

Artificial Intelligence – a Key Success Factor for Wealth Management Industry

Plamen Dzhaparov - Chief Assist. Prof. PhD
University of Economics - Varna, Varna, Bulgaria
pl.djaparov@ue-varna.bg

Abstract

The Private Banking & Wealth Management (PWM) industry is generally seen as embodying traditional, old-fashioned and even archaic values. Upheld for centuries, its business model, which is based on intensive, comprehensive and discreet personal interactions between financial advisors and wealthy clients, is put to the test today. In today's dynamic and highly connected world, a large number of HNWI's (High Net Worth Individuals) want faster and more convenient value propositions and a cutting-edge digital experience – a trend that the pandemic has amplified many times over. In order to meet the increased expectations of this clientele, private banks and other institutions in the sector are increasingly investing in a number of new technologies and tools, artificial intelligence (AI) taking a leading place among them. In addition to enabling a more complete and qualitative satisfaction of user needs, AI promises benefits for PWM companies in a number of other areas: risk management, compliance, cost reduction, etc.

Keywords: Artificial Intelligence, Machine learning, Wealth Management, Private Banking.

JEL Code: G21, O30

Introduction

A quick look at the specialized literature is enough to conclude that artificial intelligence undisputedly holds the first place in the category of "the most discussed technology in the financial sector." At the same time, however, its popularity does not correlate with the pace of its implementation - a finding that can be applied to all segments of finance, including wealth management. However, some research suggests that, contrary to its proverbial conservatism, it is the PWM industry that is most open to the possibilities provided by artificial intelligence. A 2022 survey of 386 executive-level respondents at various US financial institutions, for example, found that 68% of wealth management organizations use AI tools to support decision-making processes. 32% of them reporting AI use for a significant number of cases. That's triple the rate of the next-highest significant case sector user in retail banks (Arizent Research, 2022, p. 7).

A survey by Accenture among 500 financial consultants based in North America testifies to the positive attitude of the PWM sector towards artificial intelligence-based technological solutions. Almost unanimously (99%) they believe AI plays a role in the future of financial advice and more than half (55%) believe to a great extent that AI will have a transformative/revolutionary effect on the future of financial advice within the next 3 years (Accenture, 2022, p. 4-5). Against the background of these attitudes, it is not surprising that artificial intelligence tops Euromoney's ranking of the "Top 10 tech developments in Wealth Management", ahead of the second-ranked blockchain technology by more than 10% (Euromoney, 2020).

For the purposes of this scientific paper, artificial intelligence is defined as a comprehensive term referring to the capabilities of a machine to perform cognitive functions associated with the human mind, including perception, reasoning, learning, interaction with the environment, problem-solving and even creativity. There are dozens of smart technologies and activities that are associated with AI. The more important of these are: predictive analytics; machine learning (ML); robotic process automation (RPA); artificial neural networks; natural language processing (NLP); computer vision, etc.

1. Factors determining the need for AI-solutions

It should become clear that the implementation of artificial intelligence in the activities of institutions engaged in wealth management is not just a modern trend that has "infected" the minds

of their senior management. On the contrary, "embracing" this relatively new technology increasingly acquires the status of an objective necessity, determined by a number of factors.

Leading among these factors is another up-to-date concept of great importance for wealth management in recent years – handling the Big Data. Often referred to as the “new oil” due to its importance as a fundamental resource for financial institutions, data is undeniably at the center of the digital transformation of the PWM sector. Of utmost importance is information on the financial capacity, behavior and attitudes of HNW-segment customers, which is characterized by a huge variety, and includes both structured data from traditional information sources (including demographic data, size of wealth, payment history, financial market trading results, credit exposures, etc.), as well as a range of unstructured data (site visits, chat logs, emails, likes and comments on social networks, club memberships, marketing research, information generated by the "Internet of Things", and many others). In the wealth management business, no less important role is played by the information needed to evaluate the investment alternatives offered to clients, options for tax optimization, options for diversifying and rebalancing the portfolio, etc. If until recently consultants and investment managers extracted this data mainly from financial reports, regulatory documents and specialized news platforms, today this is not enough to generate the required return on investments and achieve optimal results. That is why they are also looking at a range of alternative data sets: sentiment analysis, geolocation data, satellite imagery, etc.¹

