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EMISSIONS – THE URGENT MISSING 'E' IN ESG

In most trilogies – think faith, hope and charity (love) in the Christian tradition – one is greater than the other two. Alas, the main thrust of that great mantra of finance today – environmental, social and governance, or ESG – gets lost in much of the noisy and wide-ranging but often confusing and misunderstood debate around this bandwagon. That omission from much of the discussion and analysis threatens to undermine its chief purpose, which is to tame the climate challenge, and bring global temperatures under control. The omission is emissions – the biggest threat of all.

When Gary Gensler, chair of the US Securities and Exchange Commission (SEC), launched his climate disclosure proposals in March 2022, he gave a fractious Washington establishment a curt history lesson. "Our core bargain from the 1930s is that investors get to decide which risks to take," he said, "as long as public companies provide full and fair disclosure and are truthful in those disclosures. … Today, investors representing literally tens of trillions of dollars support climate-related disclosures because they recognise that climate risks can pose significant financial risks to companies, and investors need reliable information about climate risks to make informed investment decisions."

The proposals launched into a sea of controversy, even though, some would argue, they missed the main target of disclosure and verification. They cover Scope 1 emissions, the 'greenhouse gases' that a company makes directly, say, running its vehicles, ships and boilers, and also Scope 2 – indirect emissions from, for instance, the electricity or energy it buys for heating and cooling buildings, or energy which is being produced on its behalf.

But Scope 3 is nearly always the big one, representing almost 90% of all major company emissions, according to recent MSCI data. In this category go all the emissions associated, not with the company itself, but that the organisation is indirectly responsible for, up and down its value chain. That covers buying products from its suppliers, and from its products when customers use them. Under the SEC proposal, these would need to be disclosed only if they were deemed material or part of companies' climate targets. Scope 3 disclosures would not be subject to third-party verification and would be protected from legal liabilities. That is a big hole in the disclosure ozone layer, and in plans to measure corporate and investor responses to this greatest of current challenges.

This issue of RoFM returns to the themes of leadership in finance, of building the right boards to cope with today's opportunities and threats and those to come. We hear from four leading thinkers from across the planet – Professor Alexander Van de Putte and Clare Hickson on matters governance, and Dr Juzhong Zhuang and Professor Michael Mainelli, Chartered FCSI(Hon) on innovation in green finance, based on our recent joint webcast on this theme with the Central University of Finance and Economics in Beijing, which attracted more than 30,000 live viewers. Between them, this foursome hold passports of seven countries on four continents and have residency rights in at least a further two.

Nearer home, for a different light on our sector, catch up with our incisive 'poet-in-residence' Nigel Campling, former soldier, senior civil servant, merchant banker and now corporate mentor, at *cisi.org/rofm-aug22.*

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CORPORATE GOVERNANCE AND BOARDS NEED TO ADAPT QUICKLY

ALEXANDER VAN DE PUTTE, PROFESSOR OF STRATEGIC FORESIGHT AT IE BUSINESS SCHOOL, ON THE SECOND STAGE OF HIS NEW MODEL 'CORPORATE GOVERNANCE 4.0'

Professor Alexander Van de Putte is chief strategy officer, chair of corporate governance and stewardship, and chair of the Academic Council of the Astana International Financial Centre. He is also Professor of Strategy and Foresight at IE Business School, one of the world's leading institutions. In this second extract from his groundbreaking book *Corporate Governance 3.0* he assesses the changes boards must make now to cope with the new realities.

See Review of Financial Markets Aug 2022 (cisi.org/rofm-aug22) for further details and for footnotes to this piece.

In corporate finance a fundamental relationship exists between risk and return, and this provides the basis for the 'time value of money' concept. Another concept is becoming increasingly important: the 'time value of time' concept.

The velocity of change has dramatically accelerated, and given the emergence of the Fourth Industrial Revolution, this trend will continue. To remain competitive, organisations need to change at least as fast as the environment in which they operate to remain relevant.

The boardroom is these days a more challenging environment, therefore boards have many more areas to oversee compared to during Corporate Governance 3.0, ranging from company culture, climate issues, social issues (including employee welfare), cybersecurity and technology disruption. What should always be on the mind of directors is 'how can we disrupt ourselves before we are disrupted by a competitor, including future competitors?' For example, Airbnb, a start-up at the time, disrupted the hotel industry, resulting in increased room availability, reduced prices for customers, and therefore has made it much more difficult for large hotel groups such as Marriott International and Hilton Worldwide Holdings to remain competitive.

To remain relevant, Corporate Governance 4.0 companies and their boards increasingly need to reflect several characteristics.

A. THEY ARE PURPOSE DRIVEN

Based on a survey conducted by the Sustainable Foresight Institute, annually since 2008, five factors drive the longevity of companies.[1] One of these factors only emerged in the 2016 survey: long-lived companies are being increasingly purpose driven. Purpose-driven organisations recognise the need to create value for all stakeholders, including society at large.

Stakeholder governance considers the diverse interests of all stakeholders and sees the shareholders as owners of shares in the company not as owners of the business. For stakeholder governance to be effective, a company needs to articulate a purpose about how it aims to create value for all its stakeholders and then needs to report – in a transparent, ethical and accountable way – how the company has contributed to this and thus the sustainable long-term success of the company.

Benefit corporations (B corps) have been designed to deliver value to all their stakeholders, not just the shareholders. C corporations (C corps) are typically designed to maximise shareholder value and be shareholder centric. However, as argued by law professors Jill Fish and Steven Davidoff Solomon, C corps "have a purpose to do anything they can under the law".[2] Based on the views of former Delaware (US) Chief Justice Leo Strine, this view of corporate purpose does not seem so clear-cut.[3]

Given that directors of C corps may take other stakeholders into account when discharging their duties, constituency statutes passed in the wake of anti-takeover defences in the 1980s state that there is no obligation that they must under law. Although there are differences between the California Benefit Corporation and the Delaware Public Benefit Corporation, for instance, all types of B corps make it mandatory for directors to take into consideration the diverse interests of other stakeholders in all their deliberations and decisions.

