

Pioneering the World of “DAOs”: New Hopes and Concerns

The use of blockchain technology is about to dramatically change the nature of organizations and the way in which we reach consensus in the face of differing opinions. What significance will decentralized autonomous organizations (DAOs), a new form of organization, have for society?

About This Issue

What Significance Do DAOs Hold for Us? -New Possibilities Towards the Solution of Social Issues

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Blockchain technology is about to dramatically change the nature of organizations and the way in which we reach consensus in the face of differing opinions. One of the main axes of Web 3.0 will be a new form of organization known as a decentralized autonomous organization, or DAO, which brings together the twin characteristics of decentralization and autonomy. What significance will DAOs have for our societies and economies? What is their potential? What challenges can we expect to face? In this issue of *My Vision*, we take opinions from experts in the areas of the information society and blockchain technology.

Keywords...Web 3.0, a new form of organization, a new tool for the solution of social issues

Expert Opinions

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What significance do DAOs hold for us? What potential do they possess? What challenges can we expect to face?

Connecting Individuals to Allow Their Skills to Be Used in the Solution of Social Issues

Soichiro Takagi

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Keywords...Deframing, individualization, oligopoly on tokens

Realizing More Options and Expanding the Range of Economic Activities for DAOs

Emi Yoshikawa

Vice President of Corporate Strategy and Operations, Ripple Inc.

Keywords...Promotion and expansion of economic activities, DAO workers, development and enhancement of laws and institutions

DAOs Possess Real Value in the Public and Social Domains; the Issue is Mechanisms for Participation

Naoki Akazawa

Co-Founder/CTO, Fracton Ventures, Inc.

Keywords...Smart contracts, integration between management and ownership, mechanisms allowing safe participation

A New Form of Governance: Prioritizing Individuals Bringing What They Can to the Table

Kei Wakabayashi

Director of Content Development, blkswm publishers Inc.

Keywords...Fandoms, competencies, objects that people can identify with

“Digital Villagers” in a Marginal Village; Revitalizing Communities Through the Use of DAOs

Haruka Takeuchi

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Keywords...Nishikigoi NFTs, electronic resident registration, special DAO zone

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What Significance Do DAOs Hold for Us? -New Possibilities Towards the Solution of Social Issues



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Decentralized autonomous organizations (DAOs) are attracting attention as a new form of organization that is distinct from both joint-stock companies and volunteer organizations, a form that is well suited to the Web 3.0 era of decentralized Internet. DAOs are characterized by the fact that participants in these organizations are able to independently advance and manage projects on blockchains without the existence of specific owners or managers, and as such, they are expected to be useful as a new tool for the solution of social issues.

A Mechanism for “Individualization”; Broadening the Scope of Economic Activities

Professor Soichiro Takagi of The University of Tokyo's Interfaculty Initiative in Information Studies sees “individualization” as the essence of DAOs. Bitcoin, the first generation of DAOs, enabled individuals to divide roles and conduct transactions on a global scale via the use of blockchain technology, with the reliability of the algorithms in use acting as a guarantee. Recent process-oriented DAOs have placed a greater emphasis on community functions, such as the use of “native tokens,” a type of coin unique to a specific DAO, to enable voting and the exercise of rights for the purpose of making decisions. The real estate management DAOs mentioned by Professor Takagi are also very interesting as examples of “individualization” in which individual participants are able to exercise their particular skills and abilities. At the same time, Professor Takagi also points out that the initiator or initiators of projects might establish an oligopoly on native tokens, giving them a considerable degree of authority over the project.

Emi Yoshikawa, Vice President of Corporate Strategy and Operations at Ripple, Inc., believes that DAOs will promote economic activity and expand the overall economic pie. Notably, DAOs have the power to change the “winner-take-all” market monopoly in the digital economy, as typified by “GAFAM.” They are able to do so by aligning the mission of the organization with incentives for the participants through voting, thereby enabling a smaller but higher quality economy and promoting economic activities that focus on engagement. If an individual possesses skills, becoming a “DAO worker,” able to operate anywhere in the world, even anonymously or under a pseudonym, will represent a new possibility. However, Japan lags behind the U.S. with regard to relevant systems, and Ms. Yoshikawa indicates that it will be essential to establish laws and regulations with a focus on international coordination.

