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FUNDING FOR FUNDAMENTAL SCIENCE RESEARCH BASED ON BLOCKCHAIN TECHNOLOGIES: «BANCHENKO MARKET» (LUCID DREAMS AND OTHER TRNSCENDENTAL STATES OF CONSCIOUSNESS MARKET)

ФИНАНСИРОВАНИЕ ИССЛЕДОВАНИЯ ФУНДАМЕНТАЛЬНОЙ НАУКИ НА ОСНОВЕ БЛОКЧЕЙН-ТЕХНОЛОГИЙ: «РЫНОК-БАНЧЕНКО» (РЫНОК ОСОЗНАННЫХ СНОВИДЕНИЙ И ДРУГИХ ТРАНСЦЕНДЕНТАЛЬНЫХ СОСТОЯНИЙ СОЗНАНИЯ)

Banchenko Denis Yurievich, CEO, Independent Research Group Advanced Scientific Research Projects & Association of Sleep Research Projects, Baikonur, Kazakhstan (https://orcid.org/0000-0002-1286-2981 denisbanchenko@asrp.tech)

Burilova Tatyana Viktorovna, CFO, Independent Research Group Advanced Scientific Research Projects & Association of Sleep Research Projects, Nicosia, Cyprus(https://orcid.org/0009-0007-1945-1863, tatyanaburilova@asrp.tech)

Nekhaev (Siberia) Igor Nikolaevich, Head of Respiration Science Research, Independent Research Group Advanced Scientific Research Projects & Association of Sleep Research Projects, Hawai‘i, United States (https://orcid.org/0009-0004-9749-9414, igornekhaev@asrp.tech)

Mutsalkhanova-Yushchenko Olena Davletkhanovna, CVO, Independent Research Group Advanced Scientific Research Projects & Association of Sleep Research Projects, Nottingham, United Kingdom (https://orcid.org/0009-0003-8738-8596, olenamutsalkhanova@asrp.tech)

Shishkin Lev Konstantinovich, CSO, Independent Research Group Advanced Scientific Research Projects & Association of Sleep Research Projects, Orenburg, Russian Federation (levshishkin@asrp.tech)

Prokofyeva Olga Viktorovna, CBO, Independent Research Group Advanced Scientific Research Projects & Association of Sleep Research Projects, Moscow, Russian Federation. (olgaprokofyeva@asrp.tech, https://orcid.org/0009-0007-1617-2383)

Банченко Денис Юрьевич, Генеральный директор (Independent Research Group Advanced Scientific Research Projects & Association of Sleep Research Projects, Байконур, Казахстан (E-mail: denisbanchenko@asrp.tech https://orcid.org/0000-0002-1286-2981)

Бурилова Татьяна Викторовна, Финансовый Директор, (Independent Research Group Advanced Scientific Research Projects & Association of Sleep Research Projects, Никосия, Кипр (tatyanaburilova@asrp.tech, https://orcid.org/0009-0007-1945-1863)

Нехаев (Сибирь) Игорь Николаевич, руководитель отдела научных испытаний в области респирации, (Independent Research Group Advanced Scientific Research Projects & Association of Sleep Research Projects, Гавайи, США (https://orcid.org/0009-0004-9749-9414, igorsiberia@asrp.tech)

Муцалханова-Ющенко Елена Девлетхановна, исполнительный директор, (Independent Research Group Advanced Scientific Research Projects & Association of Sleep Research Projects, Ноттингем, Великобритания (olenamutsalkhanova@asrp.tech, https://orcid.org/0009-0003-8738-8596)

Шишкин Лев Константинович, директор по информационной безопасности (Independent Research Group Advanced Scientific Research Projects & Association of Sleep Research Projects, Оренбург, Россия(levshishkin@asrp.tech)

Прокофьева Ольга Викторовна, коммерческий директор, (Independent Research Group Advanced Scientific Research Projects & Association of Sleep Research Projects, Москва, Россия, (olgaprokofyeva@asrp.tech, https://orcid.org/0009-0007-1617-2383)

Abstract. Recently, there has been a significant increase in interest in the sale of NFTs. These digital assets can be used not only to address the issue of owning digital assets but also to form the basis of a business model for funding fundamental academic research,

alongside cryptocurrencies and other blockchain technologies. Concurrently, a scientific study conducted by Daniele Pepe from the University of Leuven revealed that the scientific interest in lucid dreaming is growing at a rate of 5.6% annually. Moreover, a completely new trend has emerged, with major investors allocating funds to research on lucid dreaming.

The aim of this article is to demonstrate the feasibility of using a business model for financing scientific research, exemplified by the establishment of a new "Banchenko Market" (Lucid Dreams and Other Transcendental States of Consciousness Market) based on the application of NFTs, cryptocurrencies, and blockchain technologies. Successful projects in the field of lucid dreaming research, such as the collaborative study between the Research Institute of Sleep and Dreams in Moscow and D.Y. Banchenko on exploring techniques for inducing and experiencing lucid dreams, serve as notable examples utilizing NFTs for partial project financing.