Even though C corps do not have an obligation to create value to all stakeholders, it is really the company charter that gives the corporation the licence to operate. Therefore, C corps that have company charters that reflect a clear purpose and objectives to create value to all stakeholders can contribute to more sustainable and inclusive business growth as well as B corps. For example, Paul Polman changed the purpose of Unilever during his ten-year tenure as chief executive. Despite his ousting in 2019 following a shareholder rebellion, Unilever's purpose to make sustainable living commonplace prevails today.

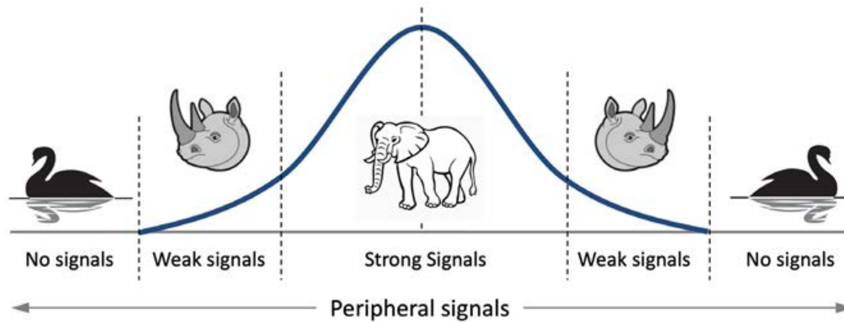
Although a strong case in favour of stakeholder governance and B corps to achieve this can be made, the future will likely see a combination of B corps and C corps with amended company charters to move us all towards stakeholder governance.

B. THEY ARE SKILLED AT SPOTTING DISCONTINUITIES IN THE EXTERNAL ENVIRONMENT

A second factor identified during the annual survey[1] conducted by the Sustainable Foresight Institute is that long-lived companies are skilled at peripheral vision.

Corporate Governance 4.0 boards continuously scan the periphery in search of discontinuities in the external environment. As discussed in Chapter 9 of Corporate Governance 3.0, not everything can be accurately anticipated, but that does not mean that organisations should not try to identify discontinuities in the external environment. Boards need to provide oversight to spot discontinuities in the external environment, including black

FIGURE 1: BLACK SWANS, GREY RHINOS AND WHITE ELEPHANTS



Source: Sustainable Foresight Institute, 2004[5]

swans, grey rhinos, and white elephants (Figure 1).

Black swans or wildcards (or the unknown unknowns) were specified as a phenomenon by Herman Khan (1960s) and Pierre Wack (1970s). It was, however, former options trader Nassim Taleb who popularised the term 'black swan', which he describes as having three characteristics: 1) low probability, 2) big impact, and 3) can only be logically explained after the facts.[4] Taleb's definition is incomplete, though, and has been developed from the perspective of a mathematician, who approaches future events from a purely probabilistic perspective.

A key characteristic of a black swan is that the event in question cannot be anticipated, either in time or in space.[6] In addition, black swans emerge suddenly, without any early warning. Thus examples of black swans are Covid-19, the Fukushima triple disaster (i.e. earthquake, tsunami, and nuclear meltdown), and the 2010 BP Macondo oil spill. None of these events were anticipated by anybody, either in time or in space.

Niall Ferguson (2021) puts it as follows:

> Disasters are inherently hard to predict. Pandemics, like earthquakes, and wars, are not normally distributed; there is no cycle of history to help us anticipate the next catastrophe. But when catastrophe strikes, we ought to be better prepared than the Romans were when Vesuvius erupted or medieval Italians when the Black Death struck.[7]

Grey rhinos (or the known unknowns) are different in that they are driven by an event or a combination of events that can be reasonably anticipated based on cause and effect. They also tend to emerge gradually and therefore weak signals provide early indications of what is about to unfold.[6,8] Examples of grey rhinos include the global financial crisis, the use of blockchain to make global value chains more resilient, and the emergence of driverless vehicles.

Finally, white elephants (or the known knowns) pose potential existential risks to the company. A well-documented example of a white elephant is that although Kodak invented digital photography, the board was unwilling to cannibalise its existing chemical photography business until it was too late. Other examples of white elephants include global climate change and cybersecurity.

C. THEY INTERNALISE EXTERNALITIES

Another factor identified during the Sustainable Foresight Institute's annual survey[1] is that long-lived companies have an experimental mindset at the fringes of their market. Therefore, it is not sufficient to continuously scan the periphery in search of discontinuities in the external environment. Corporate Governance 4.0 boards need to make judgements in the face of uncertainty to contribute to the sustainable long-term success of the company.

Although black swans cannot be anticipated either in time, or in space, it is still important for boards to try to anticipate 'possible' future black swans as part of their risk practices. The benefit for companies to anticipate

TABLE 1: VARIOUS FORESIGHT TOOLS AND THEIR USE

	Black swans 'unknown unknowns'	**Grey rhinos 'known unknowns'**	**White elephants 'known knowns'**
Characteristics	Cannot be accurately anticipated in time or in space	An event or series of events that can be reasonably anticipated based on cause and effect	The writing is on the wall
Manifestation	Abruptly (no early warning)	Gradually (early warning signs)	Already omnipresent Strong signals
Examples	Pandemics, natural disasters	Financial crises	Complacency, lack of vision and risk taking
Mitigation tool	Contingency planning	Scenario planning driven peripheral vision	Internal peripheral vision
Objective	Operational readiness and rapid response	Avoid being blindsided or disrupted	Avoid becoming obsolete

Source: Sustainable Foresight Institute, 2004[9]

possible future black swans is to be operationally ready to mitigate an event, should disaster strike. Thus, it would be possible for companies to mitigate most of the severe consequences of black swan events.

Scenario planning – plausible, divergent and internal consistent views of the future – is a useful tool to anticipate how the future could unfold. And when combined with strategic options thinking and strategic early warning, it helps companies remain competitive in a changing, complex and uncertain environment.[7] The benefit of anticipating grey rhinos is to avoid being blindsided because of changes in the external environment or in the strategy of both current and future competitors.

Proper succession planning and board diversity are ways to avoid complacency from ignoring white elephants.[10] White elephants, when ignored, pose a potential existential threat to the company. Consider the cost of cybersecurity, which is expected to inflict damage in the amount of US$6tn in 2021,[11] or 7% of global GDP. Ignoring or not providing appropriate board oversight of cybersecurity could lead to significant financial and reputational losses and even bankruptcy. The US National Association of Corporate Directors argues that cybersecurity is an enterprise-wide risk management issue, not just an IT issue, and should thus be dealt with by the board.[12]

Table 1 (p.65)summarises the various strategic foresight concepts and their potential strategic response.

