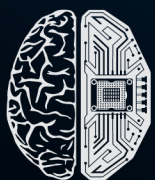# Blockchain in Longevity Industry Analytical Framework

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Introduction

The Longevity-focused analytical subsidiary of [Deep Knowledge Group](#) (DKG), [Aging Analytics Agency](#), in partnership with the DKG [AI and Data Science Division](#) has released a new [Blockchain in Longevity Industry Analytical Framework](#), representing the most comprehensive classification system to date for analyzing Blockchain application in the Longevity Industry on a global scale. The framework has been made accessible in an open-access format to better serve the needs of individuals and decision-makers within the Longevity Industry who are engaged in the application of blockchain to Longevity-related solutions and services. The main aim of the current framework is to enable comprehensive practical deep analysis of industry participants, their relations, and make it easier to compare businesses internationally, and to assess the level of disruptiveness of Blockchain technologies to Longevity.

Blockchain in Longevity Industry Framework
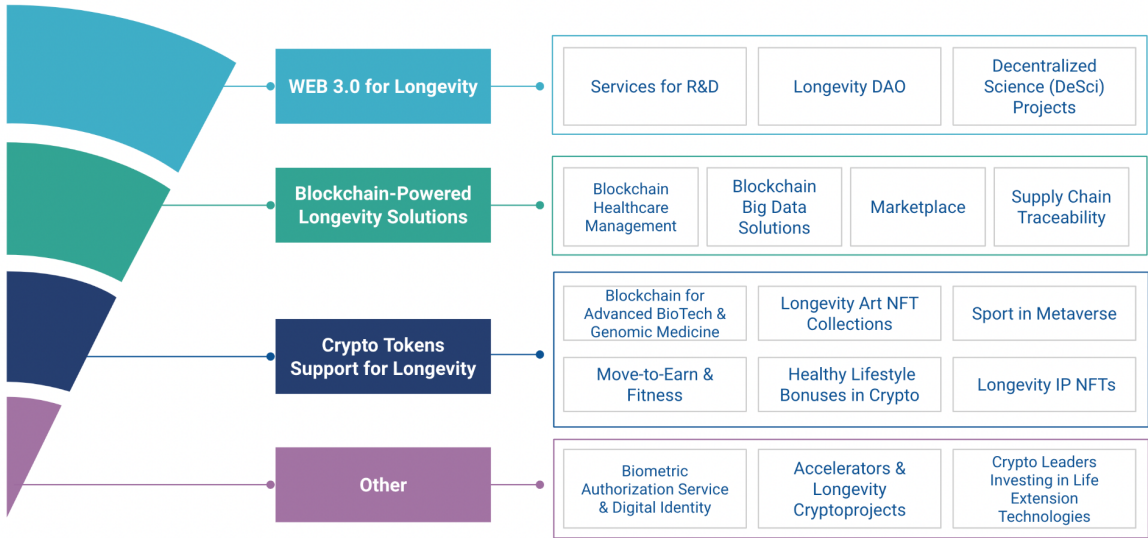
[Blockchain in Longevity Industry Analytical Framework](#)

The Longevity Industry is a rapidly growing sector that focuses on developing technologies and products that help people live longer and healthier lives. Blockchain technology has emerged as a popular tool in this field due to its ability to create decentralized and secure systems for managing data, transactions, and identities.

Blockchain technology is already being used in the Longevity Industry to create secure health data networks. With blockchain, health data can be securely stored, shared, and analyzed across multiple organizations and platforms, without compromising privacy or security. This can help improve the accuracy of medical diagnoses and treatment plans, as well as facilitate research and development in the field of longevity.

Another way in which blockchain is being used in the Longevity Industry is through the development of decentralized marketplaces for longevity products and services. These marketplaces enable consumers to access a range of products and services that promote health and longevity, including supplements, wearable devices, and personalized nutrition plans. By leveraging blockchain technology, these marketplaces can provide greater transparency and accountability in the supply chain, as well as help ensure the quality and safety of products and services.

In addition to health data networks and marketplaces, blockchain technology is also being used in the Longevity Industry to facilitate secure and transparent transactions. For example, smart contracts can be used to automate the process of buying and selling longevity-related products and services, such as life insurance policies or longevity-related investments. This can help reduce fraud, errors, and disputes, while also increasing efficiency and transparency in the marketplace.

The increasing use of blockchain technology in the longevity industry is enabling new opportunities for innovation and growth, while also improving the quality of products and services available to consumers. As blockchain technology continues to mature, it is likely that we will see even more applications of this technology in the field of longevity, helping to create a healthier and more prosperous future for all.

In 2023, Aging Analytics Agency profiled 300+ companies and 250 Investors in the Blockchain in Longevity Industry.
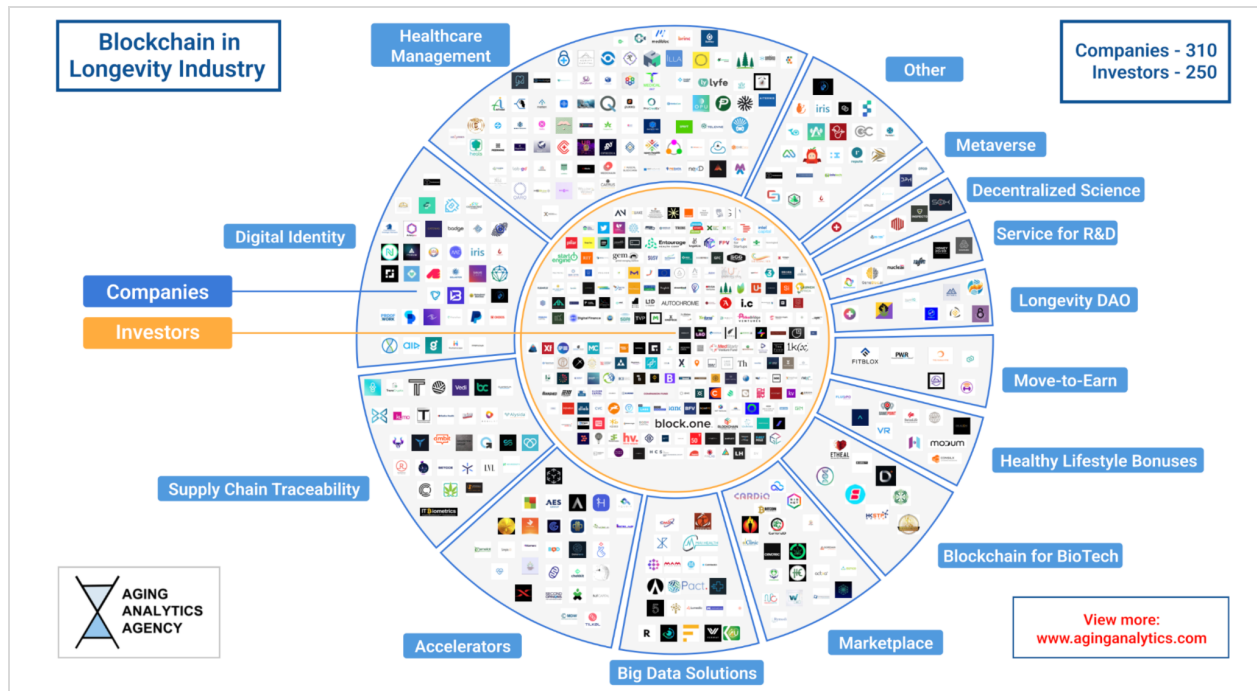
[Blockchain in Longevity Industry Analytical Framework](#)

Longevity Industry Big Data Analytics System and Dashboard

In 2020, Aging Analytics Agency set out on a mission to systematize and unify the wide array of Longevity Industry analytics across the domains of science, technology, finance, policy, and governance. Since 2013 Aging Analytics Agency has developed these analytics into a single integrated ecosystem backed by the Big Data analytics and sophisticated data visualization capabilities of Deep Knowledge Group in the form of a [Longevity Industry Big Data Analytics System and Dashboard](#).
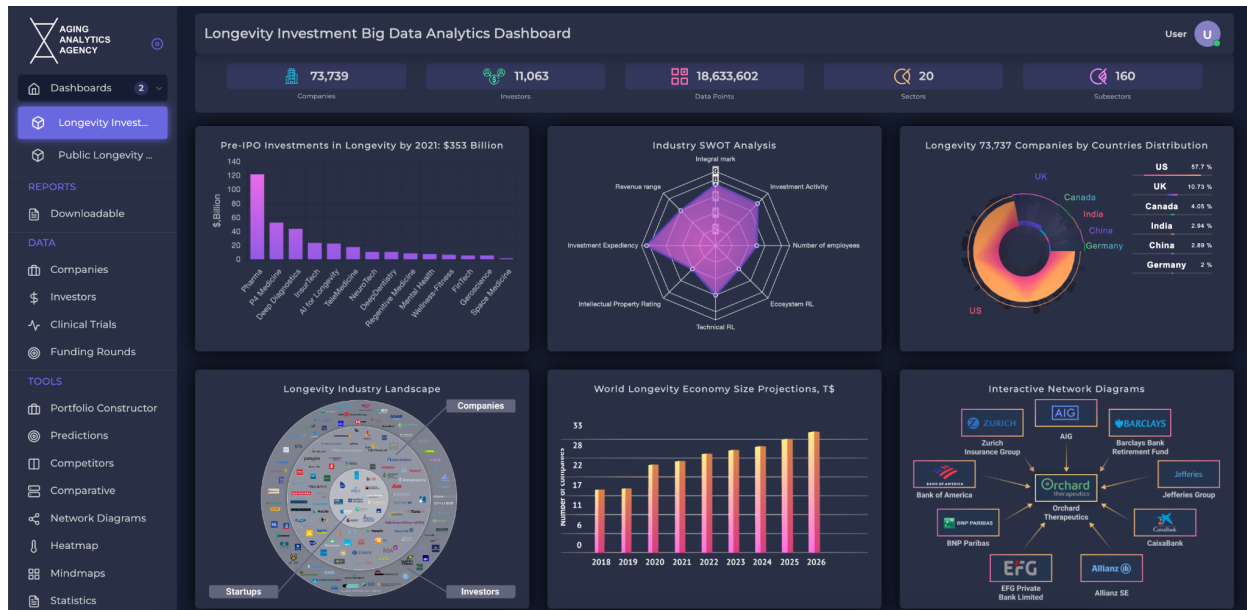
[Longevity Industry Big Data Analytics System and Dashboard](#)

The Dashboard is based on data provided by Aging Analytics Agency and has been designed to serve as a first-of-its-kind resource for knowledge-based, validated investment insights covering four major Longevity industry domains The ultimate aim of this system has been to provide strategic decision-makers across the private sector, global investment community, financial industry, and governance and policy ecosystem with unique access to Big Data analytics and visualization, market intelligence, competitive analysis, technology and company benchmarking, SWOT analysis, practical recommendations, and other strategic toolsets capable of handling the unprecedented complexity and multidimensionality of the public and private sectors of the global Longevity ecosystem. The Dashboard is based on data provided by Aging Analytics Agency, which has been active in the industry since 2013. The Dashboard has been designed to serve as a first-of-its-kind resource for knowledge-based, validated investment insights covering all Longevity Industry domains. The dashboard collects data on 50,000 longevity companies, 12,000 investors and aggregates more than 18.5 million data points.

However, given the recent explosion of the Blockchain Sector and its increasing intersection with Longevity, Longevity analytics just got an order of magnitude more complex. The megacomplexity of all of these intersecting trajectories of progress creates the need for a consistent and comprehensive framework that can adapt to the fast-changing metrics that will inevitably result. The remainder of this document reveals the framework which will make this enhanced analysis possible.

Blockchain in Longevity Industry Framework
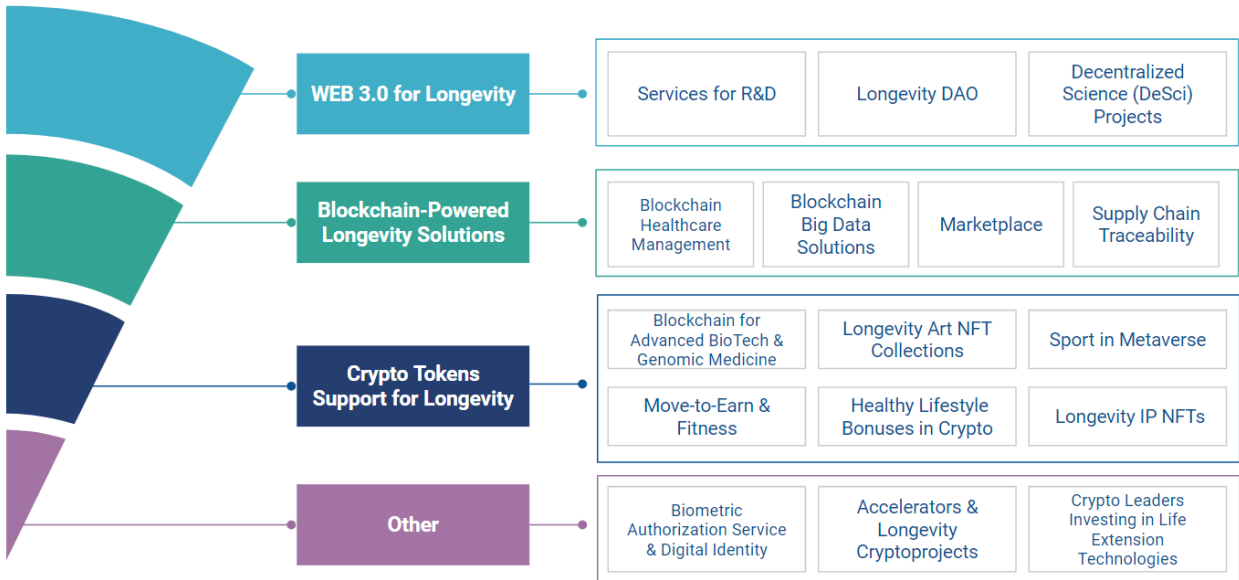
Above are shown the main segments and subsectors that comprise the Blockchain in Longevity Industry Analytical Framework. **These are documented in the next chapter, Blockchain in Longevity Industry Analytical Framework: Main Segments**.