New Tools for Collaboration; Weaving Together the Abilities of Participants

Naoki Akazawa, Co-Founder/CTO of Fracton Ventures, Inc., tells us that DAOs represent a new tool for cooperation and collaboration between individuals. In the case of business investments and purchases for collections, areas in which DAOs are currently very active, transactions are

implemented automatically through the programming of prior agreements among participants regarding the distribution of investment returns or reinvestment in the project as a whole (known as “smart contracts”). In addition, because it is possible to participate in DAOs by purchasing tokens, there is a greater degree of integration between “management” and “ownership.” As DAOs mature and become more sophisticated, they will have the potential to enhance social welfare in ways that complement existing democratic political processes. While there are many issues to be addressed, such as ensuring the legitimacy of the process of creating smart contracts, it will be essential to make DAOs both sustainable and safe for the general public to participate in.

Kei Wakabayashi, the Director of Content Development for blkswn publishers Inc., describes DAOs as a form of governance that represents a counterpoint to bureaucratic systems, and explains that in this form of governance, it is not only the “output” (i.e., the finished product), but also the “process,” incorporating such elements as “participation” and “contribution,” which is important. Fandoms (fan groups) can provide us with some orientation in this area. Fans of idol groups participate in their communities autonomously, and each of them supports and promotes the group in their own unique way. These activities are controlled by norms and rules generated autonomously within the fandom. When applying DAOs to the realm of public administration, it will also be necessary to have an “object” that can turn citizens into “fans” in order to encourage voluntary participation, and to weave together what the individuals gathered together in the DAO are able to do, i.e., their “competencies,” in order to make the activities inclusive. These are very interesting points.

Further Development of the Legal System in Order to Make It a Means of Solving Social Issues

To conclude, I would like to introduce a practical example of the application of a DAO. The Yamakoshi area of Nagaoka City, in Niigata Prefecture, is on the verge of disappearance due to damage caused by the Chuetsu Earthquake and a decline in the number of residents due to a declining birthrate and the aging of the population. One project undertaken in response to this situation is the sale of “Nishikigoi NFT,” digital art featuring Nishikigoi (a type of multi-colored carp), which originated in Yamakoshi. Blockchain technology is used to identify the owners of the NFTs and guarantee their uniqueness, thus giving them value as digital assets. In the Yamakoshi area, the NFTs are termed “electronic certificates of residence,” and their purchasers are called “digital villagers.” According to Haruka Takeuchi, Representative of the Yamakoshi Public Meeting, digital villagers also actively offer suggestions towards revitalizing the “real Yamakoshi.” One potential idea would be to create a “special DAO zone” and offer preferential tax treatment for virtual currencies for public, locally-based DAOs.

All of the experts interviewed in this issue agree that DAO mechanisms are far from complete, and that further enhancement of the relevant legal systems will be required in the future. Given that FTX, a major crypto asset trader, recently went bankrupt, the protection of personal assets is also a major issue. Nevertheless, based on the premise of “individualization,” as a new tool for collaboration between individuals, DAOs have the potential to combine individual autonomy and initiative with high-quality economic activity. They also have promise as a means of solving social issues.

Expert Opinions

Connecting Individuals to Allow Their Skills to Be Used in the Solution of Social Issues



Soichiro Takagi

Professor, Interfaculty Initiative in
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Innovations in information technology have disrupted old frameworks and allowed elements within them to connect directly without reliance on the existing framework. I call this trend “deframing”: IT and platforms allow individuals to work and conduct activities through their connection with each other without relying on old organizations and structures. For example, the reliability of currencies was most efficiently manifested in systems that had as their foundation the authority of organizations such as central banks. By contrast, with the advent of blockchain technology, bitcoin, the first generation of DAO, employed the reliability of algorithms as a guarantee, allowing individuals to engage in a division of roles and conduct transactions on a global scale. The foundation of these organizations might therefore be termed

mechanisms of “individualization.”

More than a decade ago, when bitcoin was created, DAOs were strictly based on fully codified rules. In the blockchain world (exchanges, etc.), operation was autonomous and decentralized, based on specific protocols. More recently, however, looser mechanisms that emphasize the process of discussion and decision-making among participants have become the norm. DAOs based on Ethereum are among DAOs of this type. Process-oriented DAOs use “native tokens,” currencies unique to the DAO, to allow participants to vote and exercise rights for the purpose of making decisions. From the initial days of bitcoin, when operation was based on autonomous and decentralized protocols, there was a two-tiered structure that incorporated a community of developers; today, community functions, which allow anyone to make proposals and vote, have become more important and are more widely used. Projects in a wide range of fields are implemented using platforms such as “Snapshot,” making it a simple matter for anyone to browse and participate. On the other hand, there is a possibility that the initiators of projects could establish an oligopoly on native tokens, giving them a considerable degree of authority over the project. This is becoming an issue for the future of DAOs.

