The rise of Decentralized Autonomous Organizations

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August 4, 2020

1 Introduction

In the past centuries, centralized and hierarchical ways of organizing have had a monopoly in society. There have been two main views on how organizations should be established: the mechanistic view and the human-centred view. The mechanistic view emphasises economic rationality by authority, hierarchical structures, coordination, routinized tasks and various "scientific" methods. Another perspective has been the human-centred one, in which the focal point of an organization is its people themselves. The employees are crucial in order to reach pre-set goals. In this view, their motivation and their willingness to work are always kept in hindsight when creating the working environment [1]. Although the views are different, they both have a centralized way of making decisions, which lies in the hands of a single person or a small group of individuals. Until now, this has been the only way for decision-making in global organizations and large companies due to their efficiency.

In the 21st century, the rise of Internet has changed society and organizations fundamentally by leveraging its connectivity, seamless transfer of information and wide-spread adoption. Recently, a technology built on the Internet has been introduced, with a similar promise of disruption. In 2008, Satoshi Nakamoto wrote a whitepaper, in which he introduced Bitcoin, the first implementation of a fully distributed digital currency [2]. He cleverly combined decades of research and created a new paradigm on the internet. This digital coin is represented by a database of transactions distributed across all the nodes that make up a network overlaid on the Internet. It offers resilience, decentralization and programmable transactions. The software is open source, so anyone with a smartphone/laptop and an internet connection can join the network and participate in the ecosystem. Since its inception, more alternative implementations with different features have appeared. The common underlying technology is called blockchain technology and reflects on the way data is linked together in blocks of transaction. Once a block is published on this publicly distributed ledger, it is immutable, and everybody can verify it for correctness.

Following bitcoin, a lot of variants with the same principles have been built, commonly denoted under the term distributed ledger technology. A notable example is Ethereum[1], which offers the functionality to write smart contracts through a Turing-complete distributed virtual machine. Smart contracts are self-executing code that utilizes blockchain technology to digitally enforce, verify or facilitate the performance or negotiation of a contract [3]. Due to the security guarantees offered by the underlying blockchain, trust factor between parties is removed. Organizations and actors can now directly interact with each other and trust the blockchain on executing contracts between them. This removes the need for trusted third parties and the high service fees they demand. Smart contracts have a wide-scale impact on the transformation of organizations, because a lot of time-consuming processes can be made highly efficient and automated. It provides financial openness and transparency, which are considered the core requirements to attract investments and establish trust between the stakeholders [4].

Parallel to this technological innovation of an immutable shared ledger, blockchain technologies also offered organizational innovation. Essentially, bitcoin was the first example of what has been called a Decentralized Autonomous Organization. According to Puranam, an organization can be defined as a "multi-agent system [...] with identifiable boundaries and a purpose [...] towards which the constituent agents' effort make a contribution". Bitcoin satisfies this definition, because the boundaries are imposed by its nodes who run the code. Its agents are the miners (nodes that arrange data in the new blocks according to specific rules), developers and users. They all work together to collect, verify and update the transactions that are stored on the public ledger. It is however highly decentralized, because there is no management team or central executives who can take actions concerning the governance rules. Instead modifications to the protocol are only made if there is a democratic voting process in the developer community, which is sufficiently backed by the miners [5].

Firstly, this paper will investigate existing literature in order to explore the fundamental differences between current organizational structures and Decentralized Autonomous Organizations. After describing the key differences, the benefits and challenges of implementing such a model will be described. Three industries will be examined to see how they are impacted by this technology. To illustrate our findings an example of one of the most famous DAOs will be given.

2 Traditional Organizations

In order to see how decentralization can benefit organizational structures, we will start describing the limitations of traditional organizations. An organization typically consists of a set of properties and a protocol for individuals that

[1] https://ethereum.org/

specifies the conditions on using that property, entering and leaving the organizations and the interactions between employees. Hierarchical structures were introduced when tasks started getting bigger and more complex with scarcity of knowledge. Many people were involved and coordination between them was expensive. Past studies have suggested that hierarchical structures are increasingly being re-engineered, because they can't cope with the current fast pace of digital innovation and transformation [6]. Products and services needed to be developed more rapidly, because there is strong global competition in all industries. New modes of organization require high degrees of empowerment, less administrational work, and rapid information flows. Hierarchical structures dictate the development of teams that need to communicate vertically as well as horizontally. A middle management layer is required to enable information flow in a smooth manner.