This work identifies four NFT business models: (1) NFT creator; (2) NFT market selling author's NFT tokens; (3) company offering proprietary NFTs (fan tokens); and (4) computer game with NFT sales. In this research, the financing model for research is based on the sale of authors' NFT tokens. The study combines literature on business models and NFTs to bring clarity to established NFT business models in the context of the "Banchenko Market."

Аннотация. В последнее время значительно возрос интерес к продаже NFT. Эти цифровые активы могут использоваться не только для решения проблемы владения цифровыми активами, но также могут составлять основу бизнес-модели финансирования исследований фундаментальной академической науки, наряе ходе научного исследования проведенного Daniele Pepe из университета в Лёвене было выявлено то, что научный интерес к осознанным сновидениям растёт на 5,6% ежегодно. Так же появилась совершенно новая до этого отсутствующая тенденция крупных инвесторов вкладывать средства в исследования «осознанных сновидений».

Цель данной статьи - продемонстрировать целесообразность использования бизнес-модели финансирования научных исследований на примере формирования

нового «Рынка-Банченко» (рынка осознанных сновидений и других трансцендентальных состояний сознания), основанного на применении NFT , криптовалют и блокчейн-технологий, удачным примером которого являются проекты по совместным исследованиям в области «осознанных сновидений», например совместное исследование между НИИ ВНДиН г. Москва и Банченко Д.Ю. по изучению методик погружения и проживания опыта осознанного сна, с применением NFT для частичного финансирования проекта.

В данной работе было выделено четыре бизнес-модели NFT: (1) создатель NFT; (2) рынок NFT, продающий NFT-токены авторов; (3) компания, предлагающая собственный NFT (фан-токен); и (4) компьютерная игра с продажами NFT. В данном исследовании бизнес-модель финансирования исследований базируется на продаже NFT-токенов авторов. Эта работа объединяет литературу по бизнес-моделям и NFT, чтобы внести ясность в проверенные бизнес-модели NFT применительно к «Рынку-Банченко».

Keywords: NFT, crypto assets, blockchain technologies, business model, lucid dreaming

Ключевые слова: NFT, криптоактивы, блокчейн-технологии, бизнес-модель, осознанные сновидения

Introduction

A new paradigm of research funding is related to the use of NFTs. [1] [2] In 2022, a university biomedical project was funded in the form of an IP-NFT thanks to innovative innovation in Molecule [3].

IP-NFTs provide new fundraising and collaboration strategies for researchers, combining legal and technical frameworks with NFT technology. This allows early-stage research to be funded without endless grant applications, startup creation and venture capital, or patent applications. IP-NFTs represent full legal rights to intellectual property and data access control for research. With IP-NFTs, researchers and manufacturing companies can raise funds on a commercial basis without the need for early-stage patenting or startup creation. Most researchers spend a significant amount of time on funding, as confirmed by L. Herbert's research [4]. It showed that among 285 biomedical

researchers in Australia, about 550 work-years were spent preparing proposals, and preparing a new grant application takes an average of 38 researcher workdays. Alternatives for funding and promoting developments, as well as an active and engaged community, are necessary today. NFTs can become an alternative to sources of development financing, creating an "author economy" and transferring power from intermediaries to the creators themselves, as confirmed by the use of NFTs in creative projects.

Literature review

The business model is focused on operations and processes, while the strategy takes into account external competition. Analysis of business models is particularly useful when complex technologies and processes are combined [5]. Business model innovations are often associated with changes in blockchain technologies and their applications, aimed at improving existing problems or adding new services. Blockchain technologies contribute to the modernization of decentralized platforms. [6, с 307]

Figure 1. Value chain of NFT creation: definition, market, legal aspects, and evaluation [compiled by the author based on the research materials]

This research evaluates the feasibility of applying a business model for financing fundamental academic research using NFTs and related technologies such as blockchain. Analysis of legal aspects is a prerequisite for financial and economic evaluation, which is presented in Figure 1. The study focuses on the market and legal aspects of tokens but does not include information on their technological aspects, which have extensive literature.[7] [8]

Methodology for NFT evaluation

According to IFRS 13:62, the main methods for evaluating financial assets are the market approach, the cost approach, and the income approach. The market approach is based on prices obtained from market transactions involving identical or comparable

assets. The cost approach reflects the amount that would be required to replace the asset's service potential. The income approach converts future amounts into a single current discounted amount, reflecting current market expectations.

Blockchains can impact both revenues and costs. Their economic and financial marginality can be presented in Table 1.

Table 1. The impact of NFTs and blockchain on economic and financial margin

Economic/ financial margin	Expansion of NFTs and blockchain	Company Standard
Revenues	New business models and opportunities Realistic options for expansion and development	These parameters depend on the traditional business model of the firm, without the influence of blockchain applications
-Fixed cash costs	Data verification can reduce costs and expedite processes with time savings	
-Variable cash costs		
= EBITDA	Economic and financial marginality is increasing due to higher revenues and lower costs	
+/- Operating net working capital (NWC)	Blockchains can shorten supply chains, making payments easier and faster, thereby reducing accounts receivable and payable. Even inventories can be reduced.	
+/- Investments/Capital expenditures	Blockchain can reduce some investments in fixed capital, which will positively impact some fixed costs and depreciation.	
= Operating cash flow	Liquidity can increase due to increased EBITDA and reduced NWC and capex.	