One interesting example of a form of DAO being employed in Japan involves a specific type of real estate operation. The possession of tokens gives participants in these DAOs the right to share vacant houses in their local area. The value of the tokens increases as the attractiveness of the vacant house increases, ensuring that participants in the DAO work actively to improve the house. The fact that participants sleep in the houses encourages development that adopts the user's perspective. In this case, full use is made of an “individualization” mechanism, which allows participants in the DAO, as both agents for and users of the property, to apply their individual skills and abilities. Depending on the ideas pitched, if services using DAOs are successfully incorporated into projects, it will become possible to turn economic mechanisms towards the resolution of social issues.

Professor Takagi analyzes the social impact of the development and diffusion of information technology, in the main from an economic perspective, and conducts research regarding the direction of corporate management strategies and policies. He specializes in information economics and the digital economy. He completed the doctoral course of The University of Tokyo's Graduate School of Interdisciplinary Information Studies, and holds a Ph.D. in Interdisciplinary Information Studies. He assumed his current position in 2022, following a period as a professor at the Center for Global Communications (GLOCOM) of the International University of Japan, and as an associate professor in The University of Tokyo's Interfaculty Initiative in Information Studies. He is also the representative of the Blockchain Research Initiative of The University of Tokyo's Interfaculty Initiative in Information Studies.

Expert Opinions

Realizing More Options and Expanding the Range of Economic Activities for DAOs



Emi Yoshikawa

Vice President of Corporate
Strategy and Operations,
Ripple Inc.

Up to the present, the only two ways for individuals to pursue activities with a common goal were to establish a formal legal entity, such as a corporate organization, or to come together as volunteers. The use of DAOs can bridge the gap between these two approaches by allowing people to come together and collaborate online, in a decentralized organization. I believe that the efficient mechanisms provided by DAOs will promote economic activity in fields that have not previously functioned well in this way, thereby expanding the overall economic pie. For example, investment-related DAOs and donation-related DAOs will decide where to invest or donate on the basis of voting by participants in the DAO. In addition, acceleration-focused DAOs will choose from among start-ups offering interesting ideas, and provide support for business

plans and funding.

The digital economy to date, as represented by GAFAM, has been a “winner-take-all” world in which small-scale enterprises were unprofitable. DAOs, though, have the power to change this market monopoly. By aligning the mission of the organization with incentives for its participants by means of participant voting, DAOs will enable the realization of economies that are small in scale but high in quality, in addition to promoting economic activities that are focused on engagement. Decisions will be made by voting on proposals presented by members, based on factors such as the amount of voting rights held in the form of what are known as “governance tokens.” Thousands of DAOs are already active, with a total treasury (assets held) of 12 billion US dollars, and these figures should continue to grow into the future.

There is also the new option of becoming a “DAO worker,” i.e., someone who works in a DAO. To date, the only way for an individual to utilize their skills has been by means of earning income in a specific country, in that country’s legal tender. Today, an individual possessing skills can conduct activities anywhere in the world; by manifesting those skills in the form of “non-transferable” non-fungible tokens (NFTs), one can also work anonymously or under an assumed name. From this perspective also, DAOs could be said to expand the range of economic activities available to an individual. At present, however, there are people who join DAOs but later leave because their skills do not match the skills expected by the DAOs. The challenge is therefore how to match human resources with the appropriate DAO.

Compared to the U.S., Japan still lags behind with respect to laws and systems in this area. It will be necessary to develop the necessary laws and systems with attention to international coordination. We are at the stage of exploring best practice in relation to DAOs, and governance and voting mechanisms are not yet fully formed. It is to be hoped that many people will take up the challenge of advancing the further development of DAOs, and that as a result they will improve significantly over the next several years.

Ms. Yoshikawa oversees corporate strategy and business operations at the San Francisco headquarters of Ripple Inc. She was a founding member in the establishment of Kyoto University’s Blockchain Research Center, and promotes industry-academia collaboration as a specially-appointed adjunct professor at the university. Ms. Yoshikawa also serves as an outside board member of SBI Remit, Japan’s largest overseas remittance company. In addition to the area of financial technology, Ms. Yoshikawa also has experience in fields including sustainability technology. In 2021, she was named one of the 100 Most Influential Women in Bay Area Business by the San Francisco Business Times. She holds an MBA from Harvard Business School and a Chartered Financial Analyst (CFA) certificate from the CFA Institute.