D. THEY ARE OUTCOMES DRIVEN (AS OPPOSED TO COMPLIANCE DRIVEN)

A company's longevity is intrinsically linked to how seriously the board addresses ESG risks. Given that corporate governance is concerned with contributing to the sustainable long-term success of the company, it could be argued that tying executive compensation to ESG targets and outcomes will significantly contribute to achieving this objective.

There are several benefits of tying executive compensation to how ESG risks are managed:

1. It sends a strong message to the investor community and other stakeholders that ESG risks are taken seriously by the board and top management. This may lower the underlying cost of capital and improve a company's stock price. It may also make the company more attractive to customers, suppliers, and employees – in general, it makes it easier for a company to conduct its business.
2. It demonstrates that ESG risks are inherent to the company's strategy and are part of its culture and values system.
3. The general perception is that what is good for society is not good for the shareholder. Linking executive compensation to ESG targets, and how ESG risks are managed, pushes management to think differently about ESG and explore joint gains.
4. Compensation provides an important incentive for executives to do the right thing and manage the company for the benefit of all its stakeholders, including society at large.

There are other ways to achieve this, but linking executive compensation to desired ESG targets and outcomes will incentivise company executives to balance and grow all five capital stocks – natural, manufactured, human, social and financial.

E. THEY ARE TRULY DIVERSE[13]

Board diversity needs to be seriously considered in succession planning. Diverse boards, when well designed, are better at risk oversight, including ESG oversight. Although diversity comes in many forms, typically the following four are considered: gender, ethnic, experience and age diversity.

Boards need to make judgements with the objective to contribute to the sustainable long-term success of the company. During the era of 4IR, a critical aspect for the board while discharging its duties is to provide risk oversight, including oversight of the potential unintentional consequences that AI may have on exacerbating racial and gender inequity.

Cognitive biases often impair a leader's ability to make rational and informed decisions. The risk of unconscious bias – the potential prejudice against a particular group or decision – is largely reduced in more diverse boards where the various issues, risks, and societal perspectives are constructively debated before a decision is made. Similarly, more diverse boards tend to suffer less from over-confidence and confirmation bias.

// TYING EXECUTIVE COMPENSATION TO ESG OUTCOMES COULD IMPROVE LONG-TERM PERFORMANCE //

Several studies illustrate that gender diversity leads to improved business performance, less extreme risk-taking, and enhanced governance. Ethnic diversity at board level has contributed to more consideration of the wider societal aspects in and the implications of strategic decisions. Similarly, younger board members tend to challenge decisions that would adversely affect future generations, therefore ensuring that risk-taking is better aligned with the company's risk appetite. This in turn contributes to improved long-term performance.

Companies should promote truly diverse boards in terms of gender, ethnicity, thought, age, and even neurodiversity, to contribute to the company's sustainable long-term performance and ensure that critical risk, such as AI, does not exacerbate racial and gender inequity.

F. THEY ARE INCREASINGLY ASSISTED BY ARTIFICIAL INTELLIGENCE

The UK 2006 Companies Act states that at least one board member needs to be a natural person. This gives company boards the opportunity to appoint directors that are not natural persons, such as an artificial intelligence (AI) powered robot.[14] At its most basic level, this could be an expert system, a basic form of AI, that helps directors make better judgements in the same way that physicians have used expert systems to arrive at more accurate diagnoses and even suggest treatments. Typically, an expert system performs well in its area of expertise, which is usually very narrow. More advanced AI-powered decision support

systems, commonly referred to as knowledge-based systems, use an algorithm to develop explicit knowledge of a problem, such as strategy of finance. The system is then used to arrive at a better recommendation faster. Even more advanced AI-powered systems such as DeepMind have the ability to solve very complex problems without being taught how to do it.[15]

The emergence of the 4IR, big data and accelerating velocity of change, the amount of data that needs to be processed by boards increasingly exceeds human processing capabilities.

AI is unlikely to replace the human director. But if well used, it could help individual directors and the board make better decisions. The combination of AI algorithms – to gather, augment and analyse vast amounts of data – with the human experience is potentially a very powerful one that could lead to competitive advantage.

G. THEY MONITOR ORGANISATIONAL CULTURE

A third factor identified by the Sustainable Foresight Institute's surveys[1] is that long-lived companies have a set of deeply ingrained and shared values that are a guide to action. Values are the beliefs, the guiding principles and philosophies that drive behaviour in an organisation. In essence, values drive organisational culture.

Companies with healthy cultures are risk-aware. The characteristics of a risk-aware culture include risk management devolved to the workplace, participative management style, utilisation of knowledge and skills of employees at all levels of the organisation, good communication and teamwork. Organisations with healthy cultures are therefore better able to demonstrate the relationship between culture, strategy, risk and outcomes.

> // ORGANISATIONS WITH HEALTHY CULTURES ARE BETTER ABLE TO DEMONSTRATE THE RELATIONSHIP BETWEEN CULTURE, STRATEGY, RISK AND OUTCOMES //

Weak organisational cultures come in many forms and very often lead to devasting outcomes. Consider Enron, whose board twice suspended its ethics code before its demise in 2001. While this is an extreme case of organisational failure because of the absence of deeply ingrained and shared values that are a guide to action, the importance of a healthy organisational culture cannot be underestimated.

EY articulates five ways to enhance board oversight of culture:[16]

1. Boards oversee how culture is defined and how culture and strategy are aligned
2. Boards create accountability for how culture is communicated and lived – internally and to key external stakeholders
3. Boards monitor how culture and talent metrics are measured to keep a pulse on how culture is evolving
4. Boards provide oversight of intentional culture shifts to stay in step with strategy shifts
5. Boards challenge the board's culture.

The importance of organisational culture cannot be underestimated. After all, management theorist Peter Drucker famously said: "Culture eats strategy for breakfast." With this quote, Drucker implied that a healthy organisational culture leads to better outcomes.

