BLOCKCHAIN AND AI: THE TECHNOLOGICAL REVOLUTION'S IMPACT ON CORPORATE GOVERNANCE RELATIONSHIPS

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Abstract

Disorientation and instability characterize the globalized context in which the relations of corporate governance are carried out today. Suffocated by the huge numerical and qualitative dimension of data to be analysed, companies need organizational systems and tools that allow them to interface with this reality. Through the creation of decentralized and more efficient systems able to process information at a higher speed than any human, Blockchain and artificial intelligence are the answer to these renewal requests. This paper aims to analyse the possible implications of the adoption of these technologies within the corporate governance relations, supporting how they can constitute effective and necessary support to the current organizational systems and, at the same time, how they are not yet able to replace them completely. Such a hypothesis would lead to the constitution of information oligarchies, would expose the shareholders to AI's errors or manipulations by removing any management responsibility and, ultimately, to the creation of autonomous markets driven exclusively by economic purposes of the IT protocols that constitute them.

1. INTRODUCTION

This work intends to investigate the impact and transformations that the technological revolution could bring about, within the context of financial markets and corporate governance.

In one of his essays, Kuhn (1962) states that the condition for a paradigm shift to happen is that the current system comes across excessive "anomalies", that is problematics and contradictions that are, for the considered system, unsolvable. The accumulation of anomalies reveals the impossibility of having a clear vision of Nature by using the current frame of reference. This leads to a new phase in which the scientific community is forced to adopt a change of perspective able to explain the previously identified anomalies.

This process is true as much as in the natural sciences as in economics and human sciences.

The continuous alternance of financial crises, the explosion of climate emergency and the increasing complexity of a more and more global context in constant evolution represent the most important anomalies of the current "liberal" economic paradigm.

The current anomalies push for a progressive loss of trust, from the individual, in any centralised political or economic institution, of which the Great Recession is an example.[1] Trust is a persistent factor able to adapt itself to various contingencies without ever destroying itself thanks to its resilience. Over time, through these characteristics, trust has evolved from a past paradigm of restricted trust reserved to the members of a closed community, to the current paradigm of centralised trust which has enabled the establishment of large, worldwide organisations, up to the transformation underway that is leading societies towards a widespread trust system in which the network is able to replace the current centralised figures. This trend is the reason why even in the most acute times of crisis, technology remains the only bulwark that can set itself up as on top of any other sector.

The topic of trust is closely related to the topic of information. The context in which organisations are forced to interface is characterized by growing complexity. IBM[2] (2016) claimed that almost 90% of the information on the network was generated in the last two years, and that globalization and new technological equipment provide companies an amount of Big Data that is far superior to the human analytical capacity, which makes for an overall feeling of constant instability, disorientation and insecurity in the political, social and economic spheres. Freedom does not only qualify as the absence of coercion but also, and especially,

[1] Statistics surveys show an intense decrease of USA population trust level towards economy and firms. Technology has been the only sector able to endure to that trend (source: https://www.edelman.com/sites/g/files/aatuss191/files/2018-10/2009-Trust-Barometer-Global-Deck.pdf)

[2] Source: http://comsense.consulting/wp-content/uploads/2017/03/10_Key_Marketing_Trends_for_2017_and_Ideas_for_Exceeding_Customer_Expectations.pdf

as the awareness of the choices available. A context in which the access to information is hampered by strong technical and economic friction (the management and ownership of Big Data are meant to gain more and more strategic importance) remains only as the appearance of freedom.

In the economic and finance fields, the synergic effect created by the lack of trust and the difficulty to access and process information forces companies and investors to face new challenges including, for example, the adoption of smart contracts, artificial intelligence and Blockchain. Through this technology, it is possible to create full transparent networks able to process information in real-time, to handle trade where trust conditions are lacking and to work autonomously using informatics protocols.

For these reasons, this paper asks: What implication will their usage have on corporate governance relationships? What could be the response by corporate governance actors to these disruptive elements?

While giving an answer to these questions, this work will analyse another topic often left out by the research: Automated Markets. Their place could be where the corporate governance reports are replaced by interactions between computers that can independently adapt their own demand and supply based on contingencies and instructions that remain inside their own codes. Networks allow smooth passage of information to the investors who, through their AI, analyse the data in real-time, elaborating a strategy that will be subsequently and independently implemented through the use of smart contracts.

