clarke, 2020) that the operators' only income is the sums received from advisory fees, not from the entrusted investor funds.

In the European market, the pricing policies of virtual financial advisors vary, and the rates stated in the proposals are higher than in the US market. Most platforms do allow investing sums below the minimum investment threshold, which is no less than 1 thousand GBP or EUR, most commonly 5 thousand EUR. If the investment is smaller, a fixed monthly fee applies, for example, 100 GBP per month (Grealish & Kolm, 2021). The structure of fees is similar to that effective in the American market – the dominant is the fee for asset management, which is differentiated by the type of assets. The vast majority of platforms charge management fees of no less than 0.5% of the value of the managed assets. Some claim that fees can be as high as 2.5%, depending on the type of asset. For investments in ETFs used for this asset category, fees are lower and range from 0.1% to 0.35%, with a one-time entry fee of 0.25% also used (D'Hondt et al., 2019). Around 20% of the platforms charge fixed monthly subscription fees (approximately 15 EUR or GBP), with an additional asset management fee (less than 0.5%) (D'Hondt et al., 2019).

According to J.E. Fisch, M. Labouré, and J.A. Turner (2019), only one in six offers has a performance-based remuneration component, mostly 5 or 10% of the resulting net investment return. Offers of this type distinguish European RAs from American ones.

Speaking of the significance of RA platforms in today's financial market, we should



note that RA platforms give an opportunity to easily diversify one's portfolio and efficiently and regularly adjust it to the desired structure, which ensures the attainment of investment goals. These platforms also provide investors with more precise knowledge of the characteristics of their portfolios than previously and allow them to better control the portfolio and utilize its characteristics in the process of learning from the investment experience. Importantly, some platforms also enable the optimization of tax investments, which so far are only available to investors with extensive resources (Hodge et al., 2020).

Giving an assessment of the potential for the development of digital financial advice platforms, we should point out that the popularity of the new technology may owe, among other reasons, to the relatively small amount of funds required by most platforms for investment (Table 1). This factor is supplemented by simple charging rules. The costs of such financial consulting are relatively small compared to the expenses on traditional investment advisors, which range between 1.07% and 2.8% of the value of assets managed in the case of asset management and between 0.26% and 1.51% in passive investment (Uhl & Rohner, 2018). In the case of RA platforms, these costs typically stay under 0.5%, and for portfolios limited to ETFs, they even drop below 0.2% of assets.

Another advantage of RAs is the use of online communication (at any time of the day and via any device: laptops, tablets, smartphones, Smart TVs, etc.), which is perceived by clients as less laborious and more cost-efficient as compared to traditional financial consultants (Beketov et al., 2018).

RA platforms are being actively researched and developed around the world. J.E. Fisch, M. Labouré, and J.A. Turner (2019) believe that in the near future, the functionality of the modules advising the investor in making investment decisions will be considerably improved through a multi-criteria autonomous model using artificial intelligence (Lawrencenko et al., 2016; Neznamova et al., 2020). The new model will automatically generate a set of investment offers and optimize the portfolio in real time. Major progress can also be expected with regard to the modules that are already attempting to estimate the investor's risk profile (Baker & Dellaert, 2018; Hohenberger et al., 2019; Reznikova et al., 2020).

Regarding the use of RAs in various countries, opportunities may differ depending on national legislation (Gurinovich & Lapina, 2022). In our view, Russia can use the experience of European RAs in the formation of individual investment accounts for the



so-called unqualified investors based on model investment portfolios and investment in the shares included in quotation lists, Russian OFZs, bonds of Russian issuers with a certain level of credit rating, and investment units of the stock exchange, open, and interval mutual funds.

5 CONCLUSION

We conclude that despite the differences in the offer of investment plans, minimum investment, and the fees for consulting services, the goal of digital financial advice platforms is to manage their clients' investment portfolios. These programs allow creating portfolios that are optimized in terms of customer knowledge and declarations as a result of analysis using survey data.

To the limitations of the study, we can attribute the lack of analysis of the operation of Russian RA platforms, which is objectively associated with the relatively low demand for investment consulting in Russia and the preferred structure of savings of Russian households being focused on bank investments. Although some Russian banks like Tinkoff have developed their own robo-advisers, no studies on user experience with these systems have been published in open access journals.

A prospect for further research could be an analysis of the risks associated with the operation of RAs, opportunities to reduce these risks, and the possible consequences of RAs' mistakes. The mistakes of RAs may lead to massive losses for investors, so it is important to look for various mechanisms (technical, managerial, regulatory) to minimize such risks.

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