[compiled by the author based on the research materials]

EBITDA and operating cash flow are the cornerstones of two main evaluation criteria.

Research in the field of lucid dreaming

Lucid dreaming is a phenomenon in which a person who is dreaming becomes aware that they are asleep and can therefore consciously influence the content of their dream [9, c. 74]. In a lucid dream, one can learn new things, such as a foreign language or develop skills in martial arts.[10] [11] Lucid dreaming is not a common occurrence in the general population, with estimates suggesting that only half of the population has experienced lucid dreaming at least once, and only one in five people frequently

experience lucid dreaming, up to once a month. [12] However, there are some observations indicating the possibility of shared dreaming, which was noticed by Professor Dohorov [13]. Lucid dreaming most often occurs during REM sleep, but it can rarely occur during NREM sleep or be initiated from a waking state [14, c. 10].

Interest in lucid dreaming stems from its role as a recreational activity and its practical applications, such as treating post-traumatic stress disorder and recurring nightmares [15]. Researchers have found that a single 30-minute intervention session may be enough to achieve significant relief from nightmares [16] It is possible for your consciousness to comprehend absolutely everything, and conversely, it is impossible for your consciousness to comprehend things it is not mature enough to understand. For this reason, despite the fact that fear is still present and is an integral companion to many living beings, one should not fear the world, but rather fear oneself and one's ignorance regarding the objective world. [17]. As suggested by D. Novikov in his review of proposed induction methods and their evidence, the main problem currently faced by lucid dreaming research is the need for a reliable induction technique to increase the frequency of lucid dreaming [14, c. 99]. One of the recent successful active methods recorded is the "Banchenko Algorithm": out of 18 participants, 7 were able to achieve a lucid dream state, and 5 of them did so 2 to 6 times during the study [18]. The "Banchenko Algorithm" uses various elements such as diet, brain training, self-suggestion, red light, light therapy, special physical exercises, asynchronous biosomatic movement of various parts of the body, and breathing exercises.

According to Market Insights Reports, the breathing training device market was valued at USD 21.61 million in 2020 and is expected to reach USD 35.98 million by 2026, with a CAGR of 8.4% during the forecast period (2021-2026). Growth is attributed to increased awareness of the benefits of breathing exercises and meditation, as well as an increase in respiratory diseases. Additionally, the COVID-19 pandemic has led to an increased demand for home respiratory therapy, further increasing market growth [19].

The key elements that influence the "Banchenko Market" are the following:

pharmaceuticals, devices for training breathing;

herbal remedies or direct plants, ethnobotany and traditional teas and beverages;

related products

sleep glasses with filters that do not transmit blue, violet, and ultraviolet spectra; r

ed lamps that will increase demand;

pillows for sleep;

bedding accessories;

salt gels, essential oils;

educational programs.

There are a number of devices that have generated wide interest in the "Banchenko Market" (Lucid Dreams and Other Transcendental States of Consciousness Market) [20]. S.V. Kukharenko published a review of the 10 most popular devices for inducing lucid dreams that have been/are on the market. The devices reviewed include DreamLight, NovaDreamer, Aurora, Remee, REM-Dreamer, ZMax, Neuroon, iBand, LucidCatcher, and Aladdin (Table 2) [9, c. 74].

Table 2. Comparison of the main induction devices for lucid dreaming.

Product	Signal detector	External Stimulus	REM detection algorithm	Access time	Price (USD)
DreamLight	Eye movement	Light, Acoustics	Y	N	---
NovaDreamer	Eye movement	Light, Acoustics	Y	N	450
Aurora Dreamband	Electroencephalogram	Light, Acoustics	Y	N	300
Remee	Timer	Light	N	Y	95
REM-Dreamer	Eye movement	Light, Acoustics	Y	N	170
Hypnodyne ZMax	EEG, Eye movement	Light, Acoustics, Vibration	Y	Y	>1000
iBand/iBand+	Electroencephalogram	Light, Acoustics	Y	Y	300
Neuroon	EEG, Eye movement	Light, Vibration	Y	N	450
Aladdin	Electroencephalogram	тACC	Y	N	300
LucidCatcher	EEG, Eye movement	тACC	Y	N	350
LucidDreamer	Electroencephalogram	tACS, Light, Acoustics	Y	N	---
Mask «LUNA 2»	Controlled by breathing	Acoustics, Vibration	Y	N	200
Cube Deep M.	Electromagnetic fields	Frequencies	N	N	162

[compiled by the author based on the research materials]

Important features include the signal detected, the modality of external stimulation applied, whether the device has an REM detection algorithm, whether the device is currently available for purchase, and the last reported device price.

Lucid dream induction devices that aim for high effectiveness should include various methods, including a combination of cognitive techniques with external stimuli [21].