This paper proceeds as follows. The first part, which consists of theoretical background and literature review, provides a description of AI and Blockchain's operation system and potential applications. The second part, disclosure, shows how these technologies could end up giving even more importance to boards' and proxy advisors' roles instead of, as supported by other authors, substituting them. After this, this paper will analyse the scenario of setting up automatic markets in which corporate governance relations will coincide exclusively with machine-to-machine interactions. The third part, implications and conclusion, will identify the different scenarios deriving from these technologies' application analysing where future research efforts should be directed.

2. THEORETICAL BACKGROUND AND LITERATURE REVIEW

Yermack (2017) states that, in the context of corporate governance, technological progress could constitute a strongly disruptive factor comparable only to the 1933 and 1934 Security Acts effects' in the USA. The works attempting to analyse that topic can be split into two macro-categories.

The first one states that technological revolution currently underway will not be, at least in the short term, an element of discontinuity compared to the past. Blockchain and AI will not be able, in

the coming years, to efficiently replace the human being in each of his functions within society. In fact, the use of technology in that sense could lead to further aggravation of existing issues.

According to the second category, progress brings society closer to the singularity point (Kurzweil, 2006). This concept indicates the moment when AI (synergistically with the use of other technologies) will be able to completely overcome the human being and his thinking and analytical abilities, enabling an increase of the learning curve which will generate drop-down innovations in each sector of the economy and of our lives. Blockchain and AI are a source of strong discontinuities compared to the past and, potentially, will be able to redefine the balance within Corporate Governance area.

Although we all agree on the destructive power of these technologies, the authors related to this strand end up getting ideas, often conflicting, of how this technological transition will happen, to what extent, from which fields and within what period.

This task stands in a neutral position between the two theories, critically analysing their respective arguments, outlining the possible scenarios that could occur and the questions on which the scientific community should guide their own research efforts in the next few years.

2.1. Blockchain, operating principles and development

The foundation that establishes the birth of Blockchain and DLT dates back to 1991 following Haber and Stornetta's work (1991). The concepts illustrated have been developed over time until their implementation by Satoshi Nakamoto who, in 2008, published the "White Paper" where he describes the operating principles of this technology.

The "Blockchain" is a DLT system that allows the making of safe, clear and unalterable decentralised databases. It allows a fast and efficient resolution of transactions in the absence of trust through synergistic use of cryptography, computer protocols and game theory.

Each transaction constitutes a block and is characterised by their own "Hash Code". The Hash Code is determined by the block's content, the previous block's hash and the Nounce (a pseudo-casually generated number). In the event that a hacker tries to modify even a single value inside these components, a variation of the hash from the modified block would occur and spread around the subsequent hashes nullifying the modification. The transactions' validation process is determined by a security protocol which, in the case of a public Blockchain, is based on an incentive system in terms of crypto-value. The first security protocol is named "Proof of Work" followed, over time, by different variations aimed at reducing the risks of external attacks, guaranteeing enhanced scalability and reducing costs.

From this first observation of the Blockchain, both public and mainly used in areas of finance, different versions and reinterpretations

of technology have been developed. Starting from its first version 1.0, implemented in the financial sector, the Blockchain managed to expand to most diverse settings (bureaucracy, DNS, medical...) thanks to the development of "smart contracts" (contracts composed of computer code able to independently apply itself upon the occurrence of specific conditions set by ex-ante contracts) and DAOs (organisational structures which allow the realization of societies and enterprises that lack board or steering committees, solely managed by the interaction between hubs and IT protocols editable through systems of consent from the chain's members).[3]

Next to the several versions of Blockchains, different types have altered over time and they operate different system's reinterpretations pondering the free access to the network and the public nature of the validation mechanism with instances of better security, privacy, flexibility and efficiency, creating the concepts of Hybrid, Consortium and private Blockchains.[4]

2.2. Blockchain: A solution to moral hazard problem

Referring to the Blockchain debate, Swan (2015) utilizes these words:

"The fifth disruptive computive paradigm […]. With revolutionary potential equal to that of internet, Blockchain technology could be deployed and adopted much more quickly than the internet was".

Given its capability to create networks able to bind a potentially unlimited number of people, to decentralize transactions and to make autonomous and automated contractual instruments, the Blockchain has limitless application camps.

