

TECHNOLOGY AND CORPORATE GOVERNANCE

ECGI ROUNDTABLE
HOSTED BY ALLEN & OVERY
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REPORT BY JASON FU



EXECUTIVE SUMMARY

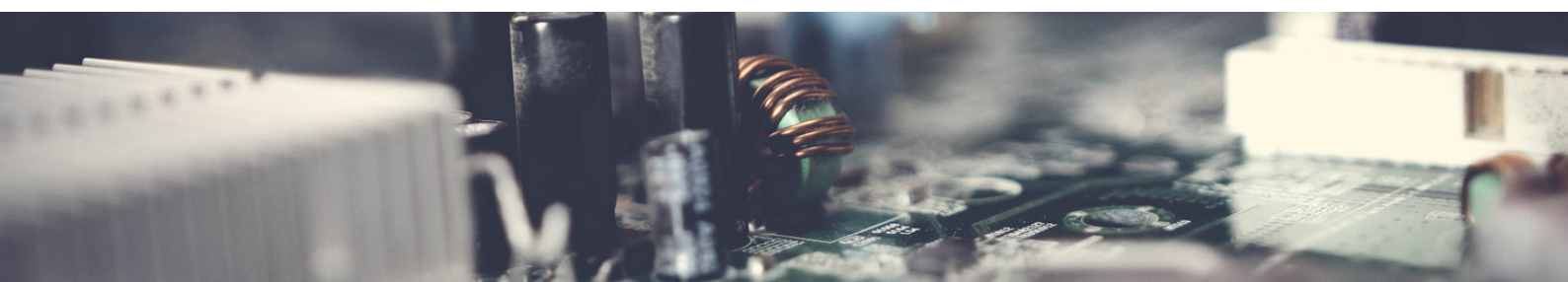
The ECGI Roundtable on technology and corporate governance centred on the use of technologies such as distributed ledger technology (DLT)/ blockchain/ smart contracts, and artificial intelligence (AI)/ machine learning, in the corporate governance context.

Roundtable participants discussed how these technologies can facilitate shareholder engagement, the new governance challenges posed by data analytics in the corporate context, and challenges to be managed.

Professor Van Der Elst focused on the potential of blockchain and DLT to enhance shareholder engagement. Unequal distribution of information and multi-tiered intermediaries between company and shareholders can inhibit shareholder engagement. Blockchain and DLT could improve shareholder engagement by more evenly distributing information in one place, reducing multi-tiered intermediation, enabling better voting and thereby enhancing shareholder democracy. DLT can also make share trading and settlement immediate, and may empower shareholders to intervene in a more timely and active way. Finally, it may help correct proxy voting imbalances.

Discussion focused on whether the full decentralisation enabled by DLT is achievable and worth the costs. Participants also questioned the desirability of the proposal to replace voting in shareholder meetings with DLT based voting.

Professor Armour discussed data governance issues stemming from firms using artificial intelligence internally for monitoring and simulations, and the challenges this poses for board oversight. Data governance challenges are increased around issues such as where the data is sourced; what metrics are used to assess the AI model; and what validity external data have for the company's context. Independent directors may be in a good position to exercise oversight of data management. The discussion centred on how the board can discharge the duty of oversight, the role of independent directors in oversight, and the legal standards required of directors in exercising the oversight functions.





1. BLOCKCHAIN AND CORPORATE GOVERNANCE

Professor Christoph Van Der Elst, Tilburg University and ECgi

In his presentation on Blockchain and Corporate Governance, based on his work in progress “Blockchain and Smart Contracting for the Shareholder Community” co-authored with Anne Lafarre (Tilburg University), Professor Van Der Elst introduced the topic by briefly touching upon the latest legislative initiatives aimed to enhance shareholder engagement within the EU. Directive (EU) 2017/828 of the European Parliament and of the council of 17 May 2017 amending Directive 2007/36/EC as regards the encouragement of long-term shareholder engagement will require Member States to facilitate listed companies’ ability to identify their shareholders. In addition, Member States will have to ensure that intermediaries facilitate the exercise of shareholders’ rights, including the right to participate and vote in general meetings. Reference was made to the well-known difficulties of shareholders exercising their voting rights when multi-tiered intermediaries are involved. Finally, institutional investors and asset managers will have to develop their shareholder engagement policy.

It was noted that the UK Corporate Governance Code 2018 already contains similar measures with respect to shareholder engagement, such as the requirement that the board seek regular engagement with shareholders and take actions in response to shareholders’ opposition to resolution in general meetings.