Considering the pharmaceutical direction as a means of inducing lucid dreams, and one of the main components of the "Banchenko Market", such drugs as Galantamine, Rivastigmine, Memantine, and Donepezil should be noted. For example, there is a correlation between evening doses of Donepezil and nightmares [22]. Researchers hypothesized that this drug activates the visual cortex of the brain during REM sleep, causing nightmares. Galantamine significantly increases the likelihood of lucid dreaming [23]. The main manufacturers include VIFITEKH, Russia; Atoll, Russia; Danson-BG, Vetprom, Bulgaria; Canon-Pharma Production, Russia; Inter-S Group, Russia; TEVA, Israel.

In terms of defined daily doses (DDD), the market for these drugs increased by 54% in 2021 and by 7.6% in 2022 (Table 3). The market dynamics in terms of sales revenue were positive only in 2021 (+35.8%), but in 2022 there was a reduction in sales by 3.6% (Tables 3).

Table 3. Sales dynamics of drugs

Dynamics of sales of drugs in DDD								
Molecule	2020		2021			2022		
	thousand DDD	% / share	thousand DDD	% / share	increase %	thousand DDD	% / share	increase %
Donepezil	1 084,8	4,3%	1 449,0	3,7%	33,6%	1 919,6	4,6%	32,5%
Galantamine	1 745,1	7,0%	1 838,8	4,7%	5,4%	1 783,4	4,3%	-3,0%
Memantine	20 923,0	83,4%	34 084,4	88,0%	62,9%	36 485,5	87,5%	7,0%
Rivastigmine	1 335,1	5,3%	1 358,4	3,5%	1,7%	1 491,2	3,6%	9,8%
Overall result	25 087,9	100,0%	38 730,6	100,0%	54,4%	41 679,7	100,0%	7,6%
Dynamics of sales of drugs at wholesale prices								
Molecule	млн руб.	% / доля	млн руб.	% / доля	growth %	млн руб.	% / доля	growth %
Donepezil	98,4	5,0%	122,7	4,6%	24,7%	157,6	6,1%	28,4%

Galantamine	184,7	9,3%	168,0	6,3%	-9,0%	120,7	4,7%	-28,2%
Memantine	1 496,7	75,8%	2 194,0	81,8%	46,6%	2 079,9	80,5%	-5,2%
Rivastigmine	195,6	9,9%	197,3	7,4%	0,9%	226,7	8,8%	14,9%
Overall result	1 975,3	100,0%	2 682,1	100,0%	35,8%	2 584,8	100,0%	-3,6%

[compiled by the author based on the research materials]

The main impact on the market dynamics is exerted by Memantine, which accounts for 88% of the market in DDD and 81% in rubles (Table 3). Among the acetylcholinesterase inhibitors, Rivastigmine has the most significant market share in value terms (8.8%), while in DDD it lags behind other drugs.

Table 4. The dynamics of weighted average prices per 1 DDD

Molecule	DDD*	2020	2021		2022	
		RUB/DDD	RUB/DDD	growth %	RUB/DDD	growth %
Donepezil	7,5	90,7	84,7	-6,7%	82,1	-3,1%
Galantamine	1,5	105,8	91,4	-13,7%	67,7	-25,9%
Memantine	20	71,5	64,4	-10,0%	57,0	-11,4%
Rivastigmine	9/9,5**	146,5	145,3	-0,8%	152,0	4,6%

[compiled by the author based on the research materials]

Sales of drugs through pharmacies are the main sales channel. Government procurement accounted for 23% of the total market in DDD and 20% in rubles in 2022. Among the reimbursed part of the market, the most significant share is accounted for by purchases by medical and other organizations for the treatment of patients in inpatient and outpatient settings.

Over the two years, pharmacy sales to the population demonstrated a high positive trend (in DDD: +31% in 2021, +27% in 2022; in rubles: +16% and +17%, respectively), while government procurement volumes fluctuated significantly, which determined such significant differences in the dynamics of the entire market of lucid dreams. If in 2021, government procurement increased by more than 2 times, then in 2022, they decreased: by 29% in DDD and by 44% in rubles. As a result, the ratio of sales between the commercial and reimbursed parts of the market in 2022 compared to 2020 did not change at all in DDD, and in rubles it shifted by 3 percentage points in favor of retail sales.

Although the prices of Donepezil are not regulated (it is not included in the list of vital and essential drugs), the weighted average prices per DDD show a slight decrease, which is determined by competition from other acetylcholinesterase inhibitors (Table 3).

The share of domestically produced drugs among the three representatives of the group including Galantamine increased from 49% to 89% in value terms and from 59% to 77% in DDDs from 2020 to 2022. The leading position among the drugs of the ATC group was held by Memantine, specifically Akatinol Memantine produced by Merz & Co., but the share of this drug in the segment's structure decreased from 75% to 64% (from 61% to 40% in DDDs) from 2020 to 2022. The market for ATC drugs includes more than 20 drugs produced by Russian and foreign companies. The share of Russian manufacturers increased from 13% to 25% in value terms and from 25% to 43% in DDDs over three years. The leader among Russian companies on this market is "Kanonpharma Production", which accounts for 10% of the market in value terms. The weighted average prices of Russian drugs in terms of 1 DDD are 2.3 times lower than those of foreign drugs.