This framework places a large and growing focus not just on **Blockchain** – the primary goal of which is to provide decentralized, transparent data processing – but also the applications from which it is inextricable, in **Longevity**, which covers the methods by which the industry needs to adapt in order to adjust to an increasingly long-lived population. E.g. bundling wellbeing initiatives between longevity and blockchain companies has a great potential to resolve the possible challenges in a more holistic manner.

The main segments are further described into subsectors, each of which is covered in detail in the upcoming chapter, **Blockchain in Longevity Industry Analytical Framework: Main Segments.**

Blockchain in Longevity Industry Framework Main Segments

WEB 3.0 for Longevity

Web3.0 is the next evolution of the internet, where the focus is on decentralization, trust, and transparency. In the context of the longevity industry, Web3.0 has the potential to revolutionize the way scientific research and knowledge are created, shared, and accessed.

Through the use of blockchain technology and the Web3 stack, the longevity industry can build a public infrastructure that enables fair and equitable funding, creation, review, storage, and dissemination of scientific knowledge. This infrastructure will enable researchers to collaborate and share knowledge more effectively, ultimately driving innovation and progress in scientific research.

Web3.0 can also enable the development of decentralized funding mechanisms that allow researchers to bypass traditional funding mechanisms and access funds more fairly. By using decentralized networks to fund research projects, the longevity industry can ensure that research funding is more fairly distributed and that research projects are evaluated based on their scientific merit.

In addition, Web3.0 provides a platform for the open sharing and attribution of scientific data and results, thereby promoting a more open and equitable research ecosystem. By leveraging decentralized networks and distributed ledger technologies, Web3.0 can promote transparency, accessibility, and collaboration throughout the entire scientific research process.

Overall, Web3.0 has the potential to democratize scientific research and knowledge dissemination, ultimately driving innovation and progress in the longevity industry. By building a public infrastructure that enables fair and equitable funding, creation, review, storage, and dissemination of scientific knowledge, the longevity industry can achieve its goal of promoting healthier, longer lives for all.

Service for R&D

Research and Development (R&D) services are essential to driving innovation in the blockchain industry. By conducting research, designing new products and services, and

implementing them effectively, R&D teams can create groundbreaking solutions that address real-world problems and provide value to businesses and consumers alike. To accomplish this, R&D teams utilize a range of advanced tools and technologies such as software development, data engineering, AI, and machine learning, which help accelerate the development cycle and bring new products and services to market quickly.

The use of blockchain technology has the potential to revolutionize various industries such as healthcare, academia, and commercial labs. In healthcare, blockchain-based solutions can ensure the privacy and security of patient data, improving data sharing, and streamlining clinical trials. In academia, blockchain can authenticate academic credentials, reducing the risk of fraud and improving the transparency and accountability of academic records. In commercial labs, blockchain-based solutions can improve supply chain management, leading to more efficient and cost-effective tracking and management.

The value of R&D services extends beyond the creation of new products and services. By staying at the forefront of innovation, R&D teams can help businesses stay competitive in a rapidly evolving industry. R&D teams can also provide valuable insights into emerging trends and technologies, helping businesses make informed decisions and adapt quickly to change.

In conclusion, R&D services play a vital role in driving innovation and success in the blockchain industry. By utilizing advanced tools and technologies, R&D teams can accelerate the development cycle and bring new solutions to market quickly, benefitting a wide range of industries such as healthcare, academia, and commercial labs. The continued growth and evolution of the blockchain ecosystem will make R&D services even more crucial to the success of businesses operating in the industry.

Longevity DAO

Longevity DAO is a decentralized autonomous organization that is dedicated to advancing research and development in the field of longevity and healthy aging through the use of blockchain technology. The DAO is driven by a community of like-minded individuals who share a common goal of promoting healthier, longer lives for all.

One of the key features of Longevity DAO is its funding mechanism, which allows members to contribute funds towards supporting innovators and research projects in

the longevity industry. This funding mechanism enables the community to support early-stage projects that may not have access to traditional funding sources.

In addition to funding, Longevity DAO provides members with decision-making power through voting power, ensuring that the community's interests are always represented. This democratic approach to decision-making ensures that the DAO remains transparent and accountable to its members.

Moreover, Longevity DAO provides access to a detailed map of the longevity industry, giving members a comprehensive view of the latest advancements and trends in the field. This access to information enables members to make informed decisions and contribute more effectively to the community.

Another unique feature of Longevity DAO is its recognition and honors program, which rewards members who make significant contributions to the longevity community with non-fungible tokens. This incentivizes members to contribute more actively to the community and promotes a culture of innovation and progress.

Finally, Longevity DAO provides its members with access to the latest early-stage longevity technology, giving them a first-hand look at the latest breakthroughs and innovations in the field. By providing this access, the DAO is driving innovation and progress in the field of longevity, ultimately promoting healthier, longer lives for all.

Decentralized Science (DeSci) Projects

In the context of Web3, DeSci (Decentralized Science) is a movement that is seeking to revolutionize scientific research and knowledge dissemination through the use of blockchain technology and the Web3 stack. By utilizing decentralized networks and distributed ledger technologies, DeSci aims to democratize scientific research and promote transparency, accessibility, and collaboration throughout the entire scientific research process.

The goal of DeSci is to build a public infrastructure that will enable fair and equitable funding, creation, review, storage, and dissemination of scientific knowledge. Through this infrastructure, DeSci aims to eliminate gatekeepers and allow for the open sharing and attribution of scientific data and results, thereby promoting a more open and equitable research ecosystem.

One of the key benefits of DeSci is that it will enable researchers to bypass traditional funding mechanisms and access funds through decentralized funding mechanisms. By using decentralized networks to fund research projects, DeSci aims to ensure that research funding is more fairly distributed and that research projects are evaluated based on their scientific merit, rather than the reputation of the researchers or the institutions they are affiliated with.

Moreover, DeSci provides a platform for the creation, review, and storage of scientific knowledge in a transparent and accessible manner. This platform enables researchers to collaborate and share knowledge more effectively, ultimately driving innovation and progress in scientific research. Through these initiatives, DeSci is promoting a more democratic and inclusive scientific research ecosystem, where scientific knowledge is openly shared and accessible to all. By democratizing scientific research and knowledge, DeSci seeks to advance scientific knowledge for the benefit of all, while promoting a more open and equitable research ecosystem.

Blockchain-Powered Longevity Solutions

Blockchain-powered longevity solutions refer to the use of blockchain technology in the longevity industry to address challenges related to data management, supply chain transparency, and marketplace efficiency. By leveraging blockchain's decentralized and tamper-proof nature, stakeholders in the longevity industry can ensure the security, privacy, and accuracy of sensitive patient data, while also enabling more efficient and collaborative research and development of personalized treatments and interventions.

Blockchain-powered longevity solutions also have the potential to improve the accessibility and affordability of healthcare services for aging populations. By utilizing blockchain technology to create decentralized and transparent platforms for healthcare delivery and payment, stakeholders can reduce administrative overhead costs and improve the efficiency of healthcare systems. Moreover, blockchain technology can enable secure and private sharing of medical data among healthcare providers, facilitating the delivery of personalized and patient-centered care. As the population ages, the demand for innovative solutions for healthy aging will continue to grow, and blockchain-powered longevity solutions are poised to play an increasingly critical role in addressing this challenge.

Additionally, the integration of blockchain technology in the supply chain of longevity products and services can enhance transparency and accountability, reducing the risk of

counterfeit products and ensuring that stakeholders can verify the origin, quality, and authenticity of products and services. Finally, blockchain-based marketplaces for longevity products and services can provide a secure and decentralized platform for buyers and sellers to transact, incentivizing innovation and collaboration among stakeholders while also ensuring transparency, trust, and immutability in transactions and data management.

Blockchain Healthcare Management

Blockchain Healthcare Management has the potential to revolutionize the healthcare industry by enhancing data management, security, and supply chain transparency. By leveraging blockchain technology, patients can have greater control over their medical data and authorize who can access it. Healthcare providers, in turn, can access and share patient data more efficiently and securely, thereby improving the overall quality of care.

Blockchain technology can also enable better tracking and authentication of medical products, ensuring patient safety and reducing the risk of counterfeit products in the supply chain. This is particularly important given the growing prevalence of counterfeit drugs in many parts of the world.

In addition, blockchain-based healthcare management solutions can improve the efficiency of healthcare systems by reducing administrative burdens and eliminating redundant processes. This can lead to significant cost savings for healthcare providers, which can ultimately translate into lower healthcare costs for patients.

Overall, Blockchain Healthcare Management has the potential to transform the healthcare industry by improving data management, security, and supply chain transparency. By enhancing patient control over their medical data, improving supply chain management, and reducing administrative burdens, blockchain-based solutions can help improve healthcare outcomes and promote greater trust between patients and healthcare providers.

Blockchain Big Data Solutions

The use of Blockchain Big Data Solutions in the longevity industry has transformed the way researchers and healthcare providers manage and analyze vast amounts of data. By using blockchain's secure and decentralized nature, these solutions provide a more transparent, efficient, and collaborative way of collecting, storing, and sharing data. This

approach can provide valuable insights into aging and age-related diseases, leading to the development of personalized treatments and interventions that can improve patient outcomes.

Moreover, Blockchain Big Data Solutions can improve the integrity of data by ensuring its immutability and transparency. This helps to reduce errors and fraud in the data, which is particularly important when dealing with sensitive health information. Additionally, these solutions can enhance supply chain management and ensure the authenticity of medical products, reducing the risk of counterfeit drugs entering the market.

Furthermore, by using blockchain technology to store and manage data, researchers and healthcare providers can be assured of its security and privacy, as the data is encrypted and accessible only to authorized parties. The use of blockchain technology in this way also promotes greater trust and accountability among stakeholders in the longevity industry.

As the longevity industry continues to grow, the use of Blockchain Big Data Solutions is expected to play a more significant role in advancing research and improving healthcare delivery. These solutions offer enormous potential to revolutionize the field of longevity and help promote healthier and longer lives for everyone.

Marketplace

Blockchain-powered longevity marketplaces have the potential to revolutionize the way people access and utilize products and services related to healthy aging. These decentralized platforms provide a secure and transparent environment for buyers and sellers to connect and transact. By leveraging blockchain technology, marketplaces can ensure that all transactions are tamper-proof and transparent, promoting trust between buyers and sellers. This level of transparency can also increase competition and drive down prices, making longevity solutions more accessible to a wider range of people.

In addition, blockchain-based marketplaces can incentivize innovation in the longevity industry by providing rewards for new ideas and collaborations. This can lead to the development of more personalized and effective solutions for extending healthy lifespans, ultimately benefiting individuals, healthcare providers, and society as a whole. The decentralized nature of these marketplaces also allows for greater control over personal data and privacy, giving users more autonomy and control over their health-related decisions.

Furthermore, blockchain-powered marketplaces can provide a more efficient way of tracking and verifying the authenticity of products and services, reducing the risk of fraud and counterfeit products. This can improve patient safety and promote trust in the longevity industry. Overall, blockchain-powered longevity marketplaces have the potential to transform the way people access and utilize longevity solutions, leading to longer and healthier lives.

Supply Chain Traceability

Supply Chain Traceability is a critical component of the longevity industry, as it enables stakeholders to ensure the safety and efficacy of products and services related to healthy aging. By utilizing blockchain technology, Supply Chain Traceability can enhance transparency, accountability, and data security in the supply chain, allowing stakeholders to track and verify the origin, quality, and authenticity of products and services. This can help to promote greater trust and confidence among stakeholders, including patients, healthcare providers, regulators, and manufacturers.

Additionally, the integration of Supply Chain Traceability in the longevity industry can streamline supply chain processes, reduce costs, and minimize waste, as stakeholders can more easily identify inefficiencies and bottlenecks in the supply chain. By enabling stakeholders to access real-time data and insights, Supply Chain Traceability can also promote the development of safe, effective, and innovative products and services for healthy aging, ultimately improving patient outcomes and quality of life.

Supply Chain Traceability can also help prevent the distribution of counterfeit or substandard products, ensuring that patients receive the appropriate and safe treatments they need. Moreover, the use of blockchain technology can further enhance transparency and trust among stakeholders in the longevity industry, fostering greater collaboration and innovation in the development of products and services that support healthy aging. Overall, the integration of Supply Chain Traceability in the longevity industry has the potential to transform the way stakeholders manage and deliver products and services, while also advancing the development of novel solutions for healthy aging.

Crypto Tokens Support for Longevity

Crypto tokens have emerged as a promising new avenue for supporting longevity research and development. By issuing tokens that represent ownership or access to a

particular longevity project or technology, startups in this field can raise funds and generate interest among investors.

Crypto tokens can be traded on blockchain networks, providing a new form of investment and financial gain for those who support longevity research. This allows individuals to invest in the longevity industry in a decentralized and transparent way, without relying on traditional funding sources such as venture capital firms.

The use of crypto tokens can also help to democratize access to longevity research and development. By providing a platform for crowdfunding and investment, crypto tokens can enable a wider range of individuals to contribute to the development of life-extending technologies.

The use of crypto tokens can also enable new forms of incentivization and collaboration within the industry. Tokens can be used to reward individuals or organizations for contributing to the development of life-extending technologies, or to facilitate collaboration between different players in the longevity ecosystem.

Overall, the use of crypto tokens for supporting longevity research and development has significant potential. By leveraging blockchain technology, crypto tokens can help to drive innovation and progress in the field of life extension, and to bring the benefits of longevity research to a wider audience.

Blockchain for Advanced BioTech & Genomic Medicine

Blockchain technology can be leveraged to enhance the security, transparency, and efficiency of advanced biotech and genomic medicine. By using blockchain, stakeholders can securely store and share sensitive genomic data while ensuring patient privacy and confidentiality. Blockchain also enables the creation of tamper-proof and auditable records of genomic data, which can facilitate research collaborations, accelerate drug discovery, and support precision medicine. Furthermore, blockchain can streamline the management of clinical trials and the delivery of personalized care, ultimately leading to improved health outcomes for patients.

The application of blockchain technology in advanced biotech and genomic medicine also enables the creation of decentralized marketplaces for genomic data, allowing patients to control their data and monetize it while ensuring its security and privacy. This incentivizes patients to participate in research studies and share their data, which can ultimately accelerate scientific discoveries and improve patient outcomes.

Additionally, blockchain-based solutions can enable more efficient and secure communication and collaboration among stakeholders in the biotech and genomics industry, fostering innovation and driving progress towards more personalized and effective treatments for diseases. Overall, blockchain-powered solutions have the potential to transform the landscape of biotech and genomics by enhancing data security, transparency, and efficiency, ultimately leading to improved patient outcomes and better public health.