H. THEY ADOPT AN INTEGRATED REPORTING APPROACH[17]

In 2010, the International Integrated Reporting Council was launched with several partners, including the Big Four accounting firms, to report on how the company's strategy and operations impact the six capital stocks – natural, manufactured, human, social, intellectual and financial – with an objective to understand a company's financial and sustainability performance. Although voluntary, integrated reporting has been widely adopted, at least in part, by many multinationals.

In principle, a voluntary over mandatory disclosure should be favoured because it is difficult to develop a disclosure framework that works for companies in different industries and of different sizes and levels of complexity. However, given that failure to identify and mitigate material ESG risks poses a potential existential threat to the company, it can be argued that mandatory disclosure of ESG information is warranted. Considered the ESG disclosure requirements imposed by the US Securities and Exchange Commission (SEC).[18]

It is important though to highlight that, to date, the SEC only mandates the disclosure of ESG information that is financially material as seen by the investor. In other words, any ESG related information that would significantly alter the mix of information available to investors.

These days, not disclosing any material information about ESG risk is simply not an option for companies. By requiring mandatory disclosure, the SEC provides guidance as to what to disclose, therefore helping companies to paint a fair and transparent picture to investors about the ESG risks and what the company is doing about them. This has several benefits: 1) it creates trust among investors, especially institutional ones, 2) it reduces the volatility of cash flows, and 3) it avoids potential future litigation from investors who may feel that they have been misled by the company.

Arguably, by requiring mandatory disclosure, the SEC provides a service to companies: the risk of lawsuits resulting from a false or misleading company statement perceived to have misled investors is thus drastically reduced.

CONCLUSION

It can be argued that Corporate Governance 4.0 is emerging and that many stakeholders, from shareholder to regulators and civil society, are increasingly welcoming this needed change in the way that boards provide stewardship to contribute to the sustainable long-term success of the company for the benefit of society. Building inclusive, sustainable and more resilient businesses for the benefit of humanity – and not just the shareholder and in the short term – is a corporate director's emerging duty.

THE EXISTENCE OF AN ACTIVE CLIMATE MINDSET MODEL IN DIRECTORS' OWN ACCOUNTS OF THEIR THOUGHTS AND ACTIONS

CLARE NICKSON HAVENS CONTINUES HER ANALYSIS OF WHAT MAKES FOR GOOD AND EFFECTIVE BOARDS IN THE FACE OF THE GROWING CLIMATE THREAT

In this second extract from her research at Cambridge Institute for Sustainable Leadership at the University of Cambridge, Clare Nickson Havens considers how financial institution directors account for their own behaviours when addressing the key challenges and opportunities of climate change.

For background to this article and details of references, please visit cisi.org/rofm-feb22

TO WHAT EXTENT AND IN WHAT WAYS ARE BANK DIRECTORS USING AN ACTIVE MINDSET IN THEIR DECISIONS ABOUT CLIMATE RESPONSE MATTERS?

In order to answer the above research question, and to achieve my second and third aims – to test how the active mindset is working in practice in the climate response of bank board directors, identifying areas where practice can be improved, and test the validity of the model – I analysed the directors' accounts for evidence of the components of the proposed active mindset model and identified additional active mindset behaviours. These findings are detailed below.

THE SCANNING STAGE

Below, I discuss each attribute in the scanning stage, ordered by frequency of response. Table 1 shows that the underlying attributes of the scanning stage exist and are being attended to by directors and gives examples of these attributes in practice.

Alertness

All directors were alert to the many climate-related financial risks (Seega & Voysey, 2020), and the potential opportunities from banking what they perceive as the inevitably low carbon future economy, exhibiting behaviours identified with an active mindset by CISL (2020). The value of being able to "see around corners" to pick up signals, as suggested by Teece (2021), was echoed in the directors' accounts. There is a need "to be alert", to "scan the horizon", "have your antennae up for where new issues are emerging", and "read the tea-leaves", indicating that directors are not simply relying on management information but have a wider field of vision (Hambrick & Mason, 1984).

Climate response was particularly associated with long-term, future-focused thinking by all directors, supporting the active mindset behaviours. Directors expressed eagerness to engage in this type of thinking: "what I love about thinking of climate change is the thinking about the future", one director enthused, and some directors appeared frustrated at having to "overly dwell on historical data" such as financial statements, this being viewed as "completely irrelevant, because that's from the strategic signals two years ago". However, all directors understood that a solid understanding of current climate-related risk is necessary to create a pathway to a low carbon future.

Discovery processes

Although all directors were aware of the need to increase their own knowledge around climate change, increasing their human capital (Adner & Helfat, 2003), directors differed in their understanding of what constitutes an adequate response. One director expressed the need to "osmose as much external data [around climate change] as I can, to provide myself with some sort of foundation to properly analyse what's delivered". Others were frustrated by "the deluge" of information they receive on climate, stressing the importance of "relevant", "material" information and of "knowing when you have enough information to make a decision", supporting Simon's (1956) 'satisficing', having sufficient information to make a decision in a scenario without an obvious optimal pathway (Huse, 2007). A director's ability to satisfice could be influenced by higher perceived self-efficacy, an attribute of emotional capital (Andrade, 2015). Some directors commented that too much information leads to indecision, echoing Forbes' (2005, p.607) observation that if an information search is too comprehensive, it can lead to anxiety and 'paralysis by analysis'.

In terms of 'field of vision' (Hambrick & Mason, 1984), directors gather

TABLE 1: FINDINGS AT THE SCANNING STAGE OF THE PROPOSED ACTIVE MINDSET MODEL

Task-related attributes	Examples
Alertness	• Awareness of risks from environmental sources • Need to be forward-looking
Discovery processes	• Need to increase own knowledge • Know when you have enough information • Use internal and external sources • Use board interlock
Recognise opportunities	• Leverage technology • Leverage relationship bankers
Anticipate threats	• Avoid becoming irrelevant • Aware of peers' response • Risk to personal reputation

climate-related information from a range of sources, consulting with external experts including academics and scientists and internal (bank) resources. Internal risk specialists, strategists and meteorologists from the bank's insurance division are consulted, as are other directors on the board with expertise in diverse industries, leveraging social capital (Adner & Helfat, 2003) and supporting Huse's (2007) finding that board members know and use each other's competences. In addition, one chair spoke of having deliberately recruited energy experts to the board to "broaden the range of perspectives and knowledge".