The market for herbal tea is gaining momentum due to increased awareness of food consumption and healthcare [24]. The size of this market was estimated at $3,314.5 million in 2021, and it is projected to reach $5,521.59 million by 2030, growing at an average of 6.10% from 2023 to 2030. This is due to people switching to herbal tea due to the use of synthetic ingredients in packaged food products. Additionally, the trend of increasing consumption of ready-to-drink tea also contributes to the growth of the herbal tea market.

There are several teas and herbs that are traditionally associated with the potential to induce lucid dreaming:

Pouchong (Tibetan: ཕུད་མཆོག་) is a traditional Tibetan tea that is usually consumed before bed to improve sleep quality and promote lucid dreaming. There is no research on the connection between Pouchong tea and lucid dreaming, but this tea is part of Tibetan traditional medicine, and its use for inducing lucid dreams is passed down from generation to generation [25].

Mugwort (Artemisia vulgaris) is a plant that is used in traditional medicine and folklore in various cultures. It is believed that consuming mugwort before bed can improve sleep quality and promote lucid dreaming [26].

Galangal tea (Alpinia galanga) is an herbal tea that is usually consumed before bed in Southeast Asian traditional medicine. It is believed to improve sleep quality and promote lucid dreaming [27].

Green tea: a study conducted in 2012 showed that drinking green tea increases deep sleep duration and reduces sleep onset latency. However, this study did not investigate the effects of green tea on lucid dreaming [28].

Mugwort: in 2011, a study was conducted in which participants consumed a mugwort infusion before bedtime. The study showed that mugwort consumption improved sleep quality, but its effect on lucid dreaming was not investigated [29].

Calea zacatechichi (also known as "dream herb" in the Mayan language in Mexico): in 2001, a study was conducted in which participants consumed this herb before bedtime. About 50% of participants reported an increase in the quantity and quality of their dreams [30].

Salvia divinorum (also known as "diviner's sage"): in 2008, a study was conducted in which participants consumed an extract of this herb before bedtime. Several participants reported an improvement in the quality of their dreams, but the effect was not statistically significant [31].

Valeriana officinalis (valerian): in 2011, a study was conducted where participants consumed this herb before sleep. Approximately 40% of participants reported improved sleep quality and reduced anxiety levels, but the effect on lucid dreaming was not studied [32].

The global herbal tea market is segmented by product type, raw material type, and geographical regions. By product type, the market is divided into instant premixes, liquids, powders, and syrups. In 2021, the largest market share (51.47%) is held by instant premixes, with a medium annual growth rate of 6.79%. Green tea is one of the most widely used instant premixes for soluble tea, which offers several health benefits. The

increasing demand for ready-to-drink beverages leads to rapid adoption of instant premixes in the corporate sector, which drives market growth.

By type of raw material, the market is divided into black, green, and yellow tea. In 2021, the largest share of the market (54.26%) belongs to green tea, with an average annual growth rate of 5.44%. Green tea is considered more beneficial for health and better suited for young people and, in our case, for inducing lucid dreaming.

The main players in the market are Tata Consumer Products, Organic India, Hain Celestial, Associated British Foods plc, BARRY'S TEA, Harney & Sons Fine Teas, Nestlé SA, Mother Parkers Tea & Coffee Inc., Martin Bauer Group, Green Earth Products Pvt. . Ltd., Bigelow Tea among other domestic and global players. Market share data is available worldwide, in North America, Europe, the Asia-Pacific region (APAC), the Middle East and Africa (MEA), and South America separately.

There are some observations suggesting the possible involvement of cocoa in the mechanism of inducing lucid dreaming. In the "Banchenko Algorithm," cocoa was used once a day to induce LD [18]. Indigenous peoples used cocoa to work with dreams through traditions and rituals that included simple natural food, singing, dancing, peaceful conversations at night, and the absence of electricity, allowing their minds to follow natural rhythms freely [33]. Similar algorithms adapted to modern conditions were used in the "Banchenko Algorithm" [18].

Before the Spanish era, cocoa was a precious commodity and was used as currency. Real cocoa contains theobromine, which widens the blood vessels in the brain and improves brain blood flow, resulting in calming, stimulating, and euphoric effects. Magnesium in cocoa promotes sleep as a natural relaxant that helps deactivate adrenaline. Cocoa also contains tryptophan, an amino acid that, when ingested, converts to the neurotransmitter serotonin, which then converts to the hormone melatonin.

As a component of accompanying goods within the "Banchenko Market" market, it should be noted that the size of the global cocoa powder and chocolate market was valued at $44.3 billion in 2020, and is expected to further grow to $67.2 billion by 2027, at a CAGR of 7.4%.

The sales volume of cocoa today is very high, as cocoa is one of the most popular products in the world. According to the International Cocoa Organization, over 4.8 million tons of cocoa beans were produced in 2019, and the total sales volume of cocoa-based products exceeded $100 billion. The majority of cocoa production and consumption is concentrated in developing countries such as Ivory Coast, Ghana, Nigeria, Ecuador, and Indonesia. It is also worth noting that there are various types of cocoa-based products on the market, including chocolate, cocoa powder, cocoa butter, and others, which are also in demand among consumers.