According to the researcher, this technology catalyzes the instances of greater efficiency and decentralization. The failures of the first distributed governance experiments are only physiological steps towards the assertion of technologies able to solve the inefficiencies of the current centralized systems.

According to opinions from the opposite conceptual category, the enormous potential clashes with reality which has shown the fragile basis of an innovative technology that often ends up providing antiquated solutions to problems much older than its nature. Amato and Fantacci (2018) demonstrate, for example, how Bitcoin itself starts from a correct analysis of the problems and limitations of the current financial system, advancing a solution that follows, aggravating, the Gold Standard system. Likewise, the instances of decentralization clashed with the reality of mining pools and the assumptions of security and immutability collapsed under The DAO story.

According to Iansiti and Lakhani (2017) "Blockchain is not a

[3] The most famous example of this new organizational system is The DAO, a venture capital fund built on the Ethereum platform. Thanks to a bug within the system to snatch, from the platform, about 55 million Ether. The situation was then resolved by carrying out a Hard Fork which however questioned the blockchain's principle of immutability.

[4] Source: https://blog.ethereum.org/2015/08/07/on-public-and-private-blockchains/

disruptive technology, which can attack a traditional business model with a lower-cost solution and overtake incumbent firms quickly". Actually, blockchain constitutes an important technological innovation capable of supporting current systems but unable to completely replace them. A decentralized network isn't flexible, every change needs to be approved by nodes' majority, which can be, as in the case of The DAO, easily manipulated by charismatic personalities. The instances of decentralization give hope for the creation of companies and societies lacking in coercive power, but, writes Atzori (2016), what makes non-coercion superior to justice, equality, security, happiness and Freedom coming from the exercise of Power aimed to ensure equal rights and speed of action? Computer protocols are not exempted from errors which could be determined by any technical mistake in the programming phase. Actually, public Blockchain is very far from replacing any centralized governance system, while the private versions are able to provide important support to current systems preserving the centralized and hierarchical system's problems.

Despite this, Fenwick and Vermeulen (2018) state that "in the context of digital transformation, such as a view of the potential impact of technology seems naive. As with any new technology, there will be setbacks as glitches and flaws are sorted out. Nevertheless, the potential for digital technologies to profoundly disrupt companies are organized should be taken seriously". The beating heart of this technology's application within corporate governance relations is the ability to create a completely transparent network leading to the resolution of several problems determined by the presence of asymmetric information conditions. This theme has been addressed by Yermack (2017) who analysed what could be the Corporate Governance's implications determined by the Blockchain's adoption.

From the shareholders' perspective, the adoption of Blockchain systems would generate disintermediation and consequent reduction of voice, entry and exit options exercise costs, allowing a greater shareholder activism level. The system's transparency regime could be both a risk and an opportunity for them. Shareholders would be able to monitor and become fully aware of management behaviours, calibrating their decisions on the actions undertaken by them (if a manager intended to sell or buy shares because he was in possession of privileged information, other shareholders could simply imitate his behaviours, nullifying his advantages) and, at the same time, being informed about possible takeover bids even before reaching percentages for which the obligation to advertise is imposed by law. On the other hand, privacy problems could be a disincentive for investors to enter the Blockchain firm's capital (the problem would be different with the adoption of permissioned Blockchain). In the end, the recording of all transactions within companies would allow investors to develop and verify independently the legitimacy of the data provided by firms without the

use of intermediaries. Firms would be incentivized to adopt such a system from the reputational advantage that would follow.

With regards to management, the use of Blockchain would make it impossible to exercise insider trading or backdating actions due to the properties of immutability and complete transparency (a problem which nevertheless reoccurs in the presence of permissioned Blockchain).

The adoption of Blockchain within the voting system[5] would allow a higher level of shareholder engagement and make the process more efficient and secure, preventing hypothetical empty voting cases.

These applications would, therefore, allow problems to be solved that derive from the separation of ownership and control through the establishment of a direct and transparent relationship between investors and managers. According to Yermack (2017), this process could imply the emptying of the board's importance since the monitoring function could be directly exercised by the investors themselves.