Longevity Art NFT Collections

Longevity Art NFT Collections are a unique form of crypto tokens that offer an exciting opportunity for individuals to invest in a growing art collection that is dedicated to the promotion of longevity research and development. The creation and sale of these tokens enable artists to showcase their talents while raising funds to support vital longevity research projects. The use of blockchain technology ensures the security and transparency of the transactions, enabling investors to track and verify the authenticity of the artwork and the investment value of the tokens.

Longevity Art NFT Collections also offer an opportunity for the longevity industry to reach a broader audience, engaging the public in the conversation and highlighting the importance of scientific advancements in promoting healthy aging. Furthermore, these tokens offer a novel way for investors to diversify their portfolio and potentially benefit from the appreciation of the value of the art collection. As the longevity industry continues to grow, Longevity Art NFT Collections are expected to play an increasingly important role in promoting the intersection of art and science in the pursuit of extending healthy lifespans.

In addition to promoting the intersection of art and science, Longevity Art NFT Collections also provide a unique opportunity for artists to showcase their work and contribute to the advancement of longevity. By creating artwork that highlights the importance of healthy aging and longevity, artists can play an active role in shaping the conversation around this critical issue. As the field of longevity continues to grow, Longevity Art NFT Collections are poised to become an increasingly important part of the ecosystem, bringing together art enthusiasts, investors, researchers, and developers in support of the common goal of extending healthy lifespans.

Sport in Metaverse

The emergence of the metaverse has created new opportunities for the integration of sport and physical activity into digital environments. Crypto tokens can support the development of sport in the metaverse by facilitating the creation of decentralized platforms for virtual sports, fitness challenges, and other physical activities.

These platforms can incentivize users to engage in regular physical activity through rewards in the form of crypto tokens, promoting healthy lifestyles and longevity. By using blockchain technology, these platforms can ensure the transparency and security of transactions, protect the privacy of users, and enable the creation of decentralized governance models that involve stakeholders in the longevity industry.

Crypto tokens can also provide a means of funding for sport and fitness projects in the metaverse, including research and development of new technologies, equipment, and facilities. The integration of sport in the metaverse can also create new opportunities for social interaction and community building, providing a space for individuals to connect and collaborate on shared goals related to health and longevity. This can contribute to the creation of a culture of longevity, where healthy lifestyle choices are encouraged and supported.

Overall, the use of crypto tokens to support sport in the metaverse can play a significant role in advancing the longevity industry by promoting healthy lifestyles, fostering innovation in sport and fitness technologies, and creating new opportunities for collaboration and community building.

Move-to-Earn & Fitness

Move-to-Earn (M2E) is a new concept in the crypto world that incentivizes physical activity by rewarding individuals with cryptocurrency. M2E platforms track users' fitness data through wearable devices and issue tokens as a reward for achieving fitness goals. By supporting M2E platforms, individuals can improve their physical health and potentially earn cryptocurrency at the same time, creating a win-win situation.

In the context of longevity, M2E has the potential to encourage healthy behaviors and promote the prevention of age-related diseases. Regular physical activity is known to have numerous health benefits, including improving cardiovascular health, reducing the risk of obesity and type 2 diabetes, and even improving cognitive function. By incentivizing physical activity through M2E, individuals may be more likely to adopt and

maintain healthy behaviors, ultimately leading to improved health outcomes and extended healthy lifespans.

Moreover, M2E can also promote community engagement and social connections, which are essential for healthy aging. M2E platforms can create social networks and groups that encourage individuals to support and motivate each other, leading to increased participation in physical activity and a sense of belonging.

In addition to the benefits for individuals, M2E can also support the growth of the longevity industry by promoting the development of fitness-related products and services. Fitness wearables and other technology can be integrated into M2E platforms, creating new opportunities for innovation and collaboration among stakeholders in the longevity industry. Overall, M2E is a promising approach to incentivizing physical activity and promoting healthy aging, while also supporting the growth of the crypto industry.

Healthy Lifestyle Bonuses in Crypto

Healthy lifestyle bonuses in crypto refer to incentives provided to individuals who engage in healthy behaviors such as regular exercise, healthy eating, and adequate sleep. Crypto tokens can be used to incentivize individuals to adopt and maintain healthy lifestyles, leading to improved health outcomes and potentially longer lifespans.

These tokens can be earned by participating in fitness challenges, using health tracking apps, or engaging in other health-promoting activities. In addition, these tokens can be redeemed for rewards such as discounts on health-related products and services, access to premium fitness programs, or even cash payouts.

By leveraging crypto tokens, stakeholders in the longevity industry can encourage individuals to take responsibility for their health and well-being, while simultaneously promoting the growth of the industry. The use of crypto tokens for healthy lifestyle bonuses can also facilitate the development of data-driven approaches to health management, leading to more personalized and effective interventions.

In addition, the implementation of healthy lifestyle bonuses in the form of crypto tokens can incentivize individuals to adopt and maintain healthy habits, ultimately leading to a reduction in healthcare costs and an improvement in overall population health. This approach can also promote social equity, as individuals who may not have access to traditional financial incentives for healthy behavior can still benefit from the rewards offered by crypto tokens. Overall, the use of crypto tokens as a means of promoting

healthy lifestyles presents an innovative and potentially effective solution for addressing the challenges associated with promoting healthy behavior and improving population health.

Longevity IP NFTs

Longevity IP NFTs, also known as non-fungible tokens, are unique digital assets that represent ownership of specific intellectual property related to longevity research and development. These tokens can be bought and sold on blockchain networks, providing a new avenue for investment in longevity-related technologies.

Crypto tokens have been instrumental in providing financial support for longevity research and development. They offer an innovative way for individuals and organizations to invest in scientific and technological advancements that can extend human life expectancy. By buying tokens associated with longevity IP NFTs, investors can support research efforts in this field, while potentially earning a return on their investment.

The use of blockchain technology ensures that longevity IP NFTs are secure and transparent, as ownership is recorded on a decentralized ledger that cannot be altered. This also ensures that the intellectual property rights of creators and inventors are protected, as ownership of their ideas is clearly defined.

The potential benefits of longevity IP NFTs extend beyond financial gain. By incentivizing investment in longevity research, these tokens have the potential to accelerate the development of life-extending technologies. This can have a significant impact on global health and wellness, as longer lifespans could lead to a reduction in disease burden and improved quality of life.

In addition, the use of blockchain technology for longevity IP NFTs can also promote collaboration between researchers and innovators from different parts of the world. This can help accelerate the development of breakthrough technologies and foster a more open and collaborative approach to longevity research. Overall, longevity IP NFTs represent a promising new avenue for investment in longevity research and development. By providing a transparent and secure way to invest in intellectual property related to longevity, these tokens have the potential to accelerate the development of life-extending technologies and improve global health outcomes.

Other

Beyond the aspects of WEB 3.0, blockchain-powered longevity solutions, and crypto tokens support for longevity, there are other important aspects of blockchain in the longevity industry framework.

One such aspect is the use of biometric authorization services and digital identity verification in the longevity industry. These technologies can help to ensure the security and accuracy of personal health data, which is essential for effective longevity research and development.

Accelerators and longevity cryptoprojects are also an important part of the blockchain-based longevity industry. These programs can provide funding and mentorship to startups in the field, helping to drive innovation and progress.

In addition, the involvement of crypto leaders in investing in life extension technologies has the potential to bring significant resources and attention to the field. Their investments can support breakthrough research and development, and potentially transform the way we think about aging and lifespan.

Overall, the use of blockchain technology in the longevity industry has the potential to revolutionize the field, driving innovation, progress, and improved health outcomes. By leveraging the unique features of blockchain, such as decentralized control and transparent data sharing, the longevity industry can overcome many of the challenges and obstacles that have historically hindered progress in this field.

Biometric Authorization Service & Digital Identity

Biometric authorization services are becoming increasingly popular as a means of enhancing security and privacy in the digital age. These services use biometric data, such as fingerprints or facial recognition, to confirm the identity of individuals accessing sensitive data or making financial transactions.

In the context of crypto tokens support for longevity, biometric authorization services can be used to ensure the secure and transparent transfer of digital assets related to longevity research and development. By linking biometric data to a digital identity, individuals can securely and easily access and transfer their crypto assets without the need for complex passwords or traditional forms of identification.

The use of biometric authorization services also has the potential to reduce fraud and improve compliance in the crypto industry. By verifying the identity of individuals involved in crypto transactions, it becomes more difficult for bad actors to engage in fraudulent activities.

Digital identity is also a critical component of crypto tokens support for longevity. A digital identity serves as a unique identifier for individuals and organizations involved in the development of life-extending technologies. By establishing a clear digital identity, individuals and organizations can be held accountable for their contributions to the longevity field, and can more easily collaborate on research and development efforts.

Overall, the use of biometric authorization services and digital identity in the context of crypto tokens support for longevity represents an exciting new development in the field of life extension. By leveraging these emerging technologies, researchers and innovators can work together more effectively to develop breakthrough technologies that have the potential to significantly extend human life expectancy.

Accelerators & Longevity Cryptoprojects

Accelerators are programs that support and mentor early-stage startups, providing them with resources and expertise to help them grow and succeed. In the context of longevity crypto projects, accelerators can play a critical role in supporting the development of life-extending technologies.

Accelerators can provide funding and mentorship to longevity crypto projects, helping to move them from the conceptual stage to practical implementation. They can also offer access to a network of industry experts and investors who can provide further support and guidance.

By supporting longevity crypto projects, accelerators can help to drive innovation and growth in the field of life extension. This can lead to the development of breakthrough technologies that have the potential to significantly extend human lifespan and improve global health outcomes.

The use of crypto tokens can provide an innovative way to fund longevity crypto projects through accelerators. By issuing tokens that represent ownership or access to a particular longevity crypto project, investors can provide funding and support to startups in this field. These tokens can then be traded on blockchain networks, providing a new avenue for investment and financial gain.

Overall, accelerators and crypto tokens have the potential to play a critical role in supporting the development of life-extending technologies. By providing funding and mentorship to startups in this field, they can help to drive innovation and progress, and potentially transform the way we think about aging and longevity.

Crypto Leaders Investing in Life Extension Technologies

As the field of longevity research continues to gain momentum, an increasing number of crypto leaders are investing in life extension technologies. These leaders recognize the potential for breakthroughs in the field to significantly extend human lifespan and improve global health outcomes.

Some of the world's most prominent crypto investors, such as Tim Draper and Peter Thiel, have been vocal in their support of longevity research and development. They have invested in a range of life extension technologies, from genetic engineering to stem cell research to nanotechnology.

Other crypto leaders have also been active in funding and supporting longevity research through their investments. These include Vitalik Buterin, the founder of Ethereum, who has donated to longevity research organizations, and Charlie Lee, the creator of Litecoin, who has invested in biotech companies focused on life extension.

Crypto leaders are attracted to the potential for disruptive innovation in the longevity field, as well as the potential for significant financial returns. The use of blockchain technology and crypto tokens also provides a new avenue for investment and funding in this emerging industry.

Overall, the investment and support of crypto leaders in life extension technologies is a promising sign for the future of longevity research and development. As more resources and attention are directed towards this field, there is a real potential for breakthroughs that could transform the way we think about aging and lifespan.

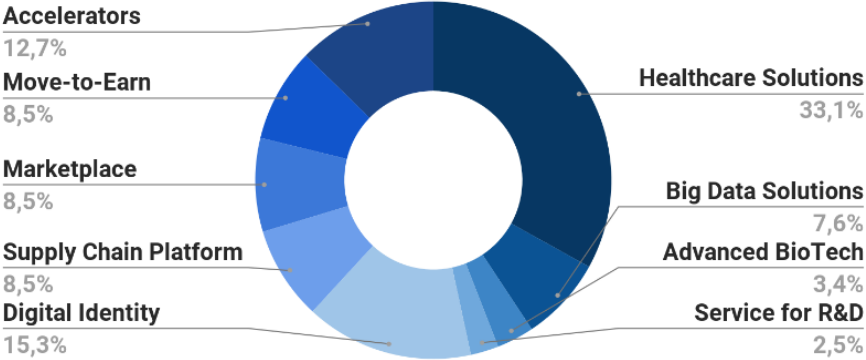# Blockchain in Longevity Industry Framework Market Overview