When considering the component of ancillary goods within the "Banchenko Market" market, it should be noted that the size of the global market for essential oils was valued at $21.79 billion in 2022 and is expected to have a compound annual growth rate (CAGR) of 7.9% from 2023 to 2030. This is due to the growing demand from major end-use industries such as food and beverages, personal care and cosmetics, as well as aromatherapy.

Essential oils contain complex volatile chemical compounds known for their antifungal, antibacterial, anti-inflammatory, and antiviral properties. Unlike most conventional medicines and drugs, these oils do not have serious side effects. It is predicted that these factors will become the main driver of market growth. Conventional medicines and drugs contain pleasantly smelling aromatic compounds to create attractive products, primarily for chemicals that emit odors. Essential oils are steadily replacing most chemical substances.

Aromatherapists claim that certain essential oils can help achieve more vivid and memorable dreams.

For example, lavender essential oil can help reduce stress and anxiety, which in turn can promote deeper and more restful sleep. Peppermint essential oil can also promote relaxation and improve sleep. Some people also claim that using essential oils before bed helps them remember their dreams better. For instance, one can apply a small amount of essential oil to their wrists, neck, or feet before bedtime to create an aromatic atmosphere in the bedroom. However, these claims lack scientific evidence, yet consumers actively buy and use them in large quantities.

Spa and relaxation dominated the global market with the highest revenue share of 40.17% in 2022. The high share is explained by the changing lifestyles of consumers worldwide. The antimicrobial properties of these oils are used for longer storage of food and beverages. The growing attention of food and beverage manufacturers to increasing the shelf life of products without compromising quality has become another important growth factor for this application segment. The growing demand for natural, safe, and minimally processed food products worldwide has become a key factor driving the use of essential oils in food and beverage products.

The growing awareness of the use of natural and organic products is increasing the segment of natural ingredients among food and personal hygiene products, which positively affects the essential oil industry. They are also widely used in perfumery, body sprays, and air fresheners

In 2022, Europe dominated the global essential oil market with a revenue share of 43.3%. This is due to the huge population and various untapped markets that attract key players to expand and create their operational and distribution centers in this region. The European Federation of Essential Oils (EFEO) was established to promote and protect the interests of stakeholders throughout the value creation chain. The presence of such organizations as EFEO has contributed to the growth of the industry, and negotiations with the European Commission and Parliament on amending legislation relating to essential oils have also contributed to the growth of the market in the region.

The essential oils industry is highly fragmented with a significant number of industry participants such as Symrise and MANE. It is expected that closer integration of key market players in the search and distribution of raw materials will increase market competition. Companies such as India Essential Oils, Young Living Essential Oils, and Biolandes have merged their operations to ensure raw material supply and production of end products to reduce raw material procurement and operating costs. This also helps companies serve other industries that use raw materials such as perfumery and deodorants, food, and beverages.

Well-known players in the global essential oils market include Takasago International Corporation, Symrise, Givaudan, and Flavex Naturextrakte GmbH.

The global pillow market is projected to grow at a rate of 7.23% per year and reach USD 11.65 billion by 2030. The pillow market can be segmented by material (cotton, bamboo fiber, silk, polyester) and by filling for different usage (sleeping, decorative, travel).

The pillow market has several key players such as Tempur Sealy International, Inc., Innocor, Inc., Sleep Number Corporation, Hollander Sleep Products, and American Textile Company. It is forecasted that the market will grow at a rate of approximately 7.23% per year and reach a volume of USD 11.65 billion by 2030.

Research shows that healthy eating and consumption of certain foods can promote the generation of lucid dreams. Recently, the BodyFoodSystem (BFS) diet based on genetic code, developed by Advanced Scientific Research Projects, has gained popularity. The system also helps people identify which foods are best suited to their genetic profile for more effective generation of lucid dreams [34].

Some foods may promote the induction of lucid dreams due to their content of certain substances, such as vitamins, amino acids, and minerals. For example:

Egg yolks contain choline, which can enhance brain activity and help induce lucid dreams.

Bananas contain vitamin B6 and potassium, which can also promote the induction of lucid dreams.

Dairy products such as milk and yogurt contain a substance known as tryptophan, which is a precursor to serotonin, an important neurotransmitter involved in sleep and mood regulation.

Nuts such as walnuts and almonds contain magnesium, which can help improve sleep quality and promote more vivid dreams.

Oatmeal contains vitamin B6, which can also aid in the induction of lucid dreams.

Thus, the turnover of certain food products in combination with a system for selecting and recommending them based on a person's genetic code and microbiome can also form the basis and significantly influence the emerging "Banchenko Market" (Lucid Dreams and Other Transcendental States of Consciousness Market).

It is important to remember that these products do not guarantee the induction of lucid dreaming, and that the induction of lucid dreaming depends on many factors, including individual differences in brain activity and sleep, exposure to natural lighting, Schumann resonance, and various other factors. [35]

Overall, the "Banchenko Market" and related products continue to grow and develop along with the main industry, such as the essential oil market. With the increasing consumer demand for quality and innovative products, there is potential for the growth and further development of the market for related products in the coming years.