Having outlined the existing legal framework in the EU and the UK, Professor Van Der Elst turned to some current practices that facilitate shareholder engagement. For instance, there were already a number of databases with regard to disclosure of information that allowed for shareholder identification. Professor Van Der Elst gave different examples of these databases, such as database of stakes of major shareholdings in listed companies, and of related parties’ dealings in shares and other instruments issued by companies, such as their short positions. Another current practice is the different ways that companies communicate with shareholders, investors and their agent: major decisions of companies, as mandated by law, have to be approved by shareholders during general meetings; it is possible, in France, for shareholders to send questions and receive responses from companies even outside general meetings; and in a roadshow, a company would provide information to potential investors.

Having identified the various techniques currently being used to facilitate shareholder engagement, Professor Van Der Elst moved on to some of the problems about unequal distribution of information to shareholders. One example was that databases in different countries sometimes disclose different shareholding information with respect to the same company, as there were time gaps between the timing of disclosure amongst these databases in different countries.

Further, it was noted that a lot of proxy voting takes place before the AGMs, allowing companies and shareholders to vote without being in person in general meetings. This risks voting results being disclosed unequally to some intermediaries, company management and shareholders who are in contact with the company before the meeting. An example was Unilever's proposed meeting for resolutions to be put to its shareholders to transfer its headquarters. The board of Unilever, knowing that they would not get the required threshold to pass the resolution as some major shareholders were opposed, cancelled the proposed meeting, and all other shareholders were not given a chance to consider and vote on the resolution. No fruitful discussion and debate with the (other) shareholders has taken place.

It was then explained how distributed ledger technology ("DLT") and blockchain, which is also a technology based on DLT, could be a way forward to ensure equal distribution of information to shareholders and facilitate shareholder engagement. DLT records transactions and information in a verifiable and immutable way. Information can be stored in blockchain's distributed ledgers, so that every party to the blockchain can receive the same information at the same time. Further, each block contains a record of the previous block header, ensuring the immutability of each transaction.

With the use of this technology, information such as announcement for general meetings, questions asked during meetings, disclosures by companies, can all be combined in a block and recorded in the distributed ledgers, so that all shareholders receive the same information at the same time. This potentially also removes the need for having separate ledgers recording different information, such as short selling, majority shareholder stakes, and can instead bring all information together in one major chain. DLT could ensure that distribution of information operates much quicker than under current practices.

It was emphasised that the current inefficiency the use of DLT could cure or address stems from the multiple layers of intermediaries between the company and shareholders. In this respect, DLT can reduce the number of intermediaries involved, although they are not to be excluded completely because a permissioner is still needed in the blockchain system. It ensures transparency of information, enables shareholder voting and decision making to be done in a cheap and harmonised way, and facilitates shareholder democracy.

DLT, therefore, can open a lot of room for further developments in facilitating shareholder engagement, and it is currently being used in a number of ways in corporate governance and practices. First, it is already possible to use DLT in the issuance of financial instruments, as it is, for instance, currently being used in the US (Overstock). Second, DLT can also be used in share trading and settlement, such that settlement can take place immediately. For instance, in Delaware, the Delaware General Corporate Law already facilitates the use of DLT in recording transfer of stock. Jurisdictions may then further develop the use of DLT for shareholder voting, to allow shareholders to participate and vote, and have information of votes cast. In this way, DLT can facilitate shareholder engagement, and shareholder decision-making can be done in a



quicker, organised way through blockchain, so that it may not be necessary to have general meetings for shareholders to make decisions.