Expert Opinions

DAOs Possess Real Value in the Public and Social Domains; the Issue is Mechanisms for Participation



Naoki Akazawa
Co-Founder / CTO,
Fracton Ventures, Inc.

DAOs are a new tool for cooperation and collaboration between people, or a form of organization that uses this tool. The most active examples currently are DAOs conducting investments or purchasing for collections in areas agreed upon by participants, utilizing funds collected from participants. The rules concerning how returns from the investment are to be distributed among the participants or returned to the project as a whole are agreed upon by the participants in advance. Programming these rules enables transactions to be conducted automatically. This is known as a smart contract.

Participation in a DAO generally requires the purchase of tokens designated by the DAO. These tokens are like shares in a stock company. In the case of a stock company, shareholders own the organization, and management and employees make up the organization. In a DAO, by contrast, there is greater integration between “management” and “ownership.” Some DAOs make it possible for anyone to purchase tokens, meaning that everyone can be the owner and the manager of a DAO. These organizational characteristics expand possibilities for social activities in collective domains and in the social sector (NPOs/NGOs, etc.) that cannot be addressed by the usual business and capitalist mechanisms. My hope for DAOs is that as they become more sophisticated and mature in the future, they will be able to enhance social welfare in a way that complements existing democratic political processes.

However, there are still many issues to be addressed before DAOs can actually be used in areas that bear a strong relation to people's actual lives. First, how do we ensure the legitimacy of the process of creating smart contracts, which we might term the “law” of DAOs? Second, even if there are accounts associated with the system, there is no one-to-one connection between these accounts and real individuals, making it possible for a single person to use multiple accounts in an attack in order to trigger desired transactions (transaction records). In addition, if the individualism (self-sovereignty) that underlies DAOs goes too far, the burden of individual responsibility will become too great. For example, the crypto-asset exchange FTX recently became bankrupt, and it is not clear to what extent personal assets will be protected.

While these challenges must be overcome, the movement towards individuals participating and being active in a variety of communities and projects will be a major trend in the future. The DAO mechanism, allowing alignment of the interests of the individual with those of the whole, must be carefully implemented while enabling the safe participation of ordinary people in order to realize sustainability.

Mr. Akazawa is a co-founder of Fracton Ventures, Inc. Since establishing the company in 2021, he has been involved in the establishment of projects in Japan and abroad towards the realization of the Web 3.0 society, including token design predicated on the existence of DAOs. Mr. Akazawa has been active as a freelance engineer in the fields of data analysis and machine learning, and has been involved in several demonstration experiments using blockchain and smart contracts, overseeing processes from planning and design to development. In addition to authoring books on the subject, he is involved in educational activities and human resource development seeking to promote the spread of token engineering.

Expert Opinions

A New Form of Governance: Prioritizing Individuals Bringing What They Can to the Table



Kei Wakabayashi

Director of Content Development,
blksw publishers Inc.

The driving force behind the global domination of “BTS” and other K-pop (Korean pop) idol groups is said to be their fandoms, or groups of very committed fans. Such fans autonomously participate in online communities, where they not only share music as they wish, but also support and promote BTS and offer each other mutual help. These support activities, colloquially referred to as “oshikatsu” in Japanese, are not unilaterally regulated by the idol group's (official) management, but are controlled by norms and rules generated autonomously within the fandom. The case of fandoms provides us with hints for considering the nature of “decentralized autonomous organizations,” or DAOs.

While we speak of “decentralization” and “autonomy,” in the case of fandoms there is always an object at the center that acts as a centripetal force, such as an idol group or a character in a movie or anime. We might seek to apply DAOs in the realm of public administration, but if there are no values and meanings that make citizens want to participate spontaneously, the spontaneity and autonomy displayed by fandoms will not be generated. Conversely, in order to encourage spontaneous participation, it is necessary to have an “object” of which citizens will become “fans.” If the project is to protect a park that is loved by the public, there must be “fans” of the park. Only when people gather around an object that they can identify with can activities begin to move in an autonomous and decentralized manner.

At this point, the DAO must be an inherently inclusive organization. Bringing people together to form a band based on roles such as guitarist and drummer represents a “division of labor.” By contrast, the main purpose of a DAO is to weave together what the people gathered in the organization are able to do, in other words, their “competencies.” If the people who are gathered together can only play the recorder or harmonica, or can only clap their hands, a project that can be realized by those people must be conceived. Inclusion is based on the idea that there is no-one who cannot do anything.