It is worth noting the innovative gadget for lucid dreaming by I.S. Blokhin, which emits weak pulses of an electromagnetic field at frequencies from 1 to 49 Hz, which stimulates deep sleep. This device is based on the natural biorhythms of all living things on Earth. Day and night between the Earth and the ionosphere, there exist electromagnetic waves. At the same time, on the daytime side, the amplitude of electromagnetic waves is 10 times higher than at night. The cost of this device is approximately $162 as of today [11].

The market for lucid dreaming devices, as a sub-segment of the overall "Banchenko market," depends not only on technological development, but also on educational programs offering training in lucid dreaming. There are many programs aimed at developing this skill, with different approaches and costs. Key players in the "Banchenko market" currently include: the "12th Arcanum" School by Denis Banchenko and Tatiana Burilova, the Institute of Noetic Sciences in the USA, the Lucid Dreaming School, Michael (Mikhail) Raduga's course [36], the Monroe Institute [37], Andrew Hole's online course, Adam Eiber's course, Isabel Vandenberg's online course, the Lucid Dreaming School, Dream Hacking course, Lucid Dreaming Mastery course, Learn How To Lucid Dream online course, Beginner's Guide to Lucid Dreaming, and the How to Have Lucid Dreams course. Prices for training programs range from tens of dollars to several thousand dollars per program, depending on the quality, complexity, and scientific basis of the educational material, which in turn greatly influences many factors including the demand for lucid dreaming devices.

It is also necessary to take into account the military and dual-use [15] of all segments and elements included in the "Banchenko Market". In the official publication of the Ministry of Defense of the Russian Federation, the "Army Collection" [38], a certain technology called "metacommunication" is mentioned, and indirect evidence suggests that the Ministry of Defense of the Russian Federation is conducting research in the field of lucid dreaming, the applied part of which is likely to involve methods of extracting information from prisoners of war. [39] For 20 years, from the late 1970s, the Defense Advanced Research Projects Agency (DARPA) in conjunction with the Monroe Institute, and with the participation of SRI International (SRI) and Science Applications International Corporation (SAIC), managed scientific research into lucid dreaming with the aim of identifying the hypothetical possibility of using this technology for obtaining strategic intelligence information. [40] [41]

Typically, military budgets of most countries have open and classified parts, so it is difficult to assess the turnover in this area, but it cannot be dismissed, as some military budgets often have significant volumes.

There is a significant influence of cinema, written books, and scripts on the "Banchenko Market" market. Movies and books related to the topic of lucid dreaming are the most popular and well-known in the market, possessing significant commercial potential that can significantly impact supply and demand within the "Banchenko Market" market.

Some well-known films related to lucid dreaming include "Inception (2010)", "Waking Life (2001)", "Lucid Dream (Loosideu deurim, 2017)", "The Cell (2000)", and "Falling Water (2016-2018)". A complete list can be found on Like Film [42]. Books and scripts about lucid dreaming have significant popularity and influence on readers interested in this topic. Some well-known books on this topic include "The Art of Dreaming" by Carlos Castaneda, The books by Max Frei: "Echo Labyrinths", "Echo Secrets", and "Echo Ancient", and "Cheater Hunter" by Dmitry Nelin."The Tibetan Yogas of Dream and Sleep" by Tenzin Wangyal Rinpoche, and "Phase: Breaking the Illusion of Reality" by Mikhail Raduga. On mybook, you can explore literature about lucid dreaming [43].

The overall sales volume of these films and books can vary significantly depending on various factors such as budget, theatrical releases, DVD and Blu-ray sales, broadcast rights sales, and many other factors. However, the approximate total revenue from films is over 3 billion dollars.

"Banchenko business model": financing research in the field of lucid dreaming using NFTs

An iterative qualitative methodology was used in this study to explore the emerging NFT ecosystem and identify proven NFT business models within it.

This study attempts to identify NFT-oriented business models. Business models reflect processes and how value is added [44, c. 1019]. This study divided the business model into NFT's key processes and competitive advantage. Trust was identified as the competitive advantage for all four NFT business models. The four business models are presented below in Figure 2.