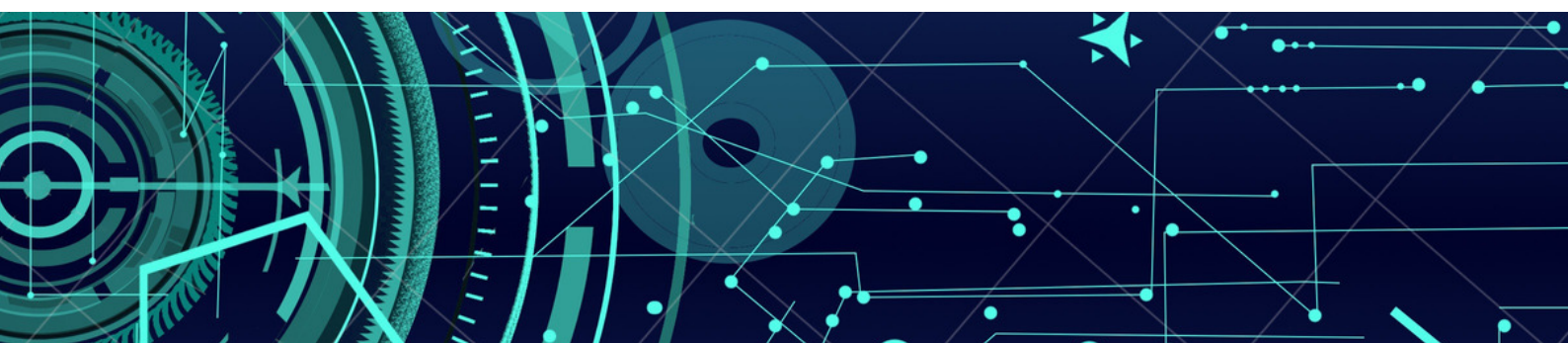
Lastly, DLT would allow us to question the division of powers between the board and shareholders. Professor Van Der Elst noted that in the past fifteen years there has been a shift towards shareholders having more right (such as say on pay). If DLT works as described above, it can further facilitate shareholder engagement, so as to enable shareholders to make decisions in a wider range of matters in an efficient way.

In a comment, Edmund Schuster (London School of Economics) queried whether the benefits of decentralisation for shares brought by blockchain were worth the costs to achieve them, because there would inevitably need to be a certain level of recentralisation. Since the underlying relationships will necessarily be governed by legal rules, it will always be necessary for the system to properly reflect judicial decisions and changes in the law. This can only reliably be achieved by granting some level of central authority to a trusted party – be that a court or another entity tasked with realigning the state of the ledger with the applicable legal rules. Consequently, true decentralisation cannot be achieved in the present context. Thus, the added costs of designing a system in a decentralised fashion are unlikely to be justified, especially since all features, save decentralisation, could be achieved in a traditional centralised system at far lower cost. Horst Eidenmüller (University of Oxford) made the similar comment that if the decentralised system is still to be governed by law, there would still be a need to bring back the law and hence centralisation in. In response, Professor Van Der Elst remarked DLT was not the ultimate solution, agreed that some benefits brought by the DLT could be achieved in a centralised system, and emphasised his belief that DLT could reduce transaction costs.

In a response to a comment by Peter Montagnon (Institute of Business Ethics), Professor Van Der Elst emphasised that his proposal was not to get rid of general meetings altogether, but to allow for flexibility in the organisational methods of general meetings for shareholders to decide on matters. Professor Van Der Elst also said his proposal was to have decision-making to be done at the institutional shareholders' level, rather than at that of the ultimate beneficiaries. In response, Peter Montagnon remarked that a system that made it much easier for shareholders to vote would enhance the ongoing pressure to give individual members of pension funds to vote.

Lisa Rabbe (Stratosphere Advisors LLC) added that the claims that blockchain is immutable and unhackable and therefore more secure, remain to be proven. There are important differences between public, proof of work vs centralised, permissioned blockchains; and the immutability of a transaction can be challenged and overridden by a 51% majority. She further pointed out that blockchain would appeal to proponents of stakeholder value capitalism, as stakeholders would be able to more timely express their views on corporate actions.

Luca Enriques (University of Oxford) commented that technological feasibility did not necessarily mean good policy, and there may be good policy reasons why market participants, such as traders or raiders, should be allowed not to disclose their actions and stakes for a reasonable period of time. In response, Professor Van Der Elst remarked that DLT should not be thought of as a solution, but a tool to improve our system.





2. AI AND CORPORATE GOVERNANCE

Professor John Armour, University of Oxford and ECgi

The presentation on Artificial Intelligence and Corporate Governance began with two examples of artificial intelligence (“AI”) being used on company boards. The first was Deep Knowledge Analytics, a venture capital firm in Hong Kong, which appointed a robot (a programme called “Vital”) on their board. Vital served as an observer, which was essentially an algorithm that assessed investment opportunity by sifting through large amounts of data for the board when they made decisions whether to invest. In the second example, Marc Benioff, CEO of Salesforce, brought an AI machine called “Einstein” to his weekly staff meeting. After the meetings Marc Benioff would ask Einstein what it thought about what everyone said in the meetings.

Professor Armour then turned to introducing the idea of AI. He started with the definition of AI suggested by John McCarthy and Marvin Minsky in 1955, which was “[m]ak[ing] machines use language, form abstractions and concepts, solve kinds of problems now reserved for humans, and improve themselves.”