Other authors, without denying the importance of this technological innovation, have shown that such forecasts can constitute a short-sighted utopia that does not take into account the real problems subordinated to the adoption of the Blockchain. Companies will not be encouraged by the adoption of a complete transparency regime as it is their primary interest to not disclose information concerning particularly sensitive areas such as R&D, the reputational advantage would never be able to overcome the loss resulting from the publication of their own strategic plans (Enriques & Zetzsche, 2019). Moreover, the cost of processing this information would determine new costs difficult to sustain if not by the big investors who, in turn, would be discouraged from participating in the company due to the privacy issues inherent in the system. Instead of favouring shareholder engagement, it would end up favouring the entry of investors with exclusively speculative purposes. These problems could be solved by adopting a private Blockchain that would pose the problem of selecting the body responsible for managing the network. In the event that this function is entrusted to the line, the full transparency regime would disappear as managers would be free to censor and limit the free passage of information to the network controlling, indirectly, the board and shareholder's decision-making process.

In the end, it is fundamental to consider that the analysis of Blockchain alone is misleading as it is part of a much larger technological revolution. The Blockchain makes it possible to create a connection between Corporate Governance's actors, potentially increasing the levels of transparency between them. In order to understand how this information will be processed by the individual corporate governance's actors, it is necessary to talk about another topic: Artificial Intelligence.

[5] In May 2018 Santander bank adopted this mechanism for the AGM obtaining a record in terms of shareholder engagement with votes representing 63.55% of total shareholders.

2.3. Artificial intelligence: An automated data processing system

In the context of Corporate Governance, artificial intelligence refers to algorithms capable, through the application of machine learning mechanisms, of recognizing patterns, analysing and processing data. The recognition system takes place through an AI learning process based on the study of Historical Data. The methods of analysis and data processing depend on the instructions inside an algorithm's codes.

As claimed by Hamadani et al. (2018), the reason why the analysis of the relationship between this technology and the Corporate governance is urgent is that "AI algorithms may become better on average governance of decision making for individuals than their superior ability to process information, freedom from biases and lack of side interests" the use of these technologies allows companies to respond to the growing complexity of the external environment by allowing them to process analysis and information in real-time and to make more reliable forecasts. Institutional investors have already begun to invest in the development of artificial intelligence (above all in compliance and risk management applications), the Aladdin system created by Blackrock is undoubtedly the clearest example of this trend.

This change does not only concern shareholders, in a recent paper (Erel, Stern, Tan, & Weisbach, 2018) it was shown how it is possible to design algorithms able to choose board members in a much more effective way than the current mechanisms. The greater capabilities of prediction, analysis of historical data and benchmarking make it possible to guarantee the formation of active and competent boards avoiding the formation of "old boys' clubs" (Mace, 1971) unable to fulfil their supervisory role. Similarly, other functions currently carried out by internal committees could be more effectively accomplished by AI, which can, apparently, guarantee transparency and more effective and impartial decision-making. The automation of compliance and executive compensation functions could drastically reduce agency costs and fines deriving from regulatory transgressions, speeding up processes and increasing, thanks to the transparency and objectivity of IT protocols, the legitimization of the company.

As evidenced by Hamadani et al. (2018) these applications bring with them various problems. An AI bases it's learning on the study of series of historical data, because of this AI will be unlikely to be able to predict each future contingency and, in the absence of information, it will be much more rigid than current human-based systems. This feature actually makes AI a fundamental technology for supporting and optimizing decision-making but hardly able to completely replace man in his functions. Furthermore, the AI learning process is closely linked to the instructions entered within their computer code, which leads to the inevitable transfer of typically human characteristics such as opportunism and fallibility. If a manager would succeed in manipulating,

through his collaborators, these codes, he would be able to crystallize within an apparently impartial mechanism certain practices (for example, in terms of executive compensation or performance measuring criteria) completely in his favour institutionalizing phenomena such as backdating. The AI would thus guarantee complete elimination of managerial responsibility for his behaviours. The focus of the problem is, therefore, the identification of the subject designated to revise and look over the AI.

Finally, AI is able to act maximizing effectiveness and efficiency in economic terms but is unlikely to be able to incorporate within itself concepts such as "ethics" and "empathy", fundamental in the execution of certain functions inside the organization.

Due to the current situation, AI is still an immature technology, unable to act without man's supervision. The use of these technologies presupposes the performance of a serious reflection about regulatory and control mechanisms aimed at preventing the unfolding of conflict of conditions of interest. In this sense, the establishment of special committees or the intervention of external authorities could be solutions able to guarantee a sufficient level of transparency and independence, without forgetting the usual question: "Quis custodiet ipsos custodies?"