Against the background of this vast abundance of data, many PWM institutions are only scratching the surface of their potential. As a reason for this slow progress industry representatives often point to the reluctance and/or apprehension of customers to provide them with full information. However, the results of global studies refute such claims. For example, Ernst&Young found that clients are much more open to sharing personal data than wealth management firms assume – a finding that applies particularly strongly to younger generations. What's more, they are more likely to disclose information to their primary Wealth Manager than to insurers, retailers, technology firms and even their doctor (Ernst&Young, 2021, p. 25-26)! From this perspective, the reasons for the sector's failure to meet the challenges of Big Data should be sought elsewhere. For example, in the overwhelming share of the much more difficult to process unstructured data, which is expected to make up more than 80% of the world's data by 2025 (Venture Beat, 2022). In addition, in most PWM companies, data is currently often stored and managed "in silos", which makes it difficult to maintain a single, consistent and complete information base (Temenos, 2020, p. 19). This creates serious challenges for ensuring the quality of data used by financial consultants, expressed in terms of integrity, timeliness, completeness, validity, accuracy and consistency. Against the background of the mentioned problems, it becomes clear that the processing of the huge volumes of data is already beyond the possibilities of human capacity and potential. In this sense, the application of artificial intelligence turns from a wishful thinking into a mandatory condition for successful market positioning in the PWM industry.

Another factor operating in this direction are the rapidly evolving attitudes, needs and demands of wealthy clients. If only ten years ago they gave their preferences to fully personal face-to-face interactions with their personal financial advisor, today their desire for a hybrid (offline and online) service is more than clear (Oliver Wyman, Morgan Stanley, 2020, p. 8). There are several reasons for this. First, the rapid development of all-virtual FinTech (and WealthTech in particular) companies that are constantly raising the bar for customer experiences in the digital environment. Second, the Covid-19 pandemic and its enforced social distancing, which has forced the majority of HNWIs to experiment with a variety of digital channels. Thirdly, generations Y and Z, characterized by a much higher technological literacy and receptiveness to digital solutions, occupy

¹ Over the past three decades, alternative data providers have grown from around 20 in 1990 to just over 400 in 2018 (AIMA, 2020, p. 8). As for future developments, some predict that the global alternative data market will grow by 58.5% between 2021 and 2028 (The Investment Association, 2021, p. 10).

an increasing share of PWM-providers' customers.²

The growing demands of wealthy clients towards their financial services center are not only expressed in an increase in the number of desired digital channels for interaction. Today, they are increasingly demanding a truly personalized value proposition that guarantees cutting-edge and unique experiences. In this sense, in the specialized literature and professional circles, the thesis of the need for hyper-personalization in the service of the wealthy (Bailey, 2022), which is a reflection of the divergence in their needs and requirements, is increasingly being asserted. In other words, HNWIs are not just evolving in terms of their needs and wants, but also increasingly differentiating themselves from each other. It's hardly surprising, then, that by 2030, some predict that up to 80% of the new clients in the sector will want to access financial advice in a Netflix-like model – data-driven, hyper-personalised, seamless and subscription-based (McKinsey, 2020a). A key factor for the implementation of this new strategy is the extremely precise and multi-layered segmentation and clustering of the customer base, which inevitably also goes through the application of artificial intelligence. In the near future, failure to address these tasks will increasingly expose Wealth Management organizations to the threat of significant client migration, which is already a serious problem given the highly competitive environment and declining switching costs.

But that's not all. Studies show that financial advisors typically spend 60 - 70% of their time on non-revenue-generating activities. One of the leading reasons for this is that most of them are still working with legacy IT systems or even spreadsheets (McKinsey, 2022). Such statistics are completely indicative of the lack of well-developed technological tools to support consultants - a fact that they take particularly negatively. For example, a mid-pandemic survey of more than 250 financial advisors from the US and Canada found that 51% of them frequently consider replacing their current employer with one that is more technologically advanced. In addition, 74% wish their organization had access to better technology tools, and 82% admit that paperwork takes up too much of the time they would otherwise spend working with customers (Bramwell, 2022). These attitudes of consultants, combined with the global trend of their aging and the increasing shortage of staff, are another symptom of the urgency of implementing artificial intelligence in the daily work of PWM-providers.