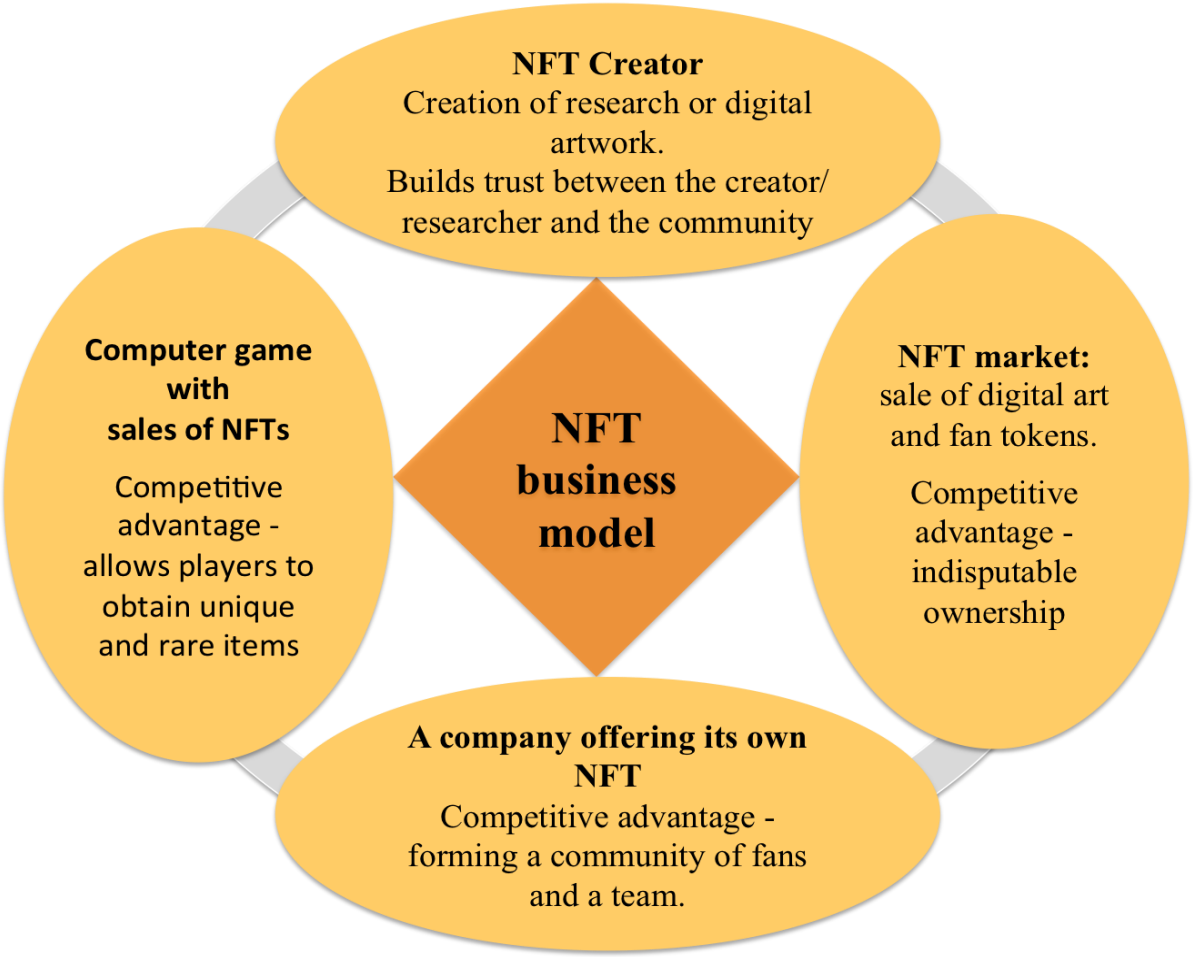

Figure 2. NFT business model [compiled by the author based on the research materials]

NFT Creator: An NFT Creator is an artist or researcher (in the context of studies on lucid dreaming) who creates digital art or research that is sold on an NFT platform. Within this model, there is the formation of alternative media that will be self-sustaining by earning revenue through advertising, but will promote related products and services associated with lucid dreaming.

NFT Market, Sale of NFT Tokens: The primary processes of NFTs are the sale of NFT digital art and, in some cases, fan tokens. The transparency of consumer purchase history allows for insight into their interests, which the NFT market can use to select which artists and art pieces to promote.

Company Offering Their Own NFT (Fan Token): This business model has several NFT processes. These include selling NFTs for profit, giving NFTs as rewards, paying fans in tokens (e.g., as part of player salaries), using NFT technology to offer subsequent offers and rewards to fan token holders.

Computer game with NFT sales: The main NFT processes of this business model are in-game purchases - NFT virtual items that are limited or unique in-game purchases, and rewarding players for playing. In relation to the market research on lucid dreaming, the "NFT Creator" model is proposed, according to which the competitive advantages of NFTs include the presence of irrefutable proof of ownership and the ability to sell a unique digital artwork or research. The reliability and transparency of NFTs strengthen consumer trust. Finally, a community is built around NFT creators, and trust is built between community members.

From a researcher's perspective, this means that the researcher has a completely new way of obtaining funding - a way that allows them to maintain autonomy, while the community can directly support and interact with the research. Instead of a grant agency or company being the source of funding, a network of enthusiasts emerges who want to participate and learn about the mission. This paradigm shift will completely change the way scientific research is funded and developed.

Conclusion

The ultimate conclusion of our analysis is that the "Banchenko Market" (Lucid Dreams and Other Transcendental States of Consciousness Market) has enormous

potential for development and investment. [45] NFT technology can play an important role in creating new business models and expanding the market, allowing for the elimination of intermediaries, simplification and verification of transactions, as well as property distribution through tokens.

Analyzing business models and legal aspects plays a preparatory role in assessing the market for research in the field of lucid dreaming. With the growing interest in understanding lucid dreaming [46] and its potential for developing consciousness and treating mental disorders, we believe that investing [47] in this market can be highly promising.

Thus, we conclude that the "Banchenko Market" is an important, innovative, young and developing market [48] that has great potential for investment and creating new business models. It is a promising direction for research and development, and we believe that NFT technologies can play an important role in its further development, as well as in financing fundamental academic science and its research.

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