Longevity Crypto Geographical Distribution
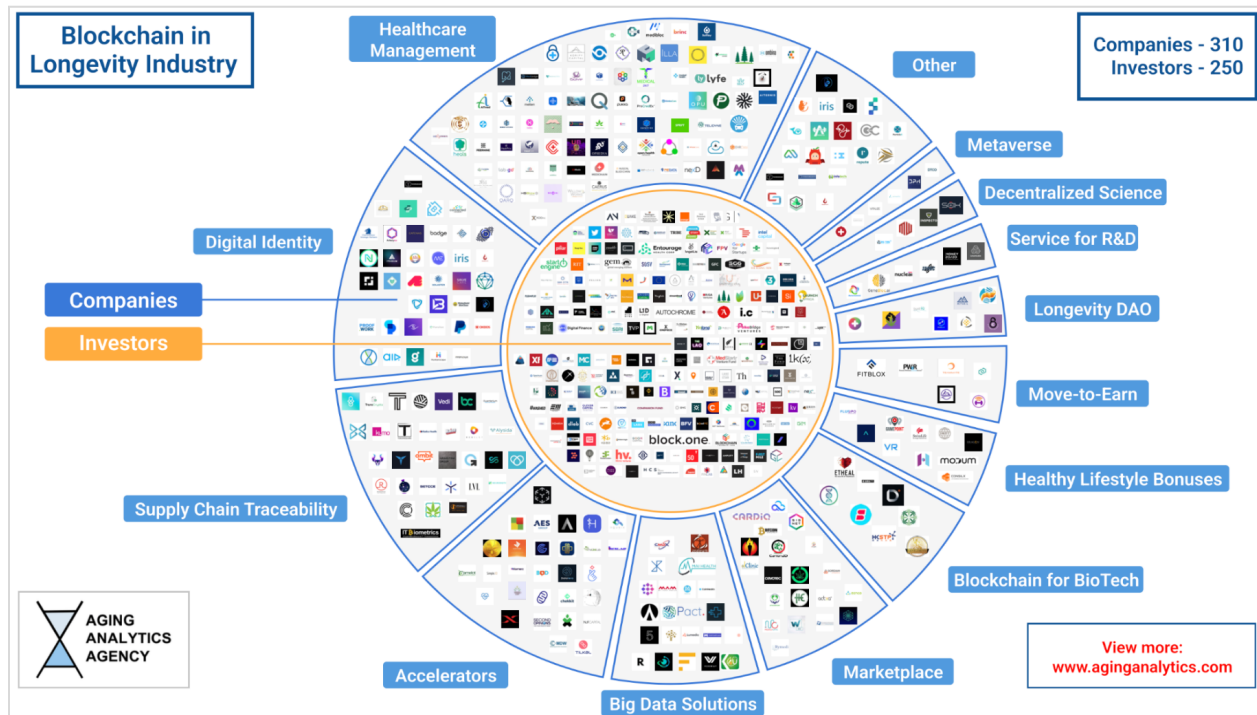
Most of the companies that apply blockchain and crypto technologies to advance the Longevity Industry are located in America and Europe. Less than 20% of companies in the Blockchain and Longevity industry are spread across other regions, such as Africa, the Middle East, Asia & Oceania.
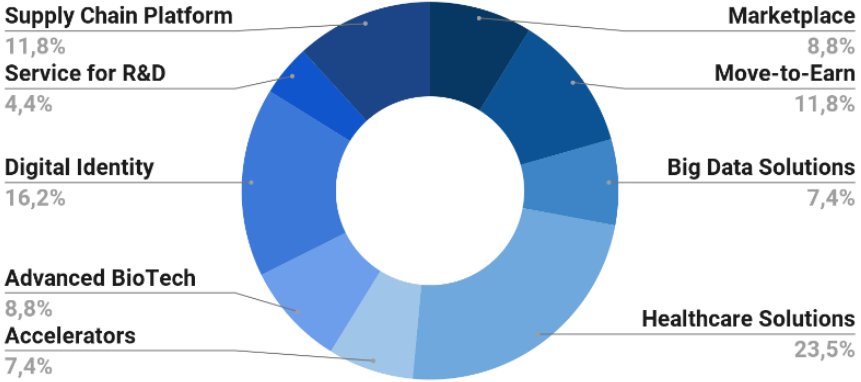
In America, a third of companies use blockchain technologies to develop healthcare management solutions and platforms. There is also a growing interest in leveraging blockchain to establish Biometric Authorization Services and Digital Identity.

America
146 companies

Accelerators 12,7%
Move-to-Earn 8,5%
Marketplace 8,5%
Supply Chain Platform 8,5%
Digital Identity 15,3%
Healthcare Solutions 33,1%
Big Data Solutions 7,6%
Advanced BioTech 3,4%
Service for R&D 2,5%

Similar to America, European companies are focusing on advancing healthcare with blockchain and development of digital identities. However, companies in Europe have a higher interest in establishing crypto-driven Move-to-Earn initiatives and improving supply chains.


Europe
78 companies

Supply Chain Platform 11,8%
Service for R&D 4,4%
Digital Identity 16,2%
Advanced BioTech 8,8%
Accelerators 7,4%
Marketplace 8,8%
Move-to-Earn 11,8%
Big Data Solutions 7,4%
Healthcare Solutions 23,5%

Blockchain in Longevity Industry Overview

Companies leveraging blockchain for developing healthcare management solutions and platforms account for the largest segment among companies engaged in Blockchain in the Longevity industry. A rapid growth of the number of companies is also observed in blockchain usage for more secure management and storage of digital identities and transparent, real-time   supply chains. A number of sectors are adopting cryptocurrencies as a means of payment or crypto-rewards to incentivize their customers.

Distribution of Sub Industries by Number of Companies
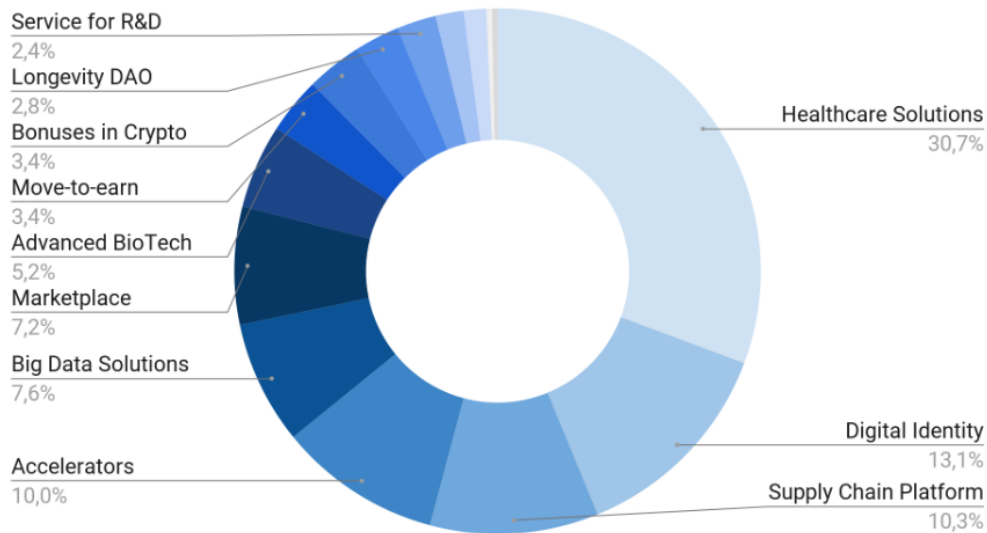
Blockchain-based Marketplaces and Healthcare Management Solutions have the highest total finding among all sectors. Marketplaces are rapidly building trust between sellers and buyers and drawing significant investments to the sector. Both governments and private companies are looking for efficient solutions to share patient data across global healthcare, which brings a lot of focus to blockchain-based systems that could provide necessary confidentiality and privacy in healthcare management.

Cumulative Funding by Sub-segment, Million USD
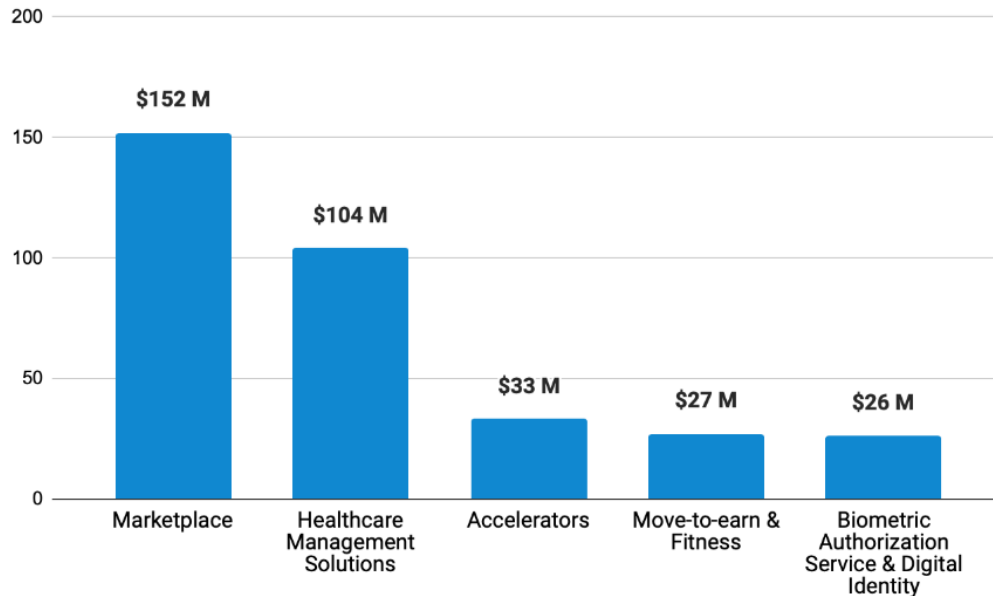
Crypto Funding Dynamics Trends

The amount of capital invested in crypto technologies is trending upwards with 2021 being a breakout year in the industry, reaching $21,2 billion in invested capital. The overall investment trend correlates with increased funding in blockchain and crypto technologies in the Longevity sector in 2021-2022, confirming an increased interest in crypto technologies across different industries in recent years.
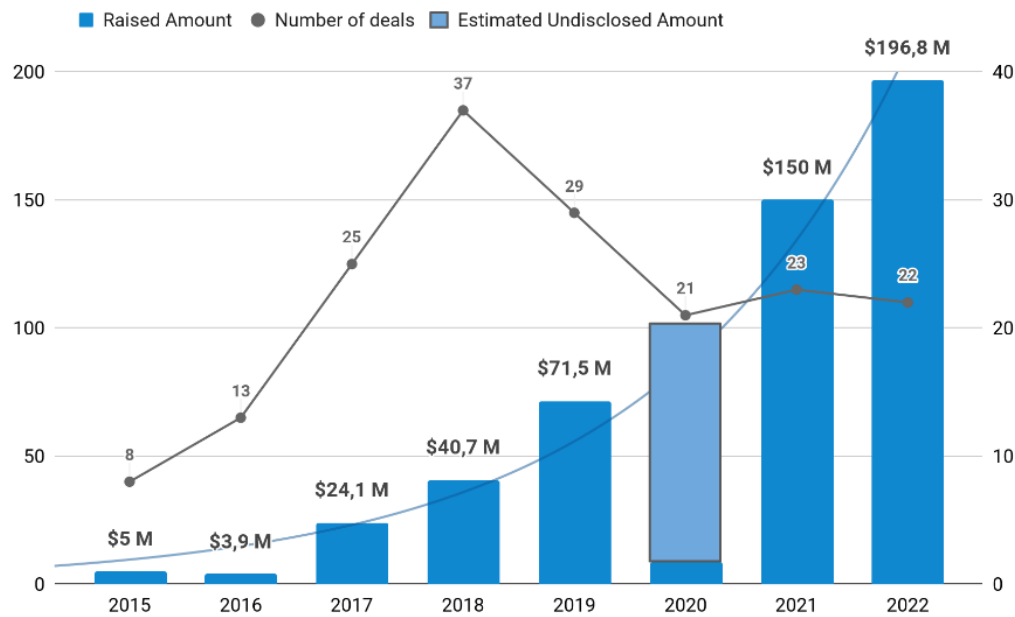
Total Crypto VC & PE Funding Amount by Years

Raised Amount ● Number of deals
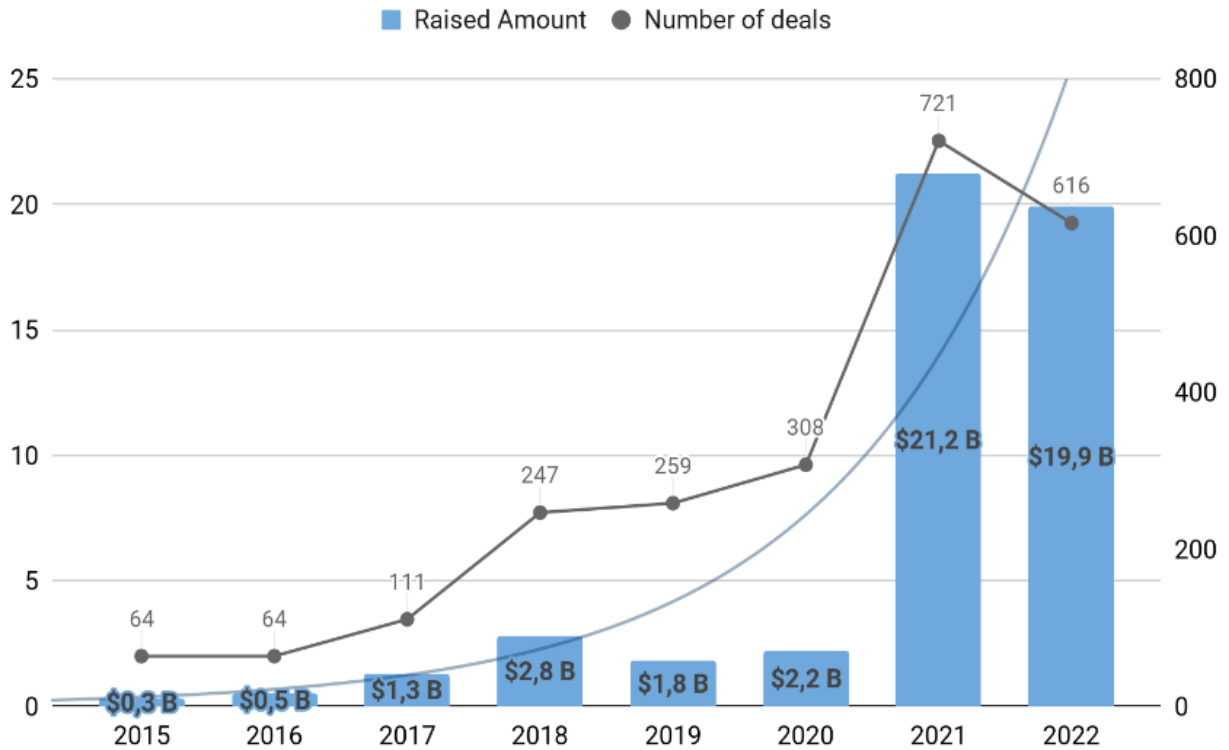
The Blockchain and Crypto entities supporting Longevity funding growth are steady from year to year, with funding spikes each year. Blockchain-powered Longevity Solutions are contributing the most to the funding deals in the Longevity Industry over the years. Moreover, during the 2022 crisis, this subsegment is experiencing rapid recovery and many other ones.
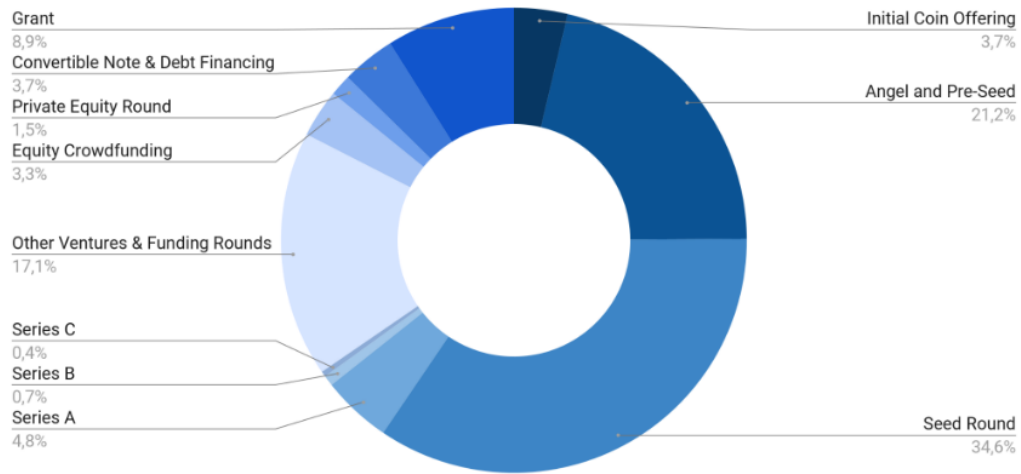
Total Blockchain in Longevity Sector VC&PE Funding Amount by Years

Legend: Raised Amount · Number of deals · Estimated Undisclosed Amount

- 2015: $5 M, 8 deals
- 2016: $3,9 M, 13 deals
- 2017: $24,1 M, 25 deals
- 2018: $40,7 M, 37 deals
- 2019: $71,5 M, 29 deals
- 2020: (Estimated Undisclosed Amount shown), 21 deals
- 2021: $150 M, 23 deals
- 2022: $196,8 M, 22 deals

Blockchain in Longevity Industry Overview

Companies in the Longevity Industry are primarily startups still in the early stages of their respective development processes and are currently on Pre-Seed or Seed funding rounds. Compared to other industries, the Equity Crowdfunding round is much more common and an IPO alternative, ICO, is becoming notable in the Longevity Industry.