Due to the team-centred approach inside companies, different values and cultures can begin to form, which are not always compatible with each other. These teams are nevertheless necessary to enable close cooperation between employees. Goals and projects are based on this hierarchy, where the individuals at the top exert their power to the employees at the bottom. This reduces the empowerment of the individuals and their motivation to make meaningful contributions to the organization's goals. This happens especially because people are rewarded for their positions instead of the work they deliver. Another limitation of centralized models for governance and decision is the "nothing at stake" problem. This relates to the idea that employees don't identify themselves with the product or service they are working on. Due to the concentration of power an individual or organization does not lose anything from bad behaviour.

3 Decentralized Organizations

The traditional organization is not the only model for a company, at its opposite decentralized organizations exist. As the word "decentralized" suggests, the power doesn't reside with one person or with a small group, but it is spread among all the people within a company. This implies the absence of a leader, a hierarchy and sometimes even a headquarter [7]. The following definition of a decentralized organization can be found in the business dictionary: "an organization wherein the decision-making authority does not sit with a central figure or group. Some decentralized organizations empower all levels within the hierarchy with decision influence" [8]. Anyone at any level has the possibility to participate in taking the business decisions and to influence the future of the company. As a result, employees interact with each other according to a protocol. This protocol could be specified by code, but it could also be based on a binding agreement between the different stakeholders.

A decentralized organization has some advantages over a traditional one. The former is able to make decisions quickly by avoiding to wait for the ap-

proval to pass through the chain of command [9]. In this way people focus on their own work instead of wasting time on secondary activities. Decentralizing an organization could foster more cooperation among people and create work teams that make employees feel part of something. This establishes shared values and a unique culture which everybody can embody. Since all the information is shared, everyone knows exactly which are the goals that the company wish to reach, and which are the projects that need to be done. Moreover, some responsibilities are delegated to the employees who gain more autonomy to make their own decisions or to implement some of their own ideas. In this way people can learn from their own experience and they feel to be important for the company, so they are more motivated and try to do their best to bring success to the firm. This is a meritocratic system that rewards employees for their skills and abilities and not for the position they embody [7]. Not all the benefits are related to the structure of the company, there are also some related to the way it faces unexpected situation. A decentralized organization answers faster to a new challenge or need by being more agile and prone innovation. It is able to grow fast, because local groups and individuals are empowered to take decisions by themselves [10]. Furthermore in a situation of emergency, a decentralized structure is able to maintain self-sufficiency because managers and employees are used to work autonomously [9].

There are some disadvantages of decentralizing organizations. Typically, they will require more generalists than specialists, which means that there might be a larger reliance on external consultants. Decisions within certain regions and subdivisions within an organization might be out of sync. This is especially true for cases where organization-wide standards are needed. An example is the GDPR-compliance within all the subdivisions of a company that separately manage their customer data. Company-wide policies will incur hindrances by local managers used to their own authority when diffusing. We acknowledge that there is not a one-size fits all solution, but a description of both traditional and decentralized organizations will contribute to the understanding of new IT-innovations in organizational management.

4 Decentralized Autonomous Organizations

A new and disruptive organizational model has been introduced, which has been made possible by the birth of bitcoin and the innovations in distributed ledger technologies. It is the so-called Decentralized Autonomous Organization (DAO), which takes the notion of decentralization to another extreme. Hsieh & Vergne define DAOs as "non-hierarchical organizations that perform and record routine tasks on a peer-to-peer, cryptographically secure, public network, and rely on the voluntary contributions of their internal stakeholders to operate, manage, and evolve the organization through a democratic consultation process" [5]. The term "autonomous" is included in the name, because the organization is its own entity on the internet. Although it is closely related to artificial intelligence,