All directors expressed seeing value in hearing employees' views on issues relating to climate, although there was strong disagreement over whether directors should engage directly with employees. This appears to be part of a broader issue of relationship between board and CEO. One commercial bank chair warned that directly engaging with employees "can erode trust" between the board and the CEO, but an investment bank director strongly disagreed, recommending directors engage with those closest to customers, it being "the only way to overcome confirmation bias stemming from the asymmetry of information that management has versus the board". By engaging directly with employees, they said, "you come back to the board with a clearly different mindset". This was echoed by other investment bank directors who said it is important to know as many people as you can within the organisation and at all levels. This supports Roberts et al's (2005) observation that informal engagement with employees helps build non-executive directors' knowledge of the firm and signals their commitment. This could also boost feelings of employee empowerment, a behaviour associated with an active mindset.

All directors noted that their roles on the boards of other entities, known as board interlock, provided a rich source of knowledge and information, supporting Wincent et al's (2010) argument that interlock positively influences innovation, and performance (Geletkanycz & Hambrick, 1997), and is an example of the mediating effect of social capital. Particularly useful are "companies further along the climate journey than we are", providing opportunities for learning and mastery, as advocated by Senge (1990) and Vygotskiĭ (2004). As an example, one director spoke of recently having joined the board of an energy company "because I really wanted to deeply understand [climate] issues". Interestingly, experience on not-for-profit boards and small social networks is also viewed as useful, providing a social lens on climate change.

> // EXPERIENCE ON NOT-FOR-PROFIT BOARDS AND SMALL SOCIAL NETWORKS IS VIEWED AS USEFUL, PROVIDING A SOCIAL LENS ON CLIMATE CHANGE //

Recognise opportunities

All directors spoke of the need for innovative and pioneering practices. "Seeing climate in a broader context, as an opportunity for advantage, just completely changes the whole dialogue", one director remarked. What constituted innovative and pioneering practices appeared to differ by type of bank the director serves. Interestingly, although there was clear appetite for product innovation in the accounts of investment bank directors, commercial bank directors largely focused on innovation around efficiencies and engagement with customers, apparently reflecting regulatory concerns following mis-selling scandal. The divergent responses by type of bank are discussed elsewhere in the paper.

Directors agreed that leveraging technology provides an opportunity to enhance climate response. Many directors spoke of opportunities afforded by technology, such as artificial intelligence to better measure customer risk, apps to help customers make sustainable energy decisions, and crowdfunding platforms to enable customers to fund sustainable projects. This innovative approach to use of technology is a key component of dynamic capabilities (Teece, 2021). Interestingly, commentary appears to focus on technology as a tool rather than on the opportunities to invest or lend to new types of technology that could facilitate the transition to a low carbon economy. There was also agreement on the opportunity to leverage frontline bankers as part of climate response, strengthening capabilities in order to deepen customer relationships during the transition, resourcing and upskilling bankers with "more than just the ability to write a loan", including climate expertise, and relocating bankers away from head office to better serve local communities, because "if you stay in the banking bubble, you'll miss 90% of what's going on". Viewing bankers as a resource for climate response rather than as an overhead that can be reduced to boost short-term earnings, marks a real shift in thinking and can empower employees.

Anticipate threats

Awareness of several types of threat were apparent in the directors' accounts: the threat of becoming irrelevant to customers; from competition; and the risk to personal reputation of an inadequate or, conversely, an extreme climate response.

The threat of becoming irrelevant to customers who expect a shift to sustainable banking was mentioned by many directors. There is a need to "be seen to lend to innovative projects" – "if you're not seen to be in a position … on this, there will be customers and entities that won't deal with you". The threats from not adequately understanding risk in customers' portfolios, from inadequate probing of the lending book and not catering to the different needs of customers were also mentioned. Having customers that are capable of transitioning to a low carbon economy is associated with an active mindset and reflects the need for a transition in thinking away from a shareholder-centric focus, as advocated by Hurth and Kravatzky (2019).

Regarding the threat from competition, only one director discussed commissioning analysis of competitors' climate response. Other

TABLE 2: FINDINGS AT THE PLANNING STAGE OF THE PROPOSED ACTIVE MINDSET MODEL

Task-related attributes	Examples
Respond to opportunity and threat	• Take an entrepreneurial approach to investing/lending • Proactively engage with customers to identify demand for climate-related products/services • Provide small- and medium-sized business customers with relevant climate-related information
Make strategic investments to develop new capabilities	• Recruit new staff with climate skills • Upskill existing staff • Directors invest in own training

directors expressed disinterest in peers' responses, with one viewing competitor analysis as only informing "about intent", evoking the spectre of 'greenwashing', or rhetoric over substance. However, banking is a highly competitive business, and despite this professed indifference, directors appeared well informed about peers' approaches. For example, a commercial bank chair remarked on the "superficial response" of competitors reacting to non-governmental organisation pressure to exit thermal coal, but still lending to oil and gas, "so not understanding why they need to exit thermal coal". Reflecting the high degree of competition around product innovation, one director commented: "we're pushing into it as hard as we can and assuming it will probably get us ahead of the pack", aware that any strategic advantage a bank has with a product is short-lived before imitators jump in as "we're the greatest copycats in the universe".

There did appear to be a more collaborative approach taken to other aspects of climate response, scenario analysis of climate-related risks specifically, with one director commenting that "all banks are on the same journey and cannot benchmark themselves against peers yet … I think we're all helping each other, as opposed to anybody is in the lead", supporting the call for collaboration noted by CISL (2020).

Several directors expressed awareness of the threat to personal reputation from either an inadequate or extreme climate response, reflecting the delicate balancing act of keeping different stakeholder groups happy. Climate response is "really part of the overall image that you want to present to the world", illustrating the importance to one director of personal reputation. A more covert approach ("we don't walk around with a banner" – advertising the bank's support for a carbon price) to avoid alienating certain stakeholders and negatively impacting reputation contrasts with the behaviour of taking responsibility identified in my previous article, 'Developing an active mindset model to help address climate change' (*cisi.org/rofm-feb22*) as an active mindset behaviour. Self-reflection, to ensure authentic alignment of beliefs with actions, as advocated by Argyris and Schön (1974), and increasing perceived self-efficacy (Forbes, 2005) could increase emotional capital (Andrade, 2015) and improve practice. The current level of awareness expressed in the interviews supports Rickards et al.'s (2014) finding that what is lacking in leaders' climate response is self-knowledge.