DAOs are a form of governance that is the antithesis of bureaucratic systems. They place the emphasis on “processes” such as “participation” and “contribution,” rather than on planned “outputs” (i.e., finished products). This is closely related to the fact that in the area of services, people are talking about the transition from products to experiences, and is a major reason why DAOs are today attracting so much attention.

Mr. Wakabayashi is the Director of Content Development of the content label “blksw publishers Inc.,” which produces content without any specific specialization with regard to field or media. His mission is to question current norms and to “re-imagine the way everything could be.” Mr. Wakabayashi is a graduate of Waseda University’s Faculty of Letters I. He became an independent freelance editor after working in the editorial department of Heibonsha’s Monthly Sun, and he has edited numerous magazines, books, and exhibition catalogs. He established blksw publishers Inc., following a term as editor-in-chief of the Japanese edition of WIRED.

Expert Opinions

“Digital Villagers” in a Marginal Village; Revitalizing Communities through the Use of DAOs



Haruka Takeuchi

Representative,
Yamakoshi Public Meeting

The Yamakoshi area (formerly Yamakoshi Village) in Nagaoka City, Niigata Prefecture, is what is termed a “marginal village,” a small community on the verge of extinction due to an ongoing decline in the number of residents resulting from the 2004 Chuetsu Earthquake disaster and a low birthrate and aging population. To date, the community has been attempting to revitalize itself through the efforts of residents and the local government, in addition to receiving help from private supporters. Through a process of trial and error, a project involving the sale of “Nishikigoi NFTs,” digital artworks featuring Nishikigoi carp (a type which originated in Yamakoshi) was initiated at the end of 2021. The use of the tamper-proof technology blockchain identifies the owner of the NFT and

guarantees the uniqueness of the artwork, ensuring its value as a digital asset.

In the Yamakoshi area, these NFTs are called “electronic certificates of residence,” and their purchasers are known as “digital villagers.” They are not official certificates of residence, nor are they linked to a citizen’s personal identification number, but their possession is considered proof that the owner is a friend of Yamakoshi with a genuine feeling for the village. Digital villagers, together with local residents, become members of the “Yamakoshi DAO” and are able to participate in project selection and operational decision-making. Digital villagers have already participated in a ballot to select projects that will contribute to the survival of the Yamakoshi region. Four projects have been selected, including one involving the creation of a “metaverse space” for the village. A portion of the proceeds from the sale of NFTs is used to fund the activities of these projects.

The Yamakoshi DAO uses Discord for chat, enabling participants to share the reality of daily life in Yamakoshi, such as the difficulty of heavy snowfalls and the joy of a bountiful harvest, and the digital villagers also participate actively in these conversations, seeking to increase the vitality of the “real Yamakoshi.” There are digital villagers who actually visit Yamakoshi in order to help organize local events, and some take on public relations duties from a distance if they are unable to visit. Yamakoshi is a small village with aging residents, and both self-help and mutual aid are becoming increasingly difficult. Given this, we wish to supplement the decline in both of these areas utilizing the “manpower” of our digital villagers and the proceeds of NFT sales as financial resources.

In order for local DAOs to take off in the future, there must be further development of a national system. Because the establishment of legislation will take time, an effective approach would be the creation of “special DAO zones” and the provision of preferential taxation treatment for the virtual currencies employed by public regionally-based DAOs. If local DAOs in each of Japan’s regions can form leagues and start a major trend, we can expect that there will be progress in the establishment of legislation in the country as a whole.

Ms. Takeuchi is the Representative of the Yamakoshi Public Meeting, a community development organization. The Yamakoshi Public Meeting was established in 2007 in order to consider the future of the region in the wake of the Chuetsu Earthquake and to take action to realize the resulting plans. Following the total evacuation of the village, Ms. Takeuchi moved to Yamakoshi together with returning residents, and worked to provide reconstruction assistance. She served on the Secretariat of the Yamakoshi Public Meeting in 2008 as a regional reconstruction aid worker, and assumed her current position in April 2021. Ms. Takeuchi believes that digital technology is the best way to maximize the value of (analog) marginal communities, and seeks to design new relationships using NFTs and DAOs as optimization tools for this purpose. She also offers public lectures focusing on advanced case studies involving the utilization of DAOs and NFTs for the realization of community development.