3. DISCLOSURE, TECHNOLOGICAL'S PARADOX AND AUTOMATED MARKETS SCENARIO

Paradoxical is something that is, at the same time, itself and it's opposite. In these terms, the present work supports the idea that the use of these technologies in corporate governance is, in their current state, paradoxical. Blockchain and AI are born from the needs of security, greater transparency, efficiency and decentralization within corporate governance relations. Because of their limits, the rash use of these technologies would lead to an apparent transparency regime, to a lesser security state and to the further strengthening of intermediaries that Blockchain and AI intended to eliminate.

A recent study (Esposito De Falco, Cucari, Canuti, & Modena, 2019) confirm, through the employ of a survey, not only the disruptive trend of this technological revolution, but also the uncertainty and doubts which it generates within the main corporate governance actors

That's because we are immersed in a fluid and dynamic context where the technologies' life cycle keeps getting smaller because new researches tend to destabilize, in a positive or negative way, previous ones. Regarding Blockchain, for example, the advent of quantum computers makes the block's security and immutability unstable. The transition from Moore's to Neven's law whereby new hardware is able to grow and develop in a doubly exponential way faster than classical systems allows us to foresee an enormous increase of computational power in the hands of some subjects that could be able to successfully

accomplish an attack on a Blockchain network. Recently the theme of the Redactable Blockchain appeared in the public debate. It is a blockchain mechanism developed by Ateniese, Magri, Venturi, and Andrade (2017) in collaboration with Accenture. Through this mechanism it will be possible to amend human errors and conflicts of interest that could affect the system. Through a private key, it will be possible to correct the blocks containing errors generating a cascade variation capable of correcting all subsequent transactions. An invention that undoubtedly destroys the paradigm of immutability and creates new forms of centralization of power (the choice of the subject that will hold the rights of this private key will be fundamental) but that gives an effective response to the problems previously illustrated.

Blockchain and AI share the aim of creating more effective, efficient, simple and transparent processes by automating the work of sharing, collecting and processing data. This action would lead, according to some of the already mentioned works, to a rebalancing of power relations within corporate governance, to the establishment of direct and transparent relations between ownership and control and, consequently, to the obsolescence of intermediate or external subjects such as board and proxy advisors.

In regard to Proxy advisors, the fact that they have by far the richest database of corporate governance information is not taken into account. As mentioned, the AI bases their ability to act on the quantity and quality of data on which their inductive learning process was based. Small investors would, therefore, be unable to adopt these solutions which, paradoxically, could make the role of Proxy advisors even more central and generate oligarchies based on the ownership of Big Data.

The AI's difficulty at learning concepts that go beyond financial and economic contexts (social, psychological, ethical and moral) and their rigidity makes utopian the idea of totally replacing boards given the current state of technology. The need to ensure neutrality and control in the management of these protocols makes the need for independence that these institutions are already called upon to fulfil even more urgent.

Strictly related to the AI supervision issue is the relationship between majority and minority. The transparency determined by the use of a Blockchain system could be able to protect the rights of minority preventing the constitution of asymmetric information conditions or the perpetration of abuses by majority shareholders. On the other hand, the distribution of network management rights to non-independent parties could end up aggravating the already present problems within minority and majority shareholders' relations.

As regards institutional investors, the possibilities of using AI may concern both the elaboration of investment and, as already seen, voting strategies. With regard to the first case, small investors may be unable to adopt similar solutions due to the difficulty of accessing data on which to base the Machine Learning mechanism. In such context, big data's

management monopoly will be an important means through which control financial markets: small investors could be relegated to use AI services provided by larger ones allowing them to indirectly control their assets.[6] As regards proxy voting, the risk of free-riding strategies operated by smaller investors would give even more importance, as seen, to proxy advisors' role.