Funding Round Type

Grant
8,9%

Convertible Note & Debt Financing
3,7%

Private Equity Round
1,5%

Equity Crowdfunding
3,3%

Other Ventures & Funding Rounds
17,1%

Series C
0,4%

Series B
0,7%

Series A
4,8%

Initial Coin Offering
3,7%

Angel and Pre-Seed
21,2%

Seed Round
34,6%

Major Funding Deals 2021-2022

Company	Sub-segment	Round	Deal Size	Date
Naetion	Marketplace	ICO	$150 M	11-May-2022
Brinc	Accelerators	Series B	$30 M	14-Dec-2021
Fit&Beat	Move-to-earn & Fitness	Venture Round	$25M	29-Sep-2022
Molecule	WEB 3.0	Seed	$13M	15-Jun-2022
Chronicled	Blockchain Healthcare Management Solutions	Seed Round	$8.3M	17-Feb-2022

Crypto Tokens Support for Longevity - Top Rounds

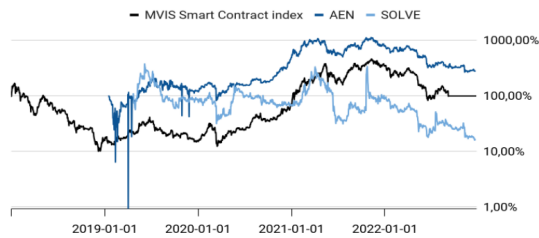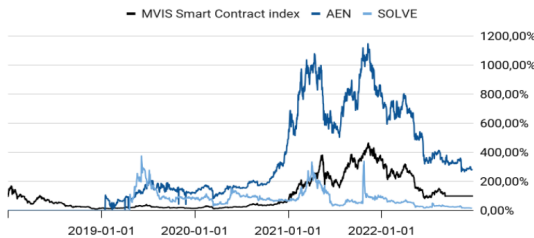**Major Funding Deals in Blockchain Companies supporting Longevity**

Company		Company Description	Round	Date	Investors
Genobank.io		Genobank.io is a provider of DNA kit intended to keep track of all the data sets and genome reports	Pre Seed Round	31-Oct- 2022	Expert DOJO
Fit&Beat		Fit&Beat creates a licencing model for personal trainers based on blockchain and utilising XR technology to transform the fitness industry	$25M Venture Round	29-Sep-2022	The Global Emerging Markets Group
PUML Better Health		PUML Better Health gamifies sports challenges and reward users for being healthy and active. Users earn $PUMLx and Athlete NFTs when being active in sports or in the Metaverse	$200K Pre Seed Funding	23-Aug-2022	DWF Labs
Cardio Health		Cardio bridges real-world exercise (Move-to-Earn) with metaverse activity & in-game play (Play-to-Earn)	$1M Seed Round	10-Jun-2022	Smilegate Investment, Nanuhm Angels, KyungDong Invest, Crescendo Equity Partners
Encrypgen		Encrypgen develops software for genomic data, empowering patients and donors, facilitating health, business, and science	Seed Round	1-Mar-2021	Undisclosed

Crypto Tokens Support for Longevity – Secondary Market Overview
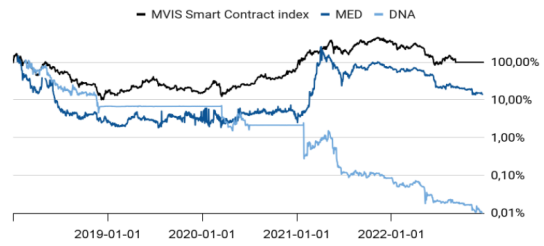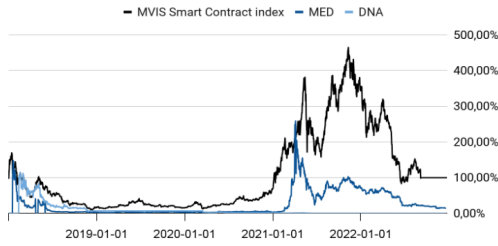
The utilization of smart contracts has seen tremendous growth since Ethereum blockchain was released. Smart contracts have become more intricate, with the ability to manage digital assets and dictate crucial business operations. The potential of blockchain technology to revolutionize healthcare is vast. Through distributed ledger technology, patient medical records can be securely stored and transferred, the medicine supply chain can be monitored and managed, and healthcare researchers can transparently get access to genetic code.

AENCO's three arrangements - HealthTech, Smart Capital, and Prime Brokerage - created a system to support medical networks and investors.

The Aenco group use AEN token to help business people and developing businesses in the medical services industry to create an affordable and developing medical gadget that will be valuable to all medical networks and benefactors.

By utilizing blockchain technology, Aenco can stimulate the growth of an organic network and promote progress in the healthcare services industry. Additionally, this will increase transparency and allow tracking of improvements in the sector.

SOLVE tokens are the utility currency for the network and can be used to pay for Care Administration Network fees, establish Care Wallets, purchase Care Cards, and participate in Care Marketplace services as well as pay for associated integration fees.

- The token supply is fixed and the price variable, as determined by market supply and demand.

- SOLVE tokens are reportedly used for the emission of Care Coins and payments requiring Care Coins.

Encrypgen is a company making a blockchain-based peer-to-peer DNA data marketplace that was founded by David Koepsell and Vanessa Gonzalez Covarrubias in 1985.

- The company offers a blockchain-based network for sharing genetic data called the Gene-Chain, and also offers other DNA related products and services.

- Gene-Chain miners are rewarded with DNA tokens, which are the medium of exchange on the Gene-Chain marketplace.

Crypto Tokens Support for Longevity – Price History

Longevity Crypto Company Name		General Description	Token type	Secondary Market Ticker / Private	Features	Industry and Other Comments
Aenco		Aenco is a HealthTech Financial Solutions Platform supported by the Aenco Blockchain. It is designed to enable businesses, in particular healthcare technology sector, to customize a wide array of impactful real-life applications.	Ethereum ERC-223	AEN	AENCO platform consist of three supportive structures known as Prime solutions, IB solutions and Smart cap solutions.	Marketplace; Decentralized prime brokerage is provided for users through distributed ledger technology that will support the use of collateral based digital asset borrowing and lending; The IB solution also offers sponsorship for healthcare technology, escrow services and an engagement portal for data analytics.
Solve.Care		Solve.Care is a healthcare platform company that uses blockchain to redefine care coordination, improves access to care, reduces benefit administration costs, and helps reduce fraud and waste in healthcare	Ethereum ERC-20	SOLVE	Solve.Care gives healthcare stakeholders an opportunity to build their own dApps to form Care Networks.	Blockchain Healthcare Management Solutions & Platform; Solve.Care is unique because it not only allows networks to run independently, but to also have a fabric underneath that allows them to all communicate.

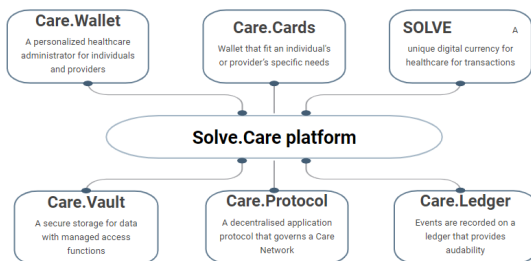| Longevity Crypto Company Name		General Description	Token type	Secondary Market Ticker / Private	Features	Industry and Other Comments
Encrypgen		Gene-Chain Coin (DNA) is the medium of exchange for the Gene-Chain blockchain. Not all users of the Gene-Chain will mine at the same rates and some will not mine at all, so they will seek DNA on the crypto markets.	Ethereum ERC-20	DNA	The number of total tokens will depend on the miners involved in the private network, as well as by the genomic data that will populate the Gene-Chain.	Blockchain for Advanced BioTech & Genomic Medicine; Encrypgen using a SAFT (Simple Agreement for Future Tokens) for the exchange as the tokens are to be mined as the Gene-Chain grows. Coin can be used to store, buy and sell genetic information.
Medibloc		MediBloc is developing a blockchain based health information platform that provides patient-centric health.	Ethereum ERC-20	MED	Panacea is a health information protocol, a public blockchain with independent network, where records are made and validated through nodes' validation	Blockchain Healthcare Management Solutions & Platform; The core function of Panacea is to record hash value of health information and to prove the integrity and ownership of the data through the hash value.

Appendix

A. Case Studies of Synergetic effects between Blockchain and Longevity Industries: Addition profiling of NFT technologies implementation for Longevity: Profiling the leading companies according to Blockchain in Longevity Industry Framework Classification

Blockchain Healthcare Management Solutions & Platform

Founded date: 2017
Headquarters: Tallin, Estonia
Total Funding Amount: $30.2M

A healthcare IT company that uses blockchain technology as the underlying distributed ledger for coordinating care, benefits and payments between all parties in the chain of healthcare: patients, doctors, pharmacies, laboratories, employers, insurers, and others.
SOLVE token that runs natively on the Ethereum blockchain is used as the currency for transactions on the platform.

Care.Wallet
A personalized healthcare administrator for individuals and providers

Care.Cards
Wallet that fit an individual's or provider's specific needs

SOLVE
A unique digital currency for healthcare for transactions

Solve.Care platform

Care.Vault
A secure storage for data with managed access functions

Care.Protocol
A decentralised application protocol that governs a Care Network

Care.Ledger
Events are recorded on a ledger that provides audability

Founded date: 2018
Headquarters: Greenville, US

Rymedi provides patient-centered cloud-based health solutions with its blockchain enabled platform that allows patients to take control of their health information. Utilizing its secure & scalable platform, Rymedi is aiming to streamline the transfer of health records to remove barriers between patients and providers.

Rymedi Platform

Rymedi uses blockchain architecture made up of two private blockchains & one public blockchain. Rymedi captures PII on one private backbone and PHI on the other private backbone. The platform combines them both, creating an encrypted serialized ID on a public blockchain

Rymedi provides a cloud-based disease testing and vaccine administration workflow solution, reducing viral spread and simplifying mass testing setup & operations. The user-friendly platform simplifies reporting, data management, and the overall customer experience, thus streamlining workflows for clients

Supply Chain Traceability and Trust Platform

Founded date: 2017
Headquarters: Paris, France
Total Funding Amount: $3.9M

Tilkal is an end-to-end, real-time representation of the supply chain that uses blockchain to facilitate and secure data collection while providing full auditability.

The supply chain traceability and trust platform has 4 components:

- Tilkal Connect - Access to existing or new data from upstream and downstream partners
- Tilkal Platform Services - Data aggregation and standardization + real-time analysis
- Tilkal Control Tower - 360° visualization of the supply chain
- Tilkal Spotlight - Interaction with customers

Marketplace

Founded date: 2021
Headquarters: Oakland, US

Canopyright is a decentralized marketplace where cannabis breeders can register their unique cultivars and transact business with growers effortlessly, securely, confidentially, and paperlessly. A web3 website & app that helps cannabis breeders protect and monetize their cultivar IP by creating smart contracts.

Blockchain Benefits
- Timestamping
  Each message is timestamped by the network, which establishes that information was in the possession of a specific person at a specific time.
- Public Accountability
  When information is accepted into a blockchain, all the computers participating in the blockchain have come to agreement on the contents of a message and when it was received.
- Immutability

The information stored in a blockchain is immutable – it can't be changed after the fact by anyone.

Sport in Metaverse

CARDIO

Founded date: 2020
Headquarters: Incheon, South Korea
Total Funding Amount: $1M

Cardio bridges real-world exercise with metaverse activity & in-game play. Users can choose from a vast curated library of the world's best games, metaverse, OTT, and fitness simulations to enjoy & earn on their workout on Cardio-powered indoor bike & treadmill.

Proof-of-Workout at Point-of-Workout means users earn Cardio Points on their verified exercise, usable in-app for health spend and swappable for Cardiocoin.

Key features
- The Cardio HUB platform has a library of over 50 games and content, including games from the ROBLOX metaverse, that the company promises to update monthly
- Cardio-powered treadmills reward users during their run. It's possible to earn up to $20 per month in Cardio Points swappable for Cardiocoin & access the Cardio HUB in-workout to make
- Cardio is a Move-to-Earn company that is cheat-proof and verifies only real fitness data, the foundation of data used in the healthcare industry

Blockchain Big Data Solutions

DeepHive

Founded date: 2018
Headquarters: Austin, United States

DeepHive is developing a distributed enterprise data management system that uniquely merges cloud and DLT with machine intelligence. Its distributed data management network DeepLedger enables fractalization, intelligent multi-parallel processing and bifurcation.