Last but not least, institutions in the sector are facing escalating operating costs, a trend that can be explained by several main reasons. First, over the past decade, PWM service providers have faced an unprecedented surge in both global and local regulatory interventions aimed at increasing transparency, protecting clients, preventing financial crime, ensuring tax compliance and market stability.³ At the same time, the regulations differ significantly in individual countries and regions, and their change moves at different speeds, which necessitates the provision of specialists with high expertise in each individual market. This is why compliance costs are growing exponentially. Second, while making significant efforts in the area of regulatory compliance, private banks do not always live up to the challenge imposed by regulators. This, combined with the frequent manifestations of moral deficiency at the highest ranks, results in fines, sanctions and reputational damage, generating additional costs in both the short and long terms. Third, as has already become clear, most traditional PWM institutions continue to be highly dependent on legacy IT systems and platforms, as well as complex manual processes. In addition to highlighting the lack of operational

² Analysts agree that the most significant intergenerational transfer of wealth in history is underway, from baby boomers and Generation X to Generation Y and Z. Speculations on the exact amount and timing of the wealth transfer vary. According to some, USD 59 trillion will be transferred by 2061, others predict USD 68 trillion for 25 years, and still others - about USD 15 trillion over the next decade (Haggerty, 2021). Regardless of the exact amount, it will undoubtedly be spectacular, especially in the US, where about 70% of the invested assets of wealthy households are currently controlled by baby boomers (McKinsey, 2020b).

³ According to Naydenova (2018) the problem is deeper for the new markets. The application of sophisticated restrictions requires administrative capacity of the supervisory authority, which is not inherent in the emerging markets.

leverage and scalability in their business models, these issues significantly increase costs for, e.g. coordination and control. Four, in view of the growing requirements for the qualifications and skills of financial consultants, and in view of the looming danger of migration to new competitors, personnel costs are also experiencing exponential growth. Against the background of all this, the logical aspiration to limit the cost pressure is another factor forcing the search for a solution in new technologies, and in particular in artificial intelligence.

2. The promised benefits of artificial intelligence

In view of all that has been said thus far, two interrelated questions arise. What are the concrete benefits of the active application of artificial intelligence in PWM companies? Why according to their top managers the use of AI and machine learning is genuine game change that will lead to a radical "re-architecting" of financial services, with the possibility for disorderly regime change (Euromoney, 2021).

The benefits of the wider implementation of AI can be grouped into four main areas.

Firstly, *higher quality service for the wealthy and ultra-wealthy, tailored to their desire to receive custom-made services*. More specifically, ML and NLP-based tools help form a 360-degree, multidimensional view of the needs of traditional PWM users, with the ability to continuously update data in real time. In other words, by analyzing a rich set of historical and current structured and unstructured information, advanced tools have the potential to reveal what topics individual customers feel "passionate" about, where their "painful spots" are, what their preferred channels of interaction are, what their desired frequency of contacts is, what their risk tolerance is, etc.⁴ Additional benefits in the customer service orbit are: easier identification of and attracting potential users; significantly improving the onboarding process; increasing the share of Cross- and Up-Selling; early diagnosis of activities indicating the risk of customer churn. In addition, AI opens up opportunities for financial advisors to focus on fewer, but higher-quality interactions at the most important moments in the client lifecycle. Also, the AI-based system can help companies direct users to Relationship Managers who share the same interests, belong to the same age group, or have experience serving a similar type of customer in the past (Shmat, 2022).

Among other things, artificial intelligence enables the significant improvement of mobile applications and/or customer portals, which (especially in the context of the pandemic) have become the cornerstone of customers' digital experiences, parametrizing their overall attitude and level of brand loyalty. In this sense, one of the most important requirements for wealth management providers is to feed into applications well-chosen content for each client, instead of "flooding" them with too much general and unnecessary information, which, as a rule, acts as an irritant and confuse the user. Such content can range from specific investment recommendations to much broader or specific topics, for example, health advice, airline ticket prices or virtual tours of private galleries. In addition, the content should not only be tailored to the key stages of the person's life, but also hint possible future decisions. So, for example, if a client is in the middle of divorce proceedings, their PWM provider could provide them with a set of articles to direct them to options for offsetting future alimony payments.⁵ Given the growing popularity of ESG-investing, it is necessary for firms in the wealth management segment to also consider the introduction of visualizations, for example

⁴ Let us illustrate this with an example. During a video call, AI-systems based on speech-to-text, natural language processing or computer vision technologies can perform hundreds of searches based on the customer's facial expressions, words and expressed interests. All relevant information is then instantly summarized in a customized dashboard. This enables the financial consultant to react in real time and to suggest suitable product solutions and investment opportunities that correspond to the client's values, interests, strategies and current attitudes (Grecourt, 2022).