the main difference is that DAOs heavily rely on individuals to perform certain tasks that can't be automated. In a DAO all the information (e.g. votes for a certain project) is supplied by humans and, with that information, the DAO takes decisions for itself. In a decentralized organization the final decisions are still taken by humans. Another difference is that the DAO contains some form of internal capital that is valuable for the stakeholders. This could be some form of digital token that can be used to reward certain activities [11]. The term public refers to the openness of a DAO in accepting its members. Its token, which reflects ownership, can be obtained by anyone willing to participate in its eco-system. Figure 1 relates traditional centralized organizations to DAOs. The most striking feature is indeed the replacement of hierarchy by a network of peers with different roles. The DAO is a virtual entity and holds no land or physical assets. It is not confined within the borders of specific states, so it is unclear how legislation should be applied. The legal entity only has secondary value and is also subverted to decentralization.

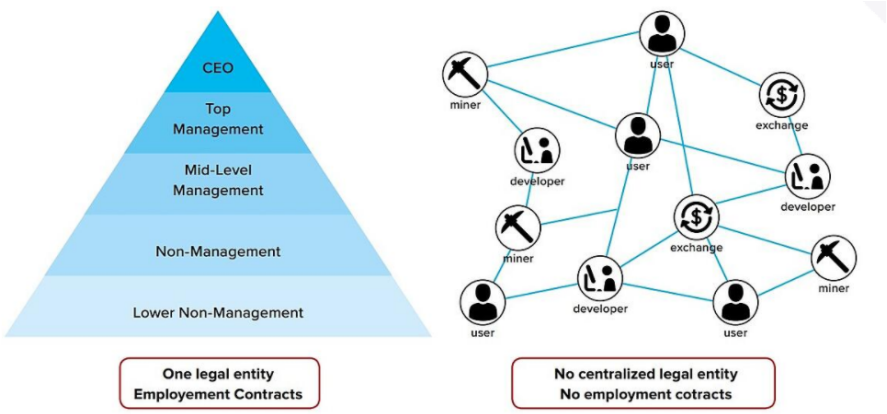

Figure 1: Centralized organizations (left) compared to DAOs (right) [12].

The different layers on which a DAO is built are shown in figure 2. The fundamental layer of the DAO is the blockchain, a distributed network, that makes keeps track of data, by providing an immutable and transparent storage structure. This technology offers the possibility to disintermediate by creating fully distributed system of organizations without need for a central entity supporting the platform. The main goal of the bottom layer is that cryptographic methods replace the need of trust in somebody maintaining the system. Once data is transmitted to the blockchain, it is almost impossible to change or delete it. The data is distributed across a large set of peers, where each check whether everything is valid. The assumption is made that there is a majority of honest peers in which case invalid data is not accepted. In this paper only public blockchains are considered, where anybody with enough computing resources

can participate in the network. The main reason for this is that currently DAO frameworks and proof-of-concepts have mostly been built on public blockchains. A complete description of alternative design approaches can be found in [13], but it is outside the scope of this paper.

The application layer in the middle is represented by the smart contract framework that allows developers to make abstraction of the underlying layer. Smart contracts are pieces of self-executing code enabled by high-level descriptive programming languages (e.g. Solidity). The philosophy behind it is that the immutable and transparent data structure in the blockchain can contain code. The code is replicated across all nodes and executed whenever it is referenced in an additional data structure [2]. This allows a consistent global state in a distributed network.

Finally, the DAO is implemented in the third layer. It consists of a set of smart contracts that enforce the rules by which it is governed. These smart contracts define the way in which people interact with each other and how decision, task allocation and rewards are handled. A social currency (in form of a digital token) is included in transactions in order to give value to opinions, work and reputation. These decisions are made by a consensus mechanism, in which people vote in order to express their own opinion, whose weight depends on the number of tokens held by each participant. The DAO retains its integrity through the underlying blockchain network; thus its code is law, which leaves no room for interpretation.