DeepLedger Design Features

Unified Distributed Network	Distributed Security	Unlimited Data Processing
Connects existing or new applications via a single point of access to multiple distributed storage systems	Data and transactions are cryptographically processed, prohibiting any centralized points of failure on the network.	Process unlimited amounts of healthcare data, including static and dynamic data
HIPAA Compliant Framework	Unified Language Translations	Interoperable Across Multiple Networks
Immutably store and transact healthcare data on the network	Translate any type of healthcare data, from file to object data and vice versa, utilizing a server-side API.	Proprietary data bridges provide for multi-network and bidirectional data interoperability.

Healthy Lifestyle Bonuses in Crypto

ReMeLife

Founded date: 2014
Total Funding Amount: $0.7M

ReMeLife is a community and incentive based membership platform that incentivizes health care through a token based blockchain model.

Deploying its ERC20 ReMC token, partnered with major corporates, its care apps are freemium based and portable from home to day and residential care.

Key features
- ReMeLife is a pioneering social impact business that offers a unique rewards-based care model that utilizes the power of decentralized communities
- The app ecosystem enables Members to build a 'care to earn' care work derived passive income and to access ReMeLife's 'CareFI' version of DeFi, called ReMeFi, to plan for their future financial needs
- Rewards based regulatory compliant REME utility token is deployed on a POA blockchain that leverages human capital, democratizes the value inherent in

digital care work and captures and monetises personal data for the benefit of its members

Move-to-Earn & Fitness

Founded date: 2018
Headquarters: Ljubljana, Slovenia
Total Funding Amount: $25M
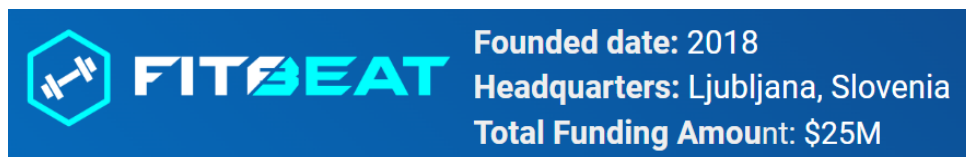
A Slovenian startup Fit&Beat is set to change the fitness world by introducing a new licensing model for personal trainers based on blockchain, using XR technology.

Fit&Beat goal is to establish a unique blockchain based fitness wellbeing platform connecting all the main factors of a healthy lifestyle in the fitness world: challenging detrimental modern ways of living and working by encouraging an active lifestyle.

Key features
- The platform will connect trainers who will be licensed by Fit&Beat's own native licenses, guaranteeing the best possible fitness and nutrition knowledge with individuals who want to train and get healthier
- Fitness professionals, blockchain and web platform developers, and digital currency enthusiasts dedicated to creating a new standard for fitness trainer licensing by connecting blockchain and virtual reality technologies
- Fit&Beat token will be used by fitness trainers offering their knowledge, people looking to improve their lifestyle and become more active, people wanting to approach fitness life more seriously and compete

Longevity DAO

**Founded date:** 2021
Total Funding Amount: $5.6M

VitaDAO is a decentralized collective funding early stage longevity research, striving to extend human lifespan by researching, financing, and commercializing longevity therapeutics in an open and democratic manner.

Members can join VitaDAO by purchasing VITA tokens or earning them through contributions of work or Intellectual Property.

Key features
- Using VitaDAO individuals donate money to support innovators and get voting power, allowing to support research, that getting out of scope of traditional grants and accelerate progress in longevity field
- The work is managed via smart contracts that determine the regulations of the organization, reducing the risk of possible human error, such as poor judgment, that could otherwise happen in a more traditional system
- The voting power opens special features like access to the detailed and vetted map of the longevity industry, recognition, and honors with nonfungible tokens, access to the latest early-stage longevity tech

Blockchain for Advanced BioTech & Genomic Medicine
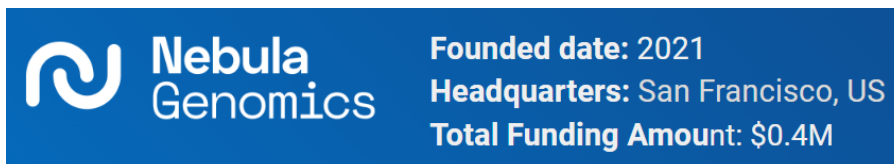
Nebula Genomics is a human genome sequencing and health big data company on a mission to usher in the era of genomic sequencing by building a large and trusted genomic and health data marketplace for consumers, researchers and the medical community.

Nebula Genomics is using blockchain to ensure that consumers maintain control of their data and are compensated for its use.

Key features
- Anonymous sequencing service enables our users to sign up, submit their samples, and receive their genetic reports without ever personally identifying themselves. Only way to identify users is to use their genome itself
- Users have full control over their personal genomic data. Using blockchain-enabled multiparty access control system, that does not rely on any single trusted party. It protects against data privacy violation by genetic testing providers
- Nebula Genomics applies execution environments, homomorphic encryption, and secure multi-party computations to enable our users to contribute to research without risking their privacy

Service for R&D

GENA™

Founded date: 2021
Headquarters: Boca Raton, US
Total Funding Amount: $0.25M

GENA™ AI platform provides commercial labs, hospitals and academic centers with the necessary tools to shorten their discovery cycle by over 95% (from days to just minutes), thus accelerating the time from testing-to-diagnosis and saving thousands of dollars per each sample sequenced thanks to improvements in workflow and the quality of results.

Key features

- With over 7K+ rare diseases analyzed, patients will be better informed to make the best decisions for the future of their individual health or the health of their family
- By providing predictive and preventative genomic analysis, the medical community will be able to effectively improve patient retention
- GENA™ shortens genomic analysis time from 3-4 days down to a few minutes and provides predictive data through AI-engines, changing the future of healthcare for good

Decentralized Science Projects

SCINET

Founded date: 2021
Headquarters: Parker, US

SCINET is building a decentralized life sciences ecosystem to accelerate life sciences innovation with a suite of easy-to-use decentralized services for scientists and investors.

Powered by blockchain technologies, SCINET allows retail and institutional investors to invest directly in life sciences research and technology with security and authenticity.

Key features

- SCINET cloud laboratory is uniquely designed with a simple-to-deploy intuitive user interface that promotes good science, meets regulatory compliance, and facilitates collaboration
- Users have full control over their personal genomic data. Using a blockchain-enabled multiparty access control system, that does not rely on any single trusted party. It protects against data privacy violation by genetic testing providers
- User can document own intellectual property on an immutable blockchain to ensure that you and your lab receive the credit you deserve wherever your discoveries are utilized

Accelerators & Other Cryptoprojects Supporting Longevity

Founded date: 2014
Headquarters: Central, Hong Kong
Total Funding Amount: $31.5M

Brinc is a venture capital and accelerator firm that supports and mentors founders and their teams from across the world and provides investment to help them grow. Brink believes that technology focused startups, with the right backing and support can fundamentally change how we live for the better. Brink runs global accelerator programs to help companies solve some of the world's most pressing challenges through new technology-based solutions.

Focus areas of accelerator programs

Web3
Blockchain and NFT startups that are shaping the future of Web3 and driving digitalization

Hardware & IoT
Connected devices & technologies improving every aspect of our daily lives

Healthcare
Innovative medical and health technologies to improve all aspects of the health industry

ClimateTech
Innovative solutions to improve environmental sustainability across all industries

Biometric Authorization Service & Digital Identity

Founded date: 2017
Headquarters: Belgrade, Serbia
Total Funding Amount: $2.5M

Blinking developed a multi-platform software solution for the creation, confirmation, and management of users' identities. Blinking digital identity platform is based on Hyperledger Fabric blockchain architecture, cloud infrastructure and in-house developed biometric recognition algorithms. The platform offers organizations a reliable, safe, and easy way of confirming their users' identity, while their end-users retain ownership and control of their private data.
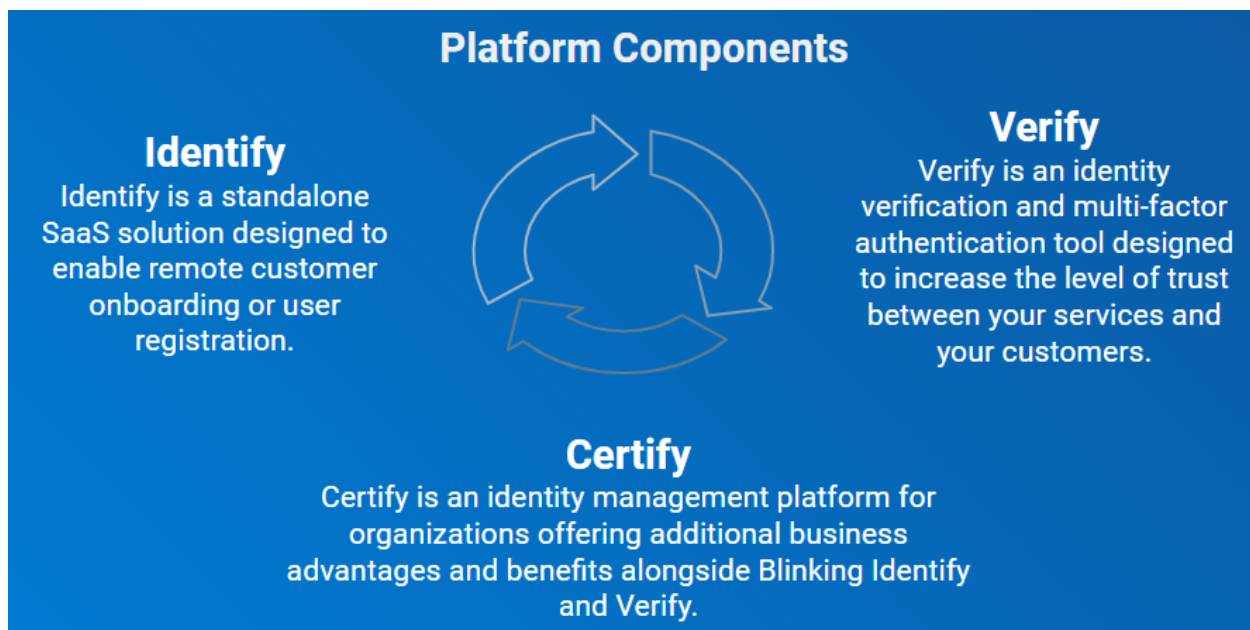
Crypto Leaders Invest in Life Extension Technologies

Blockchain communities are embracing life extension technologies and crypto philanthropists are donating significant wealth to longevity research.

Ethereum co-founder Vitalik Buterin donated $25 million in SHIB cryptocurrency tokens to the Future of Life Institute in June 2021 and contributed over $350,000 to the SENS Research Foundation to "reimagine ageing".

Richard Heart, the founder of the HEX cryptocurrency, created the PulseChain crypto project, which raised $25 million that was donated to the SENS Research Foundation.

H.E. Sun, a 'crypto diplomat' and founder of the DAO ecosystem TRON, recently donated ~$51K to the Longevity Prize and invested $3.4M in Ether Rocks (an NFT) for longevity science.

Brian Armstrong, founder and CEO of Coinbase, recently announced the formation of the private company NewLimit that aims to treat "age-related disease to extend human healthspan" and already has accumulated over $100 million to get started.

"Rather than investing in cryptocurrency stuff, I want to focus on the extreme life extension technologies, because if you die, you can't enjoy your life anymore"

Bitcoin.com founder Roger Ver told Cointelegraph

Crypto Leaders Invest in Life Extension Technologies: 10 Influencers

Twitter: 1.3 million followers **GitHub**: 3,000 followers **Reddit**: 500,000 subscribers on r/ethereum subreddit	**Linkedin**: 24,000 followers **Twitter**: 227,000 followers **Facebook**: 8,000 followers **Unchainedcrypto.com**	**Linkedin**: 2,800 followers **Twitter**: 12,000 followers **Facebook**: 16,000 followers	**Linkedin**: 2,000 followers **Twitter**: 2,000 followers **Facebook**: 2,000 followers	**Linkedin**: 2,000 followers
Vitalik Buterin, the co-founder of Ethereum, has been a strong supporter of longevity research and has made significant contributions to the field through his work with the SENS Research Foundation. In 2017, Buterin donated $2.4 million worth of Ether to the foundation, which aims to develop regenerative therapies to combat aging.	Shin has also interviewed several notable individuals in the longevity field on her podcast, including Aubrey de Grey, David Sinclair, and Laura Deming, among others. In these interviews, she explores the research and developments in the longevity field, as well as the potential for technology to extend human lifespan.	Konovalenko is a Senior Scientist at the Science for Life Extension Foundation, where she works on developing and implementing projects aimed at extending human lifespan. She has also been involved in several other longevity-related organizations, including the International Longevity Alliance.	As the CEO of MedX Protocol, a blockchain-based platform for storing and sharing medical data, James Torado is likely familiar with the potential applications of cryptocurrency and blockchain technology in the healthcare industry, including the longevity space.	Garri Zmudze is indeed a General Partner at LongeVC, a venture capital firm that invests in companies focused on extending human lifespan and improving healthspan. Through his work at LongeVC, Zmudze has been involved in supporting a number of longevity-related startups, including Insilico Medicine, a company that uses AI and machine learning to develop drugs for age-related diseases.
Vitalik Buterin	**Laura Shin**	**Maria Konovalenko**	**James Torado**	**Garri Zmudze**

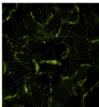|				
Linkedin: 15,000 followers **Twitter**: 55,400 followers **Facebook**: 8,000 followers	**Linkedin**: 35,600 followers **Twitter**: 12,000 followers **ResearchGate**: 108,000 Reads	**Linkedin**: 1,300 followers **Twitter**: 12,000 followers **Facebook**: 16,000 followers	**Linkedin**: 4,500 followers **Twitter**: 2,700 followers **Facebook**: 2,000 followers	**Linkedin**: 10,000 followers **Twitter**: 6,700 followers
Aubrey de Grey is a prominent researcher and advocate in the longevity field. He is the Chief Science Officer and co-founder of the SENS Research Foundation, a non-profit organization focused on developing regenerative medicine to treat age-related diseases and extend human lifespan. He was an early supporter of Bitcoin and holds the view about positive role of cryptocurrency for longevity R&D.	Alex Zhavoronkov is the founder and CEO of Insilico Medicine, a company that uses AI and deep learning to develop new drugs and interventions for aging-related diseases. He has also written about the potential for blockchain to improve the security and privacy of health data, as well as the potential for crypto to support anti-aging research.	Giacomelli has spoken about the potential for cryptocurrency and blockchain technology to support research and development in the longevity field. In addition to his work at VAIOT, Giacomelli has also been involved in the longevity-focused non-profit organization the Life Extension Advocacy Foundation (LEAF).	Dr. Bill Andrews is a renowned researcher and entrepreneur in the field of longevity. He is the founder and CEO of Sierra Sciences. He is a member of the Science Advisory Board of the Longevity Card, a cryptocurrency-powered platform that aims to promote healthy aging and provide access to longevity-focused services and products.	Liz Parrish is a biohacker, entrepreneur, and advocate for life extension technologies. She is the founder and CEO of BioViva Sciences, a biotechnology company focused on developing gene therapies to combat age-related diseases and extend human lifespan. She has been a vocal advocate for greater investment in anti-aging research and the development of new therapies to combat age-related diseases.
Aubrey de Grey	**Alex Zhavoronkov**	**Simone Giacomelli**	**Dr. Bill Andrews**	**Liz Parrish**