⁵ Morgan Stanley's Next Best Action system works on this principle. It is often referred to in specialized literature as one of the best AI-solutions in the industry (Davenport, Miller, 2022).

of the total carbon footprint of the client's portfolio. A seamless digital experience should also be complemented by do-it-yourself functionality, including convenient and easy calculators, simulation tools, and gamification-based capabilities that allow testing different scenarios and tracking the expected performance of each one of them. In this way, PWM institutions can significantly increase the engagement, especially of younger investors, raising them to the rank of co-producers of products and services.

In summary, all this opens the door for true customer centricity, which is expressed in the provision of more substantiated, refined and individualized financial recommendations, application of the so-called "contextual service" and creating WOW moments throughout the customer journey. The end result will be higher satisfaction and loyalty of the affluent clients and hence increase the customer retention quota.⁶ And at a lower cost at that.

Secondly, *conquering new customer segments*. Excessively high minimum account balance requirements, combined with high industry fees, have long kept some customers from the „lower ranks“ of wealth away from private banks and other traditional PWM providers. Institutions themselves also tend to ignore clients from this market segment because their assets are too large for retail banking's offerings but too small to attract the attention of financial advisors. At best, these individuals find themselves "besieged" by several relationship managers who offer them the same standardized set of products, while thematic investments, as well as those in hedge funds, private and venture capital, are offered exclusively only to institutional clients and very wealthy individuals. However, this strategy turns out to be extremely short-sighted, given the fact that the mass affluent clientele currently includes a whopping 331 million individuals, with the potential to contribute \$118 billion to global revenue. In the future, these numbers will continue to grow, and the Asia-Pacific market, characterized by an emerging middle class, will be especially lucrative (BCG, 2021, p. 17 - 21).

All analysts agree that AI is the technology that will enable PWM institutions to engage cost-effectively with the mass affluent clientele. In fact, it can be said that the road to increasing access to advice by ensuring greater participation of consumers of all income levels (or so-called democratization of the industry) is at least half-way done. This is evidenced by the increasingly popular robo advisers. In a 2021 survey, for example, 40% of PWM companies declared that they already included robo-advice in their range of services offered, and another 37% planned to do so in the future (Advent, Wealth Briefing, 2021, p. 10). Driven by significantly lower fees and minimum participation thresholds, it is the "lower rungs" of wealth that are currently the most active users of robo advisers.

Low costs are not the only advantage of robotic platforms. Other highlights include: more accurate investment return forecasts, greater transparency, speed and convenience provided, the ability to monitor and rebalance the portfolio 24/7, greater impartiality of generated investment advice, etc. These characteristics make robo advisers particularly attractive for another not so well covered client segment: the representatives of generations Y and Z.⁷ Such a finding is completely

⁶ The rapidly gaining concepts of Behavioral Finance and Sentiment Analysis, the potential of which is also being unlocked thanks to the advanced technological capabilities of AI, can be useful in this direction. Specifically, the first concept allows companies to examine the impact of psychological and emotional factors on customer investment behavior. The Early Adopters in the industry use it to design personalized investment proposals: portfolios based on the individual's accompanying risks, his/her degree of anxiety caused by the volatility of the market and the emotional aspects of his/her investment (Capgemini, 2021, p. 27). In turn, sentiment analysis involves interpreting emotions from any textual source, be it a news article, social media post, personal blog content, etc. With the help of natural language processing wealth management companies can analyze public opinion on various topics, trends, events and companies in real time, which also helps to make much more informed investment decisions (Shmat, 2022).

⁷ A survey by Ernst&Young, for example, found that two-thirds of younger investors think robo-advisors generate benefits, compared with just a quarter of older investors who share these views (Ernst&Young, 2021, p. 29).

understandable. In addition to demonstrating (by default) an extremely high enthusiasm for technological solutions of all kinds, according to a number of studies, the new generations of wealthy individuals are much more likely to conduct their own independent research and analysis on the basis of which they can make their own final decisions about their finances, instead of implicitly and unconditionally trusting a financial advisor.

Thirdly, *time saved and increased productivity of financial consultants*. The application of artificial intelligence can contribute to productivity growth due to the unlocked opportunity to automate administrative back office tasks that are usually cumbersome, inefficient, tedious and error-prone when performed manually. Particularly useful in this regard is RPA technology, with the help of which a number of repetitive tasks of financial consultants can be optimized, including search for information, Know Your Customer (KYC): procedures, marketing activities, report generation, document flow management, etc. In addition, robotic solutions are an important step towards building a unified platform for tracking results in the so-called post-advisory period. The combination of all this will logically lead to saving time that consultants can invest in a greater number of and more creative value-added activities, as well as in serving a larger number of clients. In turn, their increased productivity is expected to result in reduced labor costs, with savings of up to 50% according to some studies (Celent, 2021, p. 24).