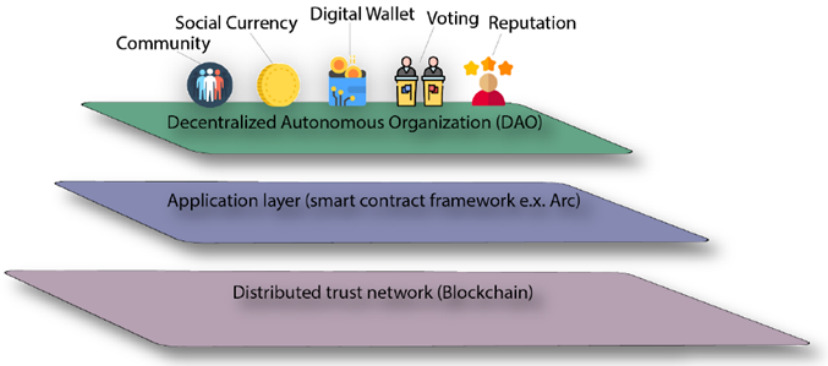

Figure 2: The different layers on which a DAO is built [7].

[2] In Bitcoin this would be called a transaction. Each time a smart contract is referred to in a transaction, its code would be run and state changes to a global state would be enforced across all nodes

4.1 Benefits

DAOs can face and solve some problems that often appear in a traditional organization. The homogeneity of information created by such an infrastructure brings more cooperation among people. The power is distributed and everyone can influence the decisions. The outcomes reflect the needs and opinions of the majority, avoiding the risk that a small group of people act in their own self-interest. Individual behaviour is incentivized only in order to contribute to the common goals for the best of the company [14]. Since a decentralized company implies the lack of hierarchy, it involves human beings in the decision-making process in an egalitarian way and this brings to minimize conflicts. The number of tokens owned by people is proportionally to their value, so when they are asked to express their own opinion, their vote weight depends on their status [14]. Everyone can have an impact on the future of the company, evaluating what is the best for it, based on the knowledge they have of the organization.

The DAO is better able to share information and to keep people informed about everything concerning the company. Everyone can see and audit the code by which it is run, because it is distributed over a public network of nodes. It removes the need of a central third party by letting people interact directly with each other. The smart contract automatically enforces the outcomes after consensus is reached by stakeholders. This system allows new ideas that people can propose: the whole network can vote and decide if it is worth to spend resources to realize them. Members invest their token into initiative that they believe most viable and then receive rewards if it is beneficial to the organization; this mechanism is possible because the DAO has internal capital. Thanks to the smart contract, the set of actions become automated, which leads to an increase in efficiency. Consequently, the DAO reduces cost in the preparation, execution, control and registration of the transactions [7]. The agency costs due to infrastructure and organization are thus significantly lowered. The error probability decreases, because computers don't miscalculate and smart contracts can face complex and dynamics situations, such as takeovers and mergers, proving to be a flexible self-organizing system structure [15]. The decisions are automatically in line with the nature of the organization. Its culture, motivation, structure, portfolio and strategies are taken in account due to the collective making-decision process. The absence of third parties doesn't only imply more internal efficiency, but also freedom of trade between networks, creating a new market form. Highly powerful individuals can't influence or corrupt information, if the ledger is based on secure protocols. Finally, the DAO creates new working opportunities, because it needs specific expertise from specialists [7].

Companies could be encouraged to apply the DAO for different reasons, since this model brings benefit not only in the internal environment, but also to the external one. In fact a DAO may avoid some issues, such as regulations, obligations, high ongoing cost in legal, accounting and tax advice, things that a traditional organization has to take into account to ensure continued com-

pliance [16]. It also eases any type of B2B arrangement that a company can make externally, such as joint ventures, partnerships, side-projects and all these kind of relationship that allow to cut down on waste and to increase trust and cooperation [16]. Since blockchain and smart-contract technology seem to bring companies so many benefits, it's possible that more companies will prefer an organization like the DAO. In a possible future scenario this model could be the de facto standard, because it can avoid illegal transaction [16].