// ALL BANKS ARE ON THE SAME JOURNEY AND CANNOT BENCHMARK THEMSELVES AGAINST PEERS YET. WE'RE ALL HELPING EACH OTHER //

THE PLANNING STAGE

It is not enough to gather information. There needs to be an understanding of the need "to use the signals you have picked up, to challenge the status quo", one director urged, supporting Teece, Raspin and Cox (2020) who stress the need for action in dynamic capabilities. Table 2 shows the task-related attributes of planning exist in the directors' accounts and examples of these attributes in practice.

Responding to opportunities and threat

Although several directors identified technology and leveraging frontline bankers as opportunities in the transition to a low carbon economy, accounts differed over how these would be realised. Responses appeared to be on a continuum. At one end: "it's not the bank's role to give away money to climate initiatives … the first job is to protect the [lending] book, rather than innovate"; through: "you've got to do it all" and that banks that "grasp the nettle" and lend broadly will "be winners"; to the other end of the continuum, where a director spoke of a radical transformation of the mortgage portfolio, and reorganising the bank entirely around data. This latter view supports Teece et al.'s (2020) observation that entrepreneurial, transformational thinking is a vital part of dynamic capabilities. I would argue it also suggests high perceived self-efficacy.

Similarly, directors described differing approaches to deepening relationships with customers, seemingly reflecting differing levels of entrepreneurial thinking (Teece et al., 2020) and varying degrees of perceived self-efficacy (Bandura, 1997; Forbes, 2005). The director of a commercial bank said the bank would only invest in infrastructure to support a new product once there was significant demand. This contrasted with the more proactive approach described by the chair of an investment bank who spoke of frontline bankers engaging with customers to "get a sniff of whether there's demand and say: 'maybe if we come up with a product, we can satisfy that demand.'"

The opportunity of better servicing small and medium business enterprise (SME) customers, who are resource-

restricted, was highlighted as a particular opportunity and described as one way of "weaponising" climate response for commercial advantage, supporting Teece's (2021) call for a dynamic response, with the word 'weaponising' illustrating banking's competitive nature.

Make strategic investments to develop new capabilities

Directors spoke of several different types of investment they have authorised as part of their climate response, including hiring staff with more commercial skills at an ethical bank and climate-related skills at a commercial bank; and technology training and sustainability training. However, very few directors spoke of investments they had made to develop their own capabilities. One spoke of undertaking specific risk training and another of taking a sustainability course, thus, increasing their human capital. I suggest there is an opportunity here for improved practice through learning, in line with Vygotskiĭ (2004).

THE TRANSFORMING STAGE

Table 3 shows that the underlying task-related attributes of the transforming stage exist and gives examples of these attributes in practice.

Enhance, align and modify resources and capabilities

All directors were alert to the need to embed climate-related skills within the bank, supporting the findings of Vygotskiĭ (2004) who recommended learning by doing, and Senge's (1990) work on mastery. However, although directors identified that embedding climate skills within the bank was crucial, one expressed scepticism as to whether it was possible, reluctantly concluding that skills such as scenario analysis to measure physical and transition risk would have to be outsourced to consultants. This contrasted with the chair of an investment bank who said scenario analysis would no more be outsourced than would credit analysis (decisions about to whom to lend), reiterating the need "to ensure the capability is embedded". I suggest these divergent responses reflect the directors' perceived self-efficacy and indicate an opportunity to improve practice. Ethical bank directors went further, suggesting that biodiversity and nature-related financial impacts are of even higher priority than climate impacts, and "arguably, you can't solve climate without nature-based solutions and protecting nature", reflecting their more advanced knowledge (human capital) of climate issues and potentially higher levels of perceived self-efficacy.

Empowering employees through increasing capabilities was viewed by many directors as vital. In particular, sustainability training forces a "mindset shift" that will "filter its way through the organisation in a top-down and a bottom-up way". Given it is the frontline bankers, not the board, that see individual deals and who need to be "thinking about opportunities", I would argue that empowering employees to make decisions, take risks, and not fear making mistakes is crucial and could lead to greater innovation and risk management, two behaviours identified as associated with active mindset.

Another way of empowering staff is by rethinking branches to allow more staff to work closer to home and to their customers, creating jobs in rural areas as part of the bank's climate response. The intractable problem of aligning remuneration, usually on a 12-month cycle, with sustainability, which has a far longer timeframe, was recognised by many directors, and was felt to particularly apply to commercial banks, where, due to the culture and scale of existing business-lines such as mortgages, any product innovation is relatively tiny and positive impact can take years to materialise, or be material. In contrast, staff can effect significant damage in the short term through, for example, mis-selling a financial product and the bank having to pay compensation and fines. The chair of a commercial bank said: "if you focus your remuneration on a 12-month cycle, you'll get just that … you've got to allow for those key performance indicators to be more future-thinking". Although recognising the importance of aligning remuneration with climate response, no solutions were suggested. I would suggest commercial banks need to address their structure and culture in order to achieve this alignment.

// SUSTAINABILITY TRAINING FORCES A MINDSET SHIFT THAT WILL FILTER ITS WAY THROUGH THE ORGANISATION TOP-DOWN AND BOTTOM-UP //

THE STAGE OF REFLECTION

I discuss the attributes associated with the reflection stage next, ordered by frequency of response. Table 4 (p.72) shows that the task-related attributes of the reflecting stage exist and details examples of these attributes in practice.