Fourthly, *more effective risk management*. RPA-technology is considered very useful in managing compliance risk and limiting the respective compliance costs by drastically reducing the need to invest significant resources in daily manual tracking of regulatory changes in dozens or even hundreds of regulatory documents, websites, news platforms, etc. Also, AI-systems allow organizations to react much faster to regulatory changes and thus increase the resilience of their business (Shmat, 2022). From the point of view of Compliance risk, some other potential benefits of RPA technology are not to be underestimated either. For example, it enables better coordination between teams directly involved in regulatory compliance and risk management, development, marketing, etc. On the other hand, improved technological tools will contribute to avoiding fines and reputational damage, providing complete and accurate information for external stakeholders, etc.

Another area where artificial intelligence has great potential is cyber risk management. With the ever-increasing amount of data, much of it stored on cloud servers, one of the biggest challenges facing PWM companies is the heightened need to protect the privacy of financial records and customers' personal information. In this regard, machine-learning-based "smart" and self-learning platforms and applications can perform a precise and timely assessment of already occurred cyber incidents or observed anomalies, and on this basis identify early symptoms of potential future problems and threats.⁸

Finally, it should be emphasized that all these advantages are unlikely to be achieved if AI is seen as a technology that will completely replace human interactions in the long run. On the contrary, in the business of wealth management, identified for centuries with the discreet, deep and even "intimate" relationships along the financial advisor - client axis, the only purpose of technology is to serve people. In other words, the key to success should be sought in the synergy between the emotional intelligence inherent in humans and the almost limitless technical capacity of artificial intelligence (Grecourt, 2022).

Conclusion

Propelled by drivers such as evolving client needs and wants, an increasingly saturated

⁸ HSBC, for example, is working with the NEASQC consortium to explore how quantum computing can protect against advanced forms of cyber risk (Celent, 2021, p. 36). Goldman Sachs has also invested significantly in providing AI tools to improve its cyber defenses.

competitive environment, and exponentially rising operating costs, today's wealth management industry is undergoing a transformation from a fully-analogous to a hybrid business model. A key factor for the success of this venture is the successful implementation of artificial intelligence technology in various parts of the value chain of PWM suppliers. AI-based tools, platforms and systems have enormous potential in a number of areas: Big Data processing and analysis, marketing segmentation, compliance, protection against cyber attacks, etc. Institutions that are able to take full advantage of it can count on positive results, both in terms of customer satisfaction (thanks to the high-quality personalized service of HNWI's and more accurate forecasts and analyses), and of the optimization of internal processes (through the minimization of manual intervention and increased cost efficiency).

References

1. Accenture (2022) *AI in Wealth Management: A Financial Advisor Study*. [Online]. Available from: https://www.accenture.com/_acnmedia/PDF-178/Accenture-Wealth-Management-AI-All-Systems-Go.pdf.
2. Advent, Wealth Briefing (2021) *Tech & Ops Trends in Wealth Management 2021*. [Online]. Available from: <https://clearviewpublishing.com/wp-content/uploads/2021/06/SSC-Advent-and-WealthBriefing-Tech-Ops-Trends-in-Wealth-Management-2021.pdf>.
3. AIMA (2020) *Casting the Net: How Hedge Funds are Using Alternative Data*. [Online]. Available from: <https://www.aima.org/educate/aima-research/casting-the-net.html>.
4. Arizent Research (2022) *The future of the data-driven workplace*. [Online]. Available from: <https://arizent.brightspotcdn.com/be/b2/9042045949d9a57d5da9b545b0b5/ai-driven-decision-making-researchreport-072022-v8.pdf>.
5. Bailey, S. (2022) *How hyper-personalisation is key to success in wealth management*. [Online] Available from: <https://www.refinitiv.com/perspectives/future-of-investing-trading/how-hyper-personalisation-is-key-to-success-in-wealth-management/>.
6. BCG (2021) *When Clients Take the Lead*. [Online] Available from: <https://web-assets.bcg.com/d4/47/64895c544486a7411b06ba4099f2/bcg-global-wealth-2021-jun-2021.pdf>.
7. Bramwell, J. (2022) *Is Artificial Intelligence Becoming a Tool for Financial Advisors?* [Online] Available from: <https://www.cpapracticeadvisor.com/2022/08/05/client-advisors-see-ai/68911/>.
8. Business Wire (2021) *BlackRock Boosts Aladdin's Forward-Looking Sustainability Analytics and Reporting Capabilities Through Strategic Partnership with Clarity AI*. [Online] Available from: <https://www.businesswire.com/news/home/20210114005634/en/BlackRock-Boosts-Aladdin%E2%80%99s-Forward-Looking-Sustainability-Analytics-and-Reporting-Capabilities-Through-Strategic-Partnership-with-Clarity-AI>.
9. Capgemini (2021) *World Wealth Report 2021*. [Online] Available from: <https://worldwealthreport.com/wp-content/uploads/sites/7/2021/07/World-Wealth-Report-2021.pdf>.
10. Celent (2021) *Wealth Management Technology Forecast 2022*. [Online] Available from: <https://www.onespan.com/sites/default/files/2021-07/OneSpan-AnalystReports-Celent-Wealth-Management-Technology-Forecast-2022.pdf>.
11. Davenport, T., Miller, S. (2022) *Morgan Stanley: Financial Advisors and the Next Best Action System*. [Online] Available from: <https://ieeexplore.ieee.org/document/9855586/authors#authors>.
12. Ernst & Young (2021) *Where will wealth take clients next?* [Online] Available from: https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/wealth-and-asset-management/ey-2021-global-wealth-research-report-optimized-for-web-v2.pdf.
13. Euromoney (2020) *Private Banking and Wealth Management Survey 2020: How to win in wealth over the next decade*. [Online]. Available from: <https://www.euromoney.com/>