B. Case Studies of Synergetic effects between Blockchain and Longevity Industries: Addition profiling of NFT technologies implementation for Longevity

Longevity Non-Fungible tokens (NFTs)

The recent advances of the NFT power impact Longevity

The Project Name		Issuers and Participants	Longevity NFT Type	The Drop Period	Blockchain	Longevity NFT Purpose
E·LON·GEV·I·TY (Exponential long life)		Dogelon Mars ($ELON) & Methuselah Foundation	Community & Fundraising	Phase 2 ongoing	Ethereum	ELONgevity community depicts the heroes of the mission token: Longevity, Space and Crypto. The process will yield an Enigma, a final image that will be broken down into 10,000 NFTs. The NFTs will grant the owner exclusive access to future exclusive events and webinars hosted by Methuselah Foundation and its affiliates.
CycloTurtle NFT		NotEssential & Beyond Coral	Community & Fundraising	Cycloturtles NFT Reveals every Friday	Ethereum	The goal is to bring together socially responsible investors through all four phases of the CycloVerse where each phase represents four core values, Longevity, Prosperity, Wisdom and Freedom. CycloTurtles Phase 1 represents Longevity.
Longevity Volumes NFT Collection		Longevity Science Foundation & Triptych	Fundraising	2023	Ethereum	The NFT collection will act as a new donation arm to support the grants for cutting-edge research and projects. Individuals who purchase Triptych NFTs will receive donor-specific perks: access to events with top longevity researchers, unique lectures and resources from the longevity field.

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Biopharma IP-NFT		VitaDAO & Molecule	Fundraising	2022	Ethereum	Research funded by DAO is converted into an intellectual property NFT, which allows the organization to monetize it to support future research.
Lifespan Legends		Lifespan.io & LongevityDAO	Community & Fundraising	Early 2023	Ethereum	The Lifespan Legends are an official innovative NFT series by Lifespan.io, which raises awareness for longevity research through massive-scale PR initiatives, creates digital therapies to defeat dementia, and pioneers decentralized clinical trials to overcome the diseases of aging.
NFT Digital-Bioart		SENS Research Foundation	Fundraising	2022	Ethereum	The first-ever live-culture/auto-generative NFT artwork is tied to one of the seven damage-repair research programs. The art is generated using a system for real-time monitoring of the number of living cells in a petri dish. Proceeds from the sale of each NFT will fund SRF research and contribute to ending the diseases of aging.

E·LON·GEV·I·TY

Company: Methuselah Foundation
Headquarters: Springfield, US
Mission: "90 the new 50 by 2030"

ELONgevity means exponential long life, a word derived from the collaboration of Dogelon Mars ($ELON) and Methuselah Foundation showing synergies to propel advances in space and medicine.

ELONGEVITY Enigma NFT Drop

An image with input of the ELONgevity community depicting the heroes of the mission token: Longevity, Space and Crypto was created. The image is broken down into 10,000 pieces, each shaped as a jigsaw puzzle.

PHASE 1
The ELONgevity Enigma release is made available to the first 2500 members of the ELONgevity Discord Server. Each of these 2500 members instantly qualifies for a *founding member* Enigma NFT.

PHASE 2 & 3
Two additional stages to deploy the remaining 7500 Enigma NFTs and the full reveal of the imagery of the Enigma.

CycloTurtle NFT

NotEssential

Company: NotEssential
Mission: "Individually we are Not Essential. Together we are all Essential."

NotEssential is an innovative web3 company, reshaping the way we interact with each other and our planet. Current target focuses are Coral Regeneration, NFT wearables, Permaculture education/development, and IRL community events.

CycloloTurtels Collection

CycloVerse encompasses 4 projects, where each one represents one of the 4 Core Values to create avenues of change: Longevity, Prosperity, Wisdom and Freedom. CycloTurtles, represents the first chapter of the CycloVerse.

CycloTurtles will bring the community the value of Longevity through marine conservation efforts by partnering with Beyond Coral to create awareness of the CHARM robot and collaborations with other Green Chip NFT projects.

A CHARM Ai Robot (Coral Farming Robot) will be purchased to place at a community meetup location in Indonesia to help accelerate the positive impact on the coral triangle.

Longevity Volumes NFT

Company: Longevity Science Foundation
Headquarters: Miami, US
Mission: Longevity-focused care accessible
to everyone

The Longevity Science Foundation is a non-profit membership organization advancing the field of human longevity by funding research and development of medical technologies to extend the healthy human lifespan.

The NFT collection is a way to support the Foundation and the grants it provides for research and projects. The LSF partnered with Triptych Labs, a web3 agency dedicated to building communities.

Artists will contribute longevity-themed pieces to each of the collection's four seasons. Each season will explore different aspects of human longevity and what it means to live longer lives.
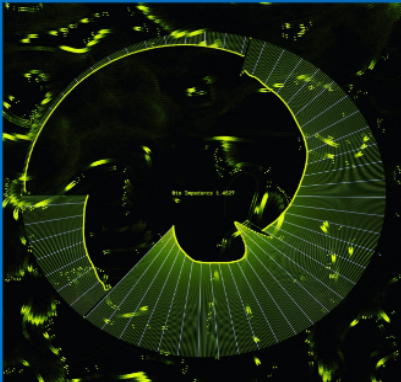
The collection will help support LSF's grants backing longevity research and projects. 70% of the income from Triptych's NFTs will be sent directly to the LSF's treasury.

NFT Digital-Bioart

Company: SENS RESEARCH FOUNDATION
Mission: Funding age-related disease research

VI7A is a digital Bio-Art NFT collection designed by the artist Solimán López that connects live entities to blockchain technology and NFTs. A new NFT will be dynamically generated as it is fed by cell cultures in vivo.

The VI7A project is minting unique NFT works of art. Each NFT is based on one of the SENS 7 Strands, and is connected to live data streams from cell cultures of the SENS research center by means of electrodes and an oscilloscope.

From this system, a new NFT series associated with a SENS research project and disease focus will be issued weekly, with one unique NFT minted every minute, creating a dynamic portrait of the live cell culture.

Biopharma IP-NFT

Company: VitaDAO & Molecule
Mission: Funding drug discovery research

Molecule is proposing a new kind of marketplace for early-stage biopharma IP through which stated IP can easily be bought, funded and collaborated on.

Molecule aims to become an OpenSea of biotech IP, powering a new creator economy for researchers that allows for the rapid funding, discovery, and development of therapeutics through globally connected patient collectives.
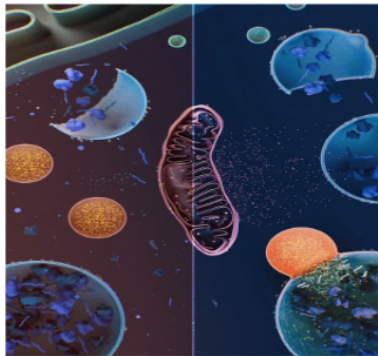
Thumbnail for the IP-NFT is a longevity research project from Prof. Korolchuk. With VitaDAO funding this lab will use this innovative method to screen an unique library of natural compounds, synthesize derivatives based on hits and identify their biological target.

Lifespan Legends

Company: Lifespan.io & LongevityDAO
Mission: Promoting anti-aging research

The Lifespan Legends are an official innovative NFT series by Lifespan.io, which raises awareness for longevity research through massive-scale PR initiatives, creates digital therapies, and pioneers decentralized clinical trials to overcome the diseases of aging.

C. Case Studies of Longevity-oriented companies blockchain-based ecosystem: Addition profiling of NFT technologies implementation for Longevity

SingularityNET

SingularityNET is a decentralized marketplace that connects AI developers and users. The platform provides a marketplace where developers can offer their AI services and algorithms to users who need them. SingularityNET uses blockchain technology to ensure transparency and accountability in the development and deployment of AI algorithms.

The platform offers a range of AI services, including natural language processing, computer vision, predictive analytics, and robotics. Users can access these services through a user-friendly interface, which allows them to search for the specific AI services they need and compare different providers' prices and capabilities.

SingularityNET also provides tools and resources for developers to create, test, and deploy AI algorithms on the platform. Developers can access a range of development tools, including software development kits (SDKs) and application programming interfaces (APIs), to build and deploy their AI services on the SingularityNET platform.

In addition, SingularityNET is built to be interoperable, meaning that AI services developed on the platform can be easily integrated with other applications and systems. This interoperability makes it easier for developers to create complex AI applications that can be used across multiple platforms and devices.
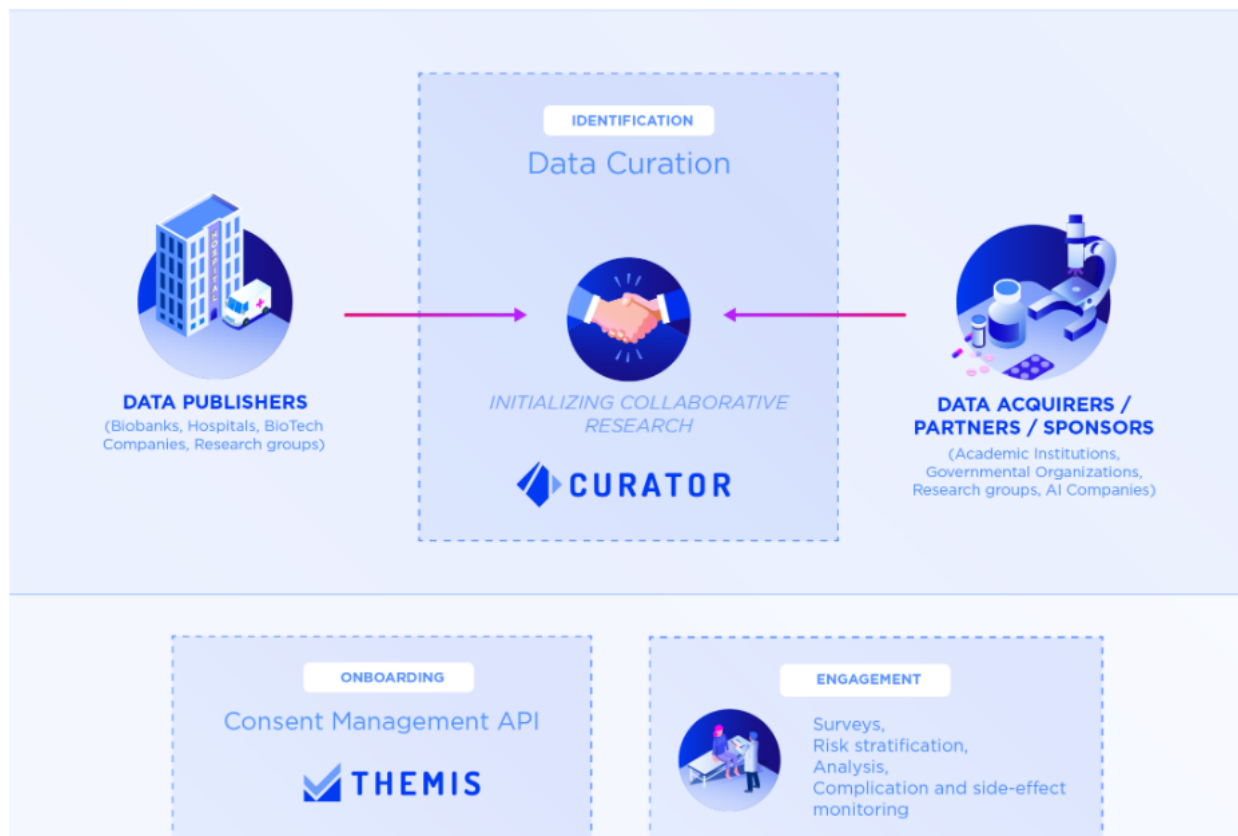
Longenesis

Longenesis is a technology company that focuses on the intersection of healthcare and blockchain technology. By utilizing blockchain technology, Longenesis aims to revolutionize various aspects of healthcare, such as medical data management, patient consent, and data exchange.

1. One of the key applications of blockchain in Longenesis's platform is the secure storage and management of medical data. Blockchain's decentralized and immutable nature allows for the creation of an encrypted and tamper-proof record of patients' medical history, providing a higher level of security compared to traditional centralized databases.

2. Longenesis's platform also enables the management of patient consent using smart contracts. These self-executing contracts ensure that patients have full control over their data and can provide or revoke access to their information easily. This empowers patients by giving them autonomy over their own healthcare data while streamlining data exchange between healthcare providers.

3. Longenesis facilitates the exchange of medical data among various stakeholders, including healthcare providers, researchers, and pharmaceutical companies. The blockchain-based platform ensures that data sharing is secure, transparent, and traceable, fostering trust among participants. This helps to improve collaboration in medical research, accelerating the discovery of new treatments and therapies.

4. Longenesis's platform offers a token-based ecosystem that encourages participants to share their medical data. Users can earn tokens by sharing their data with researchers and other stakeholders. These tokens can be used to access premium services within the platform or exchanged for other cryptocurrencies or fiat money.