4.2 Challenges

Several challenges need to be overcome in order to enable large scale adoption of DAOs. The first major concern is security. In DAO security concerns are coupled with economic objectives, which is why some authors termed the coin "seconomics" [17]. According to them, a failure of a security protocol in a DAO is not simply an annoying part of the protocol. Instead it should be viewed as an economic vulnerability, since it could lead to the collapse of the entire economic functionality. The bar for writing secure code is raised, because now the incentives to subvert the system will be high. A malicious attacker can take over control of the organization if an exploit is found. A perfect illustration on how this can happen will be given in section 6. To combat this, new platforms are being developed with the sole purpose of making it easy to create, secure and maintain DAOs. Examples of such frameworks that build on top of the Ethereum platform are Aragon [3] and Colony [4].

Another challenge comes from an employee perspective. Since it was mentioned before that the DAO could automatically value each employee based on its performance inside the company, a surveillance system could be constructed. This could severely harm willingness to contribute in such system and give raise to privacy concerns. Employees would likely not want their value to be openly accessible by everyone else. This can lead to dystopian scenarios, where a human being would subvert its fate to a computerized algorithm. It's important to still realize that the stakeholders will always be humans and that they are also regarded as human beings instead of agents of autonomous organizations.

The third challenge discussed here will be on the legal status of DAOs. The Internet is a global network and DAOs have similar characteristics, which will lead to cross-border organizations. At a certain point legal issues will arise, because there are no clear definitions for accountability and taxation. This will make the stakeholders that own a certain part of the DAO through tokens liable for its actions [18]. For these organizations to be attractive there has to be a lot of legislation introduced. Nevertheless, there have already been successful proof-of-concepts, which means that legal systems need to handle these new organizational forms without precedent guidelines. This will be cumbersome,

[3] https://aragon.org/
[4] https://colony.io/

because every country can have a different legal approach to DAOs, but the DAO will not be confined to specific jurisdictional areas.

The last challenge mentioned here concerns the switch over from established traditional organizations to DAOs. These companies would benefit the most from reduced agency costs, because they typically incur large costs related to management overhead. Shifting an existing company towards an alternative governance model is very difficult and probably not possible. On one side, the existing processes are too complex to be replaced by automated code, since they have been typically evolved for several decades. On the other hand, the existing management layer will probably not support the switch, since it turns their world upside-down from an organizational perspective. This challenge could be mitigated through only considering adopting specific governance features that are relevant for the a subset of operations [19].

5 Example industries

In the following paragraphs the industries in which DAOs can potentially have an impact on will be explained. We will try to sketch in what way they will be influenced.

5.1 Financial Technology

Financial technology uses innovation and technology in order to enhance activities in finance. This industry is likely the one that will notice the rise of DAOs firstly. This comes from the observation that the first blockchain application and DAO, Bitcoin, provided a solution for what was previously accounted for as the double spending problem. Now that the obstacle of prohibiting digital copies of a coin has been overcome, engineers, entrepreneurs and managers can explore how code can autonomously handle the notion of value. A lot of obstacles can be overcome, that will decrease the entrance barrier to access financial services. Examples like loans and global money transfer could change the lives of people that previously couldn't reach traditional banking services. All that would be required in order to participate in this ecosystem would be a smartphone and an internet connection. Another area in fintech where DAOs can be expected are futures markets. A futures contract is a standardised legal agreement between two parties to purchase or sell an underlying asset at specified price agreed upon today with the settlement occurring at a future date [17]. The nature of these agreements makes them easy to automate in smart contracts. These smart contracts could be then managed by a DAO.

5.2 Software Development

Another area where DAOs can be expected to be implemented early on is the software development industry. Employees in such environment are familiar

with how IT works and they will have the expertise that is needed to understand and to implement the infrastructure. Software engineers will probably give up more easily human managers in favour for automated decentralized managing. Software is by nature virtual and no physical assets need to be handled, which means that the interface with the real world is minimized. This is an ideal use case for DAOs, since everything can be kept virtual. Also, the fact that software development can be done remotely is a good argument to implement such organizational models. Programmers could accept projects, submit their code and be rewarded automatically if enough peers have controlled their work. The high density of start-ups in this industry can make adoption happen faster, because their structures are less complex than those of large corporate organizations. In other words, start-ups will be the first ones to implement DAOs, since they start from ground-zero in the design of their organization.