If these limitations constitute the panorama of the markets in the short term, it is not impossible to hypothesize that technological progress could remedy these critical issues, giving rise to new and unexplored scenarios obtained by the combination of Blockchain, smart contracts and artificial intelligence. Blockchain ideally allows the creation of a transaction log shared by all the actors ensuring full transparency, real-time data transfer and transaction efficiency. The AI, in turn, allows Shareholders to process this information in real-time, translate it into investment strategies in line with corporate values and apply it independently through smart contracts. The investment strategies put in place by an AI would be superior and more far-sighted than human ones as it would be able to include much more information in a bias-free decision-making process. The strategy developed could subsequently be applied automatically through the use of smart contracts. Instantly adjusting their demand function through system's information, the markets would be able to anticipate and prevent the advent of adverse contingencies due to the presence of information asymmetries (e.g. speculative bubbles). At the same time, a DAO is, as seen, a company without central boards and management committee, which acts and coordinates itself through the use of computer protocols. The replacement of boards with AI could generate a radical revolution in Corporate Governance relationships, from Human-to-Human to Machine-to-Machine: relationships between artificial intelligence systems able to interact with each other using the instructions included in their codes, the information coming from the common network and the execution of smart contracts. This regime can be defined as an "automatic market" since the demand-supply's equilibrium is able to instantly adapt to external contingencies without the aid of the human factor.

The automatic markets would be more efficient than the current ones strengthening the principle of "market for corporate control". At the same time, this new form could bring new problems like the oligarchy concerning the control of information networks and data to design AI. Another critical aspect is represented by the fact that the machine-to-machine dialogue has, as its sole purpose, the optimization of transactions and relationships from an economic point of view, leaving out the socio-emotional and cultural one.

[6] Blackrock's Aladdin system actually supports the management of over 20 Trillions worth assets (around 10% of world's financial assets)

4. IMPLICATIONS

This work analysed the issue of possible implications that could generate the application of AI and Blockchain within corporate governance relations. It has been analysed how these technologies are still immature and strictly Humans reliant. As seen, to correctly employ AI, it is necessary to educate those using historical data on which machine learning is based. The Proxy advisors are the subjects in possession of the largest information database on corporate governance, which is why they would end up acquiring even more importance from the use of these technologies. At the same time, the board would acquire crucial importance as well, given the need of impartial monitoring and the inability, typical of these systems, to consider dimensions external to the economic system.

In the context of corporate governance relations, these technologies could, in the short term, be able to increase the level of transparency among shareholders, supporting committees' activities and increasing shareholder engagement through the costs' reduction deriving from processes' simplification. On the other hand, it is important to understand how to apply these technologies without ending up being overwhelmed. A short-sighted application could lead to reduction of managerial responsibility and to the institutionalization of harmful behaviours such as insider trading or backdating; in the absence of control bodies of the network by neutral and independent bodies, managers would be able to manipulate shareholders and boards manipulating the AI's instructions and determining which information to transmit and which not to. Furthermore, in a more distant future, we could be witness to the birth of markets characterized by the absence of Man and the exclusive presence of Machine-to-Machine relations between AI systems. These would be markets without information asymmetries but characterized by the presence of short-sighted actors unable to maximize values other than purely economic. These technologies are highly dependent on the availability of data and information on which to base learning processes, which is why oligopoly situations could arise in favour of subjects, such as proxy advisors and large investors, in possession of large amounts of data.

4.1. Conclusions and future research

This work has analysed the Blockchain and AI's impact on corporate governance relationships. These disruptive technologies' adoption could lead to two different scenarios. According to the first one, Blockchain and AI will bring to a full transparency regime that could prevent the occurrence of consequences deriving from Moral Hazard and other Asymmetric Information conditions. Blockchain technology could allow rebalancing majority-minority and board-shareholder relationships

meanwhile AI could greatly improve committees and boards' decision making. On the other hand, a short-sighted adoption of these technologies could bring to a worsening of current problems due to the creation of an apparent transparency regime able to mask and institutionalize the abuses of majority shareholders on minority ones and the managerial selfish behaviours.

In both scenarios, Proxy advisors and other Big Data owners will strengthen their role in Corporate Governance relationships and further they will be able to influence financial market trends.

This work has analysed only the surface of themes and problems destined to acquire an even greater relevance.

Is it possible to create more efficient markets by avoiding the formation of "big data" monopolies? Through which regulatory tools is it possible to prevent the use of these new technologies from turning into a new abusing tool of the majority over minority and of management over boards? To whom should the management and control of AI and Blockchain networks be delegated?

Future research efforts should be directed to answer these questions and towards the creation of a future that, according to the Kantian maxim, always considers man as an end and never as a means to other ends.

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