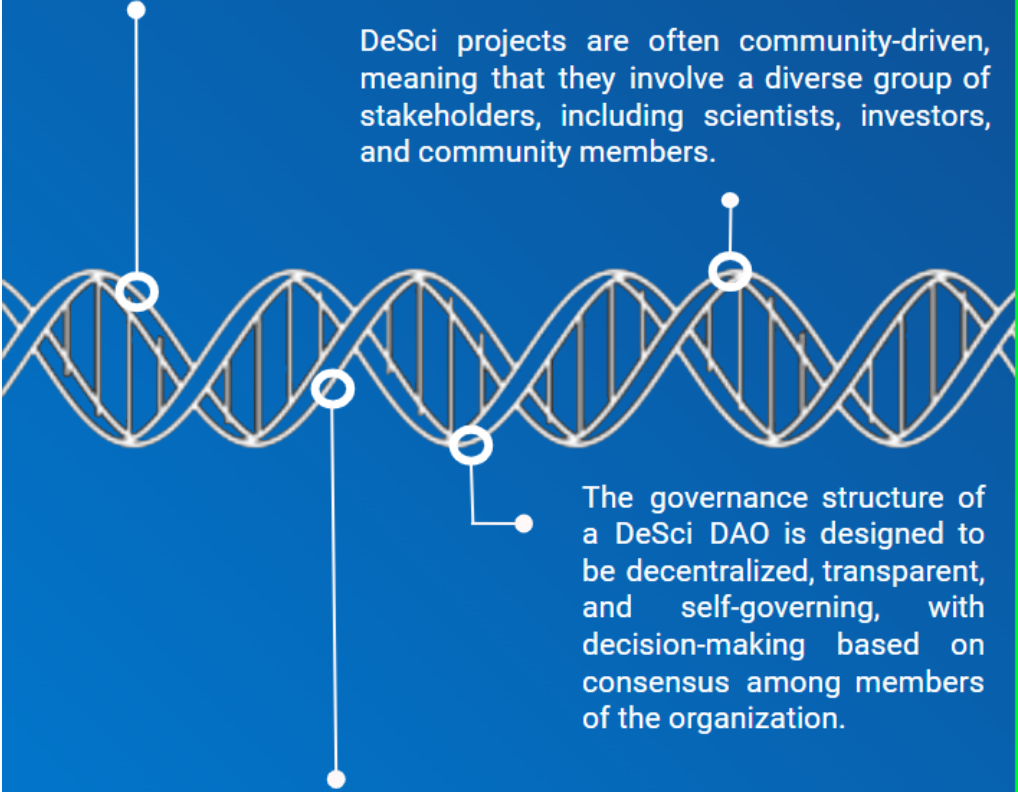# D. Longevity DAO and DeSci: Addition profiling of DAO and DeSci technologies implementation for Longevity

Components of Decentralized Science

The **Decentralized Autonomous Organization (DAOs)** is a Web 3.0 idea that allows communities, corporations, or any type of collective organization to be administered and governed without the traditional top to bottom organization with a centralized authority, thanks to the ability of blockchain.

The relationship between DeSci projects and longevity DeSci DAOs is that the latter can serve as a platform for the former. By using a decentralized autonomous organization, longevity DeSci DAOs can bring together a diverse group of stakeholders, including scientists, investors, and community members, to collaborate on research projects related to longevity. This can help to promote transparency, access to data, and democratize funding for scientific research in this area.

This natural distinction in DeSci proved to be efficient with time, for example of Molecule and VitaDAO collaboration, that brought out new infrastructure for research funding to the world in the form of BioPharma IP-NFT.

DeSci projects leverage decentralized technologies such as blockchain and smart contracts to create decentralized networks for scientific research and collaboration.

DeSci projects are often community-driven, meaning that they involve a diverse group of stakeholders, including scientists, investors, and community members.

The governance structure of a DeSci DAO is designed to be decentralized, transparent, and self-governing, with decision-making based on consensus among members of the organization.

By leveraging blockchain technology, DeSci DAOs can enable crowdfunding and investment from a wide range of stakeholders, including scientists, investors, and the general public.

DeSci Projects

Decentralized science (DeSci) is a global, open alternative to the current scientific system. DeSci movement aims to use Web3.0 stack to build public infrastructure for funding, creating, and storing scientific knowledge. DeSci strives to eliminate reliance on profit-hungry intermediaries and increase collaboration across the field.

DeSci Labs builds technology that could transform how we store, access, assess, and track scientific outputs, envisioning a scientific record without data silos, paywalls, and proprietary analytics.

The goal is to design a credibly neutral and content-addressed library for interoperable research outputs that requires minimal maintenance or dependencies on intermediaries. DeSci Labs is also developing decentralized persistent identifiers for linked digital objects (dPIDs).

For quality validations, DeSci Labs builds social coordination tools to enable different approaches to peer-review.

Molecule is a decentralized biotech protocol, building a web3 marketplace for research-related IP.

Its platform and scalable framework for biotech DAOs connects academics and biotech companies with quick and easy funding, while enabling patient, researcher, and investor communities to directly govern and own research-related IP.

Molecule created a hybrid legal-smart contract primitive called an IP-NFT. The IP-NFT protocol brings rights to IP and R&D data on-chain, unifying the legal rights, data access, and economics around research projects into cryptographic tokens on Ethereum.

DeSciWorld is a community-driven initiative aiming to facilitate the on-boarding of people into the DeSci space. Funded and directed by the DeSciWorldDAO, DeSciWorld exists as a vehicle to promote and expand the culture of Decentralised Science.

DeSciWorld aims to become a starting point from which everyone should be able to dive into the DeSci space, a resource-oriented focal point for the DeSci community. The DeSciWorld Dashboard is a free-to-use online information hub that aggregates and displays information about DeSci projects in an easily digestible format.

DeSci DAOs

DAOs are designed to be decentralized, autonomous, and self-governing, with decisions made by consensus among members of the organization. In a DAO, the rules are enforced by smart contracts, which are self-executing and automatically enforce the rules encoded within them.


BioDAO leverages the power of community, decentralization, and tokenization to build a biotech economy.

The goal is to initiate 25-30 projects per year for the next five years which will result in 3-5 new therapies per year in the next 6-10 years. BioDAO will begin by focusing on funding the development of therapies and artificial intelligence (AI)-based approaches in healthcare.

Members can join BioDAO by buying up "BIO" tokens on the platform or by earning them by contributing work or intellectual property (IP). In return, the members can vote in operational and strategic decisions taken by the DAO.

CureDAO is creating an open-source platform to discover how millions of factors like foods, drugs, and supplements affect human health.

The first project is a community-owned, open-source, no-code platform for health data aggregation and analysis. It will provide a basic foundational technology layer to remove barriers for physicians, researchers, clinicians, and developers of digital health applications.

Anyone can donate data, intellectual property, and program and monetize custom plugins for the platform. In return, they get a share of the revenue in tokens.

GenomesDAO is a biotech DAO focused on safe, private & auditable monetization of genomic data.

GenomesDAO leverages the Ethereum blockchain to provide a transparent and immutable audit log of access to a user's genome. Using the Genomes mobile app, users control third-party access to their DNA Vault.

Whenever a partner company, researcher or charity wants to access a user's genomic data, the user can give their consent and receive a direct payment in the form of GENE tokens. They can even create a personalized non-fungible token (NFT) that is decorated using data from their genome.

DeSci DAOs can combine different traits and be a universal platform with benefits for researchers, investors, and the general public. In platforms like LabDAO and OpenBioML decision-making, funding and research made by one community inside one platform, yet with different degrees of freedom in   terms which projects can be applied to the platform and how funding is distributed among beneficiaries.

LabDAO

LabDAO is a DeSci DAO that is focused on creating an open and decentralized platform for collaboration between individual research without regards of nation-state borders.

One of the key feature of LabDAO is a self-emerging focus on dry biology and drug design, with an emphasis on biotechnology. Platform promotes project creation from individual members and provides them with access to cryptocurrency crowdfunding. Latest project of this dao is a open access longevity knowledge graph.

This DAO funding scheme completely dependent on community-action, projects created by individuals inside platform and everyone can join this project or donate cryptocurrency to the project.

OpenBioML

OpenBioML is a Longevity DAO that is focused on creating an open and decentralized platform for scientific research in the field of biology and biomedicine.

The primary project of OpenBioML is an open-source platform for biological and biomedical data analysis, which will enable researchers to easily share and analyze large amounts of data from various sources. The platform encourages community to start project, however through the system of proposals, which can constrict set of possible scientific research inside platform.

The DAO enable crowdfunding and investment from a wide range of stakeholders, including scientists, investors, and the general public. Latest project of this DAO is a generative models of regulatory DNA sequences based on diffusion models

phas3

Phas3 is a decentralized autonomous organization (DAO) that is focused on advancing the field of longevity and extending healthy human lifespans.

The project brings together a community of individuals who are passionate about longevity and are committed to supporting research, development, and implementation of strategies that can help people live longer, healthier lives. One of the key areas of focus for Phas3 is funding research into new longevity technologies and therapies. The DAO provides grants to researchers who are working on innovative approaches to extending healthy human lifespans, such as gene therapy, senolytics, and stem cell therapy.

Phas3 is also committed to educating the public about the benefits of longevity research and the potential impact that breakthroughs in this field could have on society.

Decentralized science (DeSci) DAOs are a relatively young concept, and the infrastructure for funding such projects is still in its early stages of development. However, despite these challenges, DeSci DAOs have already shown promising results in terms of advancing scientific research.

DAOs funding amount comparison by 3 month transaction history

GenomesDAO 14.7%
BioDAO 9.3%
OpenBioML 8.0%
LabDAO 30.7%
CureDAO 37.3%
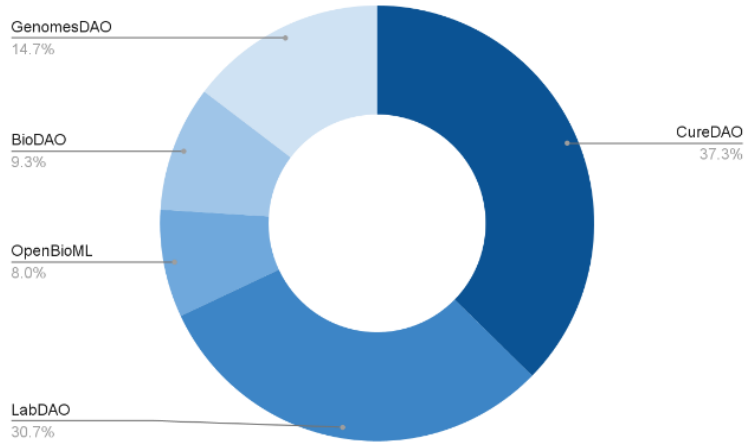
Despite being a relatively new concept, DeSci DAOs have already shown promising results in terms of funding scientific research. For example, in 2021, a DeSci DAO called the Molecular Future Fund raised over $5 million in funding for a project focused on developing new treatments for COVID-19. This project, which involves a team of over 20 researchers from leading institutions, is now well underway and has the potential to make a significant impact on the fight against COVID-19.

VitaDAO has access to the public funding model, yet it's still hard to track activity of other DAOs. By 3 month period of transactions through vote subdomains of different

DAOs we can see that CureDAO and LabDAO receive the most of funding with their model of dynamical community and open project creation model. One interesting case is OpenBioML – a relatively young DAO focused on ML and NLP application to biological problems, in a 3 month period received funding per transaction increased twice.

OpenBioML funding received in 3 month period in USD
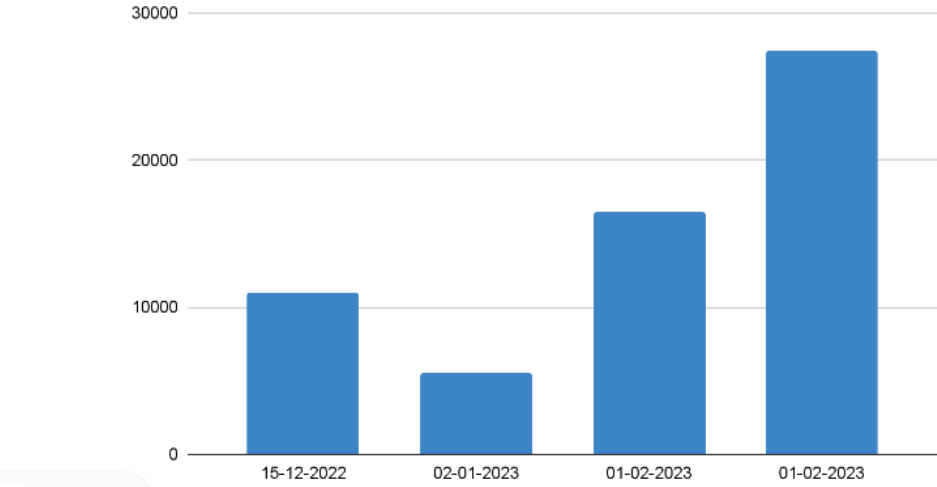
E. Takeaways

Blockchain in Longevity Industry Classification Framework developed by the Aging Analytics Agency is a comprehensive tool for industry analysis that facilitates comparison of businesses and emphasizes the way their operations influence the Longevity Industry.

WEB 3.0 for Longevity offers a new way to finance and incentivize research into the aging process and longevity-related treatments. Longevity DAOs provide an opportunity for individuals, companies, and organizations to pool their resources in order to fund projects that would otherwise be too costly or difficult to pursue alone. Symbiosis of longevity DAOs and DeSci organizations is inevitable and by working together, they create a powerful network of resources and expertise to help achieve the goal of promoting longevity and accelerating R&D activities in this industry. Additionally, both entities can benefit from each other's strengths in terms of marketing, fundraising, and networking opportunities.

Blockchain-Powered Longevity Solutions have the potential to revolutionize healthcare by providing a secure, transparent, and efficient platform for storing patient data. This could help reduce the cost of healthcare services, improve patient privacy and security, and streamline clinical trials. Additionally, this technology can be used to track medical supplies and medications from source to destination, helping ensure that only safe and effective products are used in healthcare settings. By leveraging blockchain technology, these solutions can also help facilitate more accurate diagnoses and treatments while providing access to real-time insights into population health trends.

Crypto Tokens Support for Longevity provides a secure, transparent and automated way to manage intellectual property rights, collect funds via DAO regardless of nation-state borders and distribute it with regard DAO members' opinion that facilitates patient-centered approach prevalence in the Longevity Industry. Historic transaction from VitaDao to Scheibye-Knudsen Laboratory in 2021 signifies that legal and technical difficulties of smart contract research governance via IP NFT are left aside, giving blockchain technologies possibility to compete with traditional way of funding research, to bring transparency and decentralization in research and development sphere, to accelerate technological progress for Longevity and overall.