5.3 Agricultural Industry

An example of how a DAO can impact the agricultural industry is Union Chain. This project builds a DAO, using blockchain technology, artificial intelligence, big data and cloud computing technology. The agricultural sector is one of the industries that can benefit the most applying this type of organization. It has a very long supply chain, but at the same time deals with perishable products, that have to be delivered in time and be transported in the right condition [20]. Food is traded all over the world and the number of actors is very high, so its networks is complicated and lacks transparency. Its efficiency is low due to the outdated production methods, using little automation equipment. Union Chain was born to improve this situation. First, it includes sensors attached to the packaging that can be scanned and tracked anywhere, collecting data automatically. But information is also provided by nodes, that have the responsibility to improve operation and management ability of the network. DAO ensures a fair governance that every stakeholder must consider. In fact, Union Chain has a reward and punishment system, motivating community to create a fair market. All the stakeholders can be rewarded for their participation in the system. The reward is given through a number of tokens, based on the measure of their contribution on the system. They not only have to follow the encoded rules, but also the directives established by the trusted nodes that form the main chain [21]. The DAO brings a lot of benefits for this industry: it lowers the transaction costs, breaks down section barriers and improves trade structure. The transparency is ensured by the uploading of the data only after the consensus is reached and by the impossibility to alter this data. Moreover, the technology provides blockchain finance, upgrading bank credit to business trust. This is crucial for the sector, since it is based on small scale businesses, which typically don't have access to much finance [20]. The assets are divisible, transferable and liquid and they can be owned by any actor. Union Chain has been created to cover the entire agricultural supply chain and to improve the cooperation and the coordination among so many stakeholders. It is an important innovation that can change the actual situation in this such complex

field.

6 The DAO that got hacked

Bitcoin was the first successful DAO, but all subsequent DAO projects were implemented on Ethereum. The simple reason for this is that Ethereum provides a platform where smart contracts can be developed on with ease. These smart contracts provide the automated encoding of rules and decision-making needed to create a structure with decentralized control. Since everything is in software, developers need to take good care in designing it, because smart contracts will exactly do what they were coded to do, and this can have unintended consequences. A good illustration for what can go wrong is a hack from 2016, where hackers managed to steal $50 million in ether, the virtual currency of the Ethereum [22] platform. In the following paragraphs "The DAO" refers to the organization which got hacked, instead of the general concept.

The DAO was designed by a German start-up, called slock.it, who specialized in creating smart locks. Smart locks are smart contracts built on top of Ethereum in order to let people share access to their property (cars, boats, apartments). The goal of The DAO was to provide an investor-directed venture capital fund. It didn't have a physical address, nor a management layer. Its code was open source. The organization needed a real-world legal structure in order to comply with the laws, so the founders established a Swiss-based company, DAO.Link. This choice was motivated by the fact that Swiss companies are allowed to take money from an unknown source, as long as the money's destination is known [23]. The DAO raised $150 million from more than 11 000 investors, thus becoming the largest crowdfunding in the history. The mechanics behind the project worked as follows [24]:

- Slock.it created a set of smart contracts which encoded the rules that would run the organization. These programs specified how companies looking for capital should apply for funding from the DAO. A distributed voting process was also implemented after which the release of the funds would happen automatically.
- During an initial funding period, investors could purchase DAO-tokens by sending Ether to The DAO smart contract. These tokens would represent ownership of The DAO, but didn't have any monetary value.
- After the funding period, The DAO begins to operate in a self-governing manner.
- People could then ask for funding for their project. The only human regulation came from volunteers that checked the identity of the submitters and whether the projects were legal. If the project passed the test, they would then be voted by the investors who owned DAO-tokens. The more

tokens one had, the larger weight their vote received. After a successful vote, the project would receive the requested amount automatically.