It was then explained how the use of AI has evolved from the 1980s and 1990s, when the focus of AI was on so-called “expert systems”, to the current period, from 2000 onwards, with “machine learning” having taken centre stage. In an expert system, human experts’ knowledge is encoded by a knowledge engineer into a knowledge base. The user of this type of AI, who does not have expertise in the domain, would ask questions through the user interface, and the inference engine in between would generate an answer from the database. Expert systems, however, face limitations, such as the knowledge base being finite, relying on lots of efforts by the knowledge engineering to capture human knowledge, and the fact that the user of the expert system would have to frame questions correctly for the machine to interpret them properly. Progress in recent years has rather been with machine learning. This involves the computer learning how to improve performance of its tasks without being specified what it should do in advance. Machine learning works by inputting sets of data and answers to train the algorithm, so that it can improve its performance of getting the right answers. A subset of the general machine learning approach is “deep learning,” where there are multiple layers of machine learning algorithms on top of each other, with the output going to the next one. Several examples of machine learning AI applications were provided, including image classification, speech recognition, translation, autonomous driving, natural-language interfaces, information retrieval, and sentiment analysis.

Professor Armour moved on, then, to identify two ways in which machine learning AI can affect corporate governance. One is that it can be used as a tool for monitoring and synthesising information, measuring performance, risks, compliance etc., with different metrics. Another is that it can be a tool for simulations, helping the board to conduct sophisticated scenario planning by synthesising data and coming up with possible visions of the future.

The next part of the presentation was on the challenges posed by the use of AI to the board, and specifically on what Professor Armour calls “data governance,” ie the governance issues arising from firms’ use of AI for monitoring and simulations.

Reference was made to the UK Corporate Governance Code, which in its 2018 iteration, as in previous versions, provides a mandate for the board’s risk management and oversight of internal control. Professor Armour noted that the board might use AI tools as part of these processes. He also referred to directors’ duty of care under section 174 of the Companies Act 2006, which includes a non-delegable duty in relation to oversight. The standard of care expected of directors in the performance of their duties has an objective minimum; Professor Armour suggested that as the use of AI became more common, the general knowledge, skill and experience that may reasonably be expected of a director (the objective standard under section 174) might in due course come to include an appreciation of the strengths and weaknesses of analyses based on machine learning models, and hence their appropriate use-cases. . It follows that the boards would be well advised to acquire the relevant knowledge skill and experience on the board to deal with the issues to which AI gives rise.

It was suggested that questions about data governance had a general character, arising independently of context. The challenges of data governance may therefore be appropriately addressed, at board level, by the independent directors.

The presentation then turned to the conditions for a successful application of AI, as part of the wider discussion on data governance issues and challenges. Three main data governance challenges were identified: the model’s external validity, the selection of metrics measuring how “good” the model is and the so-called “dashboard myopia” that such selection would create. First of all, machine learning is very data hungry, and needs big pool of data to train. One challenge of data governance, then, is with the model’s external validity, ie. how well a trained model, when taken to a different data set, would deliver useful results in relation to that data set. External validity poses a challenge for corporate governance, because not all businesses have sufficiently large in-house data set to train models, and the question becomes how well a vendor’s data set, on which their model has been trained, extrapolates to business choices and the firm’s own data set.

Further, there could be different metrics for measuring how “good” the model is, and their selection poses governance challenges. These metrics include accuracy, precision (measure of false positives), and recall (measure of false negatives). How well these different metrics serve business choices depend on the firm’s needs. This may lead to what is known as dashboard myopia: the dashboard is designed to screen projects for investment, and what is on the dashboard is prioritised, while what is not on the dashboard is ignored. This means in using AI it would become very important for firms to understand the different dimensions of choice, and evaluate the firm’s needs.

The presentation concluded by outlining the challenges of data governance. AI use-cases require large amounts of data; access to that data and application of the model trained on those data create new challenges, such as where the data are sourced; what privacy and security issues arise around sourcing the data; what metrics are used to assess the AI model; what validity external data have for the firm’s context; what happens to, and who captures the, value created by training a model on the firm’s internal data. These challenges may lend themselves to generic



assessment criteria, to a new oversight role of the independent directors, and to a new area for the board to engage with.