Assumption analysis

In general, directors believed they test assumptions "as a matter of course, that's sort of part of the job", referring to testing assumptions regarding information provided by management. For example, one director observed the need to question what is on the board agenda "because what's on the agenda might not be what we actually need to

TABLE 3: FINDINGS AT THE TRANSFORMING STAGE OF THE PROPOSED ACTIVE MINDSET MODEL

Task-related attributes	Examples
Enhance, align and modify resources and capabilities	• Embed climate skills within institution • Empower staff to make decisions and not fear failure • Rethink branches as part of climate response • Align remuneration with sustainability

TABLE 4: FINDINGS AT THE REFLECTING STAGE OF THE PROPOSED ACTIVE MINDSET MODEL

Task-related attributes	Examples
Assumption analysis	• Test your frame of reference • Challenge the way of thinking
Contextual awareness	• Type of institution influences climate response • Size of institution influences climate response • Location of institution influences climate response
Imaginative speculation	• Think innovatively about how to fund sustainable projects • Engage with policymakers
Reflective scepticism	• Test information coming from management • Challenge your own opinions

talk about", reflecting the need for reflective scepticism (Rimanoczy, 2021). Another director spoke of needing to build a certain fluency in climate-related issues before feeling "that you're competent to properly test assumptions", supporting the importance of cognition and perceived self-efficacy.

In terms of testing one's own assumptions, directors expressed a need to challenge the way of thinking, using the analogy that if you have a hammer (a patterned way of thinking) everything looks like a nail, supporting Tuckett and Nikolic's (2017) observations on the value of awareness of one's conviction narrative and underlying mental states. Interestingly, directors gave examples of how changing their thinking about one issue, for example shifting their thinking about suspected credit card fraud to presuming the customer was innocent rather than guilty, "changed how the board thinks about everything", including climate. This observation is a useful reminder that directors are not making climate-related decisions in isolation, and, although their conviction narratives and underlying mental models vary issue by issue, by increasing awareness of their conviction narrative, significant shifts in thinking can be achieved.

Imaginative speculation

Several directors described ways they are thinking innovatively about how to fund sustainable projects, for example, reimagining a large mortgage portfolio and reorganising the bank around data, and two directors mentioned engaging with regulators to help shape the future of finance, through, for example, advocating for lower capital requirements for sustainable products. This supports the innovation and engaging with policymaker behaviours associated with active mindset (CISL, 2020) and also suggests high perceived self-efficacy (Bandura, 1997; Forbes, 2005).

Reflective scepticism

The importance of doubt and healthy cynicism as a general habit was mentioned as "an essential ingredient of the active mindset" by one director. This supports the importance of awareness of one's mental state, whether divided (not open to conflicting information) or integrated, as suggested by Tuckett and Nikolic (2017) and generally higher perceived self-efficacy (Bandura, 1997).

ADDITIONAL ACTIVE MINDSET BEHAVIOURS IDENTIFIED IN THE DIRECTORS' ACCOUNTS

I identified two:

1. Leverage board composition (meaning the personal experiential and psychological attributes of the directors as well as the connections that exist due to board interlock), which was mentioned by all respondents, supporting the importance of social capital as advocated by Adner and Helfat (2003) and Hambrick and Mason (1984), and Geletkanycz and Hambrick's (1997) and Wincent et al.'s (2010) observations on the importance of board interlock to innovation and performance.
2. Leverage the bank brand to drive climate response, using the "emotional connection and trust" customers feel towards the bank to drive a progressive climate response.

MEDIATING FACTORS IN THE DIRECTORS' ACCOUNTS

In addition to the active mindset model components of scan, plan, transform and reflect existing in the directors' accounts, the factors identified in the previous article (*cisi.org/rofm-feb22*) as mediating dynamic capabilities: human and social capital; cognition; emotional capital; and objective reality/context were also apparent in the directors' accounts. Thus, it appears that the components of the active mindset model exist in practice and the active mindset model is an effective conceptualisation, achieving my third research aim. Test for the validity of the model.

In terms of answering my research question ('To what extent and in what ways are bank directors using an active mindset in their decisions about climate response matters?') and addressing my second aim (test how the active mindset is working in practice, identifying areas where practice can be improved), it is apparent from the accounts that active mindset regarding climate response exists, but what directors perceive as an adequate response is heavily influenced by their context (predominantly type of bank). This supports the importance of objective reality/context as a mediator of dynamic capabilities, although, importantly, some directors are pushing against this constraint. I also identified that there are significant opportunities to improve performance through developing another mediator of dynamic capabilities, emotional capital, in particular. I discuss objective reality/context as a constraint and the opportunity to develop emotional capital to improve practice elsewhere in the overall paper.

For a copy of the full paper, please email Claire Nickson Havens at cn438@cam.ac.ukw

GREEN FINANCE CHALLENGES IN DEVELOPING COUNTRIES

IN THE FIRST OF TWO ARTICLES FROM CHINA, MR JUZHONG ZHUANG SURVEYS THE ROLE OF GREEN FINANCE IN DEVELOPMENT

Mr Juzhong Zhuang is currently joint chief economist of International Finance Forum (IFF) and an adjunct professor at Fanhai International School of Finance, Fudan University. He worked as a research Fellow at the London School of Economics after graduating from Manchester University with a PhD in economics in 1992. He joined the Asian Development Bank (ADB) in 1997, in charge of technical support for ASEAN+3 monetary and financial cooperation. From 2010 to 2018, he served as ADB's deputy chief economist and deputy director general of its Economic Research and Regional Cooperation department. He also led ADB delegations to many ASEAN+3, APEC, OECD, ESCAP and G20 meetings. He has written extensively on Asian development, covering economic growth, income distribution, economics of climate change, and cost-benefit analysis. His latest publications include *Inequality in Asia and the Pacific* and *Managing middle income transition: challenges facing China*.

According to United Nations Development Programme studies, total investment needs for achieving Sustainable Development Goals amount to US$3.9tn annually from 2015 to 2030, equivalent to 11% of developing countries' projected combined GDP.

However, green finance in developing countries is still at a nascent stage. For example, according to data compiled by Climate Bonds Initiative, of the total green bond issuances globally (at US$297bn) in 2020, developing countries only accounted for 16%; if China is excluded, the developing world accounted for less than 5%.

The International Finance Forum and the International Institute for Green Finance of the Central University of Finance and Economics have collaborated on a project called the Global Green Finance Development Index, which provides rankings of the 55 largest economies worldwide in developing green finance. It finds that the bottom ten are all developing countries.

Developing countries face enormous challenges in growing green finance. Green finance is mostly for financing long-term infrastructure, including energy, transport, water and sanitation, and agriculture. While bank loans and foreign capital are certainly important, green finance should mainly be raised through domestic capital markets, to avoid maturity and currency mismatches. But in developing countries, by and large, financial systems are still bank-dominated, and domestic capital markets are not well developed, not very deep and liquid, despite their continued progress.