After the initial success, largely because of good marketing, people started raising concerns on vulnerabilities inside the code. There was a function in one of the smart contracts that allowed to withdraw funds recursively. While programmers were trying to fix the code, an attacker managed to exploit the recursive bug and withdrew 3.6 million ether (worth $50 million at time of the hack) from The DAO. As a reaction to prevent more ether from being taken, there were proposals to split The DAO, but the votes necessary weren't collected in time [24]. After the funds were removed, there was a need for a resolution. Since approximately 15% of the total available ether was locked inside The DAO, this hack had a large impact on the ecosystem.

Several solutions where suggested by the Ethereum Foundation, an organization responsible for the development of the platform. One of the solution's was to put the account to which the funds were sent on a blacklist. Transactions coming from this account would not have been accepted by the validators. The decentralized nature makes this only possible if the majority of the validators and the miners accept this change. Another proposal would have had a hard-coded intervention return all funds to the original owners. In order to save investors and punish hackers this hard code was implemented. This meant that participants now had a choice between two versions of the blockchain. The situation where two blockchains exist at the same time is called a fork. The original blockchain (now called Ethereum Classic) still exists. Ethereum Classic is maintained by the idealists who consider the intervention of a central party against the ideology that everything on the network is trusted by nature. This created a division with the people who considered the exploit to have a too big impact on the system to leave it unresolved [25].

This example of a DAO teaches a lot of interesting things. First, even if a fully DAO can be implemented where all participants have equal power, the underlying blockchain platform needs to be trusted to maintain its decentralized nature. Even more important is that is crucial to have a secure implementation of the rules inside the smart contract. The fundamental problem underlying the hack wasn't the Ethereum platform itself, but an unintended human error inside the smart contract code. Automation leaves no room for error, because rolling faults back goes against the virtue of blockchains. It is not a trivial undertaking and it heavily damages its image of trustworthiness. Humans often make errors, so it is still to be seen how they can function in systems that do not tolerate errors by design. A third obstacle can be seen from a regulatory perspective. DAOs are a digital novelty, but they still need to comply with laws designed for physical organizations. In order to become widely accepted, new laws and regulations have to be introduced.

7 Conclusion

Bitcoin itself is currently reaching its 10th anniversary, but blockchain technologies are still in their infancy and DAOs remain very rare. Nevertheless, blockchain technologies are unlikely to disappear, because they offer decentralization on an unprecedent scale. The existing projects serve as an experimental ground on rethinking organizational structures. Serious scalability and privacy issues stand in the way for a lot of use cases. If they are not solved, fully decentralized autonomous organizations won't compete with existing structures. For both problems there is a lot of active research and solutions are on their way. Usability is another obstacle that needs to be overcome if blockchain platforms want to enable DAOs. Especially privacy might be an inhibiting factor, since some organizations can't afford to have most of their data publicly available. The previously mentioned hack explains the increased need for security. If decisions are going to be automated on code, having exploitable bugs will be intolerable. Once a hack occurs, the trust in the whole organization disappears. These problems require a lot of engineering work, but there is no reason why they would be impossible to solve.

Another important factor to keep in mind that one of the main reasons for an organization to exist is to enable cooperation with humans. If business leaders and employees can't cope with the idea of being managed in an automatic way then serious obstacles are in the way for this digital innovation to happen. The future of this transformation is uncertain, but if people embrace it, it will bring a revolution in the labour market. It is supposed to change the way people work radically and the current concept of "employee" would be distorted, since permanent positions would not exist anymore. For big and established companies changing entirely its organization is quite impossible because the culture is ingrained inside. It would be easier applying the DAO at the beginning of a business, like in start-up or in a new capital venture, where an innovative mentality can be taught. The future workforce is the current generation of millennials, which have been born into the age of digitization. This might lead to smoother adoption of new disruptive technologies. However, it's unreasonable to expect that current structures will disappear completely. Instead hybrid organizations will delegate some of its decision-making processes to blockchain-based organizational platforms, but keep some of its hierarchical structure to coordinate the core projects. In any case, we expect corporate governance to undergo another shift towards more decentralization.

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