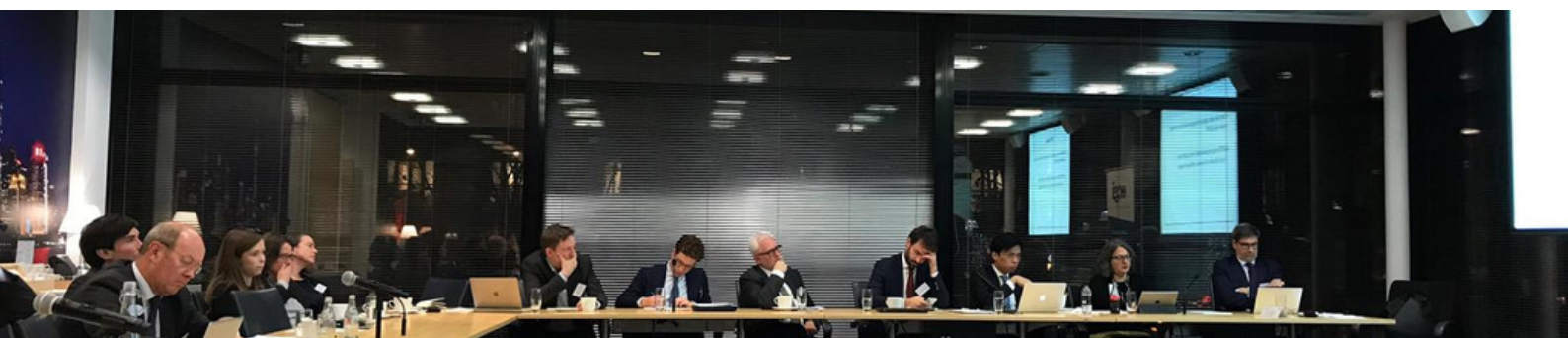
In the discussion session that followed, a number of issues regarding the use of algorithms and data governance were raised. The first was whether algorithms could be designed and used, in effect, to allow the board to put their telescope to a blind eye, by solely relying on the judgment of the machine in making decisions. In response to this line of comments, Professor Armour said the board would be liable for being in bad faith if it deliberately set compliance policy to exclude inputs to the algorithm that would otherwise create red flags. The second issue was the normative significance of probabilistic information produced by the algorithm. Professor Armour remarked that this would be a question for further reflection, and legal systems would have to get better at assessing probabilistic evidence.

James Baird (University of Glasgow) added that a further aspect of data governance was the choice of data and the responsibility of the board to ensure that they were basing their communication and compliance decision-making on all appropriate and relevant data sets: there is a risk that there could be a data set which the board should have used but did not use.

In response to comments regarding compliance experience in the banking and financial sectors, Professor Armour suggested what we have learnt from compliance in those sectors may generalise to other sectors, so that people with experience in oversight in the financial sector board can take their experience out of the financial sector and engage with questions about data governance.

In response to a comment by Thom Wetzer (University of Oxford) regarding the suitability of independent directors in overseeing data governance issues, Professor Armour clarified that, in his view, we should not expect independent directors to understand what is going on inside the algorithm; instead they should tackle issues such as the appropriateness of the application of a vendor dataset to the questions being asked, and the metrics to be used for assessing how well the model performs. Although in the first instance these are questions for the Chief Technology Officer (CTO), independent directors would be in a good position to oversee the CTO and make him or her accountable.

In another comment, Professor Armour reiterated that with the use of AI, the board would be well-advised to think prospectively about building capacity in overseeing data governance issues, but this would not imply that that the board would have to actually deliver the oversight system itself; instead it could delegate that role so long as it supervised the discharge of the delegated functions. It is a question of law what the minimum standard required of the supervision standard would be, but that standard is not static; as we go forward what is reasonably expected through this standard is likely to increase.



About the European Corporate Governance Institute (ECGI)

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The ECGI is an international scientific non-profit association which provides a forum for debate and dialogue focusing on major corporate governance issues and thereby promoting best practice. It is the home for all those with an interest in corporate governance offering membership categories for academics, practitioners, patrons and institutions.

Its primary role is to undertake, commission and disseminate research on corporate governance. Based upon impartial and objective research and the collective knowledge and wisdom of its members, it can advise on the formulation of corporate governance policy and development of best practice. In seeking to achieve the aim of improving corporate governance, ECGI acts as a focal point for academics working on corporate governance in Europe and elsewhere, encouraging the interaction between the different disciplines, such as economics, law, finance and management.

The ECGI Roundtable Series

The ECGI Roundtable Series provides an engagement platform between ECGI Research Members and Institutional or Patron Members of ECGI. The topics are selected based on geographic relevance and the interests of the participating members. For queries about hosting or taking part in an ECGI Roundtable, contact Prof. Marco Becht, ECGI Executive Director.

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