article/b1k64sdjtdlzg1/private-banking-and-wealth-management-survey-2020-how-to-win-in-wealth-over-the-next-decade.

14. Euromoney (2021) *Private Banking and Wealth Management Survey 2021: Banking`s new engine*. [Online]. Available from: <https://www.euromoney.com/article/283f9d0hjyvirczn13fu0/wealth/private-banking-and-wealth-management-survey-2021-bankings-new-engine>.
15. Grecourt, Y. (2022) *Private & Wealth Management: AI as the key to reinvent client relationship?* [Online]. Available from: https://www.ey.com/en_be/financial-services/private-wealth-management-ai-as-the-key-to-reinvent-client-relationship.
16. Haggerty, M. (2021) *The impact of inheritance*. [Online]. Available from: <https://www.vox.com/the-highlight/22320272/inheritance-money-wealth-transfer-estate-tax>.
17. McKinsey (2020a) *On the cusp of change: North American wealth management in 2030*. [Online]. Available from: <https://www.mckinsey.com/industries/financial-services/our-insights/on-the-cusp-of-change-north-american-wealth-management-in-2030>.
18. McKinsey (2020b) *Women as the next wave of growth in US wealth management*. [Online]. Available from: <https://www.mckinsey.com/industries/financial-services/our-insights/women-as-the-next-wave-of-growth-in-us-wealth-management>.
19. McKinsey (2022) *Analytics transformation in wealth management*. [Online]. Available from: <https://www.mckinsey.com/industries/financial-services/our-insights/analytics-transformation-in-wealth-management>.
20. Naydenova, K. (2018) *Built-in Problems in the New European Regulations for the Bulgarian Capital Market*. *Economic Studies* 27 (5), p. 106 - 134. Available from: https://www.iki.bas.bg/Journals/EconomicStudies/2018/2018-5/8_Kr.Naydenova_f-f.pdf.
21. Oliver Wyman, Morgan Stanley (2020) *After the Storm*. [Online]. Available from: <https://www.oliverwyman.com/content/dam/oliver-wyman/v2/publications/2020/jul/2020-Global-Wealth-Management-Report-After-the-Storm.pdf>.
22. Shmat, D. (2022) *Using AI to scale wealth management*. [Online]. Available from: <https://www.itransition.com/ai/wealth-management>.
23. Temenos (2020) *COVID-19: A Global Perspective on the Impact on Wealth Management*. [Online]. Available from: <https://www.temenos.com/wp-content/uploads/2020/08/aite-covid19-a-global-perspective-on-the-impact-on-wealth-management.pdf>.
24. The Investment Association (2021) *AI and the Investment management industry*. [Online]. Available from: <https://www.theia.org/sites/default/files/2021-11/AI%20and%20the%20Investment%20Management%20Industry%20FINAL.pdf>.
25. Venture Beat (2022) *Report: 80% of global datasphere will be unstructured by 2025*. [Online]. Available from: <https://venturebeat.com/data-infrastructure/report-80-of-global-datasphere-will-be-unstructured-by-2025/>.