For instance, in the 2010s, outstanding domestic debt securities only amounted to about 20% of GDP in Latin America and Sub-Saharan Africa, and about 40% in developing Asia, compared with more than 50% for OECD countries. Market infrastructure for domestic capital markets such as trading platforms, clearing systems, credit ratings, regulatory frameworks, insolvency resolution systems, are often lacking or not well developed. Green finance has added requirements in financial market infrastructure, such as green accreditation.

Developing countries also have a small institutional investors base. For instance, in 2017, for developing Asia as a whole, pension assets accounted for only 6% of the region's combined GDP, and insurance assets only for 25%, while for OECD countries, the two figures were 83% and 50% respectively.

The global community has a duty to support the development of green finance in developing countries. Green finance supports green investment, especially for achieving global net zero emissions, which benefits every country in the world. There are many things the global community can do. Let me mention three.

1. Developed nations could fulfil, as soon as possible, their pledge of providing US$100bn annually to developing countries to finance climate actions.
2. Support capital market development in developing countries. In this respect, multilateral development banks, such as the World Bank, ADB, IADB, and AfDB have been doing this for some years through their policy-based lending. This should be continued.
3. Promote cooperation between market participants in developed and developing countries, especially in knowledge sharing and capacity building, and in promotion of sound investment principles. In this regards, international cooperation initiatives such as the Equator Principles, the Task Force on Climate-Related Financial Disclosures, UNEP Finance Initiative, the Principles for Responsible Investment and the Sustainable Stock Exchange Initiative have a major role to play.

CISI UK-China Finance Development Forum: Balancing Climate, Energy and Development - Part 2
Juzhong Zuang speaks at the event, jointly hosted between the Central University of Finance and Economics International Institute of Green Finance and the CISI. Available on CISI TV at *cisi.org/china-uk2*

CHILE SETS A HIGH BAR FOR SOVEREIGN SUSTAINABILITY-LINKED BONDS

IN OUR RECENT GREEN FINANCE ROUNDUP WITH COLLEAGUES IN CHINA, PROFESSOR **MICHAEL MAINELLI**, CHARTERED FCSI(HON) BROUGHT SOVEREIGN SUSTAINABILITY-LINKED BONDS TO THE FORE

In March 2022, the Republic of Chile placed the first-ever sovereign sustainability-linked bond (SSLB). This US$2bn 20-year SSLB was more than four times oversubscribed – a remarkable achievement given the sovereign bond market's volatility and uncertainty. Green policy performance bonds, sustainability-linked bonds (SLBs), and, most noteworthy, SSLBs form a subset of green bonds. However, they differ from green bonds, social bonds, or sustainability bonds in several crucial ways:

- First, the funds raised are not tied to a specific project, but a corporate or national objective. Liberating the proceeds from a specific project frees the issuer to deliver sustainability improvements using a wide range of means.
- Second, SSLBs and SLBs are issued with specific sustainability performance targets (SPTs), which contain key performance indicators (KPIs), for example: "A 20% reduction in scope 1 & 2 emissions by 2030".
- Third, if the SPT is missed the bond is subject to a 'step-up' clause, meaning the bond interest increases.

The concept was formally presented by Z/Yen at the World Bank Government Borrowers' Forum in Ljubljana in May 2009, was included in the City of London's submission to COP15 in Copenhagen, was promoted by the French government in the run-up to COP21 in 2015, and has been the subject of many papers and journal articles, most notably a 2017 French booklet, *L'Innovation financière au service du climat: les obligations á impact environnemental*, by Abdeldjellil Bouzidi & Michael Mainelli. SLBs began being issued by corporates in 2018, starting with French companies such as Danone and Louis Dreyfus.

However, the original idea of 'policy performance bonds' was directed at governments as a means of delivering on their climate change pledges (though they are equally suited to corporate issuers). In its simplest form, interest payments are linked to the actual greenhouse gas emissions of the issuing country. An investor in this bond receives an excess return if the issuing country's emissions are above the government's published target.

For organisations and individuals seeking to invest in a low-carbon future, uncertainty about government commitment manifests itself in three specific risks:

- government carbon emission targets being missed
- fossil fuel prices remaining low
- carbon (emissions) prices remaining low.

Missed targets, low fossil fuel prices, and low carbon prices reduce the profitability of low carbon projects and cause losses to investors. SSLBs act as a hedge against policy risk and can help attract both domestic and foreign direct investment in low carbon projects as they de-risk government policy risk. Policy risk affects investment, for example when the worsening economic environment leads governments to talk about 'temporary' easing of carbon reduction commitments, or there is a period of low fossil fuel prices, or when lobbying for special treatment of existing infrastructure looks strong. In the case of Chile, with the issuance of the world's first SSLB, the country aims to embed green and financial incentives across several political cycles, while mitigating some of the limitations of existing sovereign green, social and sustainability instruments.

Patricio Sepúlveda, head of debt management at the Chile Ministry of Finance points to "another interesting, and sometimes misunderstood, feature of Chile's SSLB – its long maturity, of 20 years. The Sustainability Performance Targets will be verified in 2030 and 2032 and the potential step-up would be paid until 2042. This automatically ties several governments and administrations to the structure and climate actions. It is really a huge step that is, in our view, a game-changer."

We expect innovative countries, committed to targets such as net zero carbon emissions by 2050, to start issuing SSLBs following Chile's lead.

// CHILE'S SSLB TIES SEVERAL GOVERNMENTS TO CLIMATE ACTIONS //

Numerous countries are currently considering SSLBs. Based on the corporate SLBs market development from US$11bn in 2020 to US$110bn, one could imagine that SSLBs will represent 10% of the green government issuance in a few years and, as a result, SSLBs issuers will be under pressure to exhibit higher standards to differentiate their offerings. In the current economic environment of rising inflation and interest rates, SSLBs could even be more attractive than classic debt. If SPTs and KPIs are bold enough, the lower cost of funding should be a persuasive argument to convince governments to issue such instruments.

Professor Michael Mainelli is executive chair of Z/Yen. The full paper can be found at: cisi.org